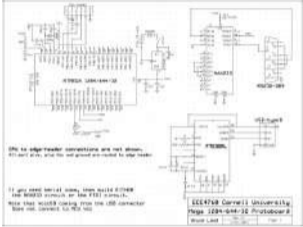



Advanced View of Atmega Microcontroller Projects List

List of Projects using Atmega Microcontroller with advance view:

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[Advancements in Networked Biometric Authentication Systems](#) Introduction: With the growing imperative to safeguard data and premises, the biometric authentication sector is witnessing significant market expansion. Our endeavor focuses on creating a scalable, compact, and efficient device tailored for securing doorways within a complex. Leveraging a FingerPrint Cards capacitance-based fingerprint scanner, our..... Listed under: [Internet - Ethernet - LAN Projects](#)
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[Innovative Applications with the Atmel Mega644 Prototype Board](#) Introduction This document outlines a prototype board designed for use with the Atmel Mega644 or Mega32 (PDIP) MCU. The board incorporates essential components such as a power supply, crystal clock, and bypass capacitors. Additionally, it features a six-pin header for flash memory programming from devices..... Listed under: [Development Board - Kits Projects](#)
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[RFID-Based Security System with AVR ATmega32 Microcontroller](#) Here are some potential issues or limitations with the proposed RFID-based access control system design: Privacy/Data Security - Stored RFID tag IDs could potentially be hacked or leaked, exposing user privacy. Proper encryption and access controls would be needed. RF Interference - The RFID reader's..... Listed under: [Security - Safety Projects](#)
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[AVR ATtiny4313 in Bascom, GCC and Assembler](#) This project explores the functionalities of the AVR ATtiny4313 microcontroller using three different programming environments: Bascom-AVR, GCC, and Assembly language. The focus is on utilizing timers and interrupts to achieve tasks like blinking an LED. Hardware Setup: The project utilizes an ATtiny4313 microcontroller mounted on..... Listed under: [LED Projects](#)
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[An Individual Progress Report on \(ECE 445\)](#) Abstract This report will detail the work I have done since the initial submission of the design document which took place in September. This document was prepared in accordance with the final reporting guidance issued. This post will outline what I have done to restructure..... Listed under: [Motor Projects](#)
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[Maximizing Productivity with an Automated Inventory Tracking System](#) Abstract The Automated Inventory Tracking System (AITS) aims to address deficiencies in the routine management of personal belongings. Specifically, it aims to minimize waste in grocery shopping by providing users with a comprehensive view of their possessions, complete with product names, specifications, and expiration dates..... Listed under: [Security - Safety Projects](#)
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[Lighting Up Your World: The Atmel AVR Microcontroller LED Chasing Project](#) Building the LED chasing effect stands out as an engaging project for many beginners and enthusiasts in the embedded systems domain or hobbyist circles. This project entails leveraging both the Arduino IDE and Atmel AVR Studio to program the AVR ATmega168 microcontroller, thereby offering an..... Listed under: [LED Projects](#)
- [Fabric-Based Interaction: Unveiling the Conductive Fabric Gesture-Control Sleeve](#) Abstract This design project addressed the challenges associated with over-reliance on smartphone screens by introducing a wearable fabric sleeve. The sleeve delivers incoming call notifications wirelessly through haptic feedback and enables touch-sensitive gesture recognition for interacting with smartphones or similar devices. The touch-sensitive grid was..... Listed under: [Other Projects](#)

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9. [Building a Reliable RFID-Based Security System with AVR ATmega32](#) A cost-effective and dependable safeguarding solution has been developed to protect a three-phase induction motor from various electrical anomalies including unbalanced voltages, under voltage, over voltage, short circuits, and overheating. To maintain affordability, the design utilizes components such as the Atmega32 microcontroller, MOSFETs, relays, as..... Listed under: [Security - Safety Projects](#)
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10. [Advance Protection for Three Phase Induction Motor using Microcontroller Atmega32](#) I. INTRODUCTION Ensuring the protection of induction motors is crucial for their prolonged operational life. While numerous researchers have delved into this domain, many existing protection schemes are deemed impractical and costly within the Indian context. In the event of a phase outage due to..... Listed under: [Motor Projects](#)
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11. [Electrifying Engagement: Building a Quiz Buzzer Circuit for Interactive Quizzes](#) Circuit Diagram In the circuit diagram of the School/College quiz Buzzer circuit using the 555 IC, three 555 timer ICs are arranged in a bistable configuration. Each 555 IC has its own stable state controlled by individual buttons accessible to the participants. Additionally, there is..... Listed under: [Circuits](#)
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12. [Android-Powered Smart Wheelchairs](#) 1. INTRODUCTION A growing number of elderly and disabled individuals seeking to enhance their mobility find wheelchairs to be the most effective assistive device. For those with mobility challenges, a wheelchair provides the convenience of moving around, either propelled by another person or by the..... Listed under: [Other Projects](#)
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13. [Smart Fire Detection: A Wireless Sensor Network Approach for Indoor Arenas](#) Abstract This document details the development and implementation of a wireless fire alarm system, managed by an ATMEGA32 microcontroller, featuring Master and Slave Unit Controllers. The system receives input signals from normally opened warning devices like heat detectors and/or smoke detectors, with the unit containing..... Listed under: [Sensor - Transducer - Detector Projects](#)
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14. [Graphical LCD Oscilloscope using ATmega16Microcontroller](#) Introduction The popularity of microcontrollers is on the rise, thanks to their compact size and impressive capabilities. Embedded systems are being constructed around microcontrollers and peripheral devices [3]. An oscilloscope is frequently employed to observe the waveform of an electrical analog signal, typically representing voltage,..... Listed under: [LCD Projects](#)
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15. [Weather Parameters Monitoring based on Zigbee and AVR Microcontrollers](#). Abstract This document centers on the utilization of Atmel AVR series microcontrollers and the Tarang Zigbee module to wirelessly monitor environmental parameters such as temperature, humidity, CO2, and moisture levels. Presently, monitoring climate parameters like temperature and humidity plays a crucial role in regulating environmental..... Listed under: [Solar energy projects](#)
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16. [Building a Web Server Using AVR Microcontrollers](#) On this occasion, I express my gratitude to the Almighty for bestowing His grace upon me, leading my efforts to a successful conclusion. I extend heartfelt thanks to my esteemed mentor, Mr. Vinod Kumar P.P., whose invaluable guidance and advice steered me through crucial moments,..... Listed under: [Microcontroller Programmer Projects](#)
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17. [Getting Started with Assembly Programming for ATMELAVRMicrocontrollers](#) Why learning Assembler? To use assembler or opt for alternative programming languages, that's the dilemma. What's the rationale behind acquiring proficiency in another language when I've already grasped

different programming languages? The strongest case for this: residing in France, you might manage with English, yet.....

Listed under: [Microcontroller Programmer Projects](#)

18. [Building a Calculator Using Keypad-Based Peripherals](#) Introduction In this laboratory session, your task involves constructing a basic calculator utilizing the keypad as an input mechanism and the LCD as an output display unit. Following the debugging and testing phase of your program, the final step will be to program a standalone..... Listed under: [Calculator Projects](#)
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19. [Efficient Crop Cultivation: An IoT-Based Smart Greenhouse Automation System](#) INTRODUCTION A greenhouse serves as an environment that can alter the growth conditions for plants, creating optimal settings while shielding them from external variations in seasons and weather. Within the greenhouse, various parameters, such as temperature and humidity, need careful monitoring. Human oversight of these..... Listed under: [Home Automation Projects](#)
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20. [Stacking Precision Power Supplies](#) 1 Introduction 1.1 Statement of Purpose We selected our project because power supplies represent a crucial yet costly element in electrical projects. From an industrial perspective, many product test setups demand multiple precise voltage references, yet the purchased supplies often possess excessive wattage and expense..... Listed under: [Other Projects](#)
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21. [WIND TURBINE PHONE CHARGER](#) Abstract The wind turbine phone charger is designed to deliver a maximum of 15W of power to a battery pack, capable of charging various portable electronic devices via USB ports. The turbine comprises a two-level Savonius structure with offset blades to capture wind from any..... Listed under: [Phone Projects](#)
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22. [VOICE CONTROLLED HOME AUTOMATION SYSTEM](#) Abstract This project develops a system capable of remotely toggling multiple power sockets across various rooms using specific voice commands. This enables convenient management of diverse electrical devices through voice control. While the project has fulfilled its verification requirements and successfully attained its design objectives,..... Listed under: [Home Automation Projects](#)
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23. [Web Server Implementation Using AVR Embedded Technology](#) ABSTRACT Computer communication systems, particularly the Internet, hold significant sway in our daily lives, offering numerous conceivable applications. This web server project aims to store a small web page in the Microcontroller's Flash memory, enabling users to control devices connected to the Microcontroller via the..... Listed under: [Internet - Ethernet - LAN Projects](#)
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24. [AUTOMATIC EGG INCUBATOR](#) The global demand for egg incubators stems from various compelling reasons. Individuals passionate about ornamental birds often struggle to acquire broody birds for rearing, leading them to seek artificial means for egg hatching. Meanwhile, non-vegetarians faced with limited options may opt for artificially raised birds..... Listed under: [LCD Projects](#)
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25. [RFID based security system using AVR ATmega32 microcontroller](#) RFID technology has significantly revolutionized our lives by streamlining machine communication. Its widespread use spans across various sectors such as schools, hospitals, industries, and more. This article provides guidance on constructing a straightforward yet dependable RFID-based security system utilizing an AVR microcontroller, a solution that..... Listed under: [Security - Safety Projects](#)
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26. [AUTOMATED SECURITY SYSTEMS](#) 1. INTRODUCTION Advancements in security systems have notably progressed, incorporating smartphone control and the utilization of microcontrollers and Graphics Processing Unit (GPU) based microprocessors within a brief timeframe. These enhancements in

technology have facilitated automation systems, offering convenient features that streamline daily life. Enabling remote.....
Listed under: [Security - Safety Projects](#)

27. [Mastering Atmega32: Exploring EEPROM Programming](#) The Atmega32 microcontroller consists of two primary memory spaces: the Data Memory and the Program Memory, along with an additional EEPROM Memory designated for data storage. This EEPROM Memory is non-volatile, contributing to the controller's three distinct memory spaces, all of which exhibit linear and..... Listed under: [Microcontroller Programmer Projects](#)
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28. [DIY Temperature Measurement Setup with LM35 Sensor, ATmega32 Microcontroller, and LCD](#) In this instructional guide, you'll be introduced to utilizing the LM35 temperature sensor alongside the ATmega32 microcontroller. You'll gain insights into the process of interfacing the temperature sensor with the ATmega32 and displaying the temperature readings on an LCD screen. This tutorial covers displaying temperature..... Listed under: [LCD Projects](#)
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29. [Atmega32-Based Smart Car Parking Solution Using ATMEL STUDIO](#) The intelligent microcontroller oversees the operation of an automatic car parking system. Utilizing sensors, this project provides real-time feedback through LED displays. Within the automatic parking system (APS), vehicles are vertically stacked to optimize space. Distinctive system designs facilitate the movement of cars from the..... Listed under: [Car Projects](#)
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30. [Building a Basic Calculator using ATmega32 Microcontroller](#) A calculator stands as a fundamental tool in daily life, and building one from scratch can serve as both an engaging and educational project. Utilizing the ATmega32 microcontroller presents a potent avenue, offering programmability for a diverse array of functionalities. This blog post aims to..... Listed under: [Calculator Projects](#)
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31. [Wireless Connectivity: UNO R3 + WiFi ESP8266 with CH340G Arduino Integration](#) Utilize the ATmega328 and ESP8266 single-board combination for effortless WiFi integration into your Arduino projects, eliminating the need for cumbersome external connections. While this particular development board holds several advantages (to be discussed later), it surprisingly lacks extensive documentation. Given its potential as an ideal..... Listed under: [Other Projects](#)
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32. [Clock-Free Arduino: Maximizing ATmega328 Performance](#) While most opt for a 16MHz oscillator in a DIY Arduino setup, it's intriguing to discover that the ATmega328 can function without it. An Arduino typically comprises various elements such as a linear regulator, USB to Serial microcontroller, debug LED, power LED, reset button, RX..... Listed under: [Clock Projects](#)
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33. [Building Your Own Atmel AVR ISP Microcontroller Programmer](#) For beginners delving into AVR microcontrollers, one of the most challenging aspects is acquiring the AVR microcontroller programmer. The query typically revolves around how to program the AVR microcontroller. A Google search for AVR ISP Programmer yields abundant information, ranging from simple PC parallel port..... Listed under: [Microcontroller Programmer Projects](#)
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34. [Mastering AVR Microcontrollers: A Hands-On Guide to Project Development](#) AVR microcontrollers boast distinct advantages compared to similar microcontrollers, offering higher MIPS and a more user-friendly architecture. This article will delve into mastering the AVR Integrated Development Environment (IDE), guiding readers through the process of creating an executable project. Additionally, it will cover building a..... Listed under: [Development Board - Kits Projects](#)
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35. [Master the Art of Servo Motor Control Using AVR ATmega16](#) Overview of Servo Motor A servo motor is an electrically powered actuator that allows for precise control of angular rotation. It provides controlled movement important for applications like robotic arms that require precision. The rotation angle is dictated by a PWM (pulse-width modulation) signal sent..... Listed under: [Motor Projects](#)

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36. [Unleash the Power of AVR Hardware: Build Your Own Calculator with Keypad Input](#) In this lab, we will be preparing our AVR microcontroller hardware for initial programming and debugging. To get started, follow these steps: Construct the circuit as shown on your breadboard. This will allow us to interface our microcontroller with external components. For reference on pin..... Listed under: [Calculator Projects](#)
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37. [Starting AVR 8-bit Development](#) This tutorial will guide us through acquiring the necessary tools and setting up our environment for C programming and embedded development using 8-bit AVR microcontrollers. Specifically, it will cover: The tools required for AVR development using the free Atmel Studio IDE on Windows. Building a..... Listed under: [Development Board - Kits Projects](#)
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38. [Bridge the IoT Gap: Seamlessly Connect Your AVR-IoT WG Eval Board to Google Cloud IoT](#) This project will use the Microchip AC164160 AVR-IoT WG Evaluation Board to build an Internet of Things (IoT) development environment and application. The board is designed for prototyping IoT solutions that securely connect sensors to the cloud. Specifically, we will configure the AVR-IoT WG board..... Listed under: [Other Projects](#)
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39. [Ditch Paper Notices for Eye-Catching LED Matrix Displays](#) Abstract This Internet of Things (IoT) project utilizes speech recognition to display announcements on a light-emitting diode (LED) matrix notice board. By leveraging Google Assistant's speech-to-text capabilities, notices can be verbally dictated rather than manually typed, saving time and reducing the risk of unauthorized modifications..... Listed under: [LED Projects](#)
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40. [Printed Circuit Board for Introductory Animatronics Course](#) Introduction For many years, freshmen Computer Engineering students at California Polytechnic State University have taken a course introducing electronics manufacturing processes. Lectures cover CAD/CAM design, Design for Manufacture, documentation, prototyping and planning. The lab allows students to build skills in project planning, soldering, automation, tool..... Listed under: [Other Projects](#)
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41. [Master Microcontrollers with C Programming and the ATmega16](#) Embedded Microcontroller Software: Embedded software presents a distinct challenge due to the critical need for reliability in continuously operating microcontroller systems. To ensure faultless long-term performance, best practices include thorough coding, documentation, and testing. While not specifically designed for microcontrollers, the C programming language remains..... Listed under: [Microcontroller Programmer Projects](#)
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42. [ATMega32 Microcontroller: The Ultimate Guide for Beginners](#) The ATMega32 is an widely used microcontroller from Atmel. It shares many similarities with the ATMega328P but has a more reduced memory capacity. However, the ATMega32 makes up for this with a greater number of input/output pins available. A key advantage of the ATMega32 is..... Listed under: [Other Projects](#)
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43. [7-Segment Display Interfacing with AVR ATmega16/ATmega32](#) 7-segment displays comprise 8 LED elements - 7 linear segments that form numerals, plus a circular dot. Numbers 0-9 and some letters (A, C, D, E, F, H, L, O, P, U) are represented using combinations of the 7 lines. The dot creates decimals. Each..... Listed under: [LED Projects](#)
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44. [Interfacing of Push Button with Atmega16](#) In this tutorial, I will walk through interfacing a push button with the Atmega16 microcontroller. It is assumed the reader has some familiarity with basic microcontroller concepts from my previous post on blinking an LED. Before connecting a push button, we must understand how to..... Listed under: [LED Projects](#)

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45. [Speed and Direction Control of DC Motor using AVR Microcontroller](#) Controlling the direction and speed of a DC motor is a crucial requirement in various applications, including: 1. Robotics: Adjusting the movement direction and speed of a robot. 2. Industrial Machinery: Modifying the direction and speed of rotating equipment. 3. Home Appliances: Regulating the speed..... Listed under: [Motor Projects](#)
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46. [Using the GNU AVR toolchain on Windows 10](#) Introduction This page aims to provide guidance on setting up a full GCC-based toolchain on a contemporary Windows platform. I've formulated these guidelines using my Windows 10 system, but they are generally applicable to Windows versions dating back to Windows 7. In earlier Windows editions,..... Listed under: [Other Projects](#)
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47. [A wireless, voice-controllable, household system.](#) Motivation We have developed a smart home control system that enables individuals to voice-control their household devices. This system operates wirelessly and allows users to manage various home facilities, such as lights, fans, and background music, using voice commands. We have successfully implemented the basic..... Listed under: [GPS Based Projects](#)
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48. [Introduction to the Atmel ATmega16 Microcontroller](#) Introduction A microcontroller typically serves as the central "intelligence" of a mechatronic system, functioning as a miniature self-contained computer. It can be programmed to interact with both the system's hardware components and the user. Even the most basic microcontroller can execute elementary mathematical operations, manage..... Listed under: [Microcontroller Programmer Projects](#)
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49. [Indoor Plant Maintenance System](#) Executive Summary This UCF Senior Design project aims to address the need for an automated plant care device for homeowners, justifying its importance in various scenarios. Notably, homeowners who are away and have cherished plants often lack a reliable way to ensure their plants receive..... Listed under: [Other Projects](#)
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50. [Embedded Controllers Using C and Arduino / 2E](#) 1. Course Introduction 1.1 Overview This course serves as an introduction to the C programming language with a specific emphasis on embedded programming. It assumes that you have prior experience with a high-level language such as Python, BASIC, FORTRAN, or Pascal. Given the intricacies of..... Listed under: [Microcontroller Programmer Projects](#)
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51. [Alarm clock DPR](#) In this project, we will create a straightforward alarm clock using the timers of the ATmega32 microcontroller. The ATmega32A microcontroller features a 16-bit timer, which will be utilized for tracking seconds and constructing a digital clock. Hardware components include the ATmega32 microcontroller, an 11.0592MHz crystal,..... Listed under: [Clock Projects](#)
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52. [Automated Frozen Pipe Burst Prevention System](#) 1. Introduction 1.1 Problem Extreme cold temperatures, such as those experienced during the winter in Illinois, pose a significant threat of causing pipes to freeze and subsequently burst. Just this past winter break, our apartment complex sent out an email notifying residents on our floor..... Listed under: [Other Projects](#)
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53. [Microcontroller Based Interface Design](#) Introduction The third installment in the "System Interface Design" series guides you through the process of crafting the resource map, which is a crucial component in Part 1, and the allocation of resources for sensors and actuators (including a Long Range IR sensor) in Part..... Listed under: [Motor Projects](#)

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54. [AVR USB Devices and Programming](#) During this week's lecture, we delved into a relatively less-explored subject: USB, a widely-used protocol enabling computers to interact with peripheral devices equipped with microcontrollers. Developing a USB device empowers any computer to establish communication without the need for the specialized software and hardware that..... Listed under: [Microcontroller Programmer Projects](#)
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55. [Interfacing Servo Motor with Atmega32 Microcontroller](#) A Servo Motor is a type of DC Motor that incorporates error sensing negative feedback to precisely regulate the angular position of its shaft. Unlike standard DC Motors, servo motors do not rotate continuously but instead perform controlled angular rotations, such as 0-90° or 0-180°..... Listed under: [Motor Projects](#)
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56. [How to use Push Button with ATMEGA32 AVR Microcontroller](#) This tutorial will provide an understanding of push buttons and their integration with the AVR ATmega32 microcontroller. While push buttons can be applied to control various devices, we will focus on using them to manipulate an LED in this demonstration. Additionally, we will delve into..... Listed under: [LED Projects](#)
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57. [Interfacing LCD 16x2 with ATMEGA32 AVR Microcontroller in 4-bit mode](#) I've devised an intriguing and straightforward method for interfacing an LCD with the Atmega32 microcontroller and programming it. I've employed a 16x2 LCD module, where "LCD" stands for "liquid crystal display." This type of electronic display module finds utility in a wide array of applications,..... Listed under: [LCD Projects](#)
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58. [Timer in AVR ATmega16/ATmega32](#) Introduction Typically, we employ a timer/counter to generate time intervals, waveforms, or tally events. Additionally, timers are utilized for purposes such as PWM generation and event capturing. In the AVR ATmega16 / ATmega32 microcontrollers, there are three timers at your disposal: 1. Timer0: An 8-bit..... Listed under: [Clock Projects](#)
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59. [ATMega32 AVR USART C programming examples](#) In the previous article, I discussed the USART module of the ATMega32 device, providing some practical examples. In this article, I will present additional USART examples that involve AVR C programming techniques. These techniques include creating conditions based on received characters and utilizing the ANSI..... Listed under: [Microcontroller Programmer Projects](#)
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60. [4x4 Keypad Interfacing with ATmega32 Microcontroller](#) In this guide, we will demonstrate how to connect a 4x4 keypad, which has 16 keys, to an ATMEGA32A microcontroller. It's essential to recognize that keypads play a crucial role as input devices in electronics projects, providing a straightforward means to issue commands or directives..... Listed under: [Microcontroller Programmer Projects](#)
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61. [Connecting a 16x2 LCD to an ATmega32 AVR Microcontroller in 4-bit mode](#) Greetings, everyone! I'm here today to share a fascinating and straightforward method for connecting a 16x2 LCD to the Atmega32 microcontroller and writing the necessary code for it. I employed a 16x2 LCD module. The acronym "LCD" stands for "liquid crystal display," a type of..... Listed under: [LCD Projects](#)
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62. [Programming ATmega32 External Interrupt](#) Numerous applications necessitate an external event to prompt an interrupt in the microcontroller, enabling it to respond accordingly. For instance, an interrupt might be initiated upon the detection of a fire by sensors like a temperature or gas sensor, or when a specific count threshold..... Listed under: [Microcontroller Programmer Projects](#)

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63. [Programming in the C language for the ATmega16 microcontroller](#) Introduction "Programming is merely one facet of a more extensive puzzle. To effectively address a problem, programmers must thoroughly understand and navigate the entire problem-solving process before diving into software development. This platform will outline the essential steps for problem analysis and solution implementation." Following..... Listed under: [Other Projects](#)
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64. [Setup External programmer in Atmel Studio](#) "This tutorial provides step-by-step instructions on incorporating an external programmer into Atmel Studio 7.0. By configuring the external programmer, you can conveniently program the AVR board without the need to switch to the 'Universal_GUI.exe' tool. This integration streamlines the workflow, enhancing the efficiency of debugging..... Listed under: [Microcontroller Programmer Projects](#)
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65. [The Atmel-ICE Debugger](#) 1. Introduction 1.1 Introduction to the Atmel-ICE Atmel-ICE is a highly capable development tool designed for debugging and programming Atmel SAM and Atmel AVR microcontrollers based on ARM Cortex-M architecture. It provides On-Chip Debug capability and supports various interfaces and families of microcontrollers, including: Programming..... Listed under: [Other Projects](#)
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66. [Hard Drive Based AVR Programmer](#) The project we are presenting differs from the one initially proposed. Our original plan was to construct a WWVB time-code receiver capable of extracting highly precise time information from a 60 kHz signal provided by the National Institute of Standards and Technology (NIST). However, due..... Listed under: [Microcontroller Programmer Projects](#)
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67. [Setup External programmer in Atmel Studio](#) This tutorial provides step-by-step instructions on how to integrate an external programmer into Atmel Studio 7.0. By setting up the external programmer, you will be able to flash the AVR board directly from Atmel Studio without the need to switch to the "Universal_GUI.exe" application. This..... Listed under: [Microcontroller Programmer Projects](#)
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68. [Web-based AVR Interface](#) Introduction To align with the current trend of incorporating networking capabilities into everyday devices, our project incorporates a webpage interface for the Atmel AVR microcontroller. Initially, one of our main objectives was to develop a low-level network interface for the Atmel device, which involved controlling..... Listed under: [Microcontroller Programmer Projects](#)
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69. [Program Artou ATmega32 Development Board](#) Program an AVR development board without installing any software. ExpressIDE and AVRdudess. Story ATmega32 Board Artou makes a development board with the ATmega32 processor. Like an Arduino Uno but this processor adds a PORTA that is not on the ATmega328p. We will toggle the four bright LEDs next to..... Listed under: [AVR ATmega Projects](#)
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70. [Simple Standalone ATmega328p Microcontroller](#) Story A digital clock is a type of clock that displays the time using numerals or digits, rather than using a dial and hands. These clocks typically use an electronic display, such as an LED or LCD screen, to show the time. Digital clocks..... Listed under: [Clock Projects](#)
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71. [Arduboy on ATmega4809](#) Porting Arduboy to the ATmega4809 and making it run on a Arduino Nano Every. Story After learning about the Arduboy on ATmega4809 challenge, we decided to join in the fun and port Arduboy to a new microcontroller. In the spirit of staying with true 8..... Listed under: [Other Projects](#)

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72. [Another ATMEGA4808 Development Board](#) Another ATMEGA4808 Development Board turned out looking very well but highlighted some issues with supply and sourcing of components. Story ATMEGA4808 – An Improvement on my previous design? Or Not... When I first started playing around with the ATMEGA4808, I was impressed as well as..... Listed under: [Other Projects](#)
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73. [ATMEGA4808: Better than ATMEGA328?](#) In this final part of the series, I look at the ATMEGA4808. This may just be the replacement for the ATMEGA328 that I have been looking for. Story The ATMEGA4808 provides a very attractive solution to replace the trusted ATMEGA328 or standard Arduino UNO /NANO..... Listed under: [AVR ATmega Projects](#)
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74. [ATmega Alien Themed Slot Machine](#) Story This project is my implementation of an alien themed slot machine using two ATmega328P-PU micro-controllers. I was inspired by Cory Potter's Alien Invasion Slot Machine, and I wanted to expand on that idea. The slot machine is for entertainment and educational purposes only. I tried my..... Listed under: [Game - Entertainment Projects](#)
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75. [AVR-GCC](#) Background I've written dozens of programs using the Arduino IDE and using other tools like the ARM mBed toolchain. My priority for this week was to familiarize myself with avr-gcc and the Atmel libraries. Week 4 Board Programming I had already programmed my Week 4..... Listed under: [Other Projects](#)
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76. [ATmega328P Standalone Board](#) In this step-by-step tutorial we will learn how to build a standalone Arduino UNO compatible ATmega328p board. ATmega328P Bare minimum configuration Before building our standalone ATmega328P chip Arduino compatible board, let's take a look at the awesome Arduino UNO board and see the main components..... Listed under: [Other Projects](#)
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77. [SPATIAL AUDIOMAP](#) Project Introduction Our project is a spatial audio map of Collegetown that allows the user to use a joystick to virtually travel around the Collegetown crossing area and hear surrounding, directional sound. Our project takes inspiration from Street View, an interactive technology featured in Google..... Listed under: [Sound - Audio Projects](#)
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78. [Snorecorder with SD Logging](#) Introduction Sound Byte The Snorecorder detects snoring sounds from a sleeping person and records the time and intensity of each snore. The data is written to an SD card, which can be easily viewed on a personal computer. Synopsis The Snorecorder determines and records snore..... Listed under: [Sound - Audio Projects](#)
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79. [ProxMidi A capacitive MIDI sequencing platform](#) Introduction ProxiMIDI is a MIDI code generator, that takes its inputs from a user using Atmel's Capacitive touch and Proximity technology. It can generate sound signals for 4 notes of 3 instruments and vary the tempo, volume and sound depending upon the proximity inputs. The..... Listed under: [Other Projects](#)
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80. [Some Assembly Required](#) What We Did We created an autonomous robot that explores the world in linear trajectories while avoiding obstacle using IR range-finding. The robot is a Venom RC car altered to be controlled by an Arduino Uno programmed in AVR Assembly (a very low-level programming language..... Listed under: [Other Projects](#)

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81. [How to Install and Setup EAGLE](#) Introduction Printed circuit boards (PCBs) are the backbone of every electronic gizmo out there. They're not flashy like those microprocessors, or abundant like resistors, but they're essential to making all components in a circuit connect together just right. We LOVE designing PCBs here at SparkFun..... Listed under: [AVR ATmega Projects](#)
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82. [Floating Away with AmForth](#) 1 Starting Forth Forth[3] is a flexible, stack-based programming language that is ideal for embedded use. It has an amazing power to weight ratio; it can do a lot with limited resources. Forth zealots take this as one of many signs that Forth is the One-True-Language..... Listed under: [Other Projects](#)
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83. [Programming for AVR](#) This project was done in order to experiment with the Automotakit breadboard board which is based on the ATMEGA256A3U chip. The use of a DAC, ADC , low pass filter, PWM, basic I/O, current control, clock setup, and interrupts on an Atmega chip are some of the..... Listed under: [Other Projects](#)
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84. [Work Progress](#) I have been working on input and output devices communication for weeks. For those weeks, I spent so many times on the ESP32 debugging and got nothing solved, which makes me be so despair about the foreseeable failure of my final project. This wildcard week,..... Listed under: [Other Projects](#)
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85. [Embedded Programming](#) 1. Programming Board Blinking Code using Arduino environment CODE: I started with code code from Jaclyn Berry's page : `const int buttonPin = 7; const int ledPin = 2; int buttonState = 0; void setup() { pinMode(ledPin, OUTPUT); pinMode(buttonPin, INPUT); } void loop() { buttonState.....` Listed under: [Other Projects](#)
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86. [Using the GNU AVR toolchain on Windows 10](#) Introduction This page attempts to describe a procedure for installing a complete GCC-based toolchain on a modern Windows system. I've developed these instructions on my Windows 10 machine, but they should work for versions of Windows as far back as Windows 7. On older versions, you might..... Listed under: [Other Projects](#)
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87. [Programming the AVR microcontroller with GCC, libc 1.0.4](#) Introduction Many people where interested in microcontroller programming after the article which I wrote in 2002. However this first step to get the development environment up and running is the hardest. If something does not work then you have absolutely no clue where the fault..... Listed under: [AVR ATmega Projects](#)
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88. [How to use I2C / TWI \(Two Wire Interface\) in AVR ATmega32- \(Part 36/46\)](#) Code explanation for MASTER Controller: Step 1: Initialization of master. Initialization of MASTER means to set the TWI clock frequency (SCL). It is done by setting bit rate in TWBR and pre scaler bits in TWSR. Listed under: [Other Projects](#)
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89. [Stand Alone Arduino ATmega328p](#) Step 1: Components and Where to Start I've started from the Arduino official site: <https://www.arduino.cc/en/Main/Standalone> where I've taken this picture, and where there is the list of all the components that you have to buy. Just the components that are showed in this picture. (..... Listed under: [Other Projects](#)

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90. [ARDUINO CLONE With ATMEGA328-PU Non P](#) Step 1: The Beginning Last week I decided to make a classic Arduino clone with an ATMEGA328P-PU. I seemed to be so easy and quick but a very bad surprise for me: I ordered the cheaper ATMEGA328-PU (non P!!) that is to say: non pico..... Listed under: [Other Projects](#)
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91. [Worry-Free Automatic Timed Plant Feeder](#) Introduction The following diagram shows the system schematic of the Smart Plant Feeder. It contains the several major blocks: ATmega 323 is the CPU of the system. 5 VDC power supplier: an adaptor first transforms 110 VAC 60 Hz into 9 VDC; then a regulator..... Listed under: [Other Projects](#)
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92. [Networking](#) Board Design For part of my final project I want to make my own USB audio recording device. So I'll try to develop all the necessary electronics this week. I have the analog circuitry I need from inputs week. But I don't have a board ready..... Listed under: [Other Projects](#)
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93. [10 Best AVR Development Boards For Engineers And Hobbyists 2019](#) Atmel's AVR series of controllers is one of the most popular with student and hobbyists. Any beginner in electronics or even professionals for that matter would appreciate an excellent development board. Development boards rid the user of the tedious tasks of prototyping and debugging necessary..... Listed under: [AVR ATmega Projects](#)
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94. [Programming the Microchip ATmega328P in C](#) Introduction This document describes how to program the Microchip ATmega328P microcontroller in C using the Avr-GCC toolchain. Students can download the software and install it on their computers by visiting a few websites. Atmel used to manufacture the ATmega328P microcontroller until it was acquired by..... Listed under: [Arduino Programmer Projects](#)
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95. [Automatic Egg Incubator](#) Many factors contribute to the high demand for egg incubator around the world. A person who is interested in birds would like to raise ornamental birds, but he couldn't find or obtain a broody bird as such; nonvegetarians eat birds, but they are often forced..... Listed under: [AVR ATmega Projects](#), [Motor Projects](#)
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96. [Atmel AVR Programmer USB Circuit Atmega8](#) Via the USB port of your computer that you can program Atmel series microcontrollers ISP port with stylish design a programming circuit. Prepared with eagle pcb circuit usb programming. are schematic drawings. To use the circuit to inspectors ATmega8 avr-doper-mega8-12mhz_a.hex need to download the file. Simplified Version..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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97. [What is AVR Microcontroller : PinOut, Working & Its Applications](#) The advanced version of a microprocessor is a microcontroller that includes a CPU, Interrupts controller, RAM, ROM, I/O unit, etc. A microcontroller is mainly used for the operation of high-speed signal processing in an embedded system. So it performs like a major component while designing an embedded system..... Listed under: [Microcontroller Programmer Projects](#)
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98. [Setting up Atmel Studio for USBasp and AVR Programming](#) It can be a lot confusing someone for who just started programming in AVR environment. Atmel studio is the best IDP [Integrated Development Platform] for AVR programming and embedded system development. It takes awful lot of time just to get installed. But once you're done..... Listed under: [Microcontroller Programmer Projects](#)

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99. [Getting Started with Atmel Studio](#) Introduction Atmel, AVR microcontrollers (MCUs) are very easy to use. All AVR microcontrollers require Integrated Development Environment(IDE) such as Atmel Studio. Using this IDE, we can create, compile, and debug programs on all AVR microcontrollers. Atmel Studio is available free of charge. To download and..... Listed under: [LED Projects](#)
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100. [The LED Chasing Effect Project using Atmel AVR Microcontroller](#) One of the interesting projects for most of the embedded beginners enthusiasts or hobbyists is to build the LED chasing effect. In this project we are going to use both the Arduino IDE and Atmel AVR Studio to program the AVR ATmega168 microcontroller, therefore you..... Listed under: [LED Projects](#)
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101. [GETTING STARTED WITH AVR MICROCONTROLLER](#) GETTING STARTED WITH AVR MICROCONTROLLER.This article will make you familiar how to getting started with AVR Microcontroller. You will learn each and every thing about AVR microcontroller. What are the basic features of AVR microcontroller, Architecture of AVR microcontroller? Here you will also learn about..... Listed under: [Microcontroller Programmer Projects](#)
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102. [AVR Tutorial for Beginners](#) This tutorial series designed specifically for beginners. If you are a beginner looking to play with cool electronic stuff, then you are going to find this very useful. This AVR tutorial for beginners series is going to cover all the information about microcontrollers. I will..... Listed under: [Other Projects](#)
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103. [Attiny13A Motor Controller Board](#) So here's something super interesting and useful, a motor controller board powered by an Attiny13A to control a Brushed DC Motor. This Motor Driver uses PWM to control the gate of an N Channel IRFZ44N mosfet by the Tap of a single button. I've..... Listed under: [Motor Projects](#)
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104. [XOD-powered Rechargeable Solar Lamp](#) There are inexpensive solar garden/walkway lamps available at most home goods and hardware stores. But as the old saying goes, you usually get what you pay for. The usual charging and illumination circuits they use are simple and cheap, but the light output you get..... Listed under: [Solar energy projects](#)
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105. [Project Green Stations: Prototype Zero](#) Introduction For our final project, we have designed and built a 'proof of concept' prototype for Project Green Stations, an externally funded student group with the following mission statement: Project Green Stations is all about changing the way people see the environment. Imagine the go-green..... Listed under: [Solar energy projects](#)
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106. [Phased Array Speaker System](#) Introduction For our ECE 4760 final project, we designed and built an array of 12 independently-controllable speakers to implement an acoustic phased-array system. The system samples a standard audio input signal at approximately 44.1 kHz, and then outputs this signal to each of 12 speakers,..... Listed under: [Sound - Audio Projects](#)
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107. [Infrared Universal Remote Control](#) Introduction One of the more challenging aspects of owning a home entertainment system is dealing with all the remote controls. My device is designed to tackle this problem. Specifically, the universal remote control I implemented is able to learn the signals used by other remote..... Listed under: [Other Projects](#)

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108. [A Moving Alarm Clock](#) Introduction We implemented a prototype for a moving alarm clock which runs away from the user when they try to silence the alarm. It has all the features of a "regular" alarm clock: settable time and alarm, snooze, and alarm on/off. The alarm clock displays..... Listed under: [Clock Projects](#)
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109. [Automated Drink Mixer](#) Abstract The automated drink mixer takes orders from a push-button menu, and moves a regular 16-ounce glass under a series of inverted bottles while dispensing specified amounts of mixers to make perfect non-alcoholic beverages. Introduction If you've ever been to a crowded bar or restaurant..... Listed under: [Motor Projects](#)
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110. [ECE 4760 Final Project Report](#) Introduction Most homes across the world lack a security system of any sort. The goal of our project was to design a simple security system using the Atmel AVR ATmega1284p microcontroller that most people could build without too much hassle for an affordable price. This..... Listed under: [Other Projects](#)
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111. [EYEMouse ELECTRO-OCULAR CURSOR CONTROL](#) Introduction Several different approaches have been explored in developing a system to track eye movements. These approaches span from measuring reflections of infrared light to using advanced imaging techniques to monitor specific features within the eye. While a variety of reports exist on measuring infrared..... Listed under: [Other Projects](#)
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112. [Sign Language Glove](#) Introduction We designed and built a glove to be worn on the right hand that uses a Machine Learning (ML) algorithm to translate sign language into spoken English. Every person's hand is a unique size and shape, and we aimed to create a device that..... Listed under: [Other Projects](#)
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113. [Segway Robot with Accelerometers](#) Introduction The objective of this project was to create a two-wheeled balance bot able to traverse a flat environment and adjust itself to shifts in position and weight, using a Proportional-Integral-Derivative (PID) feedback control loop to keep the robot upright. The balance bot is essentially..... Listed under: [Robotics - Automation Projects](#)
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114. [AccelCar](#) Our project aims to take the fun of a Wii Remote and translate it to real life. The AccelCar is a remote-controlled car that is controlled by the way that a user tilts the remote, similar to the way Mario Kart Wii is played. The..... Listed under: [Car Projects](#)
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115. [Smart Medicine Box](#) Our ECE 4760 final project is to build a microcontroller based smart medicine box. Our medicine box is targeted on users who regularly take drugs or vitamin supplements, or nurses who take care of the older or patients. Our medicine box is programmable that allows..... Listed under: [Medical - Health based Projects](#)
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116. [Maple Bot](#) Introduction For our final project in ECE 4760: Digital Systems Design Using Microcontrollers, we designed and implemented a radio-controlled, map-learning, line-following robot. The robot traverses a map of lines with a configuration that is initially unknown to a user. The robot discovers different types of..... Listed under: [Radio Projects](#)

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117. [LED Sketchpad](#) In this project we built a sketchpad based on LED matrix display with microcontroller and resistive touch screen control. We used a single point resistive touch screen to detect the user's gesture and microcontroller's analog/digital converter (ADC) ports collect the data and convert it to..... Listed under: [LED Projects](#)
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118. [Virtual Object Grabber](#) Introduction What is seeing without feeling? The field of Virtual Reality has recently been gaining much attention, with the Oculus Rift and Google Cardboard paving the path of visualizing a world that is not physically there. But what if the virtual reality experience could be..... Listed under: [Other Projects](#)
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119. [BOXING TRAINING](#) INTRODUCTION In the modern American classic, Rocky IV, Ivan Drago (portrayed by Dolph Lundgren) is shown utilizing a then-futuristic electronic punch meter (in addition to anabolic steroids) in his quest to triumph over Rocky in one of the Cold War's only face to face confrontations..... Listed under: [Other Projects](#)
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120. [Ultrasonic Pursuit Automobile](#) We've implemented an autonomous pursuit vehicle capable of chasing a designated target using ultrasonic transmissions. The system is demonstrated by chasing a second, human-controlled, RC car. The pursuit unit is equipped with a 24kHz transmitter and two 40kHz receivers, while the target unit has a..... Listed under: [Phone Projects](#)
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121. [GPS Navigator and Explorer](#) The idea of the the project is to create a useful device for being able to get directions with any specified path by use of waypoints rather than a path chosen by a GPS as well as being able to follow a path that is..... Listed under: [GPS Based Projects](#)
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122. [ECE 4760 Space Invasion](#) Introduction: What is Space Invasion: Space Invasion is a game in which a spaceship has to pass through the walls, without crashing. There are monsters trying to kill the spaceship. So the spaceship has to destroy them before getting destroyed. The game has no end,..... Listed under: [Game - Entertainment Projects](#)
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123. [Virtual Virtuoso a tool for conductors](#) Introduction There are very few ways to improve one's skills in conducting a live band. Practicing by conducting a real band requires coordination of many people and conducting along to pre-recorded songs does not provide feedback on the accuracy of the conductor's selected tempo. The..... Listed under: [Other Projects](#)
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124. [Real-Time Pitch Shifter](#). Introduction "A device that pitch-shifts voice in real time" For our final project, we attempted to implement a real-time vocal pitch shifter. The system was designed to work as follows: a user speaks into a microphone, their vocals are processed using a pitch shifting algorithm,..... Listed under: [Sound - Audio Projects](#)
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125. [Smart Sitter: A Do-it-Yourself Wireless Home Automation System](#) Introduction Smart home technology has been surging in popularity over the past decade. According to a recent poll, 46% of consumers believe that it is important that their current or next home has smart technology. Many smart home technologies are expensive to implement and require..... Listed under: [Home Automation Projects](#)

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126. [Virtual Bowling](#) For our 4760 final project, we built a virtual bowling game interface on a black and white Television in which the ball can be controlled by the glove which has the flex sensors and the accelerometer attached to it. There are 5 flex sensors on..... Listed under: [Other Projects](#)
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127. [Bike Dash](#) For our ECE 4760 final project, we designed and built a bicycle dashboard which displays the cyclist's pedaling power, speed, cadence, and distance to enhance training. The major motivation of this project was to replicate a commercial product at a dramatically reduced price point. A..... Listed under: [Other Projects](#)
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128. [ukule-LED](#) ukule-LED is a ukulele with LEDs embedded in its fretboard. These LEDs can light up in configurations corresponding to different chords, which can aid the ukulele player in learning how to play certain chords, or can act as a chord reference for a more advanced..... Listed under: [LED Projects](#)
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129. [Frequency Visualizer](#) Introduction This project visually displays the frequency content of an audio signal using an 8X3 grid of LEDs. A microphone and amplifier collect analog audio input which is sampled digitized using the MCU's analog-digital converter. The samples are buffered and and a 32 point discrete..... Listed under: [LED Projects](#)
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130. [ECE 4760 Final Project: CPR Training Dummy on AVR](#) Introduction For our ECE 4760 final project, we implemented an interactive CPR training dummy which can coach the trainees through the CPR process with a LCD to display instructions. The prototype CPR training dummy built is a budget-friendly one that contains a re-programmable Atmel ATmega1284..... Listed under: [LCD Projects](#)
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131. [Bioelectrical Body Fat Analyzer](#) Introduction For our final project, we have decided to use the microcontroller provided to make a device which would measure body fat percentage of one's body. The basic principle behind this project is known as bioelectrical impedance analysis. This technique uses a small alternating current..... Listed under: [Other Projects](#)
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132. [Speech Lock](#) we designed and implemented a speaker recognition device that acts as a lock triggered by the sound of your voice saying a specific passcode. The implementation uses hardware filtering from a microphone and many signal processing concepts in software. All software and matching is implemented..... Listed under: [Security - Safety Projects](#)
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133. [Gesture based MIDI glove](#) Introduction Musical Instrument Digital Interface, or MIDI, is a standard that describes a protocol, digital interface and specific physical connections that allow electronic music devices and computers to communicate with each other. For our final project, we created a MIDI glove that is capable of..... Listed under: [Other Projects](#)
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134. [ECE 4760: T-Bot](#) Introduction "A resistive touch screen robot that follows a user-defined path input by drawing on the touch screen." We designed and implemented a robot that follows the path drawn on a touchscreen. The touchscreen is mounted on top of the robot, and once the path..... Listed under: [Robotics - Automation Projects](#)

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135. [SingLock](#) SingLock is a pitch-based security system based on ATMEL MEGA1284P microcontroller featuring two password protection stages: one based on a 4-digit numeric personal identification number inputted via the keypad and another based on two pitches inputted via the microphone. Most security systems we find today..... Listed under: [Security - Safety Projects](#)
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136. [The Skittles Mini-Factory](#) Introduction The Skittles Mini-Factory is self-contained repackaging unit that separates Skittles by color. Once separated, the Skittles are resealed in individual plastic bags. The Skittles are dispensed one at a time (either automatically or manually) onto a light sensing module. Red, green, blue, and..... Listed under: [Other Projects](#)
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137. [ECE 4760 Final Project: Rapid Circuit Prototyping](#) Introduction Our final project was to create a rapid prototyping machine for electrical circuits by repurposing an old pen plotter that we fitted with an electrically conductive pen. Our plotter utilized an atmega 1284P to control the x and y-axis motors, and to raise and..... Listed under: [Circuits](#)
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138. [REAL-TIME SCROLLING SPECTROGRAM](#) INTRODUCTION This project implements a real-time scrolling spectrogram-style visualization of an audio signal. We successfully displayed the frequency spectrum content in real time using a 4-bit grayscale scrolling display on any NTSC television. The frequency spectrum of an audio line-in input or mic input is..... Listed under: [Other Projects](#)
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139. [PALPi Lite Edition](#) So this is the PALPi V4 which is a DIY Retro Game Console powered by a Raspberry Pi Zero W. The IDEA here was to make a portable handheld gaming console that can run RETRO Games like Contra, Pokemon, Super Mario ETC. [embed]https://youtu.be/8DVSS5S-lkQ[/embed] For Display,..... Listed under: [Game - Entertainment Projects](#)
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140. [Glowing RGB LED Magic Cube \(WS2812\)](#) I fully designed from scratch every single piece of this project to create a cool glowing Magic LED Cube, mainly made for light animation and basically could be explored for decoration of Electronics Labs. [embed]https://youtu.be/A0OtHySzadk[/embed] Designed around the awesome RP2040 Microcontroller and Built with a full of electronics..... Listed under: [LED Projects](#)
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141. [AVR Studio Simulator Introduction and Exercises](#) LEARNING OBJECTIVES • get a brief introduction to most of the major debugging features AVR Studio• read through a refresher on C programming and an introduction to I/O on AVR microcontrollers• gain an appreciation of what the AVR Studio simulator is and what it's good..... Listed under: [Sound - Audio Projects](#)
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142. [Using the AVRISP Programmer](#) Introduction The AVRISP looks just like the JTAGICE, except it's a bit smaller and it has a 6-pin connector on the end of the cable instead of the 10-pin connector on the JTAGICE. The AVRISP programmer does not have the advanced debugging features of the..... Listed under: [Microcontroller Programmer Projects](#)
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143. [Prototype Board for Atmel Mega644](#) Introduction This page describes a prototype board for the Atmel Mega644 or Mega32 (PDIP) MCU. It includes a power supply, crystal clock, and generous bypass capacitors. A six-pin header allows flash memory programming from an STK500 or AVRISPMkII. All port pins are brought out to..... Listed under: [Development Board - Kits Projects](#)
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144. [Getting Started with TinyOS and nesC](#) This lesson introduces the basic concepts of TinyOS and the nesC language in which the system is written. It includes a quick overview of the nesC language concepts and syntax to help you get started with programming in this environment. Introduction The TinyOS system, libraries,..... Listed under: [Microcontroller Programmer Projects](#)
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145. [ECEN1400 Final Project- Sensor Spy Ball](#) This is the final project for ECEN1400: Introduction to Digital and Analog with Professor Alex Fosidck at University of Colorado at Boulder (Spring 2017). The goal of this project was to make a ball full of sensors which could detect changes in its environment and..... Listed under: [Sensor - Transducer - Detector Projects](#)
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146. [LINE FOLLOWING AND OBSTACLE AVOIDING CAR](#) 1.1 Introduction Line following car is a system that traces black lines on white surfaces. There are various sensing methods available to sense these lines. The choice of these schemes depends upon sensing accuracy and required flexibility. In my project, I have used 6 TxLEDs and 6..... Listed under: [Car Projects](#)
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147. [Summer 2017 Altium Designer 17 Research](#) This past summer I had the opportunity to work for computer science PhD candidate Ryo Suzuki under the guidance of Tom Yeh of the computer science department. My task was developing printed circuit boards for experiments for human computer interaction (HCI). The goal was to create..... Listed under: [Other Projects](#)
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148. [BUILDING KILOBOTS AND REVISING KILOBOT DESIGN FOR IMPROVING THE OPTICAL RESPONSE](#) I would first like to acknowledge my adviser, Dr. Yanjun Yan, for her patience, kindness, and most of all her assistance in completing this thesis. I would like to thank Dr. Martin Tanaka, Dr. Peter Tay, and Dr. Paul Yanik for serving on my thesis committee. ABSTRACT..... Listed under: [Other Projects](#)
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149. [A Simplified Secure Programming Platform for Internet of Things Devices](#) INTRODUCTION The Internet of Things (IoT) devices have become very popular in various critical and non-critical usage fields. Many people have started to use IoT devices realizing their benefits in their lives and scientific research [MSPC12, CGOF13]. Because of the popularity of IoT devices, developers gravitate..... Listed under: [Internet - Ethernet - LAN Projects](#)
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150. [SMILab develops new low-cost strain sensor](#) Researchers from the Smart Management of Infrastructure Laboratory (SMILab), located in the Center for Advanced Research Computing, have developed a new strain sensor as a part of the Low-Cost Efficient Wireless Intelligent Sensors (LEWIS) project. The new sensor, called the LEWIS-S, is easy to use, wireless, and..... Listed under: [Development Board - Kits Projects](#)
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151. [Microcontroller Survivability in Space Conditions](#) Introduction The Utah State University (USU) Materials Physics Group (MPG) is interested in the performance of Commercial Off the Shelf (COTS) microcontrollers in space conditions. Microcontrollers are commonly used on CubeSats, small relatively inexpensive satellites that are flown in Low Earth Orbit (LEO) at altitudes of ~160 km-2000..... Listed under: [Other Projects](#)
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152. [Wireless Sensor Network for Energy and Environmental Monitoring: Helping Old Buildings Go Green](#) I. Introduction Today, the rising cost of energy and social trend of "going green" has put increasing pressure on commercial property owners to improve the efficiency of their investments. There is good reason for this, too. In the State of California, office buildings represent the..... Listed under: [Internet - Ethernet - LAN Projects](#)

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153. [Pololu USB AVR Programmer User's Guide](#) Overview The Pololu USB AVR programmer [http://www.pololu.com/product/1300] is a programmer for Atmel's AVRmicrocontrollers and controller boards based on these MCUs, such as Pololu Orangutan robot controllers[http://www.pololu.com/category/8/robot-controllers] and the 3pi robot [http://www.pololu.com/product/975]. The programmer emulates an STK500 on a virtual serial port, making it compatible with..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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154. [CC2420 Radio](#) Introduction The Chipcon (now owned by Texas Instruments) CC2420 is a commercial radio chip that complies with the ZigBee wireless standard. We have CC2420DBK development kits available for your project. Each development kit comes with 2 development boards (2 radios). Each development board has a Chipcon CC2420..... Listed under: [Radio Projects](#)
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155. [NeoPixel Reactive Table](#) https://youtu.be/46i9tALT3e8 https://youtu.be/HdIC7mgrhPU https://youtu.be/AC4vsxmy08Y https://youtu.be/51loAr7NlaY Welcome to my version of the LED reactive table! I was inspired by previous work using discrete LEDs, such as this one, but I figured it would be easier and more fun to use NeoPixels -- programmable RGB LEDs that can be set to..... Listed under: [LED Projects](#)
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156. [Multiple ATtiny85 or 13A Programmer](#) Program 6 ATtiny85/13A at the same time with this custom programmer board. Description Watch the video for a better tutorial. https://youtu.be/3tJi0zzWZtM Attiny MCUs are very popular as it is quite easy to program them and using them instead of the atmega328 chip can reduce the..... Listed under: [Microcontroller Programmer Projects](#)
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157. [I2C Blynk Car With Attiny85 and M5StickC](#) This project shows you how to build your own I2C DC motor drive using a DigiSpark Attiny85 plus Arduino motor shield. To test its operation, I made a small RC car which used an M5StickC & connected to Blynk App. to communicate with this drive via the..... Listed under: [Car Projects](#)
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158. [AVR Atmega8 Microcontroller Architecture & Its Applications](#) The abbreviation of AVR Microcontroller is "Advanced Virtual RISC" and MCU is the short term of the Microcontroller. A Microcontroller is a tiny computer on a single chip and it is also termed as a control device. Similar to a computer, the Microcontroller is made with a..... Listed under: [Other Projects](#)
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159. [Types and Applications of ATMEL Microcontroller Programming in Embedded Systems](#) Atmel Microcontroller Programming Atmel Microcontroller Programming – A microcontroller is actually a small and typically inexpensive computer. And you can use it one to perform necessary calculations and conclusions in the uncomplicated hardware framework. Such as, the LED panels generally present in subways can easily implement..... Listed under: [Microcontroller Programmer Projects](#)
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160. [ATmega versus STM32 – Which Microcontroller is Best for Your Application](#) This article compares the ATmega and STM32 microcontrollers so that you can choose the best one for your own tech product, by considering overall cost and system cost, as well as the upward migration path. Comparing ATmega and STM32 microcontrollers is a bit like comparing..... Listed under: [Other Projects](#)
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161. [Getting Started with C Programming for the ATMEL AVR Microcontrollers](#) Introduction This tutorial provides information on the tool and the basic steps for programming the Atmel AVR microcontrollers using C. It is aimed at people who are new to this family of microcontrollers. The Atmel STK500 development board and the ATmega16 chip are used in..... Listed under: [Microcontroller Programmer Projects](#)

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162. [Atmel Studio 7 Latest Version for Windows & MacOS](#) Atmel Studio was developed to help them build and debug microcontroller applications. It comes as a platform for integrated creation that uses the shell of Microsoft Visual Studio. This software manages programs written in C/C++ and even in the language of assembly effectively. I know that as a former..... Listed under: [Other Projects](#)
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163. [ATMEL USB PROGRAMMER CIRCUIT ZIF SOCKET USBASP ATMEGA8](#) Atmel USB programmer shared by more ö "Atmel AVR USB programmer" circuit designed by the advanced ZIF socket version. Source: usbasp – USB programmer for Atmel AVR controllers <http://www.fischl.de/usbasp/> As long as the 8-pin pinout fit, 20-pin, 28-pin, 40-pin... Electronics Projects, Atmel USB Programmer Circuit ZIF Socket..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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164. [Types of AVR Microcontroller – Atmega32 & ATmega8](#) ATmega32 – 8 Bit AVR Microcontroller The AVR microcontrollers are based on the advanced RISC architecture. ATmega32 is a low power CMOS 8-bit microcontroller based on the AVR enhanced RISC architecture. AVR can execute 1 million instructions per second if cycle frequency is 1MHz. Key..... Listed under: [Other Projects](#)
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165. [ATMEL AVR Tutorial 2 : How to access Input / Output Ports ?](#) Overview You cannot imagine to use microcontroller without using any of its i/o pins. Finally its all about : taking input , processing it and generating output ! Thus i/o registers and their correct settings is indispensable part while learning to program any uC. We will..... Listed under: [Other Projects](#)
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166. [Programming AVR Microcontrollers with Atmel Studio 7](#) Inexpensive microcontrollers have seen a resurgence thanks to the internet of things (IoT) and wearable devices. These end-uses depend on parts that have low costs rather than record-breaking speed. Because of this, devices like the Atmel AVR series have enjoyed decades of popularity. Any software..... Listed under: [Microcontroller Programmer Projects](#)
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167. [Classic Atmel ATtiny85-20PU Stop Light](#) The Classic ATtin85-20PU is a very simple project that is also very fun to make. It really is perfect for a parent/child combo because it's quick! Builds in minutes. But it does teach several electronic hobbyist skills. There is a story behind my decision to become..... Listed under: [LED Projects](#)
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168. [ATTiny85 Game Timer – Get Rid of That Old Hourglass!](#) What did I make? = This is a little project that uses ATTiny85 to make a simple "game timer", intended to be used with board games that demand timed turns, like "Rummikub" or "Scrabble". Never wait for all that sand getting down for the next..... Listed under: [Clock Projects](#)
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169. [LED Cube 3x3x3 With ATMEGA8](#) An interesting project and already much discussed in the forums and also in videos. Although it appears complex, it is a simple idea and fun very purpose. Mounting material: - 27 LEDs matte- Microprocessor ATmega8- Electrolytic capacitor 47UF 16V- Veroboard- Small wood board at the minimum 10x10cm-..... Listed under: [LED Projects](#)
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170. [Obstacle Avoidance Vehicle Using ATmega328P Microcontroller \(Arduino\)](#) Obstacle Avoidance Vehicle capable of detecting objects, scanning the area and navigating through the less obstructed path. Step 1: Materials Needed Hardware Arduino UNO based on ATmega328 microcontroller DYP-ME007 ultrasonic sensor Servomotor L298N Dual H-Bridge Motor driver Power Supply - i used LiPo 2s 4000..... Listed under: [Other Projects](#)

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171. [HackerBox 0044: PCB 123](#) Greetings to HackerBox Hackers around the world! HackerBox 0044 brings us PCB Design, AVR Device Programming, Serial RGB LED Applications, Pro ESP32 WiFi OLED Development, and much more. This Instructable contains information for getting started with HackerBox 0044, which can be purchased here while supplies last. If..... Listed under: [Other Projects](#)
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172. [Updated Guide on How to Program an Attiny13a or 13 With the Arduino IDE](#) The ATtiny13 series chips are extremely cheap and useful chips for small projects that don't need a full Arduino, but due to very outdated tutorials and a lack of information, it took me the better part of a day to figure out how to program..... Listed under: [Microcontroller Programmer Projects](#)
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173. [ATtiny Programming With Arduino](#) After this Instructable you should be able to program an A Ttiny85/45 with an arduino. It may sound complex but it really isn't. After doing some research I could not find to much info on how this could be done. I however did find <https://www.instructables.com/id/Program-an-ATtiny-with-Arduino/>. This Instructable..... Listed under: [Microcontroller Programmer Projects](#)
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174. [ATtiny85 Interrupt Barebones Example](#) This example code and simple wiring demonstrated how to setup an AVR ATtiny85 processor to react to external interrupts. Whenever the voltage changes on the chosen input pin (pin 6 / PB1), it executes the interrupt service routine (ISR), checks the current voltage, and sets..... Listed under: [LED Projects](#)
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175. [Ghetto Development Environment](#) A while back, I posted up a quick and dirty "el cheapo" method of getting started programming the Atmel AVR series chips: Ghetto Programmer (version 1.0) Since then, I've vamped, re-vamped, and otherwise improved my setup. Thought it'd be nice to document it. The goal was..... Listed under: [Development Board - Kits Projects](#)
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176. [How to Make a Cheap Attiny Arduino Board](#) Well most of time i get troubled when i need Arduino in some projects where i need few I/O pins Well thanks to Arduino-Tiny platform Arduino program can be burned into the Avr-tiny Series like Attiny 85/45 Arduino-Tiny is an open source set of ATtiny "cores"..... Listed under: [Development Board - Kits Projects](#)
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177. [Programming the ATtiny](#) This is a tutorial for programming the ATtiny chip. This tutorial will be more in depth than most. I will give you every step and tell you the things nobody told me when I first started programming ATtiny. Things You'll Need - Arduino Uno(Can..... Listed under: [Microcontroller Programmer Projects](#)
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178. [ATtiny Programmer Using Arduino ISP](#) For relatively small (less number of pins than ATmega328) projects, ATtiny series, ATtiny45 or Attiny85 are good choice in terms of its physical size (8-DIP or 8-SOIC) and low power consumption. There are many ways to program it. One of the popular device is USBtinyISP and DASA. Both..... Listed under: [Microcontroller Programmer Projects](#)
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179. [Wave JT – Larson Scanner With Joule Thief](#) I love LED chasers. A bunch of LEDs neatly turning on and off on a precise timing - lights running one way, then the other way... It's relaxing, soothing, and hypnotic. There are so many LED chaser/scanner/sequencer circuits out there, some are made with discreet..... Listed under: [LED Projects](#)

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180. [3 Easy ATtiny Holiday Gifts](#) Every year the holiday season rolls around and I get stuck on what to give for my friends and family. People always say that it's better to make the gift yourself than buy it at a store so this year I did just that. The..... Listed under: [Radio Projects](#)
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181. [ATtiny85 Mini RGB Mood Light!](#) I have seen RGB mood lights using Arduino, PIC, and larger AVR chips, but never one with the ATtiny85. That's why I decided to make one. This mood light is super simple to make and all the parts can be purchased online for about \$5.00..... Listed under: [Other Projects](#)
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182. [DIY Atmel Microcontroller Development Board](#) In this Instructables I am going to show you how to make a very useful development board for your favourite Atmel microcontroller that will help you save up to the third of the space on your breadboard and let you move your microcontroller around without..... Listed under: [Other Projects](#)
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183. [Car Datta Logger Using OBD II Protocol \(atmega 2560+ SD Card + Lcd 16x2\)](#) Ok first of all this was a final project for my microprocessor course in my University, and its intended to clarify and guide to someone has a similar project or just want to do it and learn , since when i was doing this project..... Listed under: [LCD Projects](#)
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184. [AVR Projects Collection | 16 ATmega MCU Projects](#) AVR is a family of microcontrollers developed by Atmel beginning in 1996. These are modified Harvard architecture 8-bit RISC single-chip microcontrollers. ATmega series are one of the types of AVR microcontrollers with features like 4–256 KB program memory, 28–100-pin package, extended instruction set, and extensive peripheral set. These special features help students, hobbyists and engineers make innovative..... Listed under: [Other Projects](#)
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185. [ATMEGA328P Microcontroller](#) ATmega328P is one of the high performances AVR technology microcontroller with a large number of pins and features. It is designed by 8-bit CMOS technology and RSIC CPU which enhance its performance and its power efficiency get improved by auto sleeps and internal temperature sensor. This ATmega328P IC..... Listed under: [Other Projects](#)
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186. [Rotary Encoder Interfacing with ATmega8 Microcontroller](#) In this tutorial we are going to interface a rotary encoder with ATmega8 microcontroller. ATmega8 is atmel's microcontroller series designed for embedded applications. Rotary encoder is used to know the position of movement and angular movement of a motor or axis. It's a three terminal device usually,..... Listed under: [Other Projects](#)
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187. [Interfacing 16x2 LCD with Atmega16 AVR Microcontroller in 4-Bit Mode](#) Display is the necessary part of any machine whether it is any home appliance or industrial machines. Display not only shows the control options to operate the machine but also shows the status and output of the task performed by that machine. There are many..... Listed under: [LCD Projects](#)
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188. [Interfacing Servo Motor with AVR Microcontroller Atmega16](#) Servo Motors are widely used where precise control is required such as robots, Automated Machineries, robotic arm etc. However, the scope of the servo motor is not limited to this much and can be used in many applications. To know more about the basics, theory and..... Listed under: [Motor Projects](#)
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189. [How to Program AVR Microcontroller Atmega16 Using USBASP programmer and Atmel Studio 7.0](#) There are several ways to program AVR microcontrollers. We are programming it with USBASP v2.0 serial programmer. For demonstration we will use ATmega16 Microcontroller and Atmel Studio. We will test the programmer with a blink sketch. Below are the steps to burn the code into..... Listed under: [Microcontroller Programmer Projects](#)
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190. [Interfacing Stepper Motor with AVR Microcontroller Atmega16](#) Stepper Motors are DC brushless motors which can rotate from 00 to 3600 in steps. Stepper motor uses electronic signals to rotate the motor in steps and each signal rotates the shaft in fixed increment (one step). The rotation angel is controlled by applying certain sequence of..... Listed under: [Motor Projects](#)
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191. [How to use ADC in AVR Microcontroller ATmega16](#) One common feature that is used in almost every embedded application is the ADC module (Analog to Digital Converter). These Analog to digital Converters can read voltage from analog sensors like Temperature sensor, Tilt sensor, Current sensor, Flex sensor etc. In this tutorial we will learn What is..... Listed under: [Other Projects](#)
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192. [Line Follower Robot using AVR Microcontroller ATmega16](#) Here we will be building yet another project with AVR Atmega16 Microcontroller. If you are new to AVR microcontrollers then you can refer to previous AVR projects and tutorials. Building a robot is always a thrill for all electronics hobbyists. And this thrill can be maximized if..... Listed under: [Robotics - Automation Projects](#)
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193. [Digital Wall Clock on PCB using AVR Microcontroller Atmega16 and DS3231 RTC](#) Every digital clock has a crystal inside it to keep track of time. This crystal is not only present in the clock but also present in all computing real-time systems. This crystal generates clock pulses, which is needed for timing calculations. Although there are some other ways to..... Listed under: [Clock Projects](#)
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194. [Interfacing ESP8266 NodeMCU with Atmega16 Microcontroller to Send an Email](#) Atmega16 is a low cost 8 bit microcontroller and comes with more number of GPIO's than its previous version of microcontrollers. It has all the commonly used communication protocols like UART, USART, SPI and I2C. It has wide applications in robotics, automobile and automation industries..... Listed under: [Other Projects](#)
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195. [Understanding Pulse width Modulation \(PWM\) in Atmega16/32 AVR Microcontrollers](#) Pulse Width Modulation (PWM) is a powerful technique where width of the pulse is changed by keeping the frequency constant. The technique is used in many control systems today. The application of PWM is not limited and it is used in wide range of applications such..... Listed under: [Motor Projects](#)
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196. [How to Use Hall Sensor with AVR Microcontroller ATmega16](#) Hall sensors works on the principle of Hall Effect proposed by Edwin Hall in 1869. The statement proposed says, "The Hall effect is the production of a voltage difference (the Hall voltage) across an electrical conductor, transverse to an electric current in the conductor and to an..... Listed under: [Sensor - Transducer - Detector Projects](#)
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197. [Interfacing DC Motor with AVR Microcontroller Atmega16](#) DC motors are the most widely used motors. These motors can be found almost everywhere from small projects to advanced robotics. We previously interfaced DC Motor with many other microcontrollers like Arduino, Raspberry pi and used it in many robotic projects. Today we learn to control DC motor with AVR..... Listed under: [Motor Projects](#)

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198. [Fingerprint Based Biometric Attendance System using Atmega32 Microcontroller](#) According to researchers from Pen state University, humans are more likely to trust machines over people, which is likely evident from us revealing our ATM pin to a machine so easily. Today, in the world where AI, Machine learning, Chat bots, Smart Speakers, Robots etc are actively progressing, this..... Listed under: [Other Projects](#)
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199. [GPS module \(uBlox Neo 6M\) Interfacing with AVR Microcontroller Atmega16/32](#) GPS modules are widely used in electronics applications to track the location based on longitude and latitude coordinates. Vehicle tracking system, GPS Clock, Accident Detection Alert System, traffic navigation, surveillance system etc. are few of the examples where GPS functionality is essential. GPS provides Altitude, Latitude, Longitude, UTC time and many..... Listed under: [GPS Based Projects](#)
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200. [Understanding Fuse Bits in ATmega328P to Enhance Arduino Programming Efficiency](#) In this tutorial, we are going to talk about fuses. Back when I was in college and learning about all the cool things in electronics, I heard the term fuse in AVR for the first time, my initial thought on the topic was, oh! there is..... Listed under: [Microcontroller Programmer Projects](#)
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201. [Cardboard Dragon Robot](#) Who doesn't love dragons? I know I do. I wanted to challenge myself with this project and build it all out of cardboard practicing some techniques I recently learned, and control it using a small thumbstick controller. Supplies: For this build, you will need: -3..... Listed under: [Robotics - Automation Projects](#)
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202. [Battery Powered Simple Waste Auditing Data Logger](#) ♻️ I wanted a way to keep track of how much waste I was generating just to be more environmentally conscious. So I created this project as an automated way to help keep track of waste accumulation through fullness measurements while also taking pictures of the..... Listed under: [Battery Projects](#)
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203. [Mandelbrot Set on Pi Pico / ILI9341](#) Mandelbrot Set is IMHO the most famous fractal. Read here for additional info: https://en.wikipedia.org/wiki/Mandelbrot_set This project was inspired by <https://hackaday.io/project/177884-mandelbrot-on-p...> I reused most of the original code, but decided to implement it with 2.8" ILI9341 SPI tft using Pico micropython driver from <https://github.com/jeffmer/micropython-ili9341>. This is my first project with..... Listed under: [Other Projects](#)
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204. [Connecting to Microcontroller With Pyserial Library – Python](#) Hi, In this instructable, we'll see how to use the Pyserial library in Python in order to make a serial connection via a COM Port (in our example COM3) and receive the temperature and humidity values from an MSP430 Microcontroller which is programmed to obtain..... Listed under: [Other Projects](#)
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205. [Open Source Ventilator Alternative](#) Access to medical devices is unequal across the globe, and the COVID-19 pandemic has underscored this fact. During the pandemic the global shortage of ventilators has been especially notable. Access to mechanical ventilation in Low and Middle Income Countries is inadequate. South Sudan, for example,..... Listed under: [Medical - Health based Projects](#)
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206. [Automatic Water Barrel Filler](#) A relative asked me if I could create something that automates refilling a water barrel used for watering a small garden greenhouse. They didn't want to plug in a pump every few hours only to have turn it off again ten minutes later when it..... Listed under: [Home Automation Projects](#)

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207. [Decoder / Electronic Quiz Game 2.0](#) Some time ago I presented the Electronic Quiz I made when I was a kid. It can be used to solve quiz sheets. The big drawback is, that each number is hard-wired to one letter so there are 26 fix combinations. Those are fast to memorise, even more..... Listed under: [Game - Entertainment Projects](#)
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208. [Wheelchair Pride Project](#) The Wheelchair Pride Project is designed to allow wheelchair users to feel confident and empowered in their chairs by creating an avenue for self-expression within the chair itself. Oftentimes wheelchairs are cold and industrial looking because they are designed for functionality, but when a wheelchair..... Listed under: [Home Automation Projects](#)
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209. [Network Rivalry: a Low-Latency Game for the BBC Micro:bit](#) In this tutorial, I will explain how to implement a basic multiplayer game on the BBC micro:bit with the following features: A simple interfaceLow-latency between button presses and screen updatesA flexible number of participantsEasy control over the game using a master remote ("root") device The..... Listed under: [Game - Entertainment Projects](#)
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210. [How to Run Servo Motors Using Moto:bit With Micro:bit](#) One way to extend the functionality of the micro:bit is to use a board called moto:bit by SparkFun Electronics (approximately \$15-20). It looks complicated and has many features, but it isn't hard to run servo motors from it. Moto:bit allows you to run more powerful motors than..... Listed under: [Motor Projects](#)
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211. [Paper Pocket Pets](#) Paper Pocket Pets (PPP) is a kit designed to create interactive modular and wearable toys. It encourages children's movement and sociality thanks to the reactions of the pet and allows children to build their own representative pet and also to change it over time if..... Listed under: [Other Projects](#)
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212. [Parallel Apps on an ESP32 Using Toit Platform for IoT](#) With the Toit platform, developers can treat an ESP32 as a regular computer, installing apps just as easy as on a computer or a phone. Using the high-level language Toit, it is easy to implement functionality and applications while the Toit platform ensures that the..... Listed under: [Other Projects](#)
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213. [Micro:bit Controlled Tic Tac Toe Game](#) With the addition of micro:bit to Tinkercad's Circuits editor, it is now possible to create circuits with other Tinkercad Circuits components and to simulate the operation of the system by controlling these circuits via micro: bit. In light of this new feature, we have prepared..... Listed under: [Game - Entertainment Projects](#)
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214. [10 Channel Wi-Fi Switch for Smart Home](#) This device can help you automate your home, backyard, or whatever you want. Step 1: Gather the Components To build this device, you'll need: ESP8266 x1;4-stage ripple (binary) counter (I can suggest SN74LS93N) x1;14-stage ripple counter (CD4020BE is the best choice) x1;Latches (SN74LS75) x6. Since..... Listed under: [Internet - Ethernet - LAN Projects](#)
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215. [Firefly Pickle Jar With Microbit and Neopixels](#) A motion sensitive firefly-filled pickle-jar that gets brighter when you move it, and then settles down to just twinkle a bit when its still. This project was inspired by a workshop led by Lila Finch and the great folks doing tinkering / creative learning at..... Listed under: [Other Projects](#)

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216. [VFD Display for the TI83+ Calculator](#) This project builds upon the PIC/TI83+ interface developed by ThomasHenry (see Nuts & Volts August 2013 – A Mathematics Engine for Microcontrollers). Acknowledgment, appreciation, and kudos to him for writing the TI-library for Great Cow Basic that made this project possible. When I recently re-discovered..... Listed under: [Calculator Projects](#)
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217. [Spin Bike Controller](#) SmartSpin2K is an open hardware and software DIY module that converts BLE signals from a cycling APP (like Zwift, FulGaz, RGT, Sufferfest, etc.) and uses the information they broadcast to increase and decrease resistance on a spin bike by rotating the resistance knob with a stepper..... Listed under: [How To - DIY - Projects](#)
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218. [BBC Micro:bit + WiFi + Phone Notifications](#) <https://youtu.be/8QtW7gWWWhOE> In this project we demonstrate BBC micro:bit how to connect it to WiFi and send a notification to a phone without writing a single line of code. The micro:bit comes with a microphone, among the other features. We are going to use it to detect loud sound e.g..... Listed under: [Internet - Ethernet - LAN Projects](#)
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219. [Arbitrary Wave Generator With the Raspberry Pi Pico](#) Just two weeks ago, the pico, a new microcontroller, the pico, was released by the Raspberry Pi Foundation, well known for the incredibly successful series of Raspberry Pi single-board computers. The new microcontroller uses a brand new chip, designed in-house, the RP2040. It has two 32-bit..... Listed under: [Other Projects](#)
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220. [Smart Home With Multiple NodeMCU ESP8266 Network With Blynk](#) In this IoT project, I have shown how to make IoT-based Smart Home Automation using Multiple NodeMCU ESP8266 network to control all the home appliances from the pushbuttons & Blynk App. If the internet is not available, then you can control the home appliances from manual switches. During the article,..... Listed under: [Other Projects](#)
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221. [Dual Cores & Interrupts on Pi Pico](#) https://youtu.be/OvF_Doo27LM The new Raspberry Pi Pico offers Dual Cores and Interrupts if you use MicroPython. I thought I would give it a go and try explain some of the pitfalls to avoid. This project keeps the action running on the two cores very simple, so..... Listed under: [Circuits](#)
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222. [\[Gamer Assist\] Haptic Feedback System for Games Using Esp8266](#) So, in this video we'll be seeing how to build this haptic feedback device and the ambient light system which reacts to the player's health value inside a PC game! For that we'll be using the ESP-NOW protocol, about which we learnt in the previous..... Listed under: [Game - Entertainment Projects](#)
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223. [Illuminated Cubes](#) This project is a follow up of the Illuminated Presents project that I posted earlier. My wife really liked the Illuminated Presents but kept them as Cubes and did not put a bow around it to turn them into presents. Because of this success I created a..... Listed under: [Battery Projects](#)
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224. [Always Know Where Home Is At](#) Introduction: I built this project as a birthday present for my oldest daughter. She had recently moved far from home and I wanted her to know her family was still there for her. I chose a Lord of the Rings theme and aesthetic because she..... Listed under: [Home Automation Projects](#)

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225. [PID Controlled Thermostat Using ESP32 \(Applied to a Rancilio Silvia Coffee Machine\)](#) WarningThe Rancilio Silvia machine runs on high voltage. Any modification to it might be fatal to you or your machine, you act at your own risk and responsible for your modification. Any modification to the machine might void the manufacturer warranty. Make sure to disconnect..... Listed under: [Motor Projects](#)
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226. [Totally Useless Coffee Dispenser...](#) So I have yet again over-engineered a task, this time, a freeze-dried coffee dispenser. Why you ask, well the obvious first, it's super fun and second, it's the best way to learn new skills. I'm a real noob when it comes to the inner workings..... Listed under: [Motor Projects](#)
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227. [Frequency Counter With Variable Gate Time](#) Frequency counter (reciprocal) Gate time selectable from 0.1 second up to 60 seconds Frequency range from 0.1 Hz up to 10 MHz (tested) Input 3.3V and 5V safe Uses a STM32F103C8 (Blue Pill) and 16x4 LCD code is available on gitlab: <https://gitlab.com/WilkoL/frequency-counter-with-v...> Supplies: STM32F103C8 (Blue..... Listed under: [Other Projects](#)
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228. [Serial Monitor With ILI9341 and BluePill](#) Serial (ascii) monitor with 9 lines of 28 char.Baudrate from 2400 up to 256000 baud. Digital 3.3V or 5V input. Powered by a single Lithium-Ion battery. (3.7V nominal). Supplies: ILI9341 display (here a parallel version is used) BluePill (or other board with a STM32F103C8) 74HC14..... Listed under: [Battery Projects](#)
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229. [Makey Makey Winter/Holiday Jukebox](#) As a second year STEM teacher, I've been using the Makey Makey kits with my 4th, 5th, and 6th graders to explore circuitry, electricity, and to just have some fun! Students have had their choice of projects, ranging from interactive displays to musical instruments using..... Listed under: [Other Projects](#)
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230. [MODAS: Magnetic Open Door Alert System](#) Hey fellow DIY'ers. Have you ever found your house door open after returning from a long trip? Me neither. But it is always good to have a safety system in our houses. I'm not talking about the old school projects like a laser trip wire,..... Listed under: [Security - Safety Projects](#)
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231. [Set @Holiday = Valentines Day](#) This Instructable can be modified for any major holiday, however my students wanted to focus on something they could do for Valentine's Day. In this design, students' hands are the conductive material that complete the circuit when they "high-five" the two halves of the heart..... Listed under: [Circuits](#)
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232. [WaveShare Motor/Servo Driver With Micro:bit](#) This Instructable will show you how to use a WaveShare motor/servo board with a micro:bit to power multiple servo motors. This board will make it possible to run more powerful servo motors than the micro servo motor that you can run directly from the micro:bit..... Listed under: [Motor Projects](#)
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233. [Bluetooth On "Air" Lapel Pin](#) I was working on an unrelated project that utilizes Bluetooth, I had to test the communication so I built one of the Arduino test circuits. The light contains all of the electronics, microcontroller and battery which can be recharged VIA USB. It uses really strong..... Listed under: [Other Projects](#)

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234. [Hello Train! ATtiny 1614](#) For my Fab Academy class I have to create a board with a microcontroller, a button and a LED. I will use Eagle to create it. Step 1: ATtiny 1614 I will use the ATtiny 1614, so I will use the reference of the echo..... Listed under: [LED Projects](#)
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235. [MicroPython Program:Update Coronavirus Disease\(COVID-19\) Data in Real Time](#) In the past few weeks, the number of confirmed cases of coronavirus disease (COVID 19) worldwide has exceeded 100,000, and the world health organization (WHO) has declared the new coronavirus pneumonia outbreak to be a global pandemic. I was very worried about this outbreak, and..... Listed under: [Arduino Programmer Projects](#)
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236. [GPS Monitoring With OLED Display Project](#) Hello everyone, in this quick article I will share with you my project :ATGM332D GPS module with SAMD21J18 Microcontroller and SSD1306 OLED 128*64 display, I built a special PCB for it on Eagle Autodesk, and program it using Atmel studio 7.0 and ASF4 so in..... Listed under: [GPS Based Projects](#)
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237. [MicroPython PCF8591 DACtest](#) I bought this book to improve my Micropython-skills: MicroPython for ESP8266 Development Workshop by Agus Kurniawan. This book is a very good start, the I2C project uses a PCF8591 module. But no DAC programming example so I had to figure that out by myself :-). Listed under: [Other Projects](#)
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238. [AI With Grove Zero and Codecraft \(Scratch 3.0\)](#) In this article we're going to build three projects utilizing AI functions of Codecraft, a graphical programming environment based on Scratch 3.0. Codecraft is developed and maintained by TinkerGen education and is free to use. AI and it's subset, machine learning, has become an integral..... Listed under: [Other Projects](#)
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239. [Dino Jump Run Cactus](#) Because of the coronavirus epidemic, a friend of mine had to be quarantined for 14 days. He complained to me that the quarantine time was too long and it was boring. He likes to play dino jumping cactus. This is a game that can be..... Listed under: [Internet - Ethernet - LAN Projects](#)
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240. [Lora Gateway Based on MicroPython ESP32](#) Lora has been very popular in recent years. The wireless communication module using this technology is usually cheap (using free spectrum), small in size, energy-efficient and has a long communication distance, and is mainly used for mutual communication between IoT terminals or data exchange with..... Listed under: [Microcontroller Programmer Projects](#)
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241. [Make Your Own Oscilloscope\(Mini DSO\) With STC MCU Easily](#) This is a simple oscilloscope made with STC MCU. You can use this Mini DSO to observe waveform. Time Interval: 100us-500ms Voltage Range: 0-30V Draw Mode: Vector or Dots. Step 1: Watch the Video! <https://youtu.be/c6gBv6Jcz7w> In this video, I will show you how to assembly..... Listed under: [Battery Projects](#)
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242. [Dual Colour Bar Graph With CircuitPython](#) I saw this LED bar-graph on the Pimoroni site and thought it might be an inexpensive and fun project while undertaking covid-19 lockdown. It contains 24 LEDs, a red and a green, in each of its 12 segments, so in theory you should be able..... Listed under: [Other Projects](#)

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243. [Micro:bit Zip Tile Introduction](#) Before I continue my serie of MU vision sensor instructables for the Micro:bit, I need to make this instructable for the Kitronik Zip Tile, since I am going to use it. The Kitronik Zip Tile, I will just call it Zip from now on, is..... Listed under: [Sensor - Transducer - Detector Projects](#)
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244. [Microbit Capacitance Meter](#) What is a capacitor? A device that stores electrical charge which in its basic form consists of two conducting plates separated by a dielectric. In addition to the basic parallel plate several other forms of construction exist an example being that the plates in the..... Listed under: [Metering - Instrument Projects](#)
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245. [BBQ Temperature & Meat Sensor on ESP8266 With Display](#) In this Instructable I will show you how to make your own version of a BBQ tool that measures the current temperature in your barbecue and turns on a fan to light it up if needed. Additional to this there is also a meat core..... Listed under: [Temperature Measurement Projects](#)
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246. [Upgrade DIY Mini DSO to a Real Oscilloscope With Awesome Features](#) Last time I shared how to make a Mini DSO with MCU. To know how to built it step by step, please refer to my previous instructable: <https://www.instructables.com/id/Make-Your-Own-Osc...> Since many people are interested in this project, I spent some time upgrading it overall. After upgrading,..... Listed under: [How To - DIY - Projects](#)
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247. [ESP32-CAM Video Surveillance Smart Camera](#) Description This project is a development of our ESP32-CAM Video Surveillance Robot project. Eventually we got a video surveillance pan & tilt camera that can be controlled with an iPhone through Internet Step 1: Parts List: ESP32-CAM x1 FT232RL FTDI Mini USB x1 - for..... Listed under: [Security - Safety Projects](#)
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248. [Coronavirus EXTER-MI-NATION With Micro:bit and Daleks](#) <https://youtu.be/06Um8RRdghc> This is a second project in series on coronavirus protection from TinkerGen. You can find the first article here. We firmly believe that with humanity's collective efforts, current epidemic will soon come to an end. But even after COVID-19 has passed we should remain vigilant..... Listed under: [Other Projects](#)
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249. [Interactive Minecraft Do Not Enter Sword/Sign \(ESP32-CAM\)](#) There are really several reasons why this project came into existence: 1. As an author of cooperative multitasking library TaskScheduler I was always curious how to combine the benefits of cooperative multitasking with the benefits of pre-emptive one. There are benefits to both and both have shortcomings..... Listed under: [Other Projects](#)
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250. [Launch-Ready SSTV CubeSat](#) Satellites are man-made instruments that collect information and data from space. Humans have pioneered space technology over the years and space technology is more accessible than ever. Earlier Satellites used to be very complicated and expensive but Now space technology is more accessible and affordable..... Listed under: [Other Projects](#)
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251. [Micro:bit MU Vision Sensor and Zip Tile Combined](#) So in this project we are going to combine the MU vision sensor with a Kitronik Zip Tile. We will use the MU vision sensor to recognise colours and get the Zip Tile to show it to us. We are going to use some of..... Listed under: [Sensor - Transducer - Detector Projects](#)

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252. [Mini Oscilloscope](#) This is an Instructable about a mini oscilloscope I made, it isn't anywhere near as capable as a real (digital) oscilloscope (such as my Rigol) but I think it is nice to have. Even more important, I enjoy making things, even when they have no..... Listed under: [Other Projects](#)
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253. [Make It So! Star Trek TNG Mini Engineering Computer](#) Overview I grew up watching Star Trek: The Next Generation. I've always wanted to build a Star Trek themed device, so I finally got around to remixing one of my old projects to make a Star Trek Display Terminal. The terminal provides the following information:..... Listed under: [Other Projects](#)
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254. [Dual Trace Oscilloscope](#) When I build my previous mini oscilloscope I wanted to see how well I could make my smallest ARM microcontroller a STM32F030 (F030) perform, and it did a nice job. In one of the comments it was suggested that a "Blue Pill" with a STM32F103..... Listed under: [Sensor - Transducer - Detector Projects](#)
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255. [DIY Smart Doorbell: Code, Setup and HA Integration](#) In this project, I will show you how you can transform your normal doorbell into a smart one without changing any of the current functionalities or cut any wires. I will be using an ESP8266 board called Wemos D1 mini. New to ESP8266? Watch my Introduction..... Listed under: [Sound - Audio Projects](#)
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256. [Laser Game](#) https://youtu.be/nRc_CEQqXQw "Star Trek", "The Terminator", "Star Wars" or "The Avengers" - in each of these films technology was on a cosmic (literally) level. The heroes used laser weapons, which always fascinated me. I decided to build a laser gun, but I would not use it to kill people or aliens,..... Listed under: [Game - Entertainment Projects](#)
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257. [WiFi Enabled Matrix Lamp](#) Who does not want to have stunning lamp which can display animations and sync with other lamps in the house? Right, nobody. That's why I made a custom RGB lamp. The lamp consists of 256 individually addressable LED's and all of the LED's can be..... Listed under: [LED Projects](#)
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258. [Chain Reactions With Strawbees and Makey Makey](#) Gamify your chain reaction by using a Strawbees grabber connected to Makey Makey to start a timer in Scratch when you grab a conductive egg. Drop the egg on the Strawbees roller coaster track. When the egg rolls into the egg drop, it stops the..... Listed under: [Other Projects](#)
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259. [GPS Cap Data Logger](#) Here is a great weekend project, if you are into trekking or taking long bike rides, and need a GPS data logger to keep track of all your treks/rides you taken... Once you have completed the build and downloaded the data from the GPS module..... Listed under: [GPS Based Projects](#)
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260. [Origami 3D Beating Heart](#) It is a 3D paper heart which starts Blinking (Glowing) when someone holds it. To surprise someone, this gift is a perfect idea as it looks like a simple origami heart but it starts blinking just like a beating heart when someone touches or holds..... Listed under: [Other Projects](#)
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261. [How to Make IoT Based Home Automation With NodeMCU Sensors Control Relay](#) In this IoT based project, I have made Home Automation with Blynk and NodeMCU control relay module with real-time feedback. In the Manual Mode, this relay module can be controlled from Mobile or smartphone and, Manual switch. In Auto Mode, this smart relay also can..... Listed under: [Sensor - Transducer - Detector Projects](#)
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262. [Tap Tap Rainbow – a 2 Player Quick Reaction Game](#) 2 weeks ago my daughter had a genius idea to make a quick reaction game with rainbow colors (she's a rainbow expert 😊). I instantly loved the idea and we started thinking how we could make it into a real game. The idea was..... Listed under: [Game - Entertainment Projects](#)
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263. [Make a Dancing Robot Without 3d Printer and Arduino/#smartcreativity](#) <https://youtu.be/mrpztOozA2U> Hello friends, in this tutorial I will show you to how to make a dancing robot at home without 3D printer and without Arduino. This robot is able to dance, auto balancing, music producing and walking. And the design of Robot is also looking..... Listed under: [Robotics - Automation Projects](#)
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264. [Cat Repellent](#) To start with, I do not hate cats but I love birds. In my garden we have some open cages where birds can enter and leave as they please. They can find food and water there. Unfortunately sometimes a cat from the neighborhood enters my..... Listed under: [AVR ATmega Projects](#)
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265. [Mushroom Climate Box](#) Hi there! i have built a climate box to grow mushrooms. It can regulate both temperature and humidity. The heating or cooling works with a peltier element. The air humidity is increased with an ultrasonic nebuliser. I have built everything modular, so that you can..... Listed under: [Other Projects](#)
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266. [Pulse Generator](#) When you need pulses of any sort, long, short and with variable frequency you can use one or two 555 timers. That works, is easy to set up and is cheap. But it also limited to a certain range in frequency and pulse length. If..... Listed under: [Other Projects](#)
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267. [UltraSonic Liquid Level Controller](#) IntroductionAs you probably know, Iran has dry weather, and there is a lack of water in my country. Sometimes, especially in the summer, it can be seen that the government cuts the water. So most of the apartments have a water tank. There is a..... Listed under: [Sensor - Transducer - Detector Projects](#)
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268. [Using the Kitronik Inventor's Kit With the Adafruit CLUE](#) The Kitronik Inventor's Kit for the BBC micro:bit is a great introduction to microcontrollers with electronics using a breadboard. This version of the kit is designed for use with the inexpensive BBC micro:bit. The detailed tutorial book which comes with the kit includes MakeCode examples using Blocks and JavaScript equivalent..... Listed under: [Other Projects](#)
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269. [BBC Micro:bit and Scratch – Interactive Steering Wheel & Driving Game](#) One of my class assignments this week is to use the BBC Micro:bit to interface with a Scratch program we've written. I thought that this was the perfect opportunity to use my ThreadBoard to create an embedded system! My inspiration for the scratch program comes from vintage..... Listed under: [Game - Entertainment Projects](#)

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270. [WiFi LED Switch IoT](#) The main aim of this project is to come up with a functional WiFi switch that will help us operate via the "Blynk" app from the Mobile app store. This Instructable is successfully tested with very basic knowledge of Electronics and I would appreciate suggestions..... Listed under: [LCD Projects](#)
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271. [Click Brick Switch for Makey Makey](#) This 3D printed switch will allow the user to turn a Makey Makey into a "finger slide" for a "click" in gaming or could be right/left arrows to scroll through presentations. The addition of right and left terminal mounts for the ground wire makes it..... Listed under: [Other Projects](#)
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272. [BOXOI – an Open Source Miniature 3D Zoetrope DIY Kit](#) Project Background: In 2015, I started a kickstarter project of a miniature 3D zoetrope DIY kit. The next year, I started the version 2 of said project by further simplifying the kit and reducing its manufacturing cost. Sadly, both crowdfunding failed, but this is how the..... Listed under: [How To - DIY - Projects](#)
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273. [MQTT Swimming Pool Temperature Monitor](#) This project is a companion to my other Home Automation projects Smart Data-Logging Geyser Controller and Multi-purpose-Room-Lighting and Appliance Controller . It is a pool side mounted monitor that measures the pool water temperature, ambient air temperature and barometric pressure. It then displays the pool water temperature on..... Listed under: [Temperature Measurement Projects](#)
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274. [Clock Generator With Si5351 and Blue Pill](#) Clock generator I recently build a pulse generator and it does its job well. It produces pulses of variable length and at several frequencies. But the number of frequencies it can produce is limited and for many jobs the length of a pulse is less..... Listed under: [Clock Projects](#)
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275. [Binary DVM](#) Binary displays are very popular for clocks so it looked like there a gap waiting to be filled in the measurement area with an instrument that displayed its results in a Binary format. As result I decided that a DVM would be a suitable project..... Listed under: [Metering - Instrument Projects](#)
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276. [A Bluetooth ESP32 TFT + Touch Macro Keypad](#)) Controlling your computer by using hotkeys and macros is a great way of speeding up your workflow. Unfortunately a device dedicated to doing that (for example Elgato's Stream Deck) will cost you about \$120. That is why I designed FreeTouchDeck. FreeTouchDeck will cost you about..... Listed under: [Other Projects](#)
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277. [Hands-Free Cardboard Gumball Machine](#) We made a Touch-Free Gumball Machine Using a micro:bit, a Crazy Circuits Bit Board, a distance sensor, a servo, and cardboard. Making it and using it was a "BLAST"! ???? ???? When you place your hand in the base of the rocket, a distance sensor..... Listed under: [CNC - Printing Machines Projects](#)
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278. [MIDI Handpan With 19 Tonefields on Upper and Down Side...](#) Introduction This is a tutorial of my custom made MIDI handpan with 19 volume sensitive tonefields, Plug'n Play USB capability, and a lot of easy to use parameters for adjusting the pads for your individual needs. It's not a design award winning model 😊 but..... Listed under: [Other Projects](#)

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279. [Wakeup Light](#) As I write this instructable it is mid winter on the Northern hemisphere and that means short days and long nights. I am used to getting up at 06:00 and in the Summer the sun will be shining by then. In the Winter though, it..... Listed under: [Development Board - Kits Projects](#)
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280. [DIY ESP8266 ESP-12 Socket – Snap Fit, Breadboard Friendly, No Soldering](#) I've been looking for an ESP8266 (ESP-12) socket for a long time, and the way I see it, It had to have all of these properties: 100% Breadboard Friendly No soldering required Snap Fit and snugly hold the ESP8266 DIY from everyday household items Easy to print..... Listed under: [How To - DIY - Projects](#)
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281. [Energy Saving Switch With Presence Sensor](#) Do you face such situations when you leave your reading lights, table fans or soldering irons without switching them off and later realize that they were on for too many hours which subsequently jumps off your electricity bills? Well, if you have such a problem..... Listed under: [Sensor - Transducer - Detector Projects](#)
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282. [Door Open Alarm With Linkit One](#) This is a device that indicates by buzzing whenever the door crosses the specified distance giving a red light indication.This has been developed by linkit one board received in the giveaway! Its total cost is ~63\$ including ~60\$ linkit one board.Here's video of it in..... Listed under: [Clock Projects](#)
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283. [Home Automation – RC Lighting](#) Is there an appliance in your house that you wished could be turned on easier? That hard to reach light that you need every day or a fan? With the LinkIt ONE we can do just that! Specifically we can control an AC appliance with..... Listed under: [Home Automation Projects](#)
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284. [Simon Says With LinkIT ONE](#) Let's go through a classic beginner projec that combines circuits, code, and fun: Simon Says. Building your own Simon Says game can be a great way to quickly dive deep into the awesome world of tinkering. You get experience with building some simple circuits (buttons..... Listed under: [Game - Entertainment Projects](#)
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285. [Portable Solar Auto Tracking System](#) Medomysself is a participant in the Amazon Services LLC Associates Program, an affiliate advertising program designed to provide a means for sites to earn advertising fees by advertising and linking to amazon.com by: Dave Weaver This build is made with aluminum t-slot extrusion. I chose..... Listed under: [Solar energy projects](#)
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286. [Linkit One Motion Sensor Prank](#) Do you want to take revenge from your friend or your elder brother because he fooled you on a occasion. Are you searching for something by which you can scare anyone and have fun. If that is the case then you are at the right..... Listed under: [Sensor - Transducer - Detector Projects](#)
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287. [Linkit One Audio Messenger](#) Have you ever met to this problem that urgently you have to go somewhere and you are try to call your wife or children to tell them about the problem but unable to call them due to some network error. I am sure on some..... Listed under: [Sound - Audio Projects](#)
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288. [RC Controlled Rgb Led Strip](#) Create your own rc controlled led-strip for individual room illumination! Most rgb-led-strips are controlled by an infrared remote control. To turn it off or on or change the color, you have to stay in front of the receiver. This is boring and not really smart..... Listed under: [LED Projects](#)
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289. [Linkit One BT – Mobile As PC Joystick](#) Playing Games in PC is always fun. Play with joy stick with out key board is some more fun. No joy stick still no problem u play with your Android smart phone. First i think it is a very simple program. But want to jump..... Listed under: [Phone Projects](#)
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290. [Linkit ONE: Flame Sensor](#) This instructable will guide you to use a flame sensor with the Mediatek Linkit ONE. A flame sensor is a device that can detect the presence of fire nearby. A buzzer connected to linkit one beeps when fire is detected by the sensor. So let's..... Listed under: [Sensor - Transducer - Detector Projects](#)
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291. [Linkit ONE Touch LED](#) This instructable will guide you to glow an LED using a touch sensor which means that the LED will glow when you touch on the probe of the sensor. The project uses the Mediatek linkit one connected to a touch sensor and an LED. As..... Listed under: [LED Projects](#)
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292. [Wireless Weather Indicator](#) I decided to use the Linkit One's GSM capabilities to create a weather indicator. This would allow me to make something both practical and visually pleasing, a wireless weather indicator. Step 1: Materials/Tools Tools Soldering Iron Computer Linkit One GSM antenna Battery for Linkit One..... Listed under: [GPS Based Projects](#)
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293. [Interactive Television Show Game](#) Interactive TV is a tamil channel, Where we lot of programs and also interactive games by call the number and use the mobile button to play the game on the television. Want to do some thing like that for local cable TV for my friend. So..... Listed under: [Game - Entertainment Projects](#)
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294. [Theft Protector Using Tilt Sensor](#) These days theft has become a serious crime. People are now much more conscious towards there precious items are purses and jewellery but due to the busy routine of this life we are not able to take care of our things. That constant detraction of..... Listed under: [Sensor - Transducer - Detector Projects](#)
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295. [Presence Notifier With Push Button](#) These days in families, both men and women have started working. Both men and women want to succeed in life and for this they have to work hard and spent more time in the offices. Due to this it becomes difficult for both of them..... Listed under: [Other Projects](#)
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296. [Linkit One Temperature Sensor](#) In this instructable I'm going to how you how to measure the temperature using a Linkit One and a Lm35 temperature sensor. This project can be a part of a wireless weather monitor, if you have not seen my previous instructables please check it out,..... Listed under: [Temperature Measurement Projects](#)

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297. [Linkit One Kitchen Timer](#) In this instructable I'm going to show you how to design a kitchen timer using the Linkit One, the timer has a maximum duration of 30 minutes. And once the timer is done counting down it fires a buzzer to notify you. The time interval..... Listed under: [Clock Projects](#)
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298. [DC Motor Multiplexer](#) This DC Motor Multiplexer allows you to control up to four DC motors in forward and reverse using one MOSFET and only 5 digital pins. For this intractable you will require: - DC motors (I used salvaged DC fans)- MOSFET (I used a 110v 30amp..... Listed under: [Motor Projects](#)
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299. [DC Motor Controller](#) This simple DC motor controller allows for one direction motor control and has been built entirely of reclaimed electrical parts. Using MOSFET's for motor control instead of control chips, allows for an external power supply and electric isolation of the motor and control board. Which..... Listed under: [Motor Projects](#)
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300. [LinkIt ONE Powered Wall-E](#) In this instructables, we give a simple example of how to add voice output and distance sensing on everyone's beloved robot with MediaTek LinkIt ONE. https://youtu.be/_0nQopA9cSE Step 1: Materials 1. Linkit One with Battery 2. Mono Audio Amp Breakout with speaker 3. VL6180X Time-of-Flight Distance..... Listed under: [Other Projects](#)
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301. [SIMPLE QUADCOPTER \(HUBSAN X4 \)](#) In this Instructable I will let you know the basic building block of a Quadcopter and how to make it in a very simple way.Only thing you need is some skill on Soldering and few basic tools.I think it will give opportunity to the new..... Listed under: [Drones](#)
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302. [Reading Sensors With a Microprocessor.](#) In my previous Instructable I showed how simple commands could be used to turn on a microprocessor output and light an LED. <https://www.instructables.com/id/Lets-Program-a-PIC...> I should stress I am not connected with Picaxe and these projects are ones I used in School to teach programming to..... Listed under: [Sensor - Transducer - Detector Projects](#)
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303. [ChipKIT Parking Obstacle Sensor](#) I've always thought it would be nice to have a car with a parking sensor. I don't want to spend that kind of money until I pay off my student loans. However I do have the materials to make one myself thanks to a class..... Listed under: [Sensor - Transducer - Detector Projects](#)
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304. [Microcontroller Based Smart Battery Charger](#) The circuit what you are about to see is a smart battery charger based on ATMEGA8A with auto cut off.Different parameters are shown via a LCD during different charge states.Also the circuit will make sound via a buzzer upon charge completion. I built the charger..... Listed under: [Battery Projects](#)
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305. [IoT Device for Serial to Ethernet by Using TCP](#) I know WIZ550S2E solution for monitoring. Recently WIZwiki-W7500ECO platform was announced by WIZnet. So I implemented a firmware of WIZwiki-W7500ECO by WIZ550S2E SW modification because I can handle a source code easily. You can know the status of equipment even if it is so far..... Listed under: [Development Board - Kits Projects](#)

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306. [3D Printed Ethernet Telescope](#) I've seen PiKon. it's great. i want make it. not original but add function!! so I made Ethernet Telescope. it's Project name is WIZKon Telescope !! :) Step 1: Prepare Material Need these... 3D cad file : i published below site -> Link mbed : i use WIZwiki-W7500 or WIZwiki-W7500ECO..... Listed under: [Internet - Ethernet - LAN Projects](#)
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307. [Adding REST-based Web Services to IoT Device for IO Monitoring](#) This project is to make a simple RESTful Web service library for IoT Devices. The library is written with C language code and on WIZwiki-W7500ECO platform board from WIZnet. With it, users can implement a RESTful Web service on IoT devices easily. Monitoring IoT devices..... Listed under: [Development Board - Kits Projects](#)
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308. [How to Make a SensorGlove With Android Connection](#) The aim is to create an input system for mobile devices, which is controlled by the movements of the fingers, in this case with the help of a glove. Para ver este tutorial en español, por favor haga click aqui: <https://www.instructables.com/id/Como-Hacer-Un-Guan...> Step 1: Creating the Glove..... Listed under: [Sensor - Transducer - Detector Projects](#)
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309. [Blinking Shark Puppet](#) How to make a shark puppet with blinking LED lights for its eyes! The two LED lights are going to turn on when the shark's mouth is closed the first time, <https://youtu.be/acaj1QTpn9g> after the first time the lights come on, the LEDs are going to..... Listed under: [LED Projects](#)
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310. [Adafruit Lightstrips](#) First, you need to know that a lightstrip is a bunch of LEDs daisy chained together. The three contacts are +5v, GND and DI (data in, AKA DIN). If you are using the same lightstrip, you can solder just 3 wires... Now on to building Step..... Listed under: [LED Projects](#)
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311. [RFID Based Home Security System Using 8051](#) In these days we're here with our subsequent assignment that is RFID and keypad primarily based security machine. This assignment is implemented by means of the use of 8051. often we are able to see RFID tags or card in metro teach when we're going..... Listed under: [Security - Safety Projects](#)
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312. [Assistive Technology for People With Communication Disabilities Using Makey Makey](#) Objective: Build a cheap and easy tool to help people with disabilities to better communicate their basic needs. Materials: - Makey Makey - Used box - my box is 6.5 x 3.5", but you can use a box bigger than that if you want. - 8 Connector..... Listed under: [Other Projects](#)
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313. [Wifi-controlled Telescope+DSLR With Motorized Focuser](#) Motivation: I love astronomy and astrophotography very much. I am sure that like me, all amateur astronomers would want a inexpensive personal observatory for taking pictures of the fabulous universe. Astrophotography, especially deep-sky photography, requires high precision in tracking (to counter the earth's rotation) and..... Listed under: [Phone Projects](#)
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314. [Adding an RTC and OLED to ESP8266-01](#) The ESP8266-01 only has a limited number of I/O pins (only 4). Fortunately these pins can be used for I2C communication, allowing us to add a hoist of other chips.I wanted to add an RTC to the ESP8266-01 and for testing purposes I did not..... Listed under: [LED Projects](#)

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315. [Easiest ESP8266 Learning IR Remote Control Via WIFI](#) The ESP8266 is a wonderful microcontroller. They can be purchased cheaply and have built in wifi. In this guide I will not go over how to flash the ESP8266 module with the basic firmware as this is covered on the <http://ESP8266basic.com> web site in detail. All the..... Listed under: [Other Projects](#)
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316. [Twin Lamps](#) Kinoma Element can power 3.3V sensors, but some projects call for the use of higher-current devices. The Tessel Relay module makes it easy to toggle externally-powered devices on and off. In this project, we control a network of two lamps using Kinoma Element, capacitive touch sensors, and relays..... Listed under: [Other Projects](#)
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317. [WeMos D1 Mini Pro Flash NodeMCU Firmware](#) This instructables show how to flash NodeMCU firmware to WeMos D1 mini Pro. Step 1: Introduction WeMos D1 mini Pro is a new ESP8266 dev board. It is thin, light weight, built-in USB to serial chip and 16 MB flash! Recently, it is the only..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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318. [Blink LED Test on Intel Quark D2000 Development Board](#) What is Intel® Quark™ microcontroller D2000? The Intel® Quark™ microcontroller D2000, is a low power, battery-operated, 32-bit microcontroller with a more robust instruction set than other entry-level microcontrollers. The first x86-based Intel® Quark™ microcontroller, Intel® Quark™ microcontroller D2000 also increases input/output options over other entry-level..... Listed under: [LED Projects](#)
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319. [Small Motion Sensing Tin Robot](#) Yay - my first instructible 😊 My 6 year old nephew wanted to have a robot to guard his room, so I decided to build one for / with him. It was supposed to have green eyes that turn red when an intruder is detected..... Listed under: [Robotics - Automation Projects](#)
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320. [Bluetooth Temperature Sensor for SmartPhone](#) This guide is going to show you how to create a Bluetooth Temperature sensor to connect to your cellphone. For my "Dry-Active" project I worked with Nordic nRF51822 chipset. This process is not a single day exercise but it's pretty straightforward and "solid" experience. Looking..... Listed under: [Temperature Measurement Projects](#)
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321. [Control a Lamp With ESP8266 and a Relay](#) My 6 year old son likes to sleep with the lights on. Eventhough I fitted his bed side lamp with a 4 Watt led bulb , I still thought I needed a way to control the lamp without getting up in the middle of the..... Listed under: [Phone Projects](#)
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322. [It's 5 O'Clock Somewhere](#) Hello Everyone!, Welcome to our group instructables page. Here, we'll break down all the steps you'll need to build the "It's 5 O'Clock Somewhere" portable clock. What is it? It's a portable clock, connected to your local wifi, or paired with your phone, to show..... Listed under: [Clock Projects](#)
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323. [Voice Oper@ted Robot](#) In this project, it is aimed to make a contribution to this dream. Controlling the machines and environment with speech makes human life easier and more comfortable. This project is a simple implementation of this approach. A robot is controlled by voice commands. Voice command..... Listed under: [Robotics - Automation Projects](#)

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324. [Complete Guide to Design an Advanced Line Follower Robot](#) Line follower is an autonomous robot which can detect a specific colored line painted on a surface of different contrast, such as white on black. In this project I used infrared transmitters and receivers to track the black strip on white surface. Due to the..... Listed under: [Robotics - Automation Projects](#)
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325. [6*8 LED Display Using a Decoder and Atmega8](#) Many of you have been wondered by seeing the LCD Display at various places and would have given a little thought about how the things work behind such a real time display. Let's clear such confusions and create a 6*8 LED display approximately similar to..... Listed under: [LED Projects](#)
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326. [STONE TFT LCD +ESP32 Line Count and Alarm](#) Brief With the continuous development of single chip microcomputer, the counting equipment tends to be automatic. It needs automatic technical device with real-time, high efficiency and accuracy to meet the counting requirements of modern production line. Through the design of esp32 MCU as the core..... Listed under: [LCD Projects](#)
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327. [Radio Signals on Micro:bit](#) Once you're getting familiar with your micro:bit, there's a whole world of possibilities opening up, but there are some errors you might run into. Here's how to make two (or more) micro:bit communicate, even if the code is written on different computers. Step 1: You'll..... Listed under: [Radio Projects](#)
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328. [Network-Connected Lamps \(IoT for Beginners\)](#) A project for someone who lights up my life... As a Christmas present (albeit an extremely late one now) for a long-distance friend, I wanted to build lamps that could "talk" to one another, as in "reflect each other's color animations when simulated." This involved a lot..... Listed under: [Internet - Ethernet - LAN Projects](#)
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329. [Temp. and RH Data Logger With Wifi UI](#) I know! You're thinking: "Oh god... another ESP temperature and humidity silly project..." but wait! Here are the characteristics that might interest you: this data logger can run for 55 days before the memory is full (considering a 15 minutes sampling rate and a 64K SPIFFS) It can run for..... Listed under: [Other Projects](#)
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330. [SmartLights – ESP8266 and Led Strip](#) SmartLights is a simple way to automate your home lighting. Unlike Phillips Hue and other commercial devices, SmartLights is economical and easily customisable . The project requires some technical skill, but they are fairly simple and can be easily followed. <https://youtu.be/pU-5jGmHxok> Some of the Features..... Listed under: [LED Projects](#)
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331. [DIY Persistence of Vision Game Display](#) Are you bored of your regular displays? Have you got a innovative idea for a game? Have you got a soldering station or somebody to help you with one? Well you are in luck, because with this instructable you will know the basics of the..... Listed under: [Game - Entertainment Projects](#)
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332. [Fast, Portable and Affordable Oscilloscope and Inductance Meter](#) When turned off, it looks like an ordinary toy car that would entertain a kid for hours, but actually it is an oscilloscope kit in disguise! The idea and also part of the code for this project came from another scope called STM-32-O-Scope (aka pigScope), which uses..... Listed under: [Metering - Instrument Projects](#)

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333. [Waren's L.E.D Music Visualizer](#) Another basic Arduino project is waiting for you to build! This exciting project will allow you to create an awesome L.E.D Music Visualizer using few components such as a Microphone module, resistors, L.E.Ds, and Arduino. This project is perfect for those who really loves music. Everybody loves music (including me)..... Listed under: [LED Projects](#)
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334. [Solar Draw](#) Burning patterns into stuff with the focused suns rays.... about the level of eighth grade earth science before this subject was eliminated by our current Secretary of Education. But what if instead of just killing small arthropods with a death ray and then seeing spots..... Listed under: [Solar energy projects](#)
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335. [Electronic Paper Rock Scissors Game](#) Paper, Rock, Scissors is an old, simple game. Basically each player takes turns to make a shape with their hands and depending on the combination one player wins each round. A more detailed description of the game can be found here The game is usually played..... Listed under: [Game - Entertainment Projects](#)
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336. [Building Homie Devices for IoT or Home Automation](#) This instructable is part of my DIY Home Automation series, check out main article "Planning a DIY Home Automation System". If you don't know yet what Homie is, have a look at homie-esp8266 + homie from Marvin Roger. There are many many sensors. I'm covering the very basic ones in..... Listed under: [Home Automation Projects](#)
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337. [Affordable Cellular IoT](#) When deciding what type of connectivity your next project will use cellular tends to be considered an expensive alternative to WiFi or Bluetooth. This tutorial is meant to break that way of thinking and show how easy and inexpensive cellular could be with the right..... Listed under: [Calculator Projects](#)
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338. [Object Avoidance Microbit Robot Using the Kitronik Motor Controller](#) Having already experimented with creating a robot using a cheap motor driver board, I decided to look at the one provided by Kitronik, I liked the look of it as it came with easy to use screw terminals to attach wires and had 4 inputs..... Listed under: [Motor Projects](#)
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339. [Electronic Dimmer With Memory](#) At home I have a salt lamp. This lamp needs a regular small 15 Watt light bulb that lights up and warms up the lamp. When the lamp is switched on you normally should not dim the lamp because of the lamp heat that the..... Listed under: [Memory - Storage Projects](#)
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340. [Bike Analog Speedometer](#) More patents for bicycle improvements have been issued than for any other machine. It is no wonder that the simplest of mechanical devices invites constant tinkering. If you do a search for speedometers for bikes you can come up with the old style mechanical contrivance..... Listed under: [Metering - Instrument Projects](#)
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341. [Picaxe Greenhouse Light Sensor Controller](#) Last year 2016 I altered my garden and planted some new stock. Half way through the growing season I noticed that the right hand Carnation had grown far more vigorously than its twin only 20" away. The only differences to the plants was that a..... Listed under: [Sensor - Transducer - Detector Projects](#)

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342. [ATTiny44 Guitar Effector](#) A DIY ATTiny44 based guitar preamp+effector. All the audio processing is done digitally on-board. So it is definitely not a HiFi system, but something you can definitely have fun programming. You can program the audio properties in Arduino IDE and create mobile apps that talk..... Listed under: [Sound - Audio Projects](#)
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343. [MQTT and Wifi Powered Mailbox Flag](#) Note: updated with new firmware, a schematic and a tips for a programmer. A couple of years I embarked on my own home automation project. It started off by building a server controlled 433 MHz transmitter build with an Arduino to switch lots of cheap..... Listed under: [Internet - Ethernet - LAN Projects](#)
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344. [Instructables Hit Counter \(ESP8266-01\)](#) Some time ago, I tried to make an "Instructables Hit Counter" using the Instructables API, and an Arduino Uno with a wired network shield. However, with the limited RAM of the Arduino Uno, I was unable to get the system to work. A while ago, I noticed..... Listed under: [Internet - Ethernet - LAN Projects](#)
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345. [Wireless Gesture Controlled Robot Using Micro-controller ATmega328](#) In this wireless gesture controlled robot project I am going to control a robot using hand gestures. This is an easy, user-friendly way to interact with robotic systems and robots. An accelerometer is used to detect the tilting position of your hand, and a microcontroller gets different..... Listed under: [Robotics - Automation Projects](#)
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346. [VivoGame](#) VivoGame (something like "liveGame" in english) is a funny 2 players game whose goal is hit a target with a automated dart. One player wear a "glasses" that doesn't let him see the target. 3 leds that replace each lens, allow the other one, who..... Listed under: [Game - Entertainment Projects](#)
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347. [Weather Monitoring System Using TIVA](#) Hi There Everyone, This is Tahir UI Haq and introduces you to another member in the family. This time the project is named as Weather Monitoring System. This is another TIVA based project presented by students of UET LHR. Weather monitoring plays an important role..... Listed under: [Other Projects](#)
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348. [DIY Cheapest Bluetooth Controlled Home Automation](#) <https://youtu.be/7I8b6yBjvXE> Step 1: COMPONENTS REQUIRED
Bluetooth module (HC-05)AT89S52/C51/S51/C52 microcontrollerRelay Driver ULN2003ARelayResistances and capacitors as circuit diagram depicts(below)power module(if the input is more than 5V or else not necessary)IC 7805(5V voltage regulator)1000uF capacitor10uF capacitorled and resistance(as per convenience so that led doesn't get damaged)
IMPORTANT NOTE:..... Listed under: [Home Automation Projects](#)
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349. [Simple 3 Button On-off With 12f629 \(mikroC\)](#) a simple 3 buttons on-off with pic12f629. it's written with MikroC Step 1: The Code... start the code with "int"----- int x0,x1,y0,y1,z0,z1; // with this the GPIO outputs could stay on or off void main() { GPIO = 0x00; // all outputs are 0 CMCON..... Listed under: [Other Projects](#)
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350. [OLED Display \(SPI\) With Particle Photon](#) Particle Photon is a tiny micro controller, just about the size of an arduino nano. But the photon is designed for easy IoT prototyping, it supports OTA updates to its firmware. So all we have to do is get it connected to the internet and we..... Listed under: [LED Projects](#)

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351. [Programming P89V51RD2 \(8051 Microcontroller\) on Breadboard](#) In this instructable, I am going to give step wise procedure of programming a P89V51RD2 microcontroller on breadboard. If you are directly seeing this tutorial, then please see my previous tutorial on basic breadboard power stage here : <https://www.instructables.com/id/Breadboard-5V-Pow...> In this tutorial we are going to..... Listed under: [Microcontroller Programmer Projects](#)
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352. [ESP32 Solar Weather Station](#) For my first IoT project I wanted to build a Weather Station and send the data to data.sparkfun.com. Small correction, when I decided to open my account in Sparkfun, they were not accepting more connections, so I choose another IoT data collector thingspeak.com. Continuing... The system..... Listed under: [Solar energy projects](#)
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353. [Entertainment Center Cooling System](#) As nice as an entertainment center with all the AV equipment neatly stacked behind a glass door looks, the ventilation leaves a lot to be desired, which meant temperatures inside the enclosure were often well in excess of 100F. I could just leave the door..... Listed under: [Game - Entertainment Projects](#)
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354. [MQTT Based Fire Detection System](#) In recent days, automatic fire detection and control is becoming very essential to reduce the fire in a building or an industry. It provides real-time surveillance, monitoring and automatic alarm. A key aspect of such systems is to identify a developing fire emergency in a..... Listed under: [Clock Projects](#)
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355. [Voice Controlled Robot Using 8051 Microcontroller](#) A voice controlled robot takes specified command in the form of voice. Whatever the command is given through voice module or Bluetooth module, it is decoded by the existing controller and hence the given command is executed. Here in this project, I have used Bluetooth..... Listed under: [Robotics - Automation Projects](#)
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356. [Measure Your WiFi Signal Strength Using Particle Photon](#) WiFi has become an integral part of our life and daily billions of people use WiFi as a method to access the internet. But the range of WiFi is limited, unlike a cellular connection. A normal WiFi router usually has a range of about a 100m..... Listed under: [Internet - Ethernet - LAN Projects](#)
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357. [Interactive Sound Poster for Kids](#) Things to Prepare: - Foam Board - Aluminum Foil or Copper Tape - Makey Makey - Computer (Or Raspberry Pi & Speaker) - Poster Design Step 1: Design a Poster With a Tappable Button. I created a poster for Halloween event for kids. It..... Listed under: [Sound - Audio Projects](#)
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358. [Controlling Relay Module From Anywhere in the World With Amazing UI Using Losant](#) Learn how to control relay module from anywhere in the world with Amazing UI using Losant, this is part 6 of IoT World Series Step 1: Needed Components Needed components ESP8266 PlatformIO IDE with default project setup Relay Module [Shipping free for a dollar] Jumper cables..... Listed under: [Other Projects](#)
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359. [Walkera Devo 10 Radio Transmitter Deviation Mod – Control Everything!](#) Universal transmitter to control everything! One transmitter to rule them all. <https://youtu.be/tRdhxRH6yUs> The Devo 10 is a programmable radio transmitter from Walkera. When Deviation is installed with a couple of RF

modules, it can almost replace every transmitter for your RTF micro multi-rotors/quadcopters/helicopters and planes..... Listed under: [Metering - Instrument Projects](#)

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360. [Wireless Energy Meter With Load Control](#) INTRODUCTION Hi guys am a 3rd Year University Student of Lovely Professional University, India currently pursuing Electronics and Communication Engineering. Youtube Channel :::: <https://www.youtube.com/channel/UC6ck0xanIU14Oor...> Facebook Profile :::: <https://www.facebook.com/arnab.das.bwn> GitHub :::: <https://www.facebook.com/arnab.das.bwn> Wordpress :::: <https://www.facebook.com/arnab.das.bwn> This Project is Based on Atmel's Atmega16 Microcontroller as the main brain for computation. NRF24L01+ Wireless communication module..... Listed under: [Metering - Instrument Projects](#)
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361. [MonkeyDogTracker](#) Okay, I admit I don't have a monkey. But would you be looking at this if I didn't mention monkey? And this would work for a monkey. Does your monkey or dog wander off? Would you like to see where he/she is? Well, they make..... Listed under: [GPS Based Projects](#)
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362. [Interactive LED Beer Pong Table](#) Create your own Interactive LED Beer Pong Table! This instructable will guide you through all of the steps to in order to create a one-of-a-kind beer pong table complete with cup detecting RGB pods, automatic ball washers, a 32x12 ping pong ball LED grid, side..... Listed under: [LED Projects](#)
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363. [ESP8266 / NRF24L01 Breadboard Adapter](#) Have you ever been anxious to receive your new break-out boards, only to find out that the pin layout is not breadboard friendly? If only those pins were aligned differently. Well, let me show you how I have made an easy breadboard adapter that will..... Listed under: [Development Board - Kits Projects](#)
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364. [GPS Data Logger](#) While this is not the first Arduino based GPS Data Logger out there, it may be the most versatile. This device has a lot of features & even more possible uses. It started with significant inspiration from Mikal Hart's "Reverse Geocache"™ and the use of..... Listed under: [GPS Based Projects](#)
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365. [Control Daikin AC From Anywhere With Beautiful UI and Losant](#) In this instructable we will learn how to control Daikin air-conditioner from any point in the world using Losant IoT Enterprise Platform and their amazing UI dashboard The ESP8266 is a low-cost Wi-Fi chip with full TCP/IP stack and MCU (microcontroller unit) Step 1: How It Works..... Listed under: [Home Automation Projects](#)
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366. [ESP32: DIY Motor Driver With ESP32 Controller](#) This is the simplest motor driver that could possibly be built using only one NPN transistor, which is controlled and driven by the ESP32 micro controller board. Step 1: Materials and Tools ESP32 MicrocontrollerDC motorNPN Transistor -- BC337100Ω resistorDiode -- N4148 General PurposeBreadboard wiresBreadboard'2x jumper..... Listed under: [Motor Projects](#)
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367. [Solar Power System Monitoring](#) In this indestructible I will demonstrate how to make your Own Solar power Monitoring station .With materials ,Code and electronics parts. we will start with the PCB designed on a fritzing program to sending off for the PCB ,Soldering it and Installing it into a..... Listed under: [Solar energy projects](#)
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368. [Make a Pocket-Size Theremin With ESP32](#) Theremin are those unique instruments use to make those alien show theme songs or sound effect. You may have also heard it in Star Trek, Big Bang Theory, or even a haunted house. They produced a unique sound from the electromagnetic effects between wires. Here..... Listed under: [Sound - Audio Projects](#)
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369. [Micro:Bit Puppet "Text Messaging"!](#) Nearly all of our wireless communication is done using radio waves*, including phone calls, text messages, and WiFi. With its built-in radio transmitters and receivers, the Micro:Bit microcontroller makes it super easy to build all sorts of projects with radio communication. This particular project is..... Listed under: [Microcontroller Programmer Projects](#)
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370. [Solar Tide Clock](#) Tides. In Anchorage Alaska we live on a point located between two enormous tidal bays--so big in fact that Captain Cook on his initial survey of the area thought (hopeful thinking) that this entrance would prove to be a "northwest passage". It is shallow and..... Listed under: [Clock Projects](#), [Solar energy projects](#)
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371. [Simple Altera FPGA Demo](#) This tutorial will show you how to turn on an LED using both the built-in LED on a development board as well as using a GPIO pin. I happen to be using a DE0 CV Dev board from Terasic. We will be using the Quartus..... Listed under: [LED Projects](#)
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372. [Bike Power Pedal IoT](#) Work is of two kinds: first, altering the position of matter at or near the earth's surface relatively to other such matter; second, telling other people to do so. The first kind is unpleasant and ill paid; the second is pleasant and highly paid. Bertrand..... Listed under: [Other Projects](#)
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373. [Jar of Fireflies](#) This project uses green surface-mount LED's along with an AVR ATTiny45 microcontroller to simulate the behavior of fireflies in a jar. <https://youtu.be/UeL0LC2lgpQ> (note: the firefly behavior in this video has been greatly sped up in order to be easier to represent in a short film..... Listed under: [Home Automation Projects](#)
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374. [How to Flash MicroPython Firmware on a ESP8266 Based Sonoff Smart Switch](#) What's Sonoff? Sonoff is a device line for Smart Home developed by ITEAD. One of the most flexible and inexpensive devices from that line are Sonoff Basic and Sonoff Dual. These are Wi-Fi enabled switches based on a great chip, ESP8266. While the Sonoff infrastructure may work quite well for..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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375. [Digital Clock Using Microcontroller \(AT89S52 Without RTC Circuit\)](#) Lets describe a clock... "Clock is a device that counts and shows time(relative)"!!! Guess I said it right so lets make a CLOCK with ALARM feature. NOTE: it will take 2-3 minutes in reading please read the whole project or else I will not be responsible for any part damage..... Listed under: [Clock Projects](#)
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376. [How to Control ESP8266 Based Sonoff Basic Smart Switch With a Smartphone](#) Sonoff is a device line for Smart Home developed by ITEAD. One of the most flexible and inexpensive devices from that line are Sonoff Basic. It is a Wi-Fi enabled switch based on a great chip, ESP8266. This article describes how to set up the Cloud4RPi service on a Sonoff Basic smart..... Listed under: [Phone Projects](#)
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377. [Interfacing 8051 Microcrtroller With 16*2 Lcd in Proteus Simulation](#) This is a very basic project of 8051. In this project we are going to tell you about how we can interface 16*2 lcd to 8051 microcontroller. So here we are using full 8 bit mode. In the next tutorial we will tell about 4..... Listed under: [LCD Projects](#)
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378. [Interfacing 8051 Microcontroller With Lcd in 4-bit Mode](#) In this tutorial we are going to tell you about how we can interface lcd with 8051 in 4-bit mode. Step 1: Software Used: As we are showing proteus simulation so FOR CODING AND SIMULATION YOU REQUIRED: 1 Keil uvision: Their are lots of product from..... Listed under: [LCD Projects](#)

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379. [How to Count From 0 to 99 Using 8051 Microcontroller With 7 Segment Display](#) Hello everyone, In this tutorial we are going to tell you about how to count from 0 to 99 using two 7 segment display. Step 1: Software Used: As we are showing proteus simulation so FOR CODING AND SIMULATION YOU REQUIRED: 1 Keil uvision: Their are..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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380. [Keypad Interface With 8051 and Displaying Keypad Numbers in 7 Segment](#) In this tutorial I'm going to tell you about how we can interface keypad with 8051 and displaying keypad numbers in 7 segment display Step 1: Software Used As we are showing proteus simulation so FOR CODING AND SIMULATION YOU REQUIRED: 1 Keil uvision: Their are..... Listed under: [Security - Safety Projects](#)
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381. [Memory-Card Made of CMOS EPROM's](#) The instructable created by me will help you to build a huge memory capacity which will come in handy for many projects and measurements. The memory card is suitable for multi-usage and can be way more reliable in comparison to flash cards and other type..... Listed under: [Memory - Storage Projects](#)
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382. [DIY Temperature Logger With STM32F103, MicroSD Card and DS18B20](#) I'm currently building a temperature logger for some guys doing a research in biology. Tried to make it as small as possible, with temperature sensor that can be crammed in small space. Since the first revision slash prototype of the device was incredibly simple to..... Listed under: [Temperature Measurement Projects](#)
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383. [Fun Micro:bit Robot – EASY and Inexpensive!](#) BBC micro:bits are great! They are easy to program, they're packed with features like Bluetooth and an accelerometer and they're inexpensive. Wouldn't it be great to be able to build a robot car that costs next to NOTHING? This project is inspired by the desire..... Listed under: [Robotics - Automation Projects](#)
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384. [Music Synthesizer Based on DE0-Nano-SoC](#) Music Synthesizer This music synthesizer is quite simple : you just have to blow, sing, or even play music in front of the microphone, and the sound will be modulated and sent through the speaker. Its spectrum will also appear on the LCD display.The Music..... Listed under: [Sound - Audio Projects](#)
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385. [EBot8 Object Following Robot](#) Have you ever wondered to make a robot that follows wherever you go? But just couldn't? Well... Now you can! We present you the object following robot! Go for this tutorial,like and vote and maybe you can do it too!! Step 1: Gather the Materials..... Listed under: [Robotics - Automation Projects](#)
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386. [Space Battleship Yamato 2199 With Trinket Microcontrollers](#) Because of the remake of the animation and movie of Space Battleship Yamato, in addition to the attractive design of Bandai model. It make me interest to build this space battleship model again. Bandai not mention its scale, maybe ~1:2500 by estimation. <https://youtu.be/b5TzmONvX3o> <https://youtu.be/SdxBiHjwRUM> Step..... Listed under: [Microcontroller Programmer Projects](#)
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387. [Solar Coaster](#) The iconic scene from Jurassic Park came in the car where the glass of water resonated with the approaching footsteps of the T-Rex (spoiler). The original scene was done according to web blogs by someone carefully boinging a musical string attached to the support for..... Listed under: [Solar energy projects](#)

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388. [Mail Alarm](#) After completing my GSM Home Alarm V1.0 and some time of using, I decided to make some modifications. In the hardware the main changes are the replacement of the ultrasonic sensor and the introduction of a keypad. On the software, I change the SMS notification by e-mail..... Listed under: [Clock Projects](#)
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389. [How to Make an Interactive Sound Wave Print](#) In this tutorial we are going to show you how to make an interactive sound wave print within a picture frame, so you can see and hear your favourite song at the same time! When you touch the print through the glass of the frame,..... Listed under: [Sound - Audio Projects](#)
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390. [The ULTIMATE Gumball Machine](#) What is ultimate? Infinite RGB? How about a cool LCD touchscreen? Maybe even some completely unnecessary wifi capabilities? How about all of them- in a gumball machine. DFRobot reached out to me to create a project that uses their 2.8" TFT screen, so I made the..... Listed under: [Game - Entertainment Projects](#), [Uncategorized](#)
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391. [The KIM Uno – a 5€ Microprocessor Dev Kit Emulator](#) The KIM Uno is a portable, software defined dev kit for (retro) microprocessors. But let me introduce the idea of it by going back in time: Back in late 2018 it came to my mind, that I wanted to build a small portable microprocessor dev kit, just..... Listed under: [Microcontroller Programmer Projects](#)
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392. [Micro:bit Compass](#) This instructables show how to use micro:bit to make a simple digital compass. Step 1: Get a Micro:bit If you not yet have a micro:bit, you may get a micro:bit here: <https://microbit.org/resellers/> Step 2: Optional: Battery Holder If you want to make the digital compass portable,..... Listed under: [Microcontroller Programmer Projects](#)
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393. [PyPortal Splatoon 2 Schedule Display](#) Fun display of current and upcoming Splatoon 2 stages in Turf War and Ranked games, Ranked game type, and Salmon Run schedule using an Adafruit PyPortal. Cycle through the schedule by pressing on the touch screen. Backgrounds are randomly cycled for eye candy. The optional..... Listed under: [Game - Entertainment Projects](#)
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394. [ESP32 Robot Using Servos](#) I have been experimenting using different ESP32 development boards, recently I ordered of the TTGO T-Beam variety which come with a Battery socket to add your own 18650 Lipo, this really takes some of the power regulation complexity out of building a small robot, as..... Listed under: [Robotics - Automation Projects](#)
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395. [Makey Makey Game Show Buzzer](#) This instructable is designed to help you build a simple game buzzer system for classroom review games. In this Instructable, you will create simple cardboard switches that will work with a Makey Makey and will be coded using Scratch. Supplies: 4 Pieces of Cardboard (3 x..... Listed under: [Game - Entertainment Projects](#)
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396. [Sinewave and Cosinewave Signal Generator](#) For an upcoming project I need a signal generator that produces a sine wave and a cosine wave*. The easiest way would be to buy a signal generator. I also could buy one of those amazing integrated circuits that Analog Devices makes and build a..... Listed under: [Internet - Ethernet - LAN Projects](#)

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397. [Alexa-controlled Adam Savage Pumpkin](#) All the lights in my house are smart so I've got pretty used to yelling at them to switch on and off, but it ends up making me look dumb when I yell at a light that isn't. And I look especially dumb when yelling..... Listed under: [LED Projects](#)
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398. [Weight Sensor Coaster](#) This Instructable will allow you to build a drink coaster with a weight sensor in it. The sensor will determine the amount of liquid in the glass placed on the coaster and send this information through WiFi to a webpage. Additionally, the coaster have LED..... Listed under: [Sensor - Transducer - Detector Projects](#)
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399. [Basic Mobile Phone Using STM32F407 Discovery Kit and GSM A6 Module](#) Have you ever wanted to create a cool embedded project?. If yes, how about building one of the most popular and everyone's favorite gadget i.e Mobile Phone!!!. In this Instructable, I will guide you on how to build a basic mobile phone using the STM32F407 Discovery..... Listed under: [Phone Projects](#)
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400. [MicroPython Program: Is the Toilet Occupied?](#) Our office is a large group office with limited bathroom space."I" often find that I have no room to go to the bathroom, so I have to wait so long that I feel embarrassed. The experiment used MakePython ESP8266 to set up a detection server..... Listed under: [Microcontroller Programmer Projects](#)
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401. [WiFi RFID Reader](#) The main idea was to read in 13.56 MHz RFID (tags / tokens / stickers / wristbands / cards) by a magic box and post the RFID UID to a local database by WiFi network. This instructable builds the base of the whole system -..... Listed under: [Internet - Ethernet - LAN Projects](#)
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402. [INFRA RED REMOTE CONTROLLED ROBOCAR USING AVR \(ATMEGA32\) MCU](#) The present PROJECT describes a design and implementation of an infrared (IR) remote controlled RoboCar which can be used for various automated unmanned control applications. I have designed remote controlled RoboCar(left-right/front-back motion). The entire system is based on microcontroller (Atmega32) that makes the control system..... Listed under: [LED Projects](#)
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403. [Using a Quadrature Encoder With an ATtiny 2313 and an OLED Display](#) In this instructable you'll learn how to use a rotary encoder (see http://en.wikipedia.org/wiki/Rotary_encoder) with a microcontroller and how to display the numeric value as a bar and a numeric value on an OLED display. See the video below for the project in action. The..... Listed under: [LED Projects](#)
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404. [2cm Height 7 Segments 6 Digits AVR Clock With 4 Digits Thermometer](#) This project is explaining how to create yourself a 6 digits 7 segments clock with AVR microcontroller Step 1: Prepare the Parts for This Project We need to prepare a parts for this project, 6x 7 Segments Common Anode 6x PNP transistors for driver, I..... Listed under: [Clock Projects](#)
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405. [Temperature Control System Using Labview \(Atmega32\)](#) This work describes a framework of ON/OFF, proportional and linear temperature control systems. The design and implementation of this process is done using LABVIEW, virtual workbench software. The project involves includes data acquisition, data processing and the display of data. At the initial stage Data..... Listed under: [Temperature Measurement Projects](#)

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406. [Firmware Upgrade for USBASP Clone – Fixing Error Setting USBASP ISP Clock](#) USBASP is one of the most popular programmer for AVR Microcontroller by Thomas Fischl. It is one of the oldest programmer for AVR. And very common being used with AVRdude software. There are many GUI based on AVRdude, such as: embedXcode AVR8 Burn-O-Mat AVRDUDESS BitBurner avrdude-gui khazama..... Listed under: [Clock Projects](#)
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407. [Low Speed AVR Oscilloscope V2.00 \(Is Updated on 19 Mar 2011\)](#) >> The firmware was updated on 19 Mar 2011 << A few months ago a friend of mine -car mechanical at profession- told me that he had problem with some car sensors. He couldn't check, with a simple multimeter, if a sensor was working properly..... Listed under: [LCD Projects](#)
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408. [Learn About Microcontrollers](#) This Instructable was designed to answer the question: how do I get started in microcontrollers? Now, in clear, simple English, you can learn what a microcontroller is, and how to use one. You will learn how to make everything that you need to get started..... Listed under: [Microcontroller Programmer Projects](#)
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409. [Homemade Battery Monitor Using AVR](#) I want to share my experiment with voltage divider, ADC and AVRHomemade battery monitor using AVRIt's pretty simple the sensor are only two resistors and zener diode with capasitor, I don't buy them, I've found it in my box.We can use it for monitoring our..... Listed under: [Battery Projects](#)
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410. [Measuring Tempurature Using Sensor\(LM35\) and Atmega32](#) A digital thermometer is a good project in microcontrollers because it provides an opportunity to learn using sensors to measure the real world signals that are analog in nature. I am trying to describes a similar project based on a Atmega32 microcontroller and an..... Listed under: [Temperature Measurement Projects](#)
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411. [Temperature Sensor\(LM35.\) Interfacing With ATmega32 and LCD Display| Automatics Fan Control](#) Step 1: In this project, You will learn How to interface a Temperature Sensor(LM35) with AVR ATmega32 Microcontroller and LCD display. Before This Project you have to need Learn about following articles how to add lcd library in avr studio| avr microcontroller tutorial introduction..... Listed under: [Temperature Measurement Projects](#)
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412. [Debugging AVR Code in Linux With Simavr](#) I recently started programming AVR chips, namely the ATTiny85. They can be programmed using C, compilers are readily available in Ubuntu, and you can do a LOT with them - just search for avr on this site! Anyway, I was having some trouble with my..... Listed under: [LED Projects](#)
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413. [Interfacing PS2 Controller With AVR -Bit Bang](#) Hey friends in this instructable I will show you how to interface sony PS2 controller with AVR microcontroller .This will be your handy code which you can be used in future to control robots .You can get analogue value from joystick which can be used..... Listed under: [Motor Projects](#)
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414. [How to Use the Dragon Rider 500 With Your AVR Dragon](#) This instructable is a crash course in how to use some of the features of the Dragon Rider 500 from Ecos Technologies. Please be aware that there is a very detailed User's Guide available on the Ecos website. The Dragon Rider is a interface board..... Listed under: [LCD Projects](#)

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415. [AVR Microcontroller. Pulse Width Modulation. Controller of DC Motor and LED Light Intensity.](#) Pulse Width Modulation (PWM) is a very common technique in telecommunication and power control. it is commonly used to control the power fed to an electrical device, whether it is a motor, an LED, speakers, etc. It is basically a modulation technique, in which the width..... Listed under: [Motor Projects](#)
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416. [Introduction to ADC in AVR Microcontroller | for Beginners](#) In this tutorial you will know everything ADC in AVR microcontroller Step 1: What Is an ADC? An ADC, or Analog to Digital Converter, allows one to convert an analog voltage to a digital value that can be used by a microcontroller. There are many..... Listed under: [Microcontroller Programmer Projects](#)
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417. [Getting Started With Atmel AVR and BASCOM](#) I have seen plenty of Instructables showing how to work with microprocessors, but they all assume that you have worked with them before and know what you are doing. I have not seen an Instructable that takes you from nothing and builds on each step..... Listed under: [Battery Projects](#)
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418. [Cheap STK500 AVR Programmer for Atmel Studio](#) Atmel Studio is a powerful tool for making AVR programs. But writing a program is the first step. To use your program, you must make a circuit and transfer your code into the microcontroller. You can program your AVR from Atmel Studio by the..... Listed under: [Microcontroller Programmer Projects](#)
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419. [AVR Microcontroller Fuse Bits Configuration. Creating and Uploading in the Flash Memory of Microcontroller the LED Blinking Program.](#)
<https://youtu.be/6rkRAnkuqM0> In this case we will create simple program in C code and burn it into the memory of the microcontroller. We will write our own program and compile the hex file, using the Atmel Studio as the integrated development platform. We will configure fuse bits and..... Listed under: [LED Projects](#)
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420. [AVR Microcontroller. Toggle LED's Using a Push Button Switch. Push Button Debouncing.](#) <https://youtu.be/YIZiwaXxtco> In this section, we will learn How to make program C code for ATmega328PU to toggle the status of the three LED's according to the input from a button switch. Also, we have explored a solution to the problem of 'Switch Bounce'. As..... Listed under: [LED Projects](#)
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421. [Density Based Traffic Signal System using Microcontroller](#) Nowadays, controlling the traffic signal becomes a major issue because of the rapid increase in automobiles and also because of large time delays between traffic lights. So, in order to rectify this problem, we will go for a density based traffic light system. This article explains you how..... Listed under: [Microcontroller Programmer Projects](#)
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422. [Microcontroller Projects: Home Automation System](#) In this era of digital revolution, we are surrounded by smart devices that are capable of making decisions on their own without much human intervention. Our home can also be made smart by implementing a real-time home automation system that monitors parameters like power consumption..... Listed under: [Home Automation Projects](#)
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423. [Line Follower Robot using Microcontroller](#) Have you ever made your own robot? Here is a very simple and easy robot. In this project, I will explain how to design and build a Line Follower Robot using a microcontroller. The Line Follower Robot is a basic robot that follows a specific path..... Listed under:

[Robotics - Automation Projects](#)

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424. [Microcontroller Projects: Sonar Water-Level Meter](#) Three-fourths of the earth is water, out of which 97 per cent is saline (in oceans, seas and groundwater). The remaining 2.5 per cent to 2.75 per cent is fresh water, out of which 1.75 per cent to two per cent is frozen in glaciers,..... Listed under: [Battery Projects](#)
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425. [RFID based Attendance System](#) Most educational institutions' administrators are concerned about student irregular attendance. Truancies can affect student overall academic performance. The conventional method of taking attendance by calling names or signing on paper is very time consuming and insecure, hence inefficient. Radio Frequency Identification (RFID) is an interesting solution in..... Listed under: [Radio Projects](#)
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426. [AT90S1200 D.D.S. FUNCTION GENERATOR](#) The presented project is a function generator for sinusoidal and square signals production. The output frequency covers the range from 10 Hz to 100 KHz with a step of 2 Hz. The waveform synthesis... Electronics Projects, AT90S1200 D.D.S. Function Generator "avr project, microcontroller projects, " The presented project is..... Listed under: [Sensor - Transducer - Detector Projects](#)
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427. [GAS DETECTOR CIRCUIT ATTINY45](#) Gas sensors are employed in a wide range of applications in the fields of safety, health, instrumentation etc... Common examples are domestic/commercial alarms for explosive or toxic gases or in automotive application, as gas... Electronics Projects, Gas Detector Circuit ATtiny45 "avr project, microcontroller projects, " Gas sensors are employed..... Listed under: [Sensor - Transducer - Detector Projects](#)
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428. [UNINTERRUPTIBLE POWER SUPPLY UPS AT90S8515](#) PWM with AT90S8515 a good practice to understand the logic can give 200w Power should be developed for more. The driver circuit method used in section H-Bridge driver integrated HIP4080 I have in the... Electronics Projects, Uninterruptible Power Supply UPS AT90S8515 "avr project, microcontroller projects, " PWM with..... Listed under: [Battery Projects](#)
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429. [MICROCONTROLLER GSM ALARM AND CONTROL CIRCUITS](#) Now quite a popular topic with Cell Phone Control with Microchip pic series for those who want to do these types of projects that could give clues will limp a few projects, including projects... Electronics Projects, Microcontroller GSM Alarm and Control Circuits "avr project, microcontroller projects, " Now quite..... Listed under: [Clock Projects](#)
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430. [MICROCONTROLLER CONTROLLED DIGITAL POWER SUPPLY CIRCUITS ARCHIVE](#) NXP80C31, PIC16F876, PIC12F629, PIC18F452, PIC16F876, PIC16F870, PIC18F252, HC908QT4 made with integrated power sources in various voltage and power MCU of microcontrollers in power electronics used always been interested 😊 Unfortunately this type MCU, PIC,... Electronics Projects, Microcontroller Controlled Digital Power Supply Circuits Archive "avr project, microcontroller projects, " NXP80C31, PIC16F876,..... Listed under: [Circuits](#)
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431. [MICROCONTROLLER CONTROLLED BATTERY CHARGING CIRCUITS](#) PIC Series Microcontroller ATMEL etc. Battery battery charger integrated circuits made using the PIC16F819, PIC16F84, PIC16F876, ATMEGA32, AT90S4433-PCR, AT90S1200-P, based on the ATmega8's 7units applications Microcontroller controlled battery charging circuits all files: microcontroller-controlled-battery-charging-circuits.rar alternative... Electronics Projects, Microcontroller controlled battery charging circuits "avr project, battery charger circuit, microchip projects,..... Listed under: [Battery Projects](#)
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432. [MICROCONTROLLER CONTROLLED ROBOT PROJECTS](#) Multi-robot projects have been realized with the microcontroller. In addition to professional practice 'projects have simple robot Most of the projects in the PIC16F series microcontrollers used ATMEL series over with no project

varieties... Electronics Projects, Microcontroller Controlled Robot Projects "avr project, microcontroller projects, " Multi-robot projects have been..... Listed under: [Robotics - Automation Projects](#)

433. [OLD CD ROM TRACK PLAYER WITH MICROCONTROLLER](#) Old Cd Rom in handy if you want to make a Track Player PIC16F877 and AT89C51, AT89S52 controllers are made with good projects. Add to My Cdrom the features of the project with PIC16F877:... Electronics Projects, Old Cd Rom Track Player with Microcontroller "avr project, microchip projects, microcontroller..... Listed under: [Other Projects](#)
-
434. [AVR TEMPERATURE MEASUREMENT SYSTEM](#) Atmel AVR, Atmel microcontroller series with a super "Temperature Control Measurement System" 16 sensor inputs 4 alarm inputs and the computer's connection. Temperature measurement, alarm, an exemplary application in the PC communication This measuring... Electronics Projects, AVR Temperature Measurement System "avr project, microcontroller projects, " Atmel AVR, Atmel microcontroller..... Listed under: [Temperature Measurement Projects](#)
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435. [MONITOR AUDIO RADIO SPECTRUM ATMEGA8](#) Atmega8-16 ac circuits with LEDs monitor the spectrum vu-meters of the advanced state of our LCD and LED spectrum analyzer circuit looks very nice variety of testing everything in the middle video There are...Electronics Projects, Monitor Audio Radio Spectrum Atmega8 "atmega8 projects, avr project, microcontroller projects, " Atmega8-16..... Listed under: [Radio Projects](#), [Sound - Audio Projects](#)
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436. [WHEELS BIKE LIGHT CIRCUIT](#) ATTINY2313 a flashy accessory for your bike 74LS595N 25LC080P a good practice based on the software with all the details have pcb diagram hex code schema (schema) and PCBs (br) Latest eaglecad prepared by...Electronics Projects, Wheels bike light circuit "avr project, microcontroller projects, " ATTINY2313 a flashy accessory..... Listed under: [LED Projects](#)
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437. [ATMEGA162 LCD OSCILLOSCOPE CIRCUIT](#) A very nice project cost is a bit high in our country, even hard to find parts Atmel AVR microcontroller series dealing with this type of project is ideal for those who want to... Electronics Projects, ATMEGA162 LCD Oscilloscope Circuit "avr project, microcontroller projects, " A very nice project..... Listed under: [LCD Projects](#)
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438. [ATMEGA8 AT90S4433 WIRELESS RF TEMPERATURE TRANSMITTER](#) And a beautiful project with ATmega8 AT90S4433 your computer from a remote location with the location's wireless RF system temperature data come Mailbox temperature measured in the test program with garden-temperature condition is displayed... Electronics Projects, ATmega8 AT90S4433 Wireless RF Temperature Transmitter "atmega8 projects, avr project, microcontroller projects, " Listed under: [Medical - Health based Projects](#), [Temperature Measurement Projects](#)
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439. [LM3886 TDA7318 DIGITAL AMPLIFIER AT90S8535](#) AT90S8535, TDA7318 and LM3886 have been realized with digital amp system LED Indicator-signal input selection can be made, unfortunately explanations could not solve in a language 😊 but ATMEL microcontroller dealing with people a... Electronics Projects, LM3886 TDA7318 Digital Amplifier AT90S8535 "audio amplifier circuits, avr project, ic amplifier,..... Listed under: [Sound - Audio Projects](#)
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440. [ATMEGA168 MOOD POLY CONTROLLED INTERACTIVE LED LIGHT](#) "Polycontrolled Interactive LED Mood Light" is based on Atmel ATMEGA168/88 quite a strange RGB LED application design professional as well as various modes, speed, the program's options. I hope I know the main parts... Electronics Projects, ATMEGA168 Mood Poly Controlled Interactive LED Light "avr project, microcontroller projects, " "Polycontrolled..... Listed under: [LED Projects](#)
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441. [SPEED INDICATOR CIRCUITS TACHOMETER ATMEL ATMEGA8](#) Atmel ATmega series of projects have been realized with the speedometer and LCD display are the different indicators used circuits. Display circuit used Used atmega8l-8P. Hex file and prepared by Proteus. Dns file there.... Electronics

Projects, Speed Indicator Circuits Tachometer Atmel atmega8 "atmega8 projects, avr project, microcontroller projects, ".....
Listed under: [Metering - Instrument Projects](#)

442. [AT89S52 THERMISTOR CIRCUIT THERMOMETER LCD DISPLAY](#) NTC Thermistor Thermometer based on AT89S52 circuit and HIH 3160 humidity sensor humidity and temperature information is given. Display LCD display circuit and there are two versions of the C source code and schema... Electronics Projects, AT89S52 Thermistor Circuit Thermometer LCD Display "avr project, microcontroller projects, " NTC Thermistor..... Listed under: [Circuits](#)
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443. [MODEL AIRCRAFT PROJECTS](#) Different models of the project Model Aircraft Model airplane models, drawings, model details, sample circuits, fan motors, etc. .. as well as stock control circuit microchip PIC16F microcontrollers made with a variety of serial... Electronics Projects, Model Aircraft Projects "avr project, microcontroller projects, " Different models of the project..... Listed under: [Other Projects](#)
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444. [COMPUTER CONTROLLED 8-CHANNEL DIMMER CIRCUIT](#) AT90S2313P 200 watt dimmer circuit is controlled from RS232 port with MOC3021 opto isolated triac driver control program running on xp pretty simple hex to asm code pcb diagram AT90S2313P. There have also dosyalarıda... Electronics Projects, Computer Controlled 8-Channel Dimmer Circuit 200W AT90S2313P"avr project, microcontroller projects, " AT90S2313P..... Listed under: [Circuits](#)
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445. [WAV PLAYER CIRCUIT WITH ATMEL ATTINY2313](#) ATtiny2313 microcontroller circuit with MAX232 PC connection can be established based on the pc program with wav file loading the output of the power amplifier TDA2003 integrated amp Atmel Wav Player Circuit Test The... Electronics Projects, Wav Player Circuit with Atmel ATtiny2313 "avr project, microcontroller projects, " ATtiny2313 microcontroller..... Listed under: [Radio Projects](#), [Sound - Audio Projects](#)
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446. [USB TO LPT CONVERTER CIRCUIT WITH ATMEL ATMEGA8](#) Converter from USB to LPT parallel port (25 pin SubD receptacle) with hardware virtualization at input/output instruction level Supports all parallel port modes named SPP, EPP and ECP, 16 Byte FIFO depth USB Low... Electronics Projects, USB to LPT Converter Circuit with Atmel ATMEGA8 "atmega8 projects, avr project,..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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447. [ATMEGA128 ATMEGA32 PC CONTROLLED LED MATRIX ANIMATION LED SIGNS](#) Serve to control the 128×64 graphic LCD with a preview of the contents of the array and menu graphics. The heart of the controller is Atmega 128 CPU for communication with the PC corresponds... Electronics Projects, ATMEGA128 ATMEGA32 PC Controlled LED Matrix Animation LED Signs "avr project, microcontroller..... Listed under: [LED Projects](#)
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448. [AT89S52 8051 RF DC MOTOR SPEED CONTROL](#) Wireless within a certain area with a control circuit for controlling the speed of DC Motor. Work, should I use to reach my goal I began to identify materials. These materials AT89S52 microcontroller, our... Electronics Projects, AT89S52 8051 RF DC Motor Speed Control "8051 example, avr project, keil..... Listed under: [Motor Projects](#)
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449. [89C51 8051 VOLTMETER THERMOMETER DS1621 ADC0808](#) ADC 0808 standard data acquisition systems many components on a single chip host is a member of ADC 0808 8-bit flip makes the process and addresses from input latch 8-channel data selection (multiplexer) and...Electronics Projects, 89C51 8051 voltmeter thermometer DS1621 ADC0808 "8051 example, avr project, keil example,..... Listed under: [Metering - Instrument Projects](#)
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450. [CALCULATION OF BODY LENGTH WITH 8051 AND DS89C430](#) In this project, which is designed using DALLAS DS89C430 microcontroller (in simulation AT89C51RC2) circuit and a marching band, calculated on the length of the body, the LCD display was performed. Circuit consists of three... Electronics Projects, Calculation of Body Length with 8051 and DS89C430 "8051 example, avr project,..... Listed under: [Calculator Projects](#)

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451. [AT89C51 8051 GRAPHIC LCD ANIMATION](#) GLCD Animation circuit voltage is applied to the currently displayed map of Turkey comes first. Subsequently, the Turkish flag and a picture of Mustafa Kemal Atatürk, the next step is to come. Art world... Electronics Projects, AT89C51 8051 Graphic LCD Animation "8051 example, avr project, keil example, microcontroller..... Listed under: [LCD Projects](#)
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452. [AT89C51 L293D DC MOTOR WITH DOOR CONTROL CIRCUIT](#) The main purpose of the circuit is to control the gate of the house. This DC motor and provided with two limit switches is provided by mechanical parts. The two buttons open and close... Electronics Projects, AT89C51 L293D DC Motor with Door Control Circuit "8051 example, avr project,..... Listed under: [Motor Projects](#)
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453. [AT89C51 SQUARE WAVE SIGNAL GENERATOR](#) Signal generator test is often the recipients of the amplifiers used in the test and repair of this equipment. Used as the signal source. Wave detector, radio frequency used in places such as bridges.... Electronics Projects, AT89C51 Square Wave Signal Generator "8051 example, avr project, keil example, microcontroller..... Listed under: [Radio Projects](#), [Sound - Audio Projects](#)
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454. [DISEQC TESTER CIRCUIT WITH ATMEL ATTINY13](#) This device is designed to help define the way DiSEqC-switches to the working protocols 1.0 and 1.1 and the number of entrances to 4 – x. It feeds the unit from the source of... Electronics Projects, DiSEqC Tester Circuit with Atmel ATtiny13 "avr project, microcontroller projects, " This device..... Listed under: [Circuits](#)
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455. [MONITOR TEST CIRCUIT WITH ATMEGA88](#) color image of a classic test circuit will monitor the audio output of this circuit in addition to the music in the game are from the old ateri amp could work in the test... Electronics Projects, Monitor Test Circuit with atmega88 "avr project, microcontroller projects, " color image of..... Listed under: [LCD Projects](#)
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456. [ATMEL ATMEGA8 IR DETECTOR CIRCUIT](#) 8-channel approach to IR detector sensor circuit is realized with ATmega8 microcontroller. I2C bus (TWI, SMBus) are measuring through the obstacle detection, designed for mobile robot. Approach reflects the beam of infrared light detector... Electronics Projects, Atmel ATMEGA8 IR detector circuit "atmega8 projects, avr project, microcontroller projects, " 8-channel..... Listed under: [Circuits](#)
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457. [AT89C51 MICROCONTROLLER ANALOG CLOCK FOR GRAPHIC LCD](#) Analog Clock GLCD We use 128×64 pixel graphical LCD having "HY-12864K" is. This adds the file extension of the LCD connections are provided in PDF. 128 × 64 graphic LCD s have the same... Electronics Projects, AT89C51 Microcontroller Analog Clock for Graphic LCD "8051 example, avr project, keil..... Listed under: [Clock Projects](#)
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458. [AT89C51 ANIMATED BMP GRAPHIC LCD DISPLAY](#) AT89C51 microcontroller controlled Animated BMP project usnig Graphic LCD Display 128×64 project keil source code and proteus isis simulation schematic files Graphic LCD Animated BMP Schematic project files: at89c51-animated-bmp-graphic-lcd-display.rar author: Cihangir Kılıç... Electronics Projects, AT89C51 Animated BMP Graphic LCD Display "8051 example, avr project, keil example, microcontroller projects, "..... Listed under: [LCD Projects](#)
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459. [8051 PS2 KEYBOARD WITH LCD WRITING TEXT](#) PS / 2 protocol used text via a keyboard microcontroller applications that perform printing text on the LCD The goal here Text via keyboard microcontroller to print text on the LCD. Through keyboard microcontroller... Electronics Projects, 8051 PS2 Keyboard with LCD Writing Text "8051 example, avr project, keil..... Listed under: [LCD Projects](#)

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460. [ATMEGA32 10A 2-CHANNEL METER WITH LCD DISPLAY](#) PID Temperature Controller Max232 PC via RS232 serial port connection can be made According to information I found PID Temperature Controller is accurate temperature control system i AT90S2313 control system with high mains voltage... Electronics Projects, AT90S2313 Computer Supported PID Temperature Controller "avr project, microcontroller projects, " PID..... Listed under: [Temperature Measurement Projects](#)
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461. [ATMEGA128 MMC CARD SUPPORTED 3-COLORS LED SIGN MESSAGE BOARD](#) ATmega128 microcontroller based on the ATmega128 a quality marquee project instead of text information stored on the MMC card codes shared resources At the beginning this project was to buy a led sign to...Electronics Projects, ATmega128 MMC Card Supported 3-Colors LED Sign Message Board "avr project, microcontroller..... Listed under: [LED Projects](#)
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462. [ATMEGA8 MOTORCYCLE ALARM CIRCUIT](#) Separate power supply. Signalling on mobile phone call.This function has only a few hundred euros more expensive equipment. motorcycle into the phone by calling The digital alarm input is a normally closed contact. The... Electronics Projects, ATmega8 Motorcycle alarm circuit "atmega8 projects, avr project, microcontroller projects, " Separate power..... Listed under: [Sensor - Transducer - Detector Projects](#)
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463. [8051 ROBOT ARM STEPPER MOTOR CONTROL](#) In this 8051 Robot ARM application I use for robot arm 3 stepper motor design, study and is to be informed about the expulsion. Stepping motors to provide work, applied to the ends of... Electronics Projects, 8051 Robot ARM Stepper Motor Control "avr project, microcontroller projects, " In this..... Listed under: [Robotics - Automation Projects](#)
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464. [8051 ELEVATOR PROJECT STEPPER MOTOR CONTROL](#) This application step (step) motor control, input and output ports through 8051 will examine the circuit by providing lift. We use our stepper motor circuit. As we know, certain steps of the stepper motor,... Electronics Projects, 8051 Elevator Project Stepper Motor Control "avr project, microcontroller projects, " This application..... Listed under: [Motor Projects](#)
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465. [MICROCONTROLLER CONTROLLED METAL DETECTOR PROJECTS](#) Result of displays in the form of two scales, which are estimated to judge the material goal.In addition, the screen is small scale level of response and the current supply voltage. PIC18F252 The program... Electronics Projects, Microcontroller Controlled Metal Detector Projects "avr project, microcontroller projects, " Result of displays..... Listed under: [Sensor - Transducer - Detector Projects](#)
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466. [AT89C51 L293D MOTOR CONTROL PROJECT](#) AT89C51 L293D Motor Control Circuit Operation, Our project name and the name suggests. The treadmill is the motor control is required. When designing this project, I saw fit to use DC motors. Because the...Electronics Projects, AT89C51 L293D Motor Control Project "avr project, microcontroller projects, " AT89C51 L293D Motor..... Listed under: [Motor Projects](#)
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467. [ATMEGA168 JAVA GUI INTERFACE NIMH CHARGE CIRCUIT](#) Source files are Java and C Diff communication with the computer via the RS232 port is made available in the Java GUI Interface 2 × 16 LCD display also got on the circuit with... Electronics Projects, ATmega168 Java GUI Interface NIMH Charge Circuit "avr project, battery charger circuit,..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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468. [AT89C51 5X7 LED MATRIX APPLICATION](#) Circuit Operation: This practice of over 5 × 7 matrix LED A... Z characters are intended to be created. Provision of characters in source code LEDs (table) was created and when necessary with the... Electronics Projects, AT89C51 5X7 LED Matrix Application "8051 example, avr project, keil example, microcontroller..... Listed under: [LED Projects](#)

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469. [AT89C51 LCD DISPLAY FREQUENCYMETER PROJECT](#) Frequency in all matters relating to the definition based on frequency is required. In the same way the numeric (digital) Frequency frequency to do the same as the description of the circuit should be... Electronics Projects, AT89C51 LCD display Frequencymeter Project "8051 example, avr project, keil example, microcontroller..... Listed under: [LCD Projects](#)
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470. [AT89C51 KEYPAD CONTROLLED SCROLLING LED DOT MATRIX TEXT](#) AT89C51 Scrolling LED Circuit Operation: Keypad't the values entered the program through is continually monitored, "*" key is pressed unless the display of the first letter that section required all letters appear, but the... Electronics Projects, AT89C51 Keypad Controlled Scrolling LED Dot Matrix Text "8051 example, avr project,..... Listed under: [LED Projects](#)
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471. [AT89S52 LCD DISPLAY STEPPER MOTOR CONTROL EXAMPLE](#) AT89S52 Stepper Motor Control Stepper motor, the motor angular position is changing in steps. This engine is moving into specific steps, according to the windings is controlled by sending signals. Any stimulus that would... Electronics Projects, AT89S52 LCD Display Stepper Motor Control Example "8051 example, avr project, keil..... Listed under: [LCD Projects](#)
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472. [8051 CALCULATOR CIRCUIT](#) 8051 Calculator Circuit Operation As seen at half one has to use the keypad and an LCD with 8051. The keypad consists of rows and columns. When the button is pressed certain keys combined... Electronics Projects, 8051 Calculator Circuit "8051 example, avr project, keil example, microcontroller projects, " 8051..... Listed under: [Calculator Projects](#)
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473. [8051 ADC0808 LCD DISPLAY VOLTMETER](#) ADC0808 analog / digital converter of the 8 analog inputs (IN0-IN7) and 8-bit digital output (OUT0-OUT7) are available. Entries will be transferred to the digital output of the converter which converted to 3-bit ADD,...Electronics Projects, 8051 ADC0808 Lcd Display Voltmeter "8051 example, avr project, keil example, microcontroller..... Listed under: [LCD Projects](#)
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474. [LED DISPLAY SPEED METER CIRCUIT WITH AT89C51](#) Speed Meter Circuit consists of four parts. These Supply solid floor Sensor sensor, microcontroller and microcontroller solid hexadecimal numbers we obtained from the 7-segment display technology with time code converter solid. Program Keil μ Vision3... Electronics Projects, LED Display Speed Meter Circuit with AT89C51 "8051 example, avr project, keil..... Listed under: [LED Projects](#)
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475. [8051 STOPWATCH CIRCUIT WITH LCD DISPLAY](#) Stopwatch Circuit 8051 on behalf of the programming of integrated compiler program that is used too much in the present case. You are left with only the easiest to use and most advantageous for... Electronics Projects, 8051 Stopwatch Circuit with Lcd Display "8051 example, avr project, keil example,..... Listed under: [LCD Projects](#)
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476. [USB CONTROLLED WEB SITE HIT COUNTER ATMEL ATTINY25 WITH DELPHI](#) Web site counts the number of inputs to the circuit .. Circuit attiny25 an interesting and MAX7219 section based on the indicators used for the 7-segment display 8 hunting and Delphi source code are... Electronics Projects, USB Controlled Web Site Hit Counter Atmel Attiny25 with Delphi "avr project,..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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477. [EMBEDDED RTL8019AS WEB SERVER PROJECT ATMEGA103](#) I quickly was able to appeal to the network card via a 8-bit data bus. The connectivity of the network card and thus the RTL8019AS chip via two 8-bit ports of the processor and... Electronics Projects, Embedded RTL8019AS Web Server Project ATmega103 "avr project, microcontroller projects, " I quickly..... Listed under: [Internet - Ethernet - LAN Projects](#)

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478. [USB PORT RELAY CONTROL WITH ATMEL ATMEGA8](#) 6 relay control units can be made via the usb port usb drive computer program code and schema files are pcb circuit to regulate the supply 9-12 volt ac section there on the SPI... Electronics Projects, USB Port Relay Control with Atmel Atmega8 "atmega8 projects, avr project, microcontroller..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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479. [AT89C51 DS1621 THERMOMETER CIRCUIT](#) AT89C51 Operation of the thermometer circuit DS1621 temperature sensor circuit using a digital thermometer will tell if I made . As a simple circuit operation is as follows; The numerical value obtained from the temperature... Electronics Projects, AT89C51 DS1621 Thermometer Circuit "8051 example, avr project, keil example, microcontroller..... Listed under: [Temperature Measurement Projects](#)
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480. [PC CONTROLLED AT90S2313 LED ANIMATION CIRCUIT](#) Why I write about it? This system uses two ready rolls 5 x 8 LED matrix, 89C2051, is a programmable serial port and it can be very easy to adapt to the needs of... Electronics Projects, PC Controlled AT90S2313 Led Animation Circuit "avr project, microcontroller projects, " Why I..... Listed under: [LED Projects](#)
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481. [AT89C2051 WITH DOT MATRIX DISPLAY APPLICATIONS](#) 4 Piece AT89C2051 microcontroller project has been realized with matrix display isis proteus simulation and asm files available in hex code Atmel AT89C2051 • Compatible with MCS®-51Products • 2K Bytes of Reprogrammable Flash Memory... Electronics Projects, AT89C2051 with Dot Matrix Display Applications "avr project, microcontroller projects, " 4 Piece..... Listed under: [LED Projects](#)
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482. [ANALOG LED CLOCK CIRCUIT AT89C2051P](#) 301 LED Analog Clock Project Schema Files of PCB and C51 Compiler Source Code has been prepared by the C-in hex The clock circuit is made of 301 LEDs with a diameter of 3mm... Electronics Projects, Analog LED Clock Circuit AT89C2051P "avr project, led projects, microcontroller projects, " 301..... Listed under: [LED Projects](#)
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483. [PC CONTROLLED FLOWER WATERING CIRCUIT WITH ATMEGA8](#) As far as I understand an interesting project information via computer is determined irrigation irrigation is done in the required time data exchange via RS232 com port has made the source code and diagrams...Electronics Projects, PC Controlled Flower Watering Circuit with ATmega8 "atmega8 projects, avr project, microcontroller..... Listed under: [Sensor - Transducer - Detector Projects](#)
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484. [ATMEL ATMEGA8 MULTIMETER CIRCUIT \(LED DISPLAY\)](#) Hello, "Multimeter" was the only title that first came to my mind to. Voltmeter (positive DC voltage) from 0.00 to 9.99 V and 10.0 – 30.0 V with automatic range switching. Frequency counter 0... Electronics Projects,Atmel Atmega8 Multimeter Circuit (led display) "atmega8 projects, avr project, microcontroller projects, "..... Listed under: [LED Projects](#)
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485. [8051 PROGRAMMABLE POWER SUPPLY](#) Circuit Operation: Circuit diagram appears in the 0-5 the entered value from the keypad circuit, which is connected to port P1 applied to the integrated DAC 0808 DAC output is obtained from the analog...Electronics Projects, 8051 Programmable Power Supply "8051 example, avr project, keil example, microcontroller projects, "..... Listed under: [Circuits](#)
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486. [DS1302 RTC 8051 DIGITAL CLOCK CIRCUIT \(LCD DISPLAY\)](#) 8051 keil example application circuit LCD Display Digital Clock using DS1302 RTC 8051 Digital Clock Schematic 8051 Digital Clock Circuit keil source code and proteus isis simulation schematic files: ds1302-rtc-8051-digital-clock-circuit-

lcd-display.rar author: @Aytan ASLAN... Electronics Projects, DS1302 RTC 8051 Digital Clock Circuit (LCD Display) "8051 example, avr project, keil..... Listed under: [Clock Projects](#)

487. [89C51 DIGITAL CLOCK CIRCUIT](#) From the incoming data encoded in Port0 integrated 7-segment display with 7447 microcontroller integrated ulaşır.7447 binary code from the 7-segment display is used to show. So when it comes to 0000 a, b, c,...Electronics Projects, 89C51 Digital Clock Circuit "8051 example, avr project, keil example, microcontroller projects, "..... Listed under: [Clock Projects](#)

488. [AT89S52 DS1620 THERMOMETER CIRCUIT \(LCD DISPLAY\)](#) This project gave ds1620'n given as a result of the digitally using AT89S52 microcontroller is a graphic display of temperature information of the LCD screen. Moreover, the circuit ambient temperature when it reaches a...Electronics Projects, AT89S52 DS1620 Thermometer Circuit (LCD Display) "8051 example, avr project, keil example,..... Listed under: [Circuits](#)

489. [LCD DATE TIME TEMPERATURE AT89C52 DS18B20 DS1302](#) Atmel microcontrollers with a good example for the use of DS18B20 DS1302 circuit 2 × 16 LCD display with 4 buttons in circuit adjustments can be made The first button is a long hold... Electronics Projects, LCD Date Time Temperature AT89C52 DS18B20 DS1302 "8051 example, avr project, keil..... Listed under: [LCD Projects](#)

490. [8051 MICROCONTROLLER UP DOWN COUNTER CIRCUIT \(KEIL\)](#) With 8051 DOWN COUNTER The basic principle of this circuit based on the number entered from the keypad is left counting down or up. # On the keypad to make counting down and counting... Electronics Projects,8051 Microcontroller Up Down Counter Circuit (keil) "8051 example, avr project, keil..... Listed under: [Circuits](#)

491. [PS2 KEYBOARD KEYLOGGER CIRCUIT ATMEL AT89C2051](#) KeeLog has decided to release an early version of it's hardware keylogger family to the public domain, including full firmware & software source code, keylogger hardware electrical schematics, and documentation. This PS/2 key logger is a 100% operational and tested device, assembled and used by hundreds of..... Listed under: [Other Projects](#)

492. [RTL8019 ISA WEB SERVER CIRCUIT ATMEGA32 RELAY CONTROL CAMERA CONNECTION](#) Very detailed and complicated project all of the resources to be shared for different applications feyza can give example might now mikrocontroller.co my site ATmega32 web server project shared resources of the project the... Electronics Projects, RTL8019 ISA Web Server Circuit ATmega32 Relay Control Camera Connection "avr project,..... Listed under: [Circuits](#)

493. [ADC0831 8051 LM35 TEMPERATURE CONTROL WITH LCD SCREEN](#) Adc 0831 with 8051 lm 35 temperature sensor, and a detailed project examples for the use of inverters. author :Özer Deniz Objective: LM 35 temperature sensor dealt with 0831 ADC analog-to-digital conversion of knowledge,... Electronics Projects, ADC0831 8051 LM35 Temperature Control with LCD Screen "avr project, microcontroller projects, "..... Listed under: [LCD Projects](#), [Temperature Measurement Projects](#)

494. [8051 SRF04 ULTRASONIC DISTANCE METER CIRCUIT](#) 8051 srf04 ultrasonic distance measurement application also contains information about the different controllers and this information can be useful for applications 8051 microcontroller distance measurement using ultrasonic transceiver done. Studies, using microcontrollers 8051 with... Electronics Projects, 8051 SRF04 Ultrasonic Distance Meter Circuit "avr project, microcontroller projects, " 8051 srf04..... Listed under: [Metering - Instrument Projects](#)

495. [NIMH NICKEL CADMIUM BATTERY FAST PWM CHARGER CIRCUIT ATMEL AVR](#) Battery charging circuit atmel attiny26lp based on switched PWM works as a fast charge is doing the switching circuit 100UH coil and irf5305 irl3803 MOSFETs used charging current of 300 mA, 600 mAElectronics Projects, NiMH NiCd Battery Fast PWM Charger Circuit Atmel AVR "avr project, battery..... Listed under: [Battery Projects](#)

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496. [USB JOYSTICK CONVERTER FOR ATARI, AMIGA, COMMODORE 64](#) Old atari, commodore-64, amiga joystick you can use on your computer usb converter circuit circuit based on Atmel ATmega8-pin adapter does not require power from the USB port in addition to working with 5Volt...Electronics Projects, USB Joystick Converter for Atari, Amiga, Commodore 64 "avr project, microcontroller projects, "..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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497. [27 MHZ WIRELESS KEYBOARD SPY CIRCUIT ATMEL ATMEGA64](#) In an article "Symantec warns: each word or phrase that you enter on the wireless keyboard, can be tracked!" Was called I knew it was true, but such a project would never have thought... Electronics Projects, 27 MHz Wireless Keyboard SPY Circuit Atmel ATmega64 "avr project, microcontroller projects, "..... Listed under: [Circuits](#)
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498. [DIGITAL AUDIO CONTROL CIRCUIT NOKIA 3310 LCD ATMEL ATMEGA8 TDA7439](#) My old chassis while stirring an old stereo on the chassis tda7439 found it and integrate these with making an application decided and ultimately such a nice application appeared application If we are talking...Electronics Projects, Digital Audio Control Circuit Nokia 3310 LCD Atmel ATmega8 TDA7439"atmega8 projects,..... Listed under: [Sound - Audio Projects](#)
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499. [TV OSCILLOSCOPE CIRCUIT WITH ATMEGA8515 ATTINY12](#) Attiny12 ATMEGA8515 a very interesting project based on digital solid-source software and schema files, PCB's drawings for people working with Atmel series microcontrollers can give different ideas can be useful in different projects analogue... Electronics Projects, TV Oscilloscope Circuit with ATmega8515 ATtiny12"avr project, microcontroller projects, " Attiny12 ATMEGA8515 a..... Listed under: [LCD Projects](#)
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500. [ATMEL ATMEGA PROJECTS THERMOMETER LM35, DISPLAY, KEYPAD](#) Atmel ATMEGA series made with micro-controller's three projects which can deliver projects bahramelectronic. site manager of @ Bahrain thanks to my brother. 1 – ATmega16 LCD display temperature measurement (LM35) 2 – 7 segment... Electronics Projects, Atmel ATmega Projects Thermometer LM35, Display, Keypad "avr project, microcontroller projects, " Atmel..... Listed under: [LCD Projects](#)
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501. [DIGITAL TONE CONTROL CIRCUIT ATMEL ATTINY2313 LM1036](#) Recently a similar application I've done, but ds1844 integrated can not be found had been a problem AVR reviewing ATtiny2313 `fame four PWM channels, saw direct this practice came to my mind bass treble...Electronics Projects, Digital Tone Control Circuit Atmel ATTINY2313 LM1036 "avr project, microcontroller projects, " Recently..... Listed under: [Sound - Audio Projects](#)
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502. [8051 BASCOM AVR PROJECTS ATMEL CIRCUITS ARCHIVE](#) With Atmel series (AT89C2052, AT90S2313, AT89S8252, etc..) Was very spacious with quality archive PIC series microcontroller atmel version of the circuit can find a lot. Usb, alarm, LCD, nokia 3310, nokia 6100, display, LED,... Electronics Projects, 8051 Bascom AVR Projects Atmel Circuits Archive "avr project, microcontroller projects, " With..... Listed under: [LCD Projects](#)
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503. [USB UART CONVERTER PIC16F88 CIRCUIT ATTINY2313](#) Recently circuit on the web I've seen perform this southern been applying If we are talking application atmel's famous ATtiny2313 achieves with USB UART converter further circuit 8bit I / O 128-byte EEPROM 32-byte...Electronics Projects, USB UART Converter PIC16F88 Circuit Attiny2313 "avr project, microchip projects, microcontroller projects,..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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504. [ATMEL AT90S2313 COMPUTER-CONTROLLED SCROLLING LED TEXT](#) All details were shared with the marquee circuit computer control program atmel at90s2313 source software image format PCB, schematics and drawings have OrCAD source. The marquee on the circuit The marquee circuit 350

leds... Electronics Projects, Atmel AT90S2313 Computer-Controlled Scrolling LED Text "avr project, microcontroller projects, " All details..... Listed under: [LED Projects](#)

505. [HDD CLOCK CIRCUIT ATMEL ATMEGA128 DS1307 TDA5410 MOTOR DRIVER](#) Before "Broken HDD Evaluate under the heading" corrupted hard disks to assess a few apps I've used on the web with the sandpaper I I told you about that time had projects now hardisk... Electronics Projects, HDD Clock Circuit Atmel ATmega128 DS1307 TDA5410 Motor Driver "avr project, led..... Listed under: [Clock Projects](#)
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506. [100WATT PV PANEL CONVERTER ATMEGA8 100W DC TO AC ICL7667 ETD34](#) The use of solar energy will be the topic for a long time an active electronic circuit is used a lot in this business at one of these inverter dc to ac converters. Ac... Electronics Projects, 100Watt PV Panel Converter Atmega8 100W DC to AC ICL7667 ETD34 "atmega8..... Listed under: [Solar energy projects](#)
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507. [POWER LED DRIVER CIRCUIT LED CURRENT SOURCES ATMEGA8 PWM](#) Power LED driver circuit based on Atmel ATmega8 is working with 12 volt 3 1 watt Luxeon power LEDs with PWM buck converter is operated ATmega-8 a good example source code to solve logic... Electronics Projects, Power LED Driver Circuit LED Current Sources Atmega8 PWM "atmega8 projects, avr..... Listed under: [LED Projects](#)
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508. [PCB PRINTING WITH EPSON CX4200 INKJET PRINTER MODIFIED](#) Prepared by: Volkan Sahin – First of all you need to know when the project was challenging but, if there is the possibility worthwhile 😊 CX4200 Epson inkjet to print text by modifying the... Electronics Projects, PCB Printing with Epson CX4200 inkjet Printer Modified "avr project, microcontroller projects, "..... Listed under: [Other Projects](#)
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509. [MICRO ROBOTIC FLY SCREEN CLEANER AT90LS8535 ROBOT BUG](#) A very interesting robot project ratchet içintasarl been cleaning the flapper cleaner robot brain of the system microcontroller atmel at90ls8535 source software given c. Uygulayamasa sections of the circuit on the robot project source... Electronics Projects, Micro Robotic Fly screen cleaner AT90LS8535 Robot BUG "avr project, microcontroller projects, "..... Listed under: [Robotics - Automation Projects](#)
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510. [CNC DRILLING MACHINE CONTROL DIRVE BOARD ATMEL AT89C2051 L297 L298](#) Printed circuit board drilling machine on the Atmel AT89C2051 microcontroller L297 L298 motor drivers.. software does not open hex code provided free computer control program, but other parts of the circuit (motor drives, serial... Electronics Projects, CNC Drilling Machine Control Dirve Board Atmel AT89C2051 L297 L298 "avr project,..... Listed under: [CNC - Printing Machines Projects](#)
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511. [2.4 GHZ SPECTRUM ANALYZER CIRCUIT NOKIA 3410 LCD ATMEGA8](#) Mobile phones with Nokia 3410 LCD screens often used microcontrollers Atmel ATmega8 and cywm6935 nokia 3410 LCD modules made with a 2.4 GHz spectrum analyzer circuit Handheld 2.4 GHz Spectrum Analyzer Circuit After visiting... Electronics Projects, 2.4 GHz Spectrum Analyzer Circuit Nokia 3410 LCD ATmega8 "atmega8 projects, avr..... Listed under: [Circuits](#)
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512. [ATMEL ATMEGA8 VIA USB CONTROL CIRCUIT](#) Hi, I have done recently attiny2313'l usb application (ATTINY2313 PIC16F88 USB UART converter circuit) then one needs at this time on I did with ATmega8. RS232 portion of the circuit 15 disuse I /... Electronics Projects, Atmel Atmega8 via USB Control Circuit "atmega8 projects, avr project, microcontroller projects, "..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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513. [LIGHT FOLLOWING ROBOT WITH ATMEL ATTINY25](#) Light following robot circuit board on attiny25v not very complicated circuit Lithium-polymer battery provided with the circuit feeding the tiny H-bridge output (2N3904) drive motors are controlled with two LDR light is perceived.

As... Electronics Projects, Light Following Robot with Atmel ATtiny25 "avr project, microcontroller projects, " Light following.....
Listed under: [Robotics - Automation Projects](#)

514. [TRANSISTOR TESTER CIRCUIT ATMEGA8 LCD DISPLAY](#) Transistor very useful for testing the circuit, but I do not know more pic programming with atmel series in seeing this type of advanced applications get confused 😊 Transistor test circuit, BJT, MOSFET, triac,...Electronics Projects, Transistor Tester Circuit ATmega8 LCD Display "atmega8 projects, avr project, microcontroller projects, "..... Listed under: [Circuits](#)

515. [ATMEGA8 PROGRAMMABLE CONTROLLER BOARD ELECTRONIC PLC CIRCUIT](#) Tiny Basic Controller (TBC) is a simple device that can operate as a PLC (program logic controller) for home automation, control, etc. For example, this one can dial-up by modem to the remote computer and control the system, can control some processes, temperature regulation, battery charging,..... Listed under: [Development Board - Kits Projects](#)

516. [FOR ALL THE TELEVISION REMOTE CONTROL \(JUST OFF\)](#) 90% of all leisure joke circuit television (including plasma, LCD) is said to work 30 ... 50 meters in open space closes the television. Circuit made ATTINY85V-10 micro-controller circuit with two 1.5v AA battery...Electronics Projects, For all the television remote control (just off) "avr project, microcontroller projects, "..... Listed under: [Other Projects](#)

517. [AT89C52 APPLICATIONS EXAMPLES PROTEUS ISIS CIRCUITS \(10 PROJECTS\)](#) AT89C52 examples of applications can be helpful for beginners of all samples prepared with simple 3 .5 source lines of code. Bass. Hex, bin, etc.. isis proteus have codes and simulation files. 0-255 binary...Electronics Projects, AT89C52 Applications Examples Proteus isis Circuits (10 projects) "avr project, microcontroller projects, "..... Listed under: [Circuits](#)

518. [ATMEL AT89C2051 CLOCK CIRCUIT WITH LED DISPLAY](#) Pretty stylish digital clock circuit of the display to show information on the hours, but around kilasik made with 120 LEDs in display attracts attention also has an alarm feature. Microprocessor AT89C2051 LED clock...Electronics Projects, Atmel AT89C2051 Clock Circuit with LED Display "avr project, led projects, microcontroller..... Listed under: [Clock Projects](#)

519. [STEREO 64LEDS VU METER CIRCUIT ATMEGA8](#) Lately, when I went deeper into programming, I was fascinated by precise A / D converters in microcontrollers. And so I decided to make a 2x32 LED VU meter with the ATmega8 microcontroller, which can be bought for example in GME for only 34Kc, and so..... Listed under: [LED Projects](#)

520. [3-20V 01-10A POWER SUPPLY CIRCUIT ATMEGA8 LCD AMMETER, VOLTMETER](#) What cannot do more than one radio amateur? What can not be more than one radio amateur? That's right - without a GOOD power supply, or even better, a GOOD TWO-CHANNEL power supply. That's right - without a GOOD power supply, or even better, a..... Listed under: [Circuits](#)

521. [OPERATED WASHING MACHINE CONTROL CIRCUIT WITH ATMEGA32](#) ATmega32 microcontroller based on the project is already quite interesting and a professional I see this type of advanced projects ATMEL series Some sections of the circuit MOC3043 opto diac, MOC3023 isolated with LCD... Electronics Projects, Operated Washing Machine Control Circuit with ATmega32 "avr project, microcontroller projects, " ATmega32 microcontroller..... Listed under: [Circuits](#)

522. [THERMOMETER CIRCUIT DS1820 ATMEGA32 SIEMENS S65 LCD](#) Thermometer circuit board ATmega32 used on the LCD display DS1820 sensor used in the Siemens S65 mobile phone graphic LCD LS020 ATmega32 project's source code S65 LS020 bitmap bmp files for graphic LCDs and... Electronics Projects, Thermometer Circuit DS1820 ATmega32 Siemens S65 LCD "avr project, microcontroller projects, " Thermometer..... Listed under: [Circuits](#)

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523. [TANK ROBOT ATMEGA48 BLUETOOTH JAVA PROJECT](#) Introduction After two more complex robots (Eurobot2008 and Robot2), I decided to build a small and simple car. The choice fell on a plastic tune, which was controlled by two AA pencil monoculars - similar toys can be found in toy shops, on soils or in bazaars. Others are..... Listed under: [Robotics - Automation Projects](#)
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524. [ATMEL ATMEGA8 NOKIA6100 LCD PCF-8833 APPLICATION](#) Nokia 3310 screen already had several applications with bi-color LCD at this time I decided to experiment with it. Heavily on the market, the Nokia 6100 LCDs and their controllers for microchip using Atmel...Electronics Projects, Atmel Atmega8 Nokia6100 LCD PCF-8833 Application "atmega8 projects, avr project, microcontroller projects, "..... Listed under: [LCD Projects](#)
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525. [TFT LCD OV7660 ATMEL ATMEGA32 APPLICATION EXAMPLE ILI9325 DRIVER](#) Emerging technologies on the market with LCD prices quite fell microcontrollers with applications proliferate mobile phone, mp4 and graphic LCDs became available, especially Atmel series with enhanced graphics LCDs can be used ATmega32 320... Electronics Projects, TFT LCD OV7660 Atmel ATmega32 Application Example ili9325 Driver "avr project, microcontroller..... Listed under: [LCD Projects](#)
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526. [TFT LCD DIGITAL PHOTO FRAME ATMEGA128 SD CARD TSC2046](#) Digital Photo Frame TFT ATmega128 TFT source C code of practice are used to SPFD5408 TFT LCD 3.2 inch 320 × 240 size images displayed in the SD card. Source: ourdev.cn/ Digital Photo Frame... Electronics Projects, TFT LCD Digital Photo Frame ATmega128 SD Card TSC2046 "avr project, microcontroller..... Listed under: [LCD Projects](#)
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527. [ATMEGA16 TOUCHSCREEN PROJECT TFT APP AVR GCC ILI9325](#) Touch TFT application based on ATmega16 processor used in the 16 MHz frequency drives and ILI9325 OTM3225, source C code (AVR GCC)'s. Source: ourdev.cn 2.4-inch TFT LCD, point-screen work notes Alternative link: atmega16-touchscreen-project-tft-app-avr-gcc-ili9325.rar... Electronics Projects,Atmega16 Touchscreen Project TFT App AVR GCC ILI9325 "avr project, microcontroller projects, " Touch..... Listed under: [LCD Projects](#)
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528. [ATMEGA128 AVR GRAPHIC LCD APPLICATION SIEMENS S65 LS020](#) Siemens s65 using the Atmel ATmega128 caption to display graphics on the LCD all the resources an application prepared S65 LCD driver library, sample text and detailed graphics shared C code. S65 application is... Electronics Projects, ATmega128 AVR Graphic LCD Application Siemens S65 LS020 "avr project, microcontroller projects, "..... Listed under: [LCD Projects](#)
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529. [AT89C2051 DIGITAL SCALES CIRCUIT ATMEL](#) This is a kitchen scale with a maximum weight of 2.5kg and an accuracy of 10g. Exceeding the range is indicated by an acoustic signal and an LED. Weight is displayed on a four-digit LCD display. The weight also includes a weight-zero reset button. The power is solved by..... Listed under: [Circuits](#)
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530. [PROGRAMMED DOOR ALARM CIRCUIT ATTINY24 ATTINY13 CONTROLLED](#) This simple mini-burglar alarm on the ATtiny 13 microcontroller is designed to protect apartments, offices, summer cottages ... When the reed switch opens, the alarm beeps or, with a little refinement, you can send an SMS from a mobile phone. The alarm control is carried out..... Listed under: [Circuits](#)
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531. [ADC EXAMPLE ATMEGA8 DIGITAL VOLT METER AMMETER AVR PROJECT](#) ADC - analog-to-digital converter (ADC-Analog-to-Digital Converter). Converts a certain analog signal to digital. Bitrate ADC determines the accuracy of the signal conversion. Conversion time - respectively,

the speed of the ADC. The ADC is embedded in many microcontrollers of the AVR family and simplifies the use of the microcontroller in any regulation schemes..... Listed under: [Metering - Instrument Projects](#)

532. [ATMEL APPLICATION NOTES AND SOURCE C ASM CODE](#) Atmel's products and practices related to application notes prepared for the asm code source c c language prepared by the majority of the samples. 138's application List: 1-Register and Bit-Name Definitions for the AVR... Electronics Projects, Atmel application notes and source c asm code "avr project, microcontroller projects, "..... Listed under: [Development Board - Kits Projects](#)

533. [RF TRANSCEIVER EXAMPLE WATER GUN PROJECT CIRCUIT TX434 ATMEGA8 RX434](#) The RF transceiver with ATmega8 prepared samples prepared with C language software has all the source code for the application circuit used joke 😊 handmade by remote control a water gun at school students...Electronics Projects, RF Transceiver Example Water Gun Project Circuit TX434 ATmega8 RX434"atmega8 projects,..... Listed under: [Game - Entertainment Projects](#)

534. [ATMEL ATTINY15 MICROCONTROLLER EXAMPLE DC TO DC CONVERTER CIRCUIT](#) Atmel ATtiny15 Microcontroller DC to DC converter circuit 3.6 Li-Ion battery voltage of 5 volts raises a more detailed circuit attiny15 not a good example for software power control with microcontroller assembly language prepared... Electronics Projects, Atmel ATtiny15 Microcontroller Example DC to DC Converter Circuit "avr project, dc..... Listed under: [Circuits](#)

535. [REMOTE-CONTROLLED DIGITAL TIMER CIRCUIT WITH ATMEL ATTINY2313](#) Based on Atmel ATtiny2313 microcontroller circuit with the remote control forward / reverse control can be done over time led display are viewing. ATtiny2313 by the time specified number 9 which is connected to...Electronics Projects, Remote-Controlled Digital Timer Circuit with Atmel ATtiny2313 "avr project, microcontroller projects, " Based..... Listed under: [Clock Projects](#)

536. [ATMEGA8 BIPOLAR STEPPER MOTOR DRIVER CIRCUIT L293B](#) Bipolar stepper motor control circuit 6v ... 35v inter able to run power 1 amp on the circuit control, program, sensor, PWM, UART has links ATmega8 output used in motor drive l293b circuit of... Electronics Projects,ATmega8 Bipolar Stepper Motor Driver Circuit L293B "atmega8 projects, avr project, microcontroller..... Listed under: [Motor Projects](#)

537. [220V SOLDERING IRON TEMPERATURE CONTROL WITH AT89C2051 LED DISPLAY](#) Sold in the market potency heat settings with TRIAC 220v temperature-controlled soldering iron more advanced version control AT89C2051 microcontroller is provided by heat setting 2 button is made with indicators, one for led display... Electronics Projects, 220V Soldering Iron Temperature Control with AT89C2051 LED Display "avr project, microcontroller..... Listed under: [Temperature Measurement Projects](#)

538. [ACTIVE ELECTRONIC LOAD CIRCUIT ATMEGA88 100W DUMMY LOAD](#) In each electronic device in one form or another there is a power supply unit (PSU). Of course, because no one will work for free. Before connecting to the circuit, it would be nice to see how the PSU works at different loads. Personally, I am not..... Listed under: [Circuits](#)

539. [STAR LED EFFECTS CIRCUIT ATTINY13 PROJECT](#) Stars in the shape of hard work to prepare printed circuit board design for SMD LEDs to be mounted like a great deal of attention and effort, but finally emerged quite nice circuit noncontiguous... Electronics Projects, Star LED Effects Circuit ATTINY13 Project "avr project, led projects, microcontroller projects, "..... Listed under: [LED Projects](#)

540. [ELECTRONIC PIANO CIRCUIT ATTINY2313 SIMPLE AUDIO PROJECT](#) Atmel ATtiny2313 two 1.5V AA batteries powered electronic piano circuit connected in series (3V) can be operated. PB3 – PB4 16 ohm speaker connected to these pins as exit.... Electronics

Projects, Electronic Piano Circuit Attiny2313 Simple Audio Project "avr project, microcontroller projects, " Atmel..... Listed under: [Game - Entertainment Projects](#)

541. [How to build alarm security system using motion sensor with PCB Prototyping](#) Introduction Security is important for everyone from our homes to places of work. You need to feel safe when you are sleeping at night. You might have important documents that you need to keep private. Sometimes you have property in your house that must be..... Listed under: [Security - Safety Projects](#), [Sensor - Transducer - Detector Projects](#)

542. [CNC PROJECT ATMEGA16 X-Y-Z MOTOR CONTROL CIRCUIT](#) ATmega16 microcontroller based on a detailed cnc project with computer com RS232 on port communicating project's source C code, schematics eagle CAM (graphic printout is used to direct the CNC circuitry and sent to)... Electronics Projects, CNC Project ATmega16 X-Y-Z Motor Control Circuit "avr project, microcontroller projects, " ATmega16 microcontroller..... Listed under: [CNC - Printing Machines Projects](#)

543. [DSPIC33FJ128GP NOKIA 6100 LCD DRIVER CIRCUIT ATMEGA168](#) @ Erhan brother Atmega8 prepared with the application had shared (Atmel Atmega8 Nokia 6100 LCD (pcf8833) application) I In addition to the helpful one more example'll share the codes and microchip dspic33fj128gp both the... Electronics Projects, dsPIC33FJ128GP Nokia 6100 LCD driver circuit ATmega168 "avr project, dspic projects,..... Listed under: [LCD Projects](#)

544. [AT90S8535 SG2524 PWM SOLAR PANEL PV INVERTER CIRCUIT](#) Solar Energy PV inverter systems used in energy production a detailed study about all the details about the project (in English) is. PV conversion control is provided by Atmel microcontrollers at90s8535 (source software has... Electronics Projects, AT90S8535 SG2524 PWM Solar Panel PV inverter Circuit "avr project, microcontroller projects,..... Listed under: [Solar energy_projects](#)

545. [NOKIA LCD MODELS PROTEUS ISIS EXAMPLES CIRCUITS LIBRARY](#) Nokia lcd screens, pic, atmel microcontrollers used in this project, with a lot of other job so popular as talking about the proteus simulation model for the program, set up a virtual environment, try... Electronics Projects,Nokia LCD Models Proteus isis Examples Circuits Library "avr project, microcontroller projects, "..... Listed under: [LCD Projects](#)

546. [FREQUENCY METER CIRCUIT LCR METER ATMEGA328](#) I have been thinking about building an LC meter for a while since I do not have a multimeter that is capable of measuring inductance and while the multimeters I have can measure capacitance, they are not able to give accurate readings for small capacitance..... Listed under: [Metering - Instrument Projects](#)

547. [SMART REMOTE ATMEGA88 CIRCUIT COPY THE TWO BUTTONS](#) This fun project lets you take control away from the person holding the remote control by intercepting the invisible signals as they travel through the air so you can play them back to the TV or video machine. You can also "train" your Remote Hijacker..... Listed under: [Development Board - Kits Projects](#)

548. [24V 48W DIGITAL SOLDERING STATIONS ATMEGA8](#) After a year of using my assembled Microfibers according to the Jendy documents23 , I decided to build another (third) microfuel. I wanted to reduce the dimensions, use the 24V AC heating power, to adjust the temperature better and to add additional functions ... Features of micro-drives : temperature range 80 °..... Listed under: [Other Projects](#)

549. [FAST FOURIER TRANSFORMATION FFT CIRCUIT ATMEGA8 SCT2024 LED DRIVER](#) ATmega8 (TQFP32 package) based on FFT Circuit applied the entry signals 16 × 16 led display (SCT2024 serial-interfaced LED driver 256 LEDs), you can see in the FFT circuit source C, hex codes have... Electronics Projects, Fast Fourier transformation FFT Circuit ATmega8 SCT2024 LED driver "atmega8 projects, avr..... Listed under: [LED Projects](#)

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550. [LED ANIMATION CIRCUIT ATMEGA168](#) Last year in one of my classes we were required to make an 'artefact' or something that reflects the interests of the class. Most people make posters and the past two quarters that's what my class did too. Posters however are static, usually boring, and..... Listed under: [LED Projects](#)
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551. [ILI9325 TOUCH-SCREEN PROJECT TFT ATMEGA644 ELT240320ATP](#) Atmel is a great project with a series of applications can be made super graphics used in this project Atmega644 the ELT240320ATP GLCD (320 × 240) driver ILI9325 Simple as iPhone menu has pacman...Electronics Projects, ILI9325 Touch-Screen Project TFT Atmega644 ELT240320ATP "avr project, microcontroller projects, " Atmel is..... Listed under: [Game - Entertainment Projects](#)
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552. [LABORATORY ADJUSTABLE 0-24V DIGITAL POWER SUPPLY CIRCUIT ATMEGA8](#) Power supply circuit two separate sections consisted primarily power solid LM317 based on the current settings for the tl082 opamp used current voltage display section Atmel ATmega8 microcontroller used optionally this section may not... Electronics Projects, Laboratory Adjustable 0-24v Digital Power Supply Circuit ATmega8 "atmega8 projects, avr project,..... Listed under: [Development Board - Kits Projects](#)
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553. [CURRENT MEASUREMENT DATA LOGGER CIRCUIT ATMEL AVR, PIC](#) Very high current of the current transformer and with microcontroller sensitive way measured to be recorded will be useful for source code with 2 sample application circuits one of the Atmel AVR ATMEGA48 88/168-P...Electronics Projects, Current Measurement Data Logger Circuit Atmel AVR, PIC "avr project, microcontroller projects, "..... Listed under: [Metering - Instrument Projects](#)
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554. [AUTOMATIC RABBIT FEEDING SYSTEM ATMEGA8 TIMER](#) In fact, feeding, feeding various timing circuits used for business. Generally puzzling, time-consuming mechanical parts is getting no special circuitry to rabbits in this project but the authors have used to feed rabbits :)... Electronics Projects, Automatic Rabbit Feeding System ATmega8 Timer "atmega8 projects, avr project, microcontroller projects, "..... Listed under: [Sensor - Transducer - Detector Projects](#)
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555. [LED HEART CIRCUIT ATMEGA88](#) Atmel atmega88 PCB LEDs circuit drawing heart looks great, especially boxing PCAD pcb drawings and diagrams and drawings prepared by the C source code files have a heart-shaped 22 pcs SMD LED flashes with... Electronics Projects, Led Heart Circuit ATmega88 "avr project, led projects, microcontroller projects, " Atmel atmega88 PCB LEDs..... Listed under: [LED Projects](#)
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556. [LED PROPELLER CIRCUIT AT90S2313 ATINY2313](#) Printed circuit board layout pcb design effects with LEDs been a good practice to work in the dark when used with an ultra bright LEDs looks very nice. Atmel AT90S2313 64 LEDs instead of... Electronics Projects, Led Propeller Circuit AT90S2313 ATINY2313 "avr project, led projects, microcontroller projects, " Printed..... Listed under: [LED Projects](#)
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557. [ATMEGA16 LEDS SNOW EFFECT CIRCUIT LED SNOW CRYSTAL](#) It really is a great led light application LEDs so fluently is moving a profit crystalline with mold has been excellent ATmega16 microprocessor 32 Edet output used to all the LEDs griplar connected software...Electronics Projects, ATmega16 LEDs Snow Effect Circuit LED snow crystal "avr project, led projects,..... Listed under: [LED Projects](#)
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558. [15A MOTOR SPEED CONTROL CIRCUIT ATTINY45 PWM](#) Used in motor speed control circuit microcontroller atmel attiny45p exit number 5 Kubla connected to pin opto pc817 pc817 output while the engine is controlled as isolated MOSFETs have bs170 and irlz34 Attiny45 Pb4... Electronics Projects, 15A Motor Speed Control Circuit Attiny45 PWM "avr project, microcontroller projects, pwm..... Listed under: [Motor Projects](#)

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559. [LED EFFECT CIRCUIT ATTINY2313 MULTI FUNCTION](#) Led effect circuits, including myself, a lot of people might be interested, especially this sort LEDs and LED circuits have great interest in blue, white, LED prices now old and not so expensive LED... Electronics Projects, Led Effect Circuit Attiny2313 Multi Function "avr project, led projects, simple circuit..... Listed under: [LED Projects](#)
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560. [RGB LED EXAMPLE CIRCUIT ATMEGA88 ATMEGA8 ATMEGA48](#) White LEDs, blue LEDs, ultra bright LEDs RGB LEDs saying quite a lot in the sample application with popular microcontrollers are used in this circuit, atmega8 ATMEGA48 Atmega88 ATmega output MOSFETs are driven by... Electronics Projects, RGB Led Example Circuit Atmega88 Atmega8 Atmega48 "atmega8 projects, avr project, led..... Listed under: [LCD Projects](#)
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561. [HDD BRUSHLESS MOTOR DRIVER CIRCUIT ATMEGA8](#) Brushless motor drive circuit used in computers hard drive with Atmega8 checked the engine ATmega 8 output MOSFET (IR4427, IRFZ44) strengthened engine with A, B, C, D, attached to either end. Software is written... Electronics Projects, HDD Brushless Motor driver Circuit Atmega8 "atmega8 projects, avr project, microcontroller projects, "..... Listed under: [Motor Projects](#)
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562. [ATMEGA32 LED CUBE CIRCUIT 74HCT238](#) On the Internet, atmel, microchip series microcontrollers with a lot Led cube has a project in this application one of them, but diagrams, photos, supplemented with a detailed description there thanks to this project...Electronics Projects, Atmega32 LED Cube Circuit 74HCT238 "avr project, led projects, microcontroller projects, " On..... Listed under: [LED Projects](#)
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563. [USB POWERED INDUCTANCE METER CIRCUIT ATMEGA8](#) Coil measurement "Inductance Meter" circuit based on Atmega8 microcontroller LCD HD44780 driver and the system's power supply is taken from the USB port on the computer or adapter operated with the circuit. Circuit of... Electronics Projects, USB Powered Inductance Meter Circuit Atmega8 "atmega8 projects, avr project, microcontroller projects, "..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Metering - Instrument Projects](#)
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564. [ATEMGA168 TLC5940 PWM RGB LED CYLINDER](#) 95 pieces made using RGB LEDs Led cylinder project quite professional printed circuit board, software quality circuit that is used quite ATEMGA168 microcontroller with integrated LEDs TLC5940 LED driver plowed. Installation was very difficult... Electronics Projects, ATEMGA168 TLC5940 PWM RGB Led Cylinder "avr project, led projects, microcontroller projects,..... Listed under: [LED Projects](#)
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565. [MULTIFUNCTION DIGITAL AMPLIFIER PROJECT TDA7294 ATMEGA32 TDA7313](#) A lot of work in the ATmega32 occur when project featuring a beautiful rose amp amp volume control on the floor in the TDA7313 TDA7294 is used in the upgrade process. Digital FM radio... Electronics Projects,Multifunction Digital Amplifier Project TDA7294 ATmega32 TDA7313 "avr project, microcontroller projects, tda7294..... Listed under: [Sound - Audio Projects](#)
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566. [FT232R USB I-O CIRCUIT ATMEGA88](#) USB I / O circuit ATMEGA88 based on the usb connection FT232R is done via detailed ir project (German explanation) the C source code, circuit diagrams and PCB drawing of the picture... Electronics Projects,FT232R USB I-O Circuit ATMEGA88 "avr project, microcontroller projects, " USB I /..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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567. [0-30V REGULATED DIGITAL SWITCHING POWER SUPPLY ATMEGA8 LM2576ADJ](#) Very high quality design of the digital power supply circuit. Voltage current of 2 × 16 lcd display of the beauty and power of the switching mode operation switching DCDC Madden LM2576 ADJ (adj... Electronics

Projects, 0-30V Regulated Digital Switching Power Supply ATmega8 LM2576ADJ "atmega8 projects, avr project,..... Listed under: [Development Board - Kits Projects](#)

568. [TOY CAR MODIFICATION MADE SIMPLE ROBOT PROJECT ATTINY2313](#) Simple robot project ATtiny2313 microcontroller used robot body for a cheap remote controlled toy car is made up of the robot's four sides LED sensors placed somewhere when it hit the back çekliy direction...Electronics Projects, Toy Car Modification Made Simple Robot Project ATtiny2313 "avr project, microcontroller projects, "..... Listed under: [Car Projects, Robotics - Automation Projects](#)
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569. [REMOTE CONTROLLED PROPELLER CLOCK CIRCUIT AT90S2313](#) Before air time, "Propeller Clock" projects I shared in this project control and mode selection can be achieved in both analog clock and digital clock view modes control for the Sony control protocol used... Electronics Projects, Remote Controlled Propeller Clock Circuit AT90S2313 "avr project, microcontroller projects, " Before air..... Listed under: [Clock Projects](#)
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570. [LIPO LI-ION BATTERY CHARGER CIRCUIT BALANCING ATTINY26](#) Attiny26 microcontroller based on the charging circuit has a lot of features in a single package 3l 12.6V LiPo batteries and Li-ion batteries and battery charging voltage edebiliry balansly regulate temperature, timing, voltage and... Electronics Projects, Lipo Li-ion Battery Charger Circuit Balancing ATtiny26 "avr project, battery charger circuit,..... Listed under: [Battery Projects](#)
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571. [ZENER DIODE TEST CIRCUIT VOLTAGE INDICATOR ATMEGA8](#) Interestingly circuited actually zener diode test measuring instruments should have a property zener measurement of when you are secure, a voltage see better, but so far no measuring instruments equipped with this feature l... Electronics Projects, Zener Diode Test Circuit Voltage Indicator ATmega8 "atmega8 projects, avr project, microcontroller..... Listed under: [Metering - Instrument Projects](#)
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572. [REMOTE CONTROLLED ROBOT CIRCUIT RC5 AT90S2313](#) The robot's control AT90S2313 microcontroller provided with the processor 4MHz is operated for control rc5 protocol that uses a control used robot çalışmala for 4 pcs 2200mAh NiMH batteries used for the experiment alkaline... Electronics Projects, Remote Controlled Robot Circuit RC5 AT90S2313 "avr project, microcontroller projects, " The robot's..... Listed under: [Robotics - Automation Projects](#)
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573. [LINE FOLLOWING ROBOT PROJECT ULTRASONIC SENSOR CIRCUIT ATMEGA16 CNY70 SFR05](#) Quite a different line following robot project was already in school competition designed for the author as he could a nice job exposes the robot's appearance sumo robots similar to healthy controls ATMega16 microcontroller... Electronics Projects, Line Following Robot Project Ultrasonic Sensor Circuit Atmega16 CNY70 SFR05 "avr project,..... Listed under: [Robotics - Automation Projects](#)
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574. [NI-MH BATTERY CHARGER CIRCUIT ATMEL ATTINY26](#) Ni-MH Battery Charger circuit 4 AA batteries can be charged in the circuit is more complex, but in general attiny26 microcontroller circuits BD140 transistors and a few passive components consist of batteries connected to... Electronics Projects, Ni-MH Battery Charger Circuit Atmel ATtiny26 "avr project, battery charger circuit,..... Listed under: [Battery Projects](#)
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575. [ROBOTIC DOG PROJECT, 16 CHANNEL SERVO CONTROL PROGRAM](#) Prepared with great effort as a hobby project "robot dog" very detailed, especially the mechanical portion control, etc. rc5 remote control computer. has features such as control solid Atmel ATmega32 and ATMEGA8515 based on... Electronics Projects, Robotic Dog Project, 16 Channel Servo Control Program"avr project, microcontroller projects, "..... Listed under: [Robotics - Automation Projects](#)
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576. [64 LED PROPELLER EFFECT CIRCUIT ATMEGA8](#) Led effect circuit 64 leds LEDs on the printed circuit board disposed in the impeller has a very different effect. A plurality of circuit components used SMD type. Effects displacement, velocity pcb solder buttons...Electronics Projects, 64 Led Propeller Effect Circuit ATmega8 "atmega8 projects, avr project, led projects,..... Listed under: [LED Projects](#)

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577. [BLUETOOTH JOYSTICK CONTROLLED DISCOVERY ROBOT PROJECT](#) Very detailed advanced robot project for many of us not be implemented, but the code, schematics, methods different robot project can be used in reconnaissance robot via mobile phone blutut can be manipulated by...Electronics Projects, Bluetooth Joystick Controlled Discovery Robot Project "avr project, microcontroller projects, " Very detailed..... Listed under: [Robotics - Automation Projects](#)
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578. [MCP4725 DAC AVR ATmega library](#) The MCP4725 DAC is a pretty common and cheap single channel 12 bit buffered voltage DAC, it also has an onboard EEPROM. To drive this chip we can use I2C interface. The ATmega8 used for my implementation has an embedded I2C interface, so we just can use that interface..... Listed under: [Development Board - Kits Projects](#)
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579. [Switch debounce library](#) Contact bounce (ref. https://en.wikipedia.org/wiki/Switch#Contact_bounce) is a common problem with mechanical switches and relays. Switch and relay contacts are usually made of springy metals. When the contacts strike together, their momentum and elasticity act together to cause them to bounce apart one or more times before making steady..... Listed under: [Development Board - Kits Projects](#)
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580. [ATmega32 ADC for Light and Temperature Sensors](#) This tutorial shows how to implement the Analogue to Digital Converter (ADC) function on ATmega32 using C code. It consists of code examples, and the meaning of some nomenclature such as sampling rate, and resolution. However before we get to the code, let us start from the..... Listed under: [Sensor - Transducer - Detector Projects](#), [Temperature Measurement Projects](#)
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581. [RTTTL Player for the ATmega32](#) Ring Tone Text Transfer Language (RTTTL) is a simple text-based code for recording monophonic musical tones. The script is usually loaded into a mobile phone, which is able to convert the code to equivalent musical notes. Many early phones had an integrated RTTTL player, which played..... Listed under: [Game - Entertainment Projects](#)
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582. [Connecting Piezo Speaker to ATmega32](#) An ATmega32 sound generator code is extremely simple to implement. Almost any GPIO pin can drive a piezo buzzer, and the output quality is fine for producing some beeps. The code shown here is the simplest one I remember using basic physics, and since it..... Listed under: [Sound - Audio Projects](#)
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583. [PHONE CONTROLLED MOBILE ROBOT CIRCUIT MT8870 ATMEGA16](#) Wireless, remotely controlled applications quite popular in this project through the mobile phone robot control is done the robot on the Nokia 1100 mobile phone used phone signals from the MT8870 receiver DTMF decoder... Electronics Projects, Phone Controlled Mobile Robot Circuit MT8870 ATmega16 "avr project, microcontroller projects, " Listed under: [Robotics - Automation Projects](#)
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584. [4 CHANNEL PWM CONTROL CIRCUIT VISUAL BASIC RS232 AT89C2051](#) PWM control project software source code in Visual Basic and are prepared (linux, windows) via RS232 serial port (19200 Baud) AT89C2051 microcontroller based on the 4-channel PWM control circuit can be made. PWM output... Electronics Projects, 4 Channel PWM Control Circuit Visual Basic RS232 AT89C2051"avr project, microcontroller..... Listed under: [Development Board - Kits Projects](#)
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585. [NOKIA5110 LCD LOGIC ANALYZER CIRCUIT ATMEGA8](#) Built on the atmega 8 microcontroller Logic Analyzer circuit for nokia 5110 display lcd display kullanilaniliyor crafted with AVRstudio Software four. source software insurance settings schema, pcb, etc. files. Frequency capture 400 kHz, Max... Electronics Projects, Nokia5110 LCD Logic Analyzer circuit ATmega8 "atmega8 projects, avr project, microcontroller projects, " Listed under: [LCD Projects](#)
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586. [ADJUSTABLE POWER SUPPLY CIRCUIT 0 30V LCD](#) Power supply circuit consists of a few sections 04 to 0 30v power supply based on solid TL081 op amp circuit 2N3055 power transistor quite popular and a classic by many people applied. LCD... Electronics Projects,Adjustable Power Supply Circuit 0 30V LCD "atmega8 projects, avr project, microcontroller..... Listed under: [LCD Projects](#)
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587. [SYNTHESIZER CIRCUIT AT89S53 AT89S52](#) Musicians use a variety of sound-producing device "Synthesizer" When you are setting a very good quality work is making. AT89S52 and AT89S53 Synthesizer used in the project on the LFO, ENV FILTER, OSC, MIX...Electronics Projects, Synthesizer Circuit AT89S53 AT89S52 "avr project, microcontroller projects, " Musicians use a..... Listed under: [Sound - Audio Projects](#)
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588. [WAVE READER CIRCUIT AT89S52 FLASH MEMORY](#) PIC24, 32, MSP430 is progressing rapidly but AT89S52 time, I still made sure that what is in use by 8051. In this project, kingston 8gb flash memory is read in the wav files (wav... Electronics Projects, Wave Reader Circuit AT89S52 Flash Memory "avr project, microcontroller projects, " PIC24,..... Listed under: [Sensor - Transducer - Detector Projects](#)
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589. [WITH PELTIER MINI REFRIGERATOR CIRCUIT ATMEGA8 DS18S20](#) Peltier Thermoelectric Cooler Is how it works with 12-Volt Feed information and 50W Peltier Mini Fridge built on the lcd display after the ATmega8 microcontroller from a more advanced peltier control circuit. The value...Electronics Projects, With Peltier Mini Refrigerator Circuit ATmega8 DS18S20 "atmega8 projects, avr project, microcontroller..... Listed under: [Home Automation Projects](#)
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590. [S65 SIEMENS LCD EXAMPLES CIRCUIT ATMEGA16 ATMEGA32](#) Before "Siemens S65 LS020 glcd ATmega128 AVR" shared examples of implementation through a lot of similar projects with ATmega16 ATmega32, microcontrollers. A few of them; Image via representation of FAT16 MMC card color, font... Electronics Projects, S65 Siemens LCD examples Circuit ATmega16 ATmega32 "avr project, microcontroller projects, " Listed under: [LCD Projects](#)
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591. [PT100 SENSOR THERMOSTAT CIRCUIT ATMEGA8](#) Thermostat circuit for 2 pt100 temperature measurement used atmega8 mikrűdenetleyici sensor pt100 sensors gives the circuit output is being used according to the information received. The thermostat is located on the circuit board led... Electronics Projects, PT100 Sensor Thermostat Circuit ATmega8 "atmega8 projects, avr project, microcontroller projects, " Thermostat..... Listed under: [Sensor - Transducer - Detector Projects](#)
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592. [EXCELLENT LED BALL CIRCUIT ATMEGA88](#) Great design has been providing birthday gifts as does not prepare mention Led to control atmega88 microcontroller is used ports çoklayıp LEDs milk to 74HC595 used LEDs effect has been very welcoming approximately 256... Electronics Projects, Excellent Led Ball Circuit ATmega88 "avr project, led projects, microcontroller projects, " Great..... Listed under: [LED Projects](#)
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593. [USB PASSWORD GENERATOR CIRCUIT ATTINY85](#) Attiny85 not found on the USB module to work, but as software optimized circuit when connected to a computer mouse USB HID is known as pull-up resistors on the circuit has very few ingredients... Electronics Projects, USB Password Generator Circuit ATtiny85 "avr project, microcontroller projects, " Attiny85 not found..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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594. [MECHANICAL CLOCK CIRCUIT ATMEGA8](#) In fact, what lies At the forefront of the digital but mechanics should have been a wonderful project:) is an interesting time in the atmega8 microcontroller time and when the mind comes to the... Electronics Projects, Mechanical Clock Circuit ATmega8 "atmega8 projects, avr project, microcontroller projects, " In fact,..... Listed under: [Clock Projects](#)

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595. [DIGITAL RADIO CIRCUIT TEA5767 AT89S8253](#) TEA5767 is a digital radio, especially mp3 and fm radio module @ETE before "TEA5767 Pic16f628 Digital PLL-controlled FM radio receiver system" article is controlled with the Pic16f628 microcontroller used in this project, the radio... Electronics Projects, Digital radio circuit TEA5767 AT89S8253 "avr project, microcontroller projects, " TEA5767 is a..... Listed under: [Radio Projects](#)
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596. [ULTRA SONIC CLEANER ROBOT CIRCUIT L298 AT89C2051](#) AT89C2051 microcontroller used in robot motor drive for cleaner L298 dual H-bridge driver IC is used 40 kHz ultra sonic senrörler (multicomp sq-40-t-10b) to detect and to change direction with the bodies, continues to...Electronics Projects, Ultra Sonic Cleaner Robot Circuit L298 AT89C2051 "avr project, microcontroller projects, " AT89C2051..... Listed under: [Robotics - Automation Projects](#)
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597. [USB BUSINESS CARD WITH ATTINY85](#) Attiny85 Atmel microcontroller with USB Business Card project established quite interesting circuit with very few elements attiny85 16.5 MHz internal RC oscillator frequency used. USB connector on the USB socket on the PCB designed... Electronics Projects, USB Business Card with attiny85 "avr project, microcontroller projects, " Attiny85 Atmel..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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598. [ATMEGA88 IR2184 DC SERVO MOTOR DRIVER CIRCUIT](#) DC Servo motor driver circuit based on the microcontroller atmel atmega88 outputs half bridge driver IC Ir2184 is being used with this integrated works at a frequency of 16MHz DC servo lrf540 MOSFETs atmega88... Electronics Projects, Atmega88 IR2184 DC Servo Motor Driver Circuit "avr project, dc dc converter..... Listed under: [Motor Projects](#)
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599. [LINE FOLLOWING ROBOT SUMO ROBOT, CONTROL CIRCUITS](#) Sumo, Line following and robot control card project open source design and very high quality of all resources provided PIC microcontroller code and eagle diagram pcb drawings are especially line following robot prepared for... Electronics Projects, Line following Robot Sumo Robot, control circuits "avr project, microcontroller projects, " Sumo,..... Listed under: [Robotics - Automation Projects](#)
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600. [ATMEL LED MULTI-FUNCTION DISPLAY ATMEGA32U4 WATCHES](#) Atmel microcontroller Board with Led indicator wristwatch ATmega32U4 project there is no usb connection and SD card connection, the advanced charging system, piezo sensor, etc. are included in the design of printed circuit boards... Electronics Projects, Atmel LED Multi-Function Display ATmega32u4 Watches"avr project, microcontroller projects, " Atmel..... Listed under: [LED Projects](#)
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601. [SIM900 MODULE PCB AVR APPLICATIONS](#) Simcom Sim900 GSM module produced by the company prepared for the PCB module and ATMEGA32 microcontroller based on Nokia 3310 lcd display GSM module for remote control application SIM900D (place of origin: CN; proteus... Electronics Projects, SIM900 Module PCB AVR Applications "avr project, microcontroller projects, " Simcom Sim900..... Listed under: [Phone Projects](#)
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602. [GUITAR TUNING PROJECT WITH ARDUINO UNO](#) Arduino Uno kit on the Board at the entrance of the TL082 opamp used Guitar Tuning circuit audio input and frequency to detect the "Arduino-Frequency-Detection" software used. According to the LEDs light at... Electronics Projects, Guitar Tuning Project with Arduino Uno "arduino projects, avr project, microcontroller projects, "..... Listed under: [Sound - Audio Projects](#)
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603. [ARDUINO UNO WITH INTERESTING CLOCK PROJECT](#) I've shared this with different time interesting projects carried out with the Arduino Uno this time, I think the most interesting thing isn't debatable kullanışımı project but the idea as a different kind of... Electronics Projects, Arduino Uno With Interesting Clock Project "arduino projects, avr project, microcontroller projects, "..... Listed under: [Clock Projects](#)

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604. [ATMEGA32 PCB DRILL MACHINE](#) This document describes the construction of a PCB drill machine driven by a master-controller board and three stepper motor driver boards. These four single sided PC boards each contain an Atmega16/32 microcontroller. Communication between... Electronics Projects, ATMEGA32 PCB drill machine "avr project, microcontroller projects, " This document describes the..... Listed under: [CNC - Printing Machines Projects](#)
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605. [PORTABLE RF JAMMER CIRCUIT ATMEGA48](#) So far I have ever seen , tidy and with all the resources shared jammer circuit project design, it's very smart Sizes also pretty small pocket on the internet a lot jammer circuit ,... Electronics Projects, Portable RF Jammer Circuit ATmega48 "avr project, microcontroller projects, " So far..... Listed under: [Sensor - Transducer - Detector Projects](#)
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606. [WINAMP REMOTE CIRCUIT BLUETOOTH AT90USB1287 NOKIA LCD LMX9838](#) A very detailed report of a project is already included in the schema. The author of the thesis, the eagle pcb source code etc. everything. The circuit used the main parts AT90USB1287 LMX9838 (Bluetooth... Electronics Projects, Winamp Remote Circuit Bluetooth AT90USB1287 Nokia LCD LMX9838 "avr project, microcontroller projects, "..... Listed under: [Other Projects](#)
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607. [BATTERY ALARM CIRCUIT FOR MODEL HELICOPTERS ATTINY13](#) ATTINY13 Atmel microcontroller installed on the circuit model helicopter is checking the voltage of the battery the battery (or battery) voltage circuit when the level set LEDs, buzzer, giving the alarm. ATTINY13 PB2, PB1,... Electronics Projects, Battery Alarm Circuit for Model Helicopters ATtiny13 "avr project, microcontroller projects, simple..... Listed under: [Battery Projects](#), [Circuits](#), [Clock Projects](#)
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608. [ATMEL ATTINY45 BLUETOOTH SCOREBOARD CIRCUIT](#) The scoreboard circuit is based on Atmel microcontroller ATtiny45 circuit cell phone can be controlled via bluetooth. The bluetooth module used in the indicator circuit BTM400-6B is an LCD TV has VGA output of...Electronics Projects, Atmel ATtiny45 Bluetooth Scoreboard Circuit "avr project, microcontroller projects, " The scoreboard circuit is based..... Listed under: [Circuits](#)
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609. [ATMEGA8 USB EMAIL NOTIFIER CIRCUIT](#) Market "USB Mail Notifier" ready devices are sold, but in practice, ileginç project also ATmega8 microcontroller and the email account that connects the program's source code (C + + RAD studiox) or not different... Electronics Projects, ATmega8 USB Email Notifier Circuit "atmega8 projects, avr project, microcontroller projects, " Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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610. [MULTI-FUNCTION DIGITAL WRISTWATCH CIRCUIT ATMEL ATMEGA168PA](#) Digital clock project PCB design is very good and prepared and used according to the coffers of small metal wristwatch. Except for a few digital Wristwatch circuit material including all the elements of SMD...Electronics Projects, Multi-function Digital Wristwatch Circuit Atmel ATmega168PA "avr project, microcontroller projects, " Digital clock..... Listed under: [Clock Projects](#)
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611. [DIGITAL CLASS D AMPLIFIER PROJECT TAS5613 TDA9859 ATMEGA128](#) TDA9859 The main part of the preamplifier is an integrated circuit TDA9859, this integrated circuit is controlled via the I2C microprocessor Atmega128. Individual settings of the preamplifier through the keyboard are displayed on the... Electronics Projects, Digital Class D Amplifier Project TAS5613 TDA9859 ATmega128 "audio amplifier circuits, avr..... Listed under: [Sound - Audio Projects](#), [Uncategorized](#)
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612. [DIGITAL CLASS D AMPLIFIER CIRCUIT TAS5706A PCM1850A ATMEGA128](#) TAS5706A Class D Amplifier was itself the signal processor. From this parts depend all the other elements. Has an impact on the type of power supply, the control method of the type converter. That... Electronics Projects, Digital Class D Amplifier Circuit TAS5706A PCM1850A ATmega128 "audio amplifier circuits, avr..... Listed under: [PWM Projects](#)

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613. [0-30V 0-3A ADJUSTABLE SWITCHING LABORATORY POWER SUPPLY](#) DC-DC Laboratory Power Supply 0-30V 0-3A LT1074 is a switching regulator type step-down (lowering) with a maximum current of 5 A. Can work with the value of the input voltage up to 60 V... Electronics Projects,0-30V 0-3A Adjustable Switching Laboratory Power Supply "avr project, dc dc converter..... Listed under: [Other Projects](#)
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614. [240W ELECTRONIC BALLAST CIRCUIT IR2104 ATMEGA48 CONTROLLED](#) IR2104 240W Fluorescent tube Ballast Circuit. Work was designed an electronic ballast for starting six fluorescent lamps with a total output of 240W with integrated dimming-controlled analog input and button. Priority is set to... Electronics Projects, 240W Electronic Ballast Circuit IR2104 ATmega48 Controlled"avr project, microcontroller projects, power..... Listed under: [Circuits](#)
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615. [1A 10A ADJUSTABLE BATTERY CHARGING CIRCUIT 100AH](#) Atmel ATTINY24 microcontroller based automatic battery charger circuit can charge 12V batteries with different power on (1A...10A current setting range of the charging current with limitation 10Ah, 20Ah, 30Ah, 40Ah, 50Ah, 60Ah, 70Ah, 80Ah,... Electronics Projects, 1A 10A Adjustable Battery Charging Circuit 100Ah "avr project, battery charger circuit,..... Listed under: [Battery Projects](#)
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616. [230V FAN REGULATOR CIRCUIT MOSFET MC33152 ATTINY25](#) Brushless asynchronous motors, with compact rotor windings, called short cages, are used to drive different fans. Their advantages are durability and simple construction. The presented layout uses a certain characteristic of such a fan... Electronics Projects, 230V Fan Regulator Circuit Mosfet MC33152 ATtiny25 "avr project, microcontroller projects, power..... Listed under: [Circuits](#)
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617. [THERMOMETER HYGROMETER CIRCUIT USB DHT22 ATMEGA8](#) The presented layout is a snap on a computer for measuring DHT22 temperature and humidity. It measures the temperature from -40 to 80 ° C with a resolution of 0.1 ° C and accuracy... Electronics Projects,Thermometer Hygrometer Circuit USB DHT22 ATmega8 "atmega8 projects, avr project, microcontroller projects, "..... Listed under: [Metering - Instrument Projects](#)
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618. [PROGRAMMABLE TIMER CIRCUIT ATTINY25](#) ATtiny25 Programmable Timer To describe the operation of the device, we will use an example – control of the electromagnetic bolt mounted in the wicket. In the simplest version we require that the push... Electronics Projects, Programmable Timer Circuit ATtiny25 "avr project, microcontroller projects, " ATtiny25 Programmable Timer To describe..... Listed under: [Clock Projects](#)
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619. [TINY USB PROGRAMMER AVR MICROCONTROLLERS AVRDUDE](#) USB programmer There are few components – the ATtiny45 microcontroller, two Zener diodes, a capacitor and several resistors. Of course, there are still connectors – USB plug and IDC-6 plug. Resistor R1 informs host... Electronics Projects, Tiny USB programmer AVR microcontrollers AVRDUDE "avr project, microcontroller projects, programmer circuit, "..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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620. [ATMEGA48 TIMER TRIGGERED BY CURRENT FLOW ASM-010](#) ATMEGA48 Many devices may be in standby mode during downtime. They do not perform any work, they are apparently disabled, but the control circuits are powered. To extract useful information from the point of...Electronics Projects, ATMEGA48 Timer triggered by current flow ASM-010 "avr project, microcontroller projects, power..... Listed under: [Clock Projects](#)
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621. [Ultrasonic Radar Model Using Microcontroller ATmega128](#) The circuit described here demonstrates the working of a radar system. It uses ultrasonic waves to detect an object and measure its distance and angular position, and displays the same on a 20x4 LCD screen. -- Ashutosh M. Bhatt is an M. Tech in embedded..... Listed under: [Sensor - Transducer - Detector Projects](#)

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622. [Digital Soil Moisture Meter](#) A digital soil moisture meter is used for indicating the water content of a given soil sample. As crop production requires water at different stages and in different amounts, it is important to measure soil moisture from time to time to know its status. The..... Listed under: [Metering - Instrument Projects](#)
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623. [NIXIE TUBE THERMOMETER CIRCUIT](#) Nixie lamp Thermometer DS18B20 Circuit with ATtiny2313 The first Nixie lamps appeared in the mid-twentieth century. For many years they have been used in a variety of apparatuses but have been supplanted by newer... Electronics Projects, Nixie Tube Thermometer Circuit "avr project, microcontroller projects, " Nixie lamp Thermometer DS18B20 Circuit..... Listed under: [Metering - Instrument Projects](#)
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624. [ATMEGA8 FT232R USB ESR METER CIRCUIT](#) USB ESR Meter Circuit The main part of the meter is a ATmega8 microcontroller that controls the entire device. Its main the task is to process measured data and perform calculations so that the... Electronics Projects, ATmega8 FT232R USB ESR Meter Circuit "atmega8 projects, avr project, microcontroller projects, "..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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625. [ATMEL ARDUINO COLORED CONNECTION CHART](#) Projects or schematics, drawings that will work when preparing pcb Atmel AVR Microprocessors Information Tags for "Share" drawings directly on Atmel microcontrollers. Colored linking expansions are more comprehensible for those dealing with Atmel Series... Electronics Projects, Atmel Arduino Colored Connection Chart "arduino projects, " Projects or schematics, drawings that..... Listed under: [Circuits](#)
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626. [AUTOMATIC FEEDING MACHINE WITH CD-ROM MECHANIC](#) For the author, the automatic feeding machine for the wedge is the easiest mechanical part for the application. they insert a plastic container all of which is placed on the CD present on the... Electronics Projects, Automatic Feeding Machine With CD-ROM Mechanic "avr project, microcontroller projects, " For..... Listed under: [Phone Projects](#)
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627. [Avr Atmega8 Microcontroller – An Introduction](#) In my previous article, I've discussed about ATmega32. Now, let me introduce another member of AVR microcontroller family, the ATmega8. This member has many features similar to that of ATmega32. But it has reduced number of features and capabilities, yet it has enough features to..... Listed under: [AVR ATmega Projects](#)
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628. [Handling the Digital Input Output in AVR Micro Controllers](#) I have already discussed about a few chapters necessary to get into AVR programming. Now this is the first article that deals with programming. Let us start with the basics. Digital input output (I/O) is the basic feature supported by AVR micro controller. To facilitate..... Listed under: [LED Projects](#)
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629. [Standard Library & String Formatting for AVR](#) Here in this article, I am planning to brief you through the Standard library of AVR-GCC. By the term "Standard Library" we mean the "Standard header" files like "stdio.h", we commonly see in C programming language. Have you ever used String Formatting in ANSI C?..... Listed under: [AVR ATmega Projects](#)
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630. [Frequency counter circuit](#) Simple Frequency Counter You may have already seen various projects over many websites named Frequency counter, Digital Frequency Counter etc. I'm posting just another of them. Showing the use of timer/counter of AVR micro controller (Atmega8) in one of it's form. This circuit can be..... Listed under: [LCD Projects](#)

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631. [How to Work With 32K crystal and AVR Microcontroller](#) This article teaches you how to add 32K external crystal source to AVR micro controller (Atmega8) with circuit diagram & C program. Introduction Timing-is one of the basic function, performed by the micro controllers. Every microcontroller has at least one timer/counter module in its..... Listed under: [AVR ATmega Projects](#)
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632. [How to work with the ADC unit of an AVR Micro-controller](#) Introduction The first step to digital signal processing is to convert a signal into digital data, and here the Analog to Digital Converter devices comes into action. Some of the AVR micro controllers include ADC unit in their features. This is a very useful unit..... Listed under: [Security - Safety Projects](#)
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633. [Interfacing LCD Module with AVR in 4-Bit Mode](#) This article is another step forward in learning more about AVR microcontrollers. We have demonstrated interfacing of LCD module with ATmega328 microcontroller, which will help you to learn its basic concepts. ATmega328 is an eight bit AVR (Advanced Virtual RISC) based microcontroller. It is a..... Listed under: [LCD Projects](#)
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634. [Bluetooth Home Automation using AVR and Android App](#) DIY-Bluetooth based Home Automation Project In this project, let's see how to design a Bluetooth based home automation project.This article explains the steps involved in the designing of a Bluetooth home automation kit, starting from the configuration of a Bluetooth module. The article also explains..... Listed under: [Android Projects](#)
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635. [Keypad Door Lock using AVR Microcontroller – Atmega16](#) Password Based Keypad Door Lock In this article, a digitally secured lock based on password verification is explained. The system uses a seven segment display array to show the password, a matrix keypad to enter the numbers/password and operates a relay (to activate the solenoid..... Listed under: [Security - Safety Projects](#)
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636. [MultiPurpose Atmel Development Boards Project](#) Atmel series microcontrollers series to prepare for the software quality testing to ensure ease in your test circuit has 3 different test circuit. ATmega8, ATmega16, atmega162, ATtiny2313 and ATTINY13 made to the circuit RS232... Electronics Projects, MultiPurpose Atmel Development Boards Project "avr development board, "..... Listed under: [Development Board - Kits Projects](#)
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637. [ATmega16 Analog-Looking Digital Clock Project](#) Atmega16 microcontroller in our circuit monitor 7 inch in size. Screen "3 inch" or "4 inch" may be, it doesn't matter. We have the biggest screen by controlling the foot links we could find.... Electronics Projects, ATmega16 Analog-Looking Digital Clock Project "avr project, microcontroller projects,..... Listed under: [Clock Projects](#)
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638. [Make Your Own WiCard WiFi Module on a Breadboard](#) Like Arduino you can make your own WiCard on a breadboard. All you need are resistors, capacitors, breadboard, wires, ATmega8, and ESP8266. Story Like "Arduino," you can make your own WiCard on a breadboard. If you want to make WiCard on a breadboard before making..... Listed under: [AVR ATmega Projects](#)
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639. [Interfacing HC-05 Bluetooth module with AVR Microcontroller](#) In this tutorial let us learn How to interface HC-05 Bluetooth Module with AVR ATmega8 microcontroller. We will establish communication between Android mobile and Atmega8 through Bluetooth module which takes place through UART serial communication protocol. In this project we will control a LED using Bluetooth..... Listed under: [Phone Projects](#)

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640. [Interfacing RF module with Atmega8: Communication between two AVR Microcontrollers](#) Making our projects Wireless always makes it to look cool and also extends the range in which it can be controlled. Starting from using a normal IR LED for short distance wireless control till an ESP8266 for worldwide HTTP control, there are lots of ways..... Listed under: [LED Projects](#)
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641. [Interfacing GSM Module with AVR Microcontroller: Send and Receive Messages](#) GSM modules are interesting to use especially when our project requires remote access. These modules could make all actions that our normal mobile phone could do, like making/receiving a call, sending/receiving a SMS, connecting to internet using GPRS etc. You can also connect a normal microphone..... Listed under: [Phone Projects](#)
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642. [UV Sensor ML8511 AVR Atmega library](#) Ultraviolet (UV) is an electromagnetic radiation with a wavelength from 10 nm to 400 nm. The ML8511 is an ultraviolet sensor that output an analog signal correlated to the amount of UV light detected. By datasheet the sensor detects wavelength from 280nm to 560nm. Here..... Listed under: [Sensor - Transducer - Detector Projects](#)
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643. [Using AVR Studio – My first C++ code](#) This is an extremely simple "Hello World" C++ code for the ATmega32 that you can follow using AVR Studio. You do not need any hardware such as the chip or even the ISP programmer cable because AVR Studio simulates the inputs and outputs, and you..... Listed under: [LED Projects](#)
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644. [Power factor measurement using Atmel AVR Micro-Controllers](#) To learn about the power factor measurement, you should have a basic knowledge of power factor. There are three types of loads. Resistive Inductive Capacitive When we apply AC voltage to resistive loads it will not change the current wave form. But inductive loads will..... Listed under: [LCD Projects](#)
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645. [Auto No Break Power Supply Control](#) The major aim of this no break power supply project is to supply continuous energy supply to a load, by picking the supply from any spring out of the four like – generator, mains, inverter and solar robotically in the lack of any of the..... Listed under: [LCD Projects](#)
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646. [DC motor interfacing with AVR ATmega16/ATmega32](#) DC motor converts electrical energy in the form of Direct Current into mechanical energy. In case of motor, the mechanical energy produced is in the form of rotational movement of the motor shaft. The direction of rotation of the shaft of the motor can be..... Listed under: [Motor Projects](#)
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647. [ATmega8 Line Follower Robot \(LFR\) Project – Part 2/2](#) Now that the mechanical assembly part is over, and we have completed the construction of left and right (L&R) infrared sensor cards. Since the MCU (ATmega8) cannot drive the dc motors directly, a dedicated motor driver circuit is used. The motor driver circuit here is based..... Listed under: [Robotics - Automation Projects](#)
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648. [A digital DC powersupply](#) Introduction In 2002 I wrote a linuxfocus.org article about a Microcontroller based DC powersupply (LF November2002 article251) The article received a lot of interest as I noticed from emails which I received on this subject. The design of this powersupply was however something for advanced..... Listed under: [LED Projects](#)

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649. [An NRF24L01+ and FTDI Ready Atmega 328P-PU \(3.3V, 500 MA\) Microcontroller With Dual Power Capability, Undervoltage, Hysteresis, and Thyristor-Crowbar Overvoltage Protection](#) This board is designed to safely drive a 3.3V microcontroller and connected accoutrements. It supports primary and backup power sources and provides numerous over and under voltage safeguards. The microcontroller here is a bare-bone, no-frills Atmega 328P-PU with no leds, driven by a 16 MHz..... Listed under: [Battery Projects](#)
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650. [AVR-based Sensor Keyboard](#) A modern microcontroller has almost everything that's needed to implement a touch sensor matrix. There are several sensing technologies: IC manufacturers typically advise using certain tech, sometimes they offer ready to use hardware- or software-based solutions. I was curious to try to implement a sensor..... Listed under: [AVR ATmega Tutorial](#), [Sensor - Transducer - Detector Projects](#)
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651. [Arduino LFO Waveform Generator V2](#) Introduction This project uses an Arduino microprocessor and a MAX522 8 bit serial DAC to produce arbitrary low frequency oscillator (LFO) waveforms. These waveforms are useful for driving a tremolo/vibrato circuit in a guitar amplifier such as the Lil Tiger or the Hammonator 2RVT. This..... Listed under: [Motor Projects](#)
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652. [Programming ATMEGA32 \(or Any Other AVR\) Using Arduino IDE](#) The Arduino is a very cool development board where you could create hundreds of projects. But it doesn't mean that for every project you create, you would need an Arduino board dedicated to that project alone. A hundred projects and a hundred Arduinos? That's a..... Listed under: [Android Projects](#), [AVR ATmega Tutorial](#)
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653. [AVR ATmega32 Mini Development Board – Interfacing LCD](#) AVR ATmega32 Mini Development Board is interfaced with a LCD module (2×16) operating at 5V. The voltage at the third pin of the LCD can be varied by potentiometer to adjust contrast. LCD can work either in 4 or 8 bit mode. Here, the circuit is..... Listed under: [LCD Projects](#)
-
654. [Interfacing Ultrasonic Rangefinder with AVR MCUs – AVR Tutorial](#) Obstacle detecting sensors are one of the most basic type of sensors that electronic hobbyists use. There are several methods to make cheap obstacle sensors. These simple sensors are made using a IR Rx/Tx pair or Normal LED and LDR pair(this design is most basic..... Listed under: [Android Projects](#), [Development Board - Kits Projects](#)
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655. [How to control DC motor speed using PWM on Atmega32](#) Using PWM (Pulse Width Modulation) to control a device is a common practice in embedded systems; for example, you can use it to control the light intensity of a LED or control the speed of a DC motor. In this article, we will explain how to..... Listed under: [Motor Projects](#), [PWM Projects](#)
-
656. [Servo Motor Control by Using AVR ATmega32 Microcontroller](#) Servo motors are a type of electromechanical actuators that do not rotate continuously like DC/AC or stepper motors, rather they used to position and hold some object. They are used where continuous rotation is not required so they are not used to drive wheels (unless..... Listed under: [Microcontroller Programmer Projects](#), [Motor Projects](#)
-
657. [Atmel ATmega Video generator with SDRAM](#) This projects uses 8MByte SDRAM from a 168 pin DIMM SDRAM and generates videosignal for a VGA monitor with a resolution of 512x480 pixels with 256 colors at 60Hz using mega8515. The project uses burst mode of SDRAM, which can feed up to

512 bytes..... Listed under: [AVR ATmega Tutorial](#), [Microcontroller Programmer Projects](#)

658. [How to make Automatic Charger for a 7Ah Battery](#) 7Ah Sealed Lead Acid Battery 7Ah Sealed lead acid battery is a very popular battery which people use in most places like fans, LEDs etc. The reason behind popularity of 7Ah battery is due to its medium size and medium Ah rating. By medium means,..... Listed under: [Battery Projects](#)
-
659. [hd44780 Character LCD Displays – Part 2](#) Introduction This tutorial continues from Character LCD Displays – Part 1. In this part we will connect the LCD module to an Atmega8 microcontroller, then write some code to drive it. The Circuit Our first task is to build the circuit. We will be using..... Listed under: [LCD Projects](#)
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660. [First steps with micro controllers \(ATMega8\)](#) Purpose of this article: 1) to learn how to connect the Micro controller in a simple circuit and how to power it 2) to see how to create a simple programmer (a device to connect the micro controller to a PC for uploading software) 3)..... Listed under: [AVR ATmega Tutorial](#), [Development Board - Kits Projects](#), [LED Projects](#)
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661. [Minimal Arduino with ATmega8](#) Like me, you may have a few old Arduino boards or ATmega8 chips (in the boards) laying around from when you were first playing with Arduino. Those chips can still be really useful as the heart of a tiny "Minimal Arduino" setup. A normal Arduino..... Listed under: [Android Projects](#), [Circuits](#), [Other Projects](#)
-
662. [Atmega8 based Voltmeter Ampmeter v2](#) Low power consumption Better Amperes display resolution while using low value drop resistor. Much smaller PCB size, only 5cm x 5cm. Still no SMD components. Easy calibration, only one voltage adjust and one ampere adjust preset, no voltage out detection. Voltage supplied by my 12Volt..... Listed under: [AVR ATmega Tutorial](#), [Microcontroller Programmer Projects](#)
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663. [Micro-controller Programming on a Bread Board](#) In playing around with DIY electronics, Pugs has developed enough confidence to share his knowledge with his juniors. So, in one such occasion, he decided to give a try to program a micro-controller, as part of the electronics hobby club. There have been many hobbyist..... Listed under: [Battery Projects](#)
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664. [Nokia5110 graphical display interfacing with AVR ATmega16/ATmega32](#) Introduction Nokia5110 is a graphical display that can display text, images and various patterns. It has a resolution of 48x84 and comes with a backlight. It uses SPI communication to communicate with a microcontroller. Data and commands can be sent through microcontroller to the display..... Listed under: [Phone Projects](#)
-
665. [Configuring and using XBEE wireless modules](#) Xbees are some of the most powerful wireless modules you can find and they're also very easy to configure and use. The only thing is they cost about Rs.1000 to Rs.2500 depending on the range and other parameters. If you're like me and only bought..... Listed under: [AVR ATmega Tutorial](#), [LCD Projects](#), [Microcontroller Programmer Projects](#)
-
666. [The simplest digital voltmeter with AVR](#) This is probably the simplest possible digital voltmeter with Atmel AVR microcontroller. The circuit is controlled by a microprocessor IO1 - Atmel AVR ATmega8 (ATmega8, ATmega8L), a program to download and configuration bits setting is below. (ATmega8 may seem too "big", but was chosen because..... Listed under: [AVR ATmega Tutorial](#), [Clock Projects](#), [Electronics News Updates](#), [LED Projects](#)

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667. [Input Devices](#) Measure something: add a sensor to a microcontroller board that you have designed and read it. This week I decided to make ATMEGA 328 board. ATMEGA 328 Some of the Features of ATMEGA 328 are 1.8-5.5V operating range Up to 20MHz 32kB Flash program memory..... Listed under: [AVR ATmega Tutorial](#), [Microcontroller Programmer Projects](#), [Sensor - Transducer - Detector Projects](#)
-
668. [PIR motion sensor interface with AVR-microcontroller ATMEGA32](#) Passive Infra red sensor also known as PIR sensors is capable of detecting motion or movement within a certain range. These type of sensors have wide range of applications in our daily life and it is essential to learn the interfacing method. This article is..... Listed under: [AVR ATmega Tutorial](#), [Sensor - Transducer - Detector Projects](#)
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669. [Analogue to Digital Conversion on an ATmega168](#) Many AVR microcontrollers are capable of doing Analogue to Digital Conversion. The ATmega168 has 6 ports (8 ports on the SMD packages) that can be used for analogue input. This tutorial shows you how. The circuit The Breadboard layout is based on the Atmega8 breadboard..... Listed under: [Android Projects](#), [AVR ATmega Tutorial](#), [Microcontroller Programmer Projects](#)
-
670. [How to make an Arduino Pro Mini bare bones with Real-time Clock](#) Recapitulation One thing I didn't find clearly over the internet is how to make an Arduino Pro Mini bare bones, that is, from the scratch, and how to make one on the breadboard. This is really useful if you want to make a custom pcb/smd..... Listed under: [Clock Projects](#), [LED Projects](#)
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671. [How to drive 595 shift registers with AVR hardware SPI](#) Driving a shift register using an AVR chip's built-in hardware is really quite easy. Most of their offerings have an SPI module, or Serial Peripheral Interface. A shift register is exactly that, a peripheral device that communicates via a serial line. All we need to..... Listed under: [AVR ATmega Tutorial](#), [Clock Projects](#)
-
672. [Make your own AVR JTAG debugger](#) Tired of putting LEDs every time you want to check some value in the microcontroller? Well, its time to build yourself a debugger. A debugger is a device which helps you run through your code in the microcontroller step by step and also gives you..... Listed under: [LED Projects](#), [Robotics - Automation Projects](#)
-
673. [Introduction to Arduino UNO \(uses AVR ATmega328\)](#) Overview Arduino is an Open Source embedded development platform which is easy-to-use. It comprises of Hardware boards and Software tools. Examples of some of the most popular Arduino Hardware boards are , Arduino Uno This board is designed around the ATmega328 AVR microcontroller. It is..... Listed under: [Android Projects](#), [Microcontroller Programmer Projects](#)
-
674. [An AVR microcontroller based Ethernet device](#) Ethernet has traditionally been a quite complex interface. All Ethernet chips until today had 100 pins or more, where difficult to find in small quantities and difficult to use from a small microcontroller with little memory. Microchip has changed the world with their new ENC28J60..... Listed under: [Other Projects](#)
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675. [Fastest Finger First Quiz Project using ATmega16](#) Most of you must have watched quiz games in TV shows or at your schools where few contestants are required to press a switch if they know the answer to the question. An electronic system is required to find out exactly which one of then..... Listed under: [LED Projects](#)

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676. [Making a LED Message Display with Keyboard Interface](#) LED signage has become the choice in modern days to convey message to visitors of a venue. Be it corporate office, shops, restaurants or any kind of social functions like marriages. Some big and complicated display needs dedicated control PCs and designers to build contents..... Listed under: [LED Projects](#)
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677. [LED Dot Matrix Room Temperature Display using P10 and ATmega8](#) Room temperature display on big screen is a common requirement from industrial sector. Used in server rooms, PLC rooms, storage rooms and many other places in an industrial units. Traditionally seven segment displays of big size (say four inch height) were used. But now a..... Listed under: [LED Projects](#)
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678. [P10 LED Display Panel Interface with AVR ATmega8](#) Making LED displays and signage is a complete industry in itself serving all sorts of clients like banks, railway stations, factories, airport and more. In earlier days display units were made using individual LEDs carefully placed and soldered to make matrix of display. But this..... Listed under: [LED Projects](#)
-
679. [Control Electrical Appliances from Android Smart Phone using Bluetooth : Project Construction](#) Connecting Bluetooth Module with Development Board The Bluetooth module has seven interface pins of which two are NC (not connected) pins. The table below shows how you can interface with it our low cost AVR development board. Bluetooth Module Dev Board GND GND RST PD2..... Listed under: [Phone Projects](#)
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680. [Home Appliance Control over Mobile Network](#) You can call up on your colleague's mobile number and ask him/her to turn on or off the lights or other appliance of your office. You may be any where in the world at that time, as mobile network allows to to talk to anyone..... Listed under: [Phone Projects](#)
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681. [ATMega328 Board](#) The ATMega328 board is a microcontroller board based on the ATmega328, The board contains everything needed to support the microcontroller. The board need 5VDC to power it. Simply connect the power connector to a computer with a USB cable or power it with a AC-to-DC adapter or..... Listed under: [Battery Projects](#)
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682. [ATTiny 2313 BOARD](#) his board is a development board on which you can build your projects. It is suited for educational use, experiments or prototyping. The board uses the ATTiny2313 microcontroller with a 20Mhz clock. The board contains the ISP 10-pin connector for in circuit serial programming. It..... Listed under: [LCD Projects](#)
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683. [LED Mood light](#) In this projects 8 different colors are displayed with the use of a RGB LED. The microcontroller that is used is the ATmega8. An RGB LED is a LED which has three LED's integrated in one packaging. These LED's have the colors red, green, and..... Listed under: [LED Projects](#)
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684. [servo motor controller](#) In ths project you can learn how to build a servo controleer motor with the ATMEGA328 board. The position of the servo motor is controlled by the software (sweep back and forth) or by a potentiometer. The position of the servo motor is set by..... Listed under: [Motor Projects](#)
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685. [LED Driver MAX7219 – clock](#) Below is the schematic that shows how the IC is wired to the ATMEGA328 microcontroller and the 4 digit 7-segment display with comon cathode. Besides the MAX7219 you need only three other external components: two capacitors and one resistor. The capacitors are here to reduce..... Listed under: [LED Projects](#)
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686. [Using Push Button Switch with Atmega32 and Atmel Studio](#) This tutorial is meant for beginners in the field of Atmel AVR programming. I hope that you already read my first tutorial Blinking LED using Atmega32 and Atmel Studio. In most of the embedded electronic projects you may want to use a push button switch..... Listed under: [LED Projects](#)
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687. [Build Your Own Microcontroller Based PID Control Line Follower Robot \(LFR\) – Second Part](#) One of the interesting parts in building the Line Follower Robot is; you could start it with a very simple version by using just two transistors with the LED and LDR for sensor (Build Your Own Transistor Based Mobile Line Follower Robot – First Part)..... Listed under: [Robotics - Automation Projects](#)
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688. [Basic User's Experiment Notes](#) The "Basic User's Experiment Note" is based on the popular 8-bit Atmel AVR ATmega328P microcontroller using AVRJazz 28PIN development board. This e-book covering most of the Atmel AVR ATmega328P microcontroller important features. With almost 140 pages, this e-book is organized similar to many of the..... Listed under: [Sensor - Transducer - Detector Projects](#)
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689. [Basic Servo Motor Controlling with Microchip PIC Microcontroller](#) The servo motor is widely used in model hobbyist such as airplane R/C model for moving the rudder, ailerons, elevators and acceleration control or in the car R/C model for steering and acceleration control. In this tutorial we will learn how to control the servo..... Listed under: [Motor Projects](#)
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690. [OH HAI! on Windows 10 IoT Core](#) Story Oh, Hai Hai ('hi') is an integration point for several stand alone smart home technologies. Hai runs on the Raspberry Pi and can be adapted to optimize electricity consumption (lighting/HVAC) and water usage (irrigation/rain collection) in a number of ways. Hai was originally envisioned..... Listed under: [Home Automation Projects](#)
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691. [ThiDom Home automation](#) Story This project uses Arduino, Raspberry and Attiny, it allows you to control nd monitor your home (AC outlet, shutters, heater, light, opening detector, temperature ...). The raspberry is the web server allowing control all arduino These can be controlled from any web browser around..... Listed under: [Home Automation Projects](#)
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692. [Cellular Data Logger](#) Story I have been collecting data from Raleigh's trails and parks for the last couple years. My primary platform has been a custom Arduino board I developed for low-cost (hey, these things may get damaged or stolen) and long battery life. I wanted a connected..... Listed under: [Sensor - Transducer - Detector Projects](#)
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693. [Physical computing with ATtiny](#) Story I have a nice "carranca" (or wall mask) from Chile that stands in my corridor. It's a very beautiful decorative mask that I liked from the very first moment I saw it at the shop. Few weeks ago I wondered if I could bring..... Listed under: [Sensor - Transducer - Detector Projects](#)

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694. [POV Cylinder with Arduino Due](#) Story Introduction This is my first Arduino project. My work was inspired by several maker projects that created Persistence of Vision Displays [2,3,4]. Persistence of vision (POV) refers to the optical illusion whereby multiple discrete images blend into a single image in the human mind and believed to..... Listed under: [LED Projects](#)
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695. [OLED on the Cheap!](#) Things used in this project Hardware components: OLED 128x64 SPI-capable Available on Aliexpress or eBay for \$4 to \$20 × 1 For standard Arduino platforms, use the unmodified Adafruit libs × 1 Story I like cheap electronics for playing. Cheap is good for budget conscious..... Listed under: [LED Projects](#)
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696. [Tinker's Word Clock – REVISITED! NOW 110% more AWESOME](#) I have been tinkering with Word Clocks for years. There is only one thing I like more than making word clocks... it's designing them so that they are easy to put together. This tutorial will go through my latest version (5!!!!). By the end of..... Listed under: [Clock Projects](#), [Home Automation Projects](#)
-
697. [nRF24L01+ with ATtiny85 3 Pins](#) Story This would be the continuation of my previous project Programming ATtiny85 with Arduino Uno. Now with cheaper ATtiny85 in place I was looking for cheaper ways to transmit the sensor data. Which brought me to nRF24L01+ a cheap, low power RF transceiver. This seemed..... Listed under: [Other Projects](#)
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698. [Programming ATtiny85 with Arduino Uno](#) Story I am working on a project which requires reading multiple sensor data on different locations. These require only few PWM pins so using multiple Arduino Uno would be expensive and unnecessary. So I decided to use ATtiny85 microcontroller in place of Arduino Uno development..... Listed under: [PWM Projects](#)
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699. [Franzino is a low cost Arduino standalone board](#) Hardware components: Atmel ATmega328P × 1 16 MHz Crystal × 1 Capacitor 22 pF × 2 Capacitor 100 nF × 5 LED (generic) × 2 Linear Regulator (7805) × 1 Capacitor 10 μF × 2 1N4007 – High Voltage, High Current Rated Diode × 1..... Listed under: [Development Board - Kits Projects](#)
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700. [Arduino Without External Clock Crystal on ATmega328](#) Story An Arduino consists of many components like: a linear regulator, USB to Serial microcontroller, debug LED, power LED, reset button, RX & TX LED, crystal oscillator, etc. But a minimal circuit can have just the brain of the Arduino UNO, that is, an ATmega328p..... Listed under: [Clock Projects](#)
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701. [Reducing Arduino Power Consumption](#) Story When it comes to portable electronics, one of the most important features is how to maximize the battery life. The ATmega328P, used on popular boards like the SparkFun RedBoard, Arduino Uno, and Pro Mini are actually quite power hungry. The RedBoard and Arduino Uno,..... Listed under: [Other Projects](#)
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702. [Gimmick on Barebones Arduino 16MHz](#) Story Did you see this 8MHz no-crystal Arduino? Arduino on Internal Oscillator Crystal as Clock Source by Naman Chauhan is a great project if you can live with 8MHz using the internal RC oscillator of the Atmega328P chip. I really like Naman's project; I did..... Listed under: [Other Projects](#)

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703. [Tri-Mode Digital Clock with ATtiny85 and RTC](#) Story Hello everybody, This is my first project using ATtiny85 microcontroller and also including a Real Time Clock (RTC) working with it. The use of ATtiny85 is a very interesting way to shrink your Arduino projects in a final tiny version. The Three-Modes Digital Clock..... Listed under: [Clock Projects](#)
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704. [Bootload Your ATtiny85](#) Story What is a Bootloader? Microcontrollers require a programmer to install firmware on them. A programmer is a device, that when combined with software, loads firmware to the microcontroller. There are many programmers available. I won't go into to detail about them, but I will..... Listed under: [LED Projects](#)
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705. [SSD1306xLED Tinusaur ATtiny85 Library for SSD1306](#) Story SSD1306xLED is a C library for working with the SSD1306 display driver to control dot matrix OLED/PLED 128x64 displays. It is intended to be used with the Tinusaur board but should also work with any other board based on ATtiny85 or similar microcontroller. The..... Listed under: [LED Projects](#)
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706. [3D-Printed RGB Wallet](#) Stand out from the crowd with this unabashedly ostentatious excuse for a wallet. It's got plenty of space, RGB lights, and you can even put your name on it for added vanity. Interested? Keep reading!In the files section of this build you can find two..... Listed under: [Other Projects](#)
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707. [Open Source IoT Platform](#) The Project Intended as open source for those who want to build their own dosimeter with their own tools, this is an IOT device that can take several sensors and have the data centralized online. The readings are accessible via a RESTful API, or by..... Listed under: [Home Automation Projects](#)
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708. [Light-Up Poker Chip](#) Spice up your poker games with these cool blinking chips. They can be programmed on the fly to have a certain number of the LEDs illuminated to indicate value, or you can have the lights blink in a cool pattern. They make great playing chips..... Listed under: [Game - Entertainment Projects](#)
-
709. [Scrumtato: Make Daily Stand-Ups Agile Again](#) Story The following was originally published in my blog. At Delphi in Gothenburg, where I am currently employed, we create all kinds of cool products for the automotive industry. To organize our development process, we use SCRUM and abide by the Agile principles. Every morning,..... Listed under: [Other Projects](#)
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710. [Goldilocks Analogue – Prototyping 3](#) Following my initial design article, and the follow up design article, I've put quite a lot of thought into how I can make this Goldilocks Analogue device best achieve my stated goals. Pictured is the new 3rd Goldilocks Analogue Prototype. I'm now working on the 4th Goldilocks Analogue..... Listed under: [LCD Projects](#)
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711. [Playing Simon On A Hacked Farm Toy](#) About My kids have a plastic farm toy. It neighs, it baas, and frankly, it grates. But since I tricked it out with a microcontroller brain, at least it can play Simon. One of the marvels of parenthood is the sheer volume of noisy plastic junk..... Listed under: [Phone Projects](#)

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712. [Coil Winding machine counter with Atmega8 and Reed relay](#) Connectors Everything has been mounted on a test board, including the headers for: ISP programmer (USBasp), the 5110 Nokia LCD, the power supply (5V in, fed to the 3.3V regulator), the Reed relay connector, the reset button connector and another 2 pins connector, used to..... Listed under: [Motor Projects](#)
-
713. [Bluetooth remote controllable \(Lego\) cars](#) How it started It started with the idea to make a technical proof of concept combining the Physical Web and WebBluetooth. The Physical Web is an effort by Google to allow interacting with "things" without fiddling around with installing apps or setting anything up. The..... Listed under: [Car Projects](#)
-
714. [Markov Music Box](#) markov summary Traditional music boxes play one or two tunes very well, but are not very interactive. Put differently, they have a high quality of synthesis, but a fixed-pattern note sequencer and fixed tonal quality. I wanted to build a device which would play an..... Listed under: [PWM Projects](#), [Sound - Audio Projects](#)
-
715. [DIY Canon IR Remote](#) Hardware components: Atmel ATtiny13a CHF 1.25 × 1 Osram SFH409 IR Diode CHF 0.75 × 1 Battery holder CR1220 CHF 0.65 × 1 Coin Cell Battery CR1220 3V × 1 Push Button CHF 0.25 × 1 Resistor 15Ω CHF 0.07 × 1 Micro Slide Switch..... Listed under: [How To - DIY - Projects](#)
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716. [wozItDo: Tiny IQ puzzel, BIG challenge](#) Hardware components: Atmel ATTiny85 × 1 LED (generic) × 3 Resistor 221 ohm Or similar, I used 220 ohm × 3 SparkFun Pushbutton switch 12mm or similar × 1 Coin Cell Battery Holder × 1 Coin Cell Battery CR2032 any 3v cell that fits is..... Listed under: [LED Projects](#)
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717. [Yet Another Z180 \(YAZ180\) Project](#) I'm thinking about a new project, something a little unusual but still with a rich history of information upon which to base the build. On Tindie, I found the RC2014 project which is a build of a Z80 platform but based on some modern components..... Listed under: [LED Projects](#)
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718. [Goldilocks Analogue Synthesizer](#) For the past year, I've been prototyping an Arduino clone, the Goldilocks Analogue, which incorporates advanced analogue output capabilities into the design of the original Goldilocks with ATmega1284p AVR MCU and uSD card cage. Recently the design scope crept up to include two SPI memory..... Listed under: [Other Projects](#)
-
719. [Arduboy Solar Charge Controller, Inverter, PowerBank, Lamp](#) About this Project I have a few solar panels, 12 Volt batteries, transformers and few more stuff laying around for a while crying out aloud to make some good use of them. Thus the birth of this device - complete small PV solution on a..... Listed under: [Solar energy projects](#)
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720. [Sigfox Talking Plant](#) Hardware components: Arduino UNO & Genuino UNO × 1 Atmel ATA8520D (EVK arduino) × 1 Software apps and online services: Sigfox Twitter Story What is Sigfox Talking Plant? It is a simple project based on Sigfox network to make a plant talk on Twitter. The..... Listed under: [Other Projects](#)

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721. [Make your own remote temperature/humidity sensor](#) Hardware components: Atmel atmega 328p-pu × 1 ControlEverything.com SI7020-A20 I²C Humidity and Temperature Sensor ±4%RH ±.4°C × 1 433 MHz transmitter / Receiver kit × 1 AMS1117-ADJ voltage regulator × 1 Capacitor 100 μF × 1 Capacitor 100 nF × 1 Resistor 1k ohm ×..... Listed under: [Sensor - Transducer - Detector Projects](#)
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722. [XBee Walkie Talkie](#) Hardware components: Goldilocks Analogue Still as prototype currently, but functionality can be recreated with MCP4822 DAC, Microphone Amplifier, and Headphone Amplifier, together with Arduino Uno. × 1 MAX9744 × 1 MAX9814 × 1 MCP4921 DAC × 1 Arduino UNO & Genuino UNO × 1 Arduino..... Listed under: [Other Projects](#)
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723. [Bionic Organs/Devices/Limbs Wireless Charging](#) Hardware components: IDT Qi 5W Transmitter Prototype Kit × 1 IDT Qi 5W Receiver Prototype Kit × 1 Atmel Atmega328p × 1 HC-SR04 Ultrasonic Sensor × 1 Hand tools and fabrication machines: Arduino cc Schemit PCBWeb Story Bionic devices/organs has a limited lifetime where its..... Listed under: [Other Projects](#)
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724. [Personal Home Assistant](#) Hardware components: Arduino UNO & Genuino UNO × 1 Atmel ATmega328 × 1 Linear Regulator (7805) × 1 Jumper wires (generic) × 20 Resistor 10k ohm × 5 Resistor 1k ohm × 5 Capacitor 22 pF × 6 16 MHz Crystal × 3 SparkFun Pushbutton..... Listed under: [Home Automation Projects](#)
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725. [Darby's not dead.](#) Hardware components: Particle Spark Core × 1 atmega168 × 1 pn532 breakout board/ adafruit × 1 Story In the future there is a bar where all the dead punk rockers hang out. They are each given a MiFare classic card programmed with their name and..... Listed under: [Other Projects](#)
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726. [Digital Thermometer using AVR, LM35 and 16×2 LCD](#) Thermometers are the device we use to measure the temperature in any desired scale and we all will be quite familiar with the analog thermometers. There are some disadvantages in analog thermometers and this can be overcome by using this digital thermometer using avr. The..... Listed under: [LCD Projects](#)
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727. [AVR Serial Communication \(UART\) Programming tutorial](#) This tutorial focuses to teach you how to program AVR Serial Communication (UART). UART plays an important role in almost every embedded applications which we see in our day to life and hence it was considered to be very important concept in every Microcontroller. The..... Listed under: [Other Projects](#)
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728. [Tutorial on printing image in Graphical LCD \(GLCD\) using Atmega32](#) Graphical LCD's known as GLCD are display devices which are capable of displaying graphical images, customized characters, etc. This paves way for any system to present information to the end user by means of interactive graphics such as printing image. Bored of using the old..... Listed under: [LCD Projects](#)
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729. [Creating Pac man custom patterns and animation in LCD display](#) LCD modules are widely used to display calculated data's, user references and much more. In addition all character based LCD which uses HD44780 controller consists of a special RAM known as CGRAM which allows user to create custom patterns. This tutorial will teach you to..... Listed under: [LCD Projects](#)

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730. [LCD Interface with Atmega32 AVR microcontoller for beginners](#) LCD's are quite familiar module when comes interfacing with microcontrollers. We can find these display modules in plenty of instances where a specific info is need to be displayed for the viewers. This article explains LCD interface with Atmega32 a AVR family Microcontroller and display..... Listed under: [LCD Projects](#)
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731. [Digital Clock using AVR Atmega16 Microcontroller](#) Digital clocks revolutionize the way we live our daily life as it helps people to stick with their schedule. This article will teach you to build your own Digital clock using DS1307 RTC Chip with Atmega16 microcontroller. As we all know that DS1307 is a..... Listed under: [Other Projects](#)
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732. [Volt-Amp meter using AVR microcontroller](#) Voltage and current are two most important parameters of electricity. This project teaches you to build a simple volt-amp meter using avr microcontroller. This project may not enable you to build a high end measurement tool but will be a good diy project which gives a..... Listed under: [Metering - Instrument Projects](#)
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733. [Door/Window alarm circuit](#) Door or Window alarm circuit have been used widely in many homes to detect intrusion. A simple search in internet might fetch you lot of alarms for you to buy. But making your own alarm will be something special and that's the purpose of this..... Listed under: [Other Projects](#)
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734. [Automatic plant watering system using AVR\(Atmega16\) Microcontroller](#) Plant watering system evolved through various stages where primitive irrigation systems possess many drawbacks as it fails to conserve water and human energy. So introducing Automation in it can help us to overcome these drawbacks and pave way to conserve water. This can be done..... Listed under: [Other Projects](#)
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735. [ATmega32 Switch Toggle Program](#) ATMega32 switch code is extremely simple to implement, and this article looks into how to write the code to make an LED light up when a switch is pressed. The atmega32-switch-code.c program tests the switch input to the ATMega32 Development System. There are many ways..... Listed under: [LED Projects](#)
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736. [ATmega32 blinking LED Lights](#) Using the ATMega32 microcontroller to flash or blink some LEDs is extremely simple and this tutorial shows how to make a blinker circuit including the example program code to blink eight LEDs. In this tutorial, you will learn how to make a program to blink..... Listed under: [LED Projects](#)
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737. [GSM Based Home Automation](#) GSM based home automation, project allows you to control electrical appliances using your mobile phone SMS. It consists of ATmega8 microcontroller, SIM300 GSM modem, Relays. There are many Home Automation Systems available in our market. Most of these are simple home appliances controlling systems like DTMF controlled..... Listed under: [Home Automation Projects](#)
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738. [GSM Based Fire Alarm System](#) GSM, Microcontroller Based Fire detection and SMS Alert system, it uses LM35 Temperature Sensor and MQ2 for Smoke sensing and 16x2 LCD is used to display temperature and Smoke Level, Over limit set points are set inside the program you can modify it as per..... Listed under: [Security - Safety Projects](#)

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739. [Password based door locking system](#) Password based door locking system, uses Matrix keypad to enter the password, This project is extended to operate on IR Remote RC-604, In this project all required data is given Circuit diagram, C code, PCB design and All related data, This project is based on..... Listed under: [Security - Safety Projects](#)
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740. [AVR Microcontroller based Temperature Monitoring and Control System](#) AVR Microcontroller based Temperature Controller, it uses LM35 Temperature Sensor for measurement of temperature and 16x2 LCD is used to display temperature set point, Heater Status and current temperature, It controls temperature by turning on and off of the heater using relay. This project is..... Listed under: [Sensor - Transducer - Detector Projects](#), [Temperature Measurement Projects](#)
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741. [Bluetooth based home automation](#) Bluetooth based home automation, project allows you to control electrical appliances using your android mobile phone. It consists of ATmega8 microcontroller, HC-06 Bluetooth module, Relays. There are many Home Automation Systems available in our market. Most of these are simple home appliances controlling systems like DTMF controlled..... Listed under: [Home Automation Projects](#)
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742. [Fingerprint based security system](#) This AVR microcontroller based project demonstrates Finger print based access control / security system, in this project we have provided all required data, PCB, Code, Circuit Diagram, Proteus Simulation. This project operates a relay based on valid finger detection. It is provided with 6-Keys for..... Listed under: [Security - Safety Projects](#)
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743. [Token number display system using microcontroller](#) Bank token number display project is build using ATmega8 Microcontroller and ULN2003 for driving large LED display, PCB layout, Circuit diagram are self explanatory. It is capable to display three digits, its simple project using microcontroller. Token issue systems are ideal for banks, airports, public..... Listed under: [LED Projects](#)
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744. [16x2 LCD interface with microcontroller](#) Interfacing with Hitachi 44780 The purpose of this page is to give a brief tutorial on how to interface with Hitachi 44780 based LCDs. I have tried to provide the all the data necessary for successfully adding LCDs to your application. The most common connector..... Listed under: [LCD Projects](#)
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745. [DS1307 RTC Interfacing with AVR microcontroller](#) In this tutorial we will learn How to interface RTC DS1307 with AVR microcontroller. We are using Atmega8 for the demo. GENERAL DESCRIPTION The DS1307 serial real-time clock (RTC) is a low-power, full binary-coded decimal (BCD) clock/calendar plus 56 bytes of NV SRAM. Address and data are..... Listed under: [Clock Projects](#)
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746. [Analog to Digital Converter AVR C Programming](#) One of the important features in today's modern microcontroller is the capability of converting the analog signal to the digital signal. This feature allows us to process the analog world easily such as temperature, humidity, light intensity, distance, etc; which usually captured by electronics sensor..... Listed under: [Microcontroller Programmer Projects](#)
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747. [AVRJazz Mega168/328 Learning and Development Board](#) The AVRJazz Mega168 board from ermicro is designed to be used both as the AVR microcontroller learning and development board. The AVR Jazz Mega168 board is stand alone microcontroller module equipped with the latest Atmel high performance low power technology AVR ATMega168 or ATMega328 microcontroller..... Listed under: [Development Board - Kits Projects](#)

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748. [Introduction to AVR Microcontroller Pulse Width Modulation \(PWM\)](#) PWM is used in many industrial mostly for controlling the motor speed. The PWM is used because it's the most efficient method comparing to the analog one. That's why most of the modern microcontrollers today have this features build in. How does this PWM works..... Listed under: [PWM Projects](#)
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749. [Atmel AVR ISP Microcontroller Programmer Project](#) One of the frustrating part in learning AVR microcontroller for the beginners is the AVR microcontroller programmer. The question is how to program my AVR microcontroller; actually if you googling on the internet and search for AVR ISP Programmer there are plenty information; start from..... Listed under: [Microcontroller Programmer Projects](#)
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750. [AVR Twinkle Twinkle Using PWM Project](#) Would be interesting if we could make our microcontroller to sing for us not just beeping or blinking; this project is all about using the powerful AVR ATmega168 16-bit PWM feature to produce accurate musical notes such as playing the child's favorite Twinkle-Twinkle Little Star..... Listed under: [PWM Projects](#)
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751. [AVR LCD Thermometer Using ADC and PWM Project](#) Sometimes we need our microcontroller to interact with more human readable information. It will be better for us if we could make it display the words not just blinking the LED. Today most modern gadget such as mobile phone and PDA, use LCD (Liquid Crystal..... Listed under: [PWM Projects](#)
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752. [Controlling DC motor with AVR ATtiny13 PWM and ADC Project](#) It's interesting to explore what we can do with this tiny 8 pins; 8-bit microcontroller. The ATtiny13 is the smallest and cheapest Atmel AVR 8-bit microcontroller families but yet, it's loaded with sophisticated peripherals such as two 8-bit PWM channels and 4 channels 10-bit ADC..... Listed under: [PWM Projects](#)
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753. [Transforming your AVR Microcontroller to the I2C or TWI Slave I/O Expander Project](#) The I2C bus (read as I squared C) is one of the most important embedded system serial bus interface first introduced by Philips in 1980; using just two lines called SCL (serial clock) and SDA (serial data) respectively make the I2C bus is a perfect..... Listed under: [Other Projects](#)
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754. [Developing Embedded Application with BASIC Language on the Microchip PIC18F Microcontroller using the Amicus18 Development system](#) The BASIC (Beginners' All-purpose Symbolic Instruction Code) language has been known as one of the popular high level language choice in embedded system today. In fact the born and development of the personal computer (PC) we use today has been influenced by the used of..... Listed under: [Development Board - Kits Projects](#)
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755. [Build your own stopwatch using Maxim MAX7219 Serially Interfaced, 8-Digit LED Display Drivers](#) One of the basic usage of the TIMER peripheral on every microcontroller is to provide the accurate timing mechanism. Using the TIMER peripheral as the basic timing, we could easily develop a stopwatch and display it to the 8-Digit seven segment numeric LED display. Thanks..... Listed under: [Clock Projects](#)
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756. [Building the I2C Smart DC Motor Controller with Atmel AVR Microcontroller – Part 1](#) The idea of building my own I2C (read as I square C) smart DC motor controller is came to me when I was learning and playing together with my son on his LEGO® MINDSTORM® NXT 2.0 about a year ago. The

NXT sophisticated controller also..... Listed under: [Motor Projects](#)

757. [Telepresence Robot using Microchip PIC16F1829 and Atmel AVR ATmega168 I2C Smart DC Motor Controller Microcontroller – Part 2](#) The I2C (read as I square C) smart DC motor controller is designed using the Atmel 8-bit AVR Atmega168 microcontroller and configured to act as the I2C slave device where it could be controlled by other microcontroller or microprocessor through the I2C SDA (serial data)..... Listed under: [Robotics - Automation Projects](#)

758. [How to use I2C-bus on the Atmel AVR Microcontroller](#) I2C (read as I Squared C) bus first introduced by Philips in 1980, because of its simplicity and flexibility the I2C bus has become one of the most important microcontroller bus system used for interfacing various IC-devices with the microcontroller. The I2C bus use only..... Listed under: [Other Projects](#)

759. [Interfacing GSM Module with Atmega32 AVR microcontroller](#) GSM (Global System for Mobile Communication) technology lets user to communicate with others across mobile networks hence it offers a vast area of coverage. Interfacing GSM technology with microcontroller will enable us to extend the communication to cover large area. This tutorial will teach you..... Listed under: [Other Projects](#)

760. [Integrating Wiznet W5100, WIZ811MJ network module with Atmel AVR Microcontroller](#) The rapid penetration of the internet networks into many of today's modern homes and personal gadgets (e.g. smart phone and smart pads) opening a tremendous useful and interesting embedded system application that could be integrated into our house or known as the intelligent house. For..... Listed under: [Internet - Ethernet - LAN Projects](#)

761. [Using Serial Peripheral Interface \(SPI\) Master and Slave with Atmel AVR Microcontroller](#) Sometimes we need to extend or add more I/O ports to our microcontroller based project. Because usually we only have a limited I/O port left than the logical choice is to use the serial data transfer method; which usually only requires from one up to..... Listed under: [Other Projects](#)

762. [Working with the Comparator Circuit](#) Sometimes in the embedded system world we need to process the analog world and sending the signal to the microcontroller when the analog signal exceed some predetermine limit we've set. Some example of this situation is to send the interrupt signal to the microcontroller operation..... Listed under: [Development Board - Kits Projects](#)

763. [Using Transistor as a Switch](#) Most of microcontrollers work within 5 volt environment and the I/O port can only handle current up to 20mA; therefore if we want to attach the microcontroller's I/O port to different voltage level circuit or to drive devices with more than 20mA; we need to..... Listed under: [Other Projects](#)

764. [Working with AVR microcontroller Communication Port Project](#) Back in the old days the COM port or known as RS-232 (EIA-232 standard) is one of the essential communications protocol and hardware use in many computer system installation start from small UNIX machine to the mainframe. The RS-232 protocol is used by terminal such..... Listed under: [Other Projects](#)

765. [Microwave Controller using ATmega8 – AVR Project](#) The user interface has the following parts. Output Device: A 16×2 alphanumeric LCD Module is used as the main output device. It can display numbers, alphabets and few symbols. It can show two line and each line can have 16 characters. The

backlight enables the..... Listed under: [LCD Projects](#)

766. [Stepper motor control with an ATmega8 microcontroller](#) This note provides basic implementation details and procedural information to design and assemble a stepper motor system. The controller discussed here is the ATmel mega8, an 8-bit microcontroller (MCU). The note consists of a general description and gives highlights of implementing a basic stepper motor..... Listed under: [Motor Projects](#)

767. [Interfacing Servo Motor with Atmega32 Microcontroller](#) Servo Motor is a DC Motor equipped with error sensing negative feedback to control the exact angular position of the shaft. Unlike DC Motors it will not rotate continuously. It is used to make angular rotations such as 0-90°, 0-180° etc. Stepper Motors can also..... Listed under: [Motor Projects](#)

768. [Interfacing DC Motor with Atmega32 Microcontroller](#) In some of your electronic projects you may want to control a DC Motor with Atmega32 Microcontroller. We can't connect a DC Motor directly to a microcontroller due to following reasons. A microcontroller can't supply the current required for the working of DC Motor. ATmega32 Microcontroller can source or..... Listed under: [Motor Projects](#)

769. [Interfacing LCD with Atmega32 Microcontroller using Atmel Studio](#) As we all know LCD (Liquid Crystal Display) is an electronic display which is commonly used nowadays in applications such as calculators, laptops, tablets, mobile phones etc. 16x2 character LCD module is a very basic module which is commonly used by electronic hobbyists and is used in..... Listed under: [LCD Projects](#)

770. [Blinking LED using Atmega32 Microcontroller and Atmel Studio](#) Similar to printing 'Hello World' in C or C++, the very first step towards programming a microcontroller is Blinking a LED with a delay. Atmega32 is a very popular high performance 8 bit AVR Microcontroller. For this example project we need to use two registers..... Listed under: [LED Projects](#)

771. [Interfacing rotary encoder to Atmega32](#) Recently I was working on a project that involved rotary encoder. I thought I'd share some thoughts on how rotary encoder can be interfaced and programmed. Actually it is easy to work with rotary encoders - interfacing is simple – only three wires are required..... Listed under: [LCD Projects](#)

772. [Graphical LCD Text Display](#) The Graphical LCD Text Display is complete! I've used the same Atmel ATmega8 controller that I used in the Composite Video Display. The interface is the same as well; an 8 bit parallel port with a strobe input and a busy output. Listed under: [LCD Projects](#)

773. [An advanced energy saver project with DTMF capabilities to use electricity efficiently by reducing the unwanted uses.](#)
INTRODUCTION: A lot of electricity is wasted due to ignorance or fault of the user. Sometimes a person in the room turns on all the electric equipments which is of no use to them. As an example, supposedly a person enters in the hall or conference..... Listed under: [Other Projects](#)

774. [Analog to Digital Converter of ATmega32 with LED Display](#) Microcontrollers are capable of detecting binary signals: is the button pressed or not? These are digital signals. When a microcontroller is powered from five volt, it understands zero volts (0V) as a binary 0 and five volts (5V) as a binary 1. But the real..... Listed under: [LED Projects](#)

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775. [4X4 Keypad Interfacing with ATmega32 and LED Display](#) Keypads are parts of HMI or Human Machine Interface and play really important role in a small embedded system where human interaction or human input is needed. Matrix keypads are well known for their simple architecture and ease of interfacing. In this project, we will..... Listed under: [LED Projects](#)
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776. [4X4 Keypad based Password with ATmega32 and LCD Display](#) Security is a prime concern in our day-today life. Everyone wants to be as much secured as possible. Keypad based password is one of the many method and the most common and easy one to provide security to any system. In this project, we will..... Listed under: [LCD Projects](#)
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777. [3-axis Accelerometer Sensor-ADXL335 Interfacing with ATmega32](#) ADXL335 accelerometer sensor is a MEMS (Microelectromechanical systems) sensor which can measure static acceleration of gravity in tilt-sensing applications, as well as dynamic acceleration resulting from motion, shock, or vibration. The accelerometer sensor is used in mobile devices, gaming systems, disk drive protection, image stabilization,..... Listed under: [Sensor - Transducer - Detector Projects](#)
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778. [Accelerometer based Hand Gesture Controlled Wheel Chair with ATmega32 for Physically Handicapped](#) In this project, we will learn How to design an Accelerometer based Hand Gesture Controlled Wheel Chair with AVR ATmega32 Microcontroller for Physically Handicapped. Here, we will use our hand gestures as input signals to drive the wheel chair in different direction and we will..... Listed under: [LCD Projects](#)
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779. [DS1307 RTC based Digital Clock Designing in 12 Hour Format with ATmega32 and 7-Segment Display](#) A digital clock is a type of clock that displays the time digitally (i.e. in numerals or other symbols), as opposed to an analog clock, where the time is indicated by the positions of rotating hands. The clock/calendar provides seconds, minutes, hours information. The clock..... Listed under: [Clock Projects](#)
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780. [AVR uartConfig – an atmega and arduino eeprom config library](#) Update to version 2014-06-13 AVR uartConfig is a small footprint library you can use to config your micro eeprom through uart communication. AVR uartConfig is a set of tools running on Windows, Linux and Mac, made up or: a avrgcc firmware library a commandline utility..... Listed under: [AVR ATmega Projects](#)
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781. [Accelerometer and Relay based Hand Gesture Controlled Wireless Home Automation System with ATmega32 using 433MHz RF](#) In this project, we will learn How to design an Accelerometer and Relay based Hand Gesture Controlled Wireless Home Automation System with AVR ATmega32 microcontroller using 433MHz RF. Here, we will use different hand gestures as input signal to control the appliances i.e 2 bulbs..... Listed under: [LCD Projects](#)
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782. [Password Protected BT136 Triac based Keypad Controlled Wireless Home Automation System with ATmega32 using 433MHz RF-I](#) In this project, we will learn How to design a Password Protected BT136 Triac based Keypad Controlled Wireless Home Appliances System with AVR ATmega32 microcontroller using 433MHz RF Part-I. Here, we will use the 4X4 keypad as the input device to enter the password and..... Listed under: [Home Automation Projects](#)
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783. [LM35 Temperature Sensor Interfacing with ATmega32 and LED Display](#) LM35 series is a low cost and precision Integrated Circuit Temperature Sensor whose output voltage is proportional to Centigrade temperature scale. Thus LM35 has an advantage over other temperature sensors calibrated in Kelvin as the users don't require subtraction of large constant voltage to obtain..... Listed under: [LED Projects](#)
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784. [Atmega 32u4 Based Wireless USB Keyboard](#) How a generic keyboard is made has been already explained in the Atmega 32u4 Based Generic USB Keyboard Project. In this project a wireless keyboard will be designed. For making a wireless keyboard, there will be two circuits involved in the project - a transmitter..... Listed under: [Other Projects](#)
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785. [Atmega 32u4 Based LED Status](#) In the Atmega 32u4 Based USB Controlled LED Series Project, it was demonstrated how to use control transfer to receive data from computer to the peripheral. In this project, it will be demonstrated to transfer data from microcontroller to the host computer. For this, the..... Listed under: [LED Projects](#)
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786. [Atmega 32u4 Based Wireless USB Mouse](#) How a generic mouse is made was explained in the Atmega 32u4 Based Generic USB Mouse Project. In this project a wireless mouse will be designed. For making a wireless mouse, there will be two circuits involved in the project - a transmitter circuit which..... Listed under: [Other Projects](#)
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787. [Atmega 32u4 Based USB Speaker](#) A speaker is a device that produces sounds from the electrical signal having audio encoded. The speakers usually have a 3.5 mm jack for audio output from the computer. Nowadays USB interface is also gaining popularity for interfacing audio devices with the computer. A lot..... Listed under: [Other Projects](#)
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788. [Atmega 32u4 Based USB Musical Keyboard](#) The music keyboard is one of the most common musical instruments. The electronic musical keyboards have been around for a long time. The electronic music keyboards synthesize musical sounds electronically according to MIDI (Musical Instrument Digital Interface) standards. Fortunately, the USB protocol does have provision..... Listed under: [Other Projects](#)
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789. [Atmega 32u4 Based USB EEPROM Reader](#) External memories are frequently used to store and carry computer data. The USB flash drives are quite common nowadays. This project is an attempt to demonstrate making of USB storage devices. The project converts an external EEPROM which basically has I2C interface to an USB..... Listed under: [Other Projects](#)
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790. [Atmega 32u4 Based USB Controlled LED Series](#) Throughout this USB series, different types of USB devices have been designed and developed. These devices were enumerating with the host computer and then were using Class Specific transfers for further USB communication. Like the Keyboard, Mouse and joystick devices were using interrupt transfers for..... Listed under: [LED Projects](#)
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791. [Atmega 32u4 Based USB Controlled Servo Motor](#) In this project, a device will be designed which will allow controlling a servo motor from the desktop computer on USB interface. For controlling a servo motor, PWM output needs to be generated from the microcontroller. The length of the ON time of the PWM..... Listed under: [Other Projects](#)
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792. [Atmega 32u4 Based USB Digital Voltmeter](#) In this project, a digital voltmeter will be designed which will show the voltage reading on a desktop application. The device will read analog voltage with respect to the ground, digitize the reading and send the reading to personal computer on USB interface. The device..... Listed under: [Other Projects](#)

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793. [Attiny85 As a Step/Dir Stepper Motor Controller](#) Somewhere in Greece, someone did something never done before... Seen those things before? Thing: 1 Thing: 2 Thing: 3 Oh, you have! You bought one of them you say? Oh... Don't worry, I did too. They did the job, yeah. But we paid for them..... Listed under: [Motor Projects](#)
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794. [Custom PCB for Lights, Temperature, Video OSD and VTX PSU upgrades to HKing Rattler RC Car](#) I've had the HobbyKing Rattler for some time now and I've been making small modifications here and there which have accumulated over time and has gotten to the point where it would be nice to have everything on a custom PCB. Here's how everything looks..... Listed under: [Temperature Measurement Projects](#)
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795. [Open Programmer – USB programmer for PIC, EPROM, ATMEL, SPI](#) Open Programmer – An open source USB programmer for PIC micros, I2C-SPI-MicroWire-OneWire-UNIO EEPROMs, some ATMEL micros, generic I2C/SPI devices and (soon) other devices. Completely free and Open Source (including firmware) Programs PIC10-12-16-18-24, dsPIC30-33, EEPROMs type 24xxxx (I2C), 25xxx (SPI), 93xx6 (MicroWire), DS24xx (OneWire), 11xxx (UNIO),..... Listed under: [Interfacing\(USB - RS232 - I2c - ISP\) Projects](#)
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796. [Updating electricity meter to communicate via WLAN](#) A while ago Farnell sent email to me and offered one (inexpensive) product as a sample in exchange for mentioning it at this blog. I browsed for a while for an interesting part and settled with Microchip MRF24WB0MA/RM WiFi module (Order code 1823142). This module..... Listed under: [Home Automation Projects](#)
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797. [Using Maxim DS1307 Real Time Clock with Atmel AVR Microcontroller Using Atmega32](#) Building our own digital clock is one of the dreamed project by most of the hobbyist or anyone that want to learn or involve seriously in the embedded system world; the ability to integrate time, day and date to the embedded system is one of..... Listed under: [Clock Projects](#)
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798. [Single Chip Computer: Easy to Produce AVR BASIC Co](#) This instructable will document and explain my latest project, a standalone computer system based upon a single chip (IC); the ATmega 1284P. The 1284P is responsible for all aspects of the system, including running the BASIC interpreter, generation RCA video signals and reading keyboard input..... Listed under: [Android Projects](#)
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799. [Doppler Radar for Collision Avoidance](#) Introduction My project uses Doppler radar sensors in order to provide the user with movement, speed, and distance information of their environment. An array of Doppler radar sensors are placed on the user's head and vibration motors are placed on the user's chest, neck, back,..... Listed under: [Sensor - Transducer - Detector Projects](#)
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800. [Drums Anywhere: solution to making a great drum beat Using 3D-printed boxes](#) Introduction "The sound and experience of drums... Any time, anywhere, with any object." -Project Soundbyte It's Friday night and you're hanging with your friends at home. There are no parties tonight and you have seen everything on Netflix already - you're bored out of your..... Listed under: [Sound - Audio Projects](#)
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801. [Ultrasonic range-finder with haptic feedback](#) Introduction "An ultrasonic range-finding hat with variable haptic feedback for obstacle detection." - Project Sound Bite For our ECE 4760 final project, we designed and implemented an ultrasonic range-finding hat that uses haptic feedback to alert its wearer about obstacles in his or her path. The..... Listed under: [Sensor - Transducer - Detector Projects](#)

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802. [Capacitive Touch with Atmel's AT42QT1070 Touch Sensor IC](#) Rather than using an out-of-the-box capacitive touch solution for my projects, I thought I'd attempt making my own little breakout board. The idea is to use a sensor capable of triggering normal digital input pins using touch. This post covers the selected touch sensor IC,..... Listed under: [Sensor - Transducer - Detector Projects](#)
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803. [AVR ATtiny USB Tutorial Part 2](#) This is the second part of my USB tutorial for ATtiny2313 and V-USB library. In the first part we learned how to get 3.3V from USB to power our circuits. In this part, we will expand our setup with following parts: Larger breadboard and additional,..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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804. [AVR Atmega audio input RMA using FFT Radix-4](#) audiogetradix4 is a simple library you can use to interface with a ac audio input. It reads data from an ADC pin and returns the RMS value of the input using DFT Radix-4 algorithm. The discrete Fourier transform (DFT) converts a finite list of equally-spaced,..... Listed under: [Sound - Audio Projects](#)
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805. [Irradiance/Illuminance Meter using TLR235R sensor with AVR Atmega](#) The TSL235 is a light-to-frequency converter. This library reads TSL235 output frequency and convert it to irradiance, and then to illuminance. Irradiance is the power of electromagnetic radiation per unit area (radiative flux) incident on a surface. It's expressed in watt per square metre, the,..... Listed under: [Metering - Instrument Projects](#)
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806. [An AVR Atmega LCD Menu builder library](#) lcdmenu1 is a simple and small lcd menu builder for AVR Atmega. It works with only 4 buttons (up, down, right, left), additional buttons can be added. It can also store values to eeprom User can use button up and down to list menu categories, right,..... Listed under: [LCD Projects](#)
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807. [An optical dust meter that uses the GP2Y1010AU0F sensor library made with AVR Atmega](#) This project is a dust detector that use the GP2Y1010AU0F sensor. Attached you can also find the GP2Y1010AU0F sensor library for AVR Atmega.GP2Y1010AU0F is a dust sensor by optical sensing system. An infrared emitting diode (IRED) and an phototransistor are diagonally arranged into this device,..... Listed under: [Sensor - Transducer - Detector Projects](#)
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808. [AVR Atmega dehumidifier controller board, update](#) This project is an update to the previous dehumidifier based you can here: <http://davigegironi.blogspot.it/2013/04/avr-atmega-dehumidifier-controller.html> This update adds some usefull functions. The main issue that i've fixed is the microcontroller crash, that happens sometimes. I've noticed that sometimes the controller stop running, crash or doesn't works as,..... Listed under: [Sensor - Transducer - Detector Projects](#)
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809. [A simple brushless sensorless motor driver for AVR Atmega](#) Brushless electric motor (BLDC motors) are synchronous motors that are powered by a DC electric source via an integrated inverter/switching power supply, which produces an AC electric signal to drive the motor. For an introduction to BLDC motors, please look at my sensored motor driver,..... Listed under: [Motor Projects](#)
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810. [An AVR Atmega based PID magnetic levitator](#) This is a magnetic levitator implemented using Atmega8 microcontroller. Magnetic levitation is a method by which an object is suspended with no support other than magnetic fields. To make a magnet levitate, an hall sensor is attached to a coil. The coil acts as an,..... Listed under: [Sensor - Transducer - Detector Projects](#)

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811. [A led matrix Mask built on AVR ATmega8](#) AVR Mask1 is a led mask built around 74hc595 shift register and 8x8 led matrix. The "Dylan Dog" comics decoupage, in conjunction with his stands, make it good looking. It has 4 8x8 led matrix, 2 for the mouth, and 2 for eyes. When the user..... Listed under: [LED Projects](#)
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812. [A simple Sound Pressure Level Meter \(SPL\) dB audio meter using AVR ATmega](#) A sound level meter or sound meter is an instrument which measures sound pressure level. Sound pressure level (SPL) or sound level is a logarithmic measure of the effective sound pressure of a sound relative to a reference value. It is measured in decibels (dB)..... Listed under: [Sound - Audio Projects](#)
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813. [SD card logger library with log rotation that fits on ATmega8](#) This library implements an SD card Data Logger that runs on ATmega. It has a small footprint, so it can be loaded on an ATmega8, leaving space for user code. It supports SD and microSD cards formatted with FAT16. It also features log rotation. The "Petit FAT"..... Listed under: [Memory - Storage Projects](#)
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814. [A Pickup Winding machine built on an ATmega8](#) The core of this project is an ATmega8. It features: wind counter slow startup automatic stop configurable motor speed configurable winds 2 directions If you are looking for a CNC version: you can find it here: <http://davigeroni.blogspot.it/2016/06/a-cnc-pickup-winding-machine-built-on.html> This winder has an LCD display that will show..... Listed under: [Motor Projects](#)
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815. [USB AVR programmer](#) I've already had a programmer for Atmel's AVR microcontrollers, but I couldn't use it in my lab, because my laptop doesn't have a LPT port. So I decided to make a new programmer with USB connection. I've found an open source programmer AVR doper, and..... Listed under: [LCD Projects](#)
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816. [RSS Reader using AVR mega8](#) I spent part of an afternoon developing a hardware RSS reader (most of my time was spent on the python side of things). It's pretty simple and uses an AVR microcontroller connected to a computer via a serial cable Hardware I am using the Dragon..... Listed under: [LCD Projects](#)
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817. [Veronica – VRAM](#) I considered titling this article, "adventures in breadboard noise", since that's what I spent most of my time dealing with. In any case, let's recap where we were. Veronica's video generator was generating a stable VGA signal. In addition, a test pattern was being displayed..... Listed under: [LCD Projects](#)
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818. [RFID based security system using AVR ATmega32 microcontroller](#) RFID technology brought a great revolution in our life as it simplifies the machine communication. RFID's are used almost everywhere today Schools, hospitals, industries and much more. This article teaches you to build a simple RFID based security system using AVR microcontroller which is reliable..... Listed under: [Security - Safety Projects](#)
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819. [AVR HVSP Fuse Resetter](#) Description In working w/ 8 or 14 pin avr devices, I would sometimes want to use the RESET pin as io as the io pin count is low. But doing so will disable further programming via SPI. I do not need a full blown HV..... Listed under: [AVR ATmega Projects](#)
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820. [AVR Thermostat](#) This thermostat is built around an ATmega164 and a TC1047A temperature sensor. It controls your furnace and air conditioner. It is not programmable, although it has a clock and is capable if some additional code were written (any volunteers?). The unique feature is that instead of a bunch of buttons..... Listed under: [Temperature Measurement Projects](#)
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821. [Building a Wifi Radio – Part 7, Building an LCD Display](#) This is the seventh part of an ongoing series about building a low cost, open source streaming internet radio. If you haven't already, check out the previous parts (see the links at the end of this article) for some background about the project. In part..... Listed under: [LCD Projects](#)
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822. [Reading temperature on AVR Atmega using a thermistor with NTCtemp library 02](#) A thermistor is a type of resistor whose resistance varies significantly with temperature, more so than in standard resistors. NTCtemp is a simple AVR library to read temperature from a thermistor connected to an atmega micro. The library implements three models convert adc value read from analog..... Listed under: [Temperature Measurement Projects](#)
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823. [CMR Robot Arm](#) Our project was mainly designed for the Cornell Mars Rover project team (CMR), which will be using the robotic arm for competition to complete many different tasks in the deserts of Southern Utah. For our ECE 4760 final project, we created the control systems for..... Listed under: [Robotics - Automation Projects](#)
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824. [AVR 16bit Stereo Wave Player](#) Introduction This project aims to implement a cost-effective wave player based on AVR (ATmega / ATiny Series) with CD-Audio Quality, which can play 8-bit/16-bit Mono/Stereo standard RIFF (Resource Interchange File Format) wave files. This project can be applied into many applications such as bus /..... Listed under: [Sound - Audio Projects](#)
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825. [Drive a stepper motor with acceleration and deceleration using an Allegro driver on ATmega8](#) The stepper motor is an electromagnetic device that converts digital pulses into mechanical shaft rotation. Most common types of stepper motor can be bipolar or unipolar, depending on the winding. To make a stepper motor move, motor windings must be loaded in the correct order. A..... Listed under: [Motor Projects](#)
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826. [InLinea01: A PID controlled line following robot build on an ATmega 8](#) InLinea01 is a simple PID controlled line following robot. This is not speed oriented line follower, this is just a prototype I built to experiment with this type of machines, though it can be the first step to build a faster one. The goal of a..... Listed under: [Robotics - Automation Projects](#)
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827. [A DIY A4 Laser Engraver made from a scanner and a printer on ATmega328](#) This "Get Ready For Win98" Laser Engraving Machine it's built using an old scanner, and an old printer. A laser engraving machine is a tool that uses lasers to engrave an object. I've an old broken scanner and an old printer lying around. Inspired by this instructables..... Listed under: [CNC - Printing Machines Projects](#)
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828. [CT Sensor on AVR ATmega](#) A CT (Current Transformers) sensor is a device used to measure alternating current. A CT sensor, like other current transformers is made by a primary winding, a magnetic core and a secondary winding. The primary winding is often a single wire passing through the main..... Listed under: [Sensor - Transducer - Detector Projects](#)

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829. [A web configurable Xively logger, build on AVR ATmega328](#) Xively (formerly Cosm and before that Pachube) is a platform devoted to simplifying the interconnection of devices and data with applications on the Internet of Things. It is an on-line database service allowing developers to connect sensor-derived data (e.g. energy and environment data from objects,..... Listed under: [Sensor - Transducer - Detector Projects](#)
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830. [Cheap CO2 meter using the MQ135 sensor with AVR ATmega](#) MQ135 is an Air Quality Sensor suitable for detecting of NH3, Alcohol, Benzene and other gases. The description below, is what i derive from the poor datasheet of this sensor, it may be uncorrect, so if you have suggestions please leave me a feedback. The..... Listed under: [Sensor - Transducer - Detector Projects](#)
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831. [A simple brushless sensored motor driver for AVR Atmega](#) Brushless electric motor (BLDC motors) are synchronous motors that are powered by a DC electric source via an integrated inverter/switching power supply, which produces an AC electric signal to drive the motor. Additional electronics control the inverter output amplitude and waveform (and therefore percent of..... Listed under: [Motor Projects](#)
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832. [PWM Motor Driver with MOSFET H-Bridge and AVR ATmega8](#) Here is a very simple project of controlling a small DC-motor (taken from an old personal cassette player) with ATmega8. The ATmega8 is having three PWM channels, out of which two are used here. PWM waveforms are fed to MOSFET (RFD3055) H-bridge. Here, direction is..... Listed under: [Motor Projects](#), [PWM Projects](#)
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833. [Atmel AVR ATmega16 Interfacing With 16x2 char LCD](#) An alphanumeric low cost LCD Display is very essential for may small and big projects to Display various type of information. Hitachi HD44780 Chipset based 16x2 char LCD is Really very cheap and easily available in the local market. Project Description:- In this project we are going to..... Listed under: [LCD Projects](#)
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834. [An AVR-Based Microstepping Bipolar Chopper Stepper Motor Driver \(STMD\)](#) Features Open Source - The schematic, parts list, and software are all freely downloadable! Hobbyist-friendly - No surface mount parts means allows this drive to be easily repaired! DMOS driver chips rated at 55V and 3 Amps. Easy parts availability - Electronic parts are all..... Listed under: [Motor Projects](#)
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835. [LCD Interfacing with AVR](#) Interfacing LCD Display in 8bit Mode I've already discussed about the LCD display in a note here in this website. You can read the Note on character LCD Display here. Now let us come to the interfacing side of LCD. Let us see the 8bit..... Listed under: [LCD Projects](#)
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836. [How to Establish A PC-Micro controller USART communication](#) Introduction USART is one of the primitive inter-device communication protocols. It is not used in modern computers. But still, a few mother boards come with the module necessary for an USART communication. Here, in the case of PCs, the port is known as COM port..... Listed under: [AVR ATmega Projects](#)
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837. [How to Interface an External EEPROM with AVR Atmega32](#) In this article, we will explain how to communicate to an external EEPROM from the AVR Atmega32 MCU using the I2C communication protocol. So let's begin our tutorial on how to interface an EEPROM (AT24C16A) with AVR Atmega32.You will usually need an external EEPROM when..... Listed under: [Sensor - Transducer - Detector Projects](#)

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838. [Week 11: Networking with ESP8266](#) For this week I set out to make a board that will show realtime MBTA bus arrival times using the ESP8266 wifi module and a LCD. Seemed doable. People of the internet have been excited about the ESP8266 lately. Here is a snapshot of google..... Listed under: [LCD Projects](#), [Sensor - Transducer - Detector Projects](#)
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839. [Color Video Game on AVR](#) Introduction Our project is to make a color video game that runs primarily on the ATmega 1284P. To do this, we adhered to the NTSC standard for color video. The sync signals used for NTSC are generated on the ATmega 1284P itself, and all game..... Listed under: [Game - Entertainment Projects](#)
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840. [Working with Atmel AVR Microcontroller Basic Pulse Width Modulation \(PWM\) Peripheral](#) Pulse Width Modulation (PWM) is a technique widely used in modern switching circuit to control the amount of power given to the electrical device. This method simply switches ON and OFF the power supplied to the electrical device rapidly. The average amount of energy received..... Listed under: [PWM Projects](#)
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841. [How to interface RFID with AVR ATmega32 microcontroller](#) RFID is most arguably a evolutionary wireless technology which boosted working of embedded devices up to great mark. And there is plenty of systems and devices working based on this technology. This article is focused to teach you how to interface RFID with AVR microcontroller..... Listed under: [AVR ATmega Projects](#)
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842. [Remote Temperature Monitoring using GSM – AVR Project](#) Temperature monitoring have wide application in daily life. In modern day keeping an eye on temperature of places such as server rooms, hospital rooms, warehouses and green houses can help solve many problems. But with the use of normal temperature sensors, someone needs to go..... Listed under: [Temperature Measurement Projects](#)
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843. [ATMega16 AVR Microcontroller Seven Segment Digital Clock](#) The ATMega16 Seven Segment Digital Clock In this ATMega16 AVR project we will be designing and implementing a digital clock with the aid of a Atmel AVR ATMega16 microcontroller and Seven Segment Displays. As such before going through this digital clock AVR project it is..... Listed under: [Clock Projects](#)
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844. [Servo motor control using AVR](#) Servo motors are so called "closed feedback" systems. This means that motor comes with control circuit, which senses if motor mechanism is in desired location and if not it continuously corrects an error until motor reaches proper point. Servo motors are widely used in robotics,..... Listed under: [Motor Projects](#)
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845. [Running TX433 and RX433 RF modules with AVR microcontrollers](#) Sometimes in embedded design you may want to go wireless. Might be you will want to log various readings of remotely placed sensors, or simply build a remote control for robot or car alarm system. Radio communications between two AVR microcontrollers can be easy when..... Listed under: [Robotics - Automation Projects](#)
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846. [Obstacle Avoiding Robot using AVR ATmega32 – Part II](#) Hello and Welcome back to the second part of Obstacle Avoiding Robot Tutorial. In the last part we studied the drive system and the mechanical construction of our robot. In this part we will make the sensor part. The sensors will help our robot detect..... Listed under: [Robotics - Automation Projects](#)

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847. [Weeks 11-12: AVR USB Devices and Programming](#) One of the relatively unexplored topics in this week's lecture was USB, the ubiquitous protocol that allows computers to communicate with peripheral devices (containing microcontrollers). Creating a USB device allows any computer to talk to it without the specialized software and hardware we've been using..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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848. [Lab: DC Motor Control Using an H-Bridge](#) Introduction Contents [show] In this tutorial, you'll learn how to control a DC motor's direction using an H-bridge. To reverse a DC motor, you need to be able to reverse the direction of the current in the motor. The easiest way to do this is..... Listed under: [Motor Projects](#)
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849. [Final Project: built a sous-vide immersion cooker](#) For my final project I built a sous-vide immersion cooker: Sous-vide is a method for cooking food in a temperature-controlled water environment for longer than normal cooking times, at an accurately regulated temperature. Sous-vide cookers are often used in high-end restaurants. In the past few..... Listed under: [Temperature Measurement Projects](#)
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850. [Arduino Robotic Arm](#) In this tutorial, we design an Arduino Uno Robotic Arm. Entire arm will be designed from some scrap material and servos. Entire process of construction has been explained in detail below. The arm has been built with cardboards and the individual parts have been locked to..... Listed under: [Robotics - Automation Projects](#)
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851. [LED Blinking with ATmega32 Microcontroller](#) Blinking LED is the first step you would like to take to get started with electronics. In this tutorial we are going to connect an LED with ATmega32, which is an AVR series microcontroller. We are going to blink the LED at half a second rate..... Listed under: [LED Projects](#)
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852. [Interfacing LCD with ATmega32 Microcontroller](#) To establish a good communication between human world and machine world, display units play an important role. And so they are an important part of embedded systems. Display units - big or small, work on the same basic principle. Besides complex display units like graphic displays..... Listed under: [LED Projects](#)
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853. [Power LED Dimmer using ATmega32 Microcontroller](#) In this project we are going to use one of the features of ATmega32A to adjust the brightness of 1Watt LED. The method that is used to adjust the speed of LED is PWM (Pulse Width Modulation). The method of PWM is explained here. Consider..... Listed under: [LED Projects](#), [PWM Projects](#)
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854. [Automatic Staircase Light](#) We all know that one of the places where power wastage happens most in homes and offices is at staircases. We usually turn on light at stairs and leave it in a hurry. In this project we are going to design a stair case lamp which..... Listed under: [Home Automation Projects](#)
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855. [Microcontroller Based Electronic Voting Machine](#) Whenever we go to vote for elections we come to see electronic voting machines. In this project we are going to design and develop a simple voting machine by using ATmega32A microcontroller. Although we can use the controller to get more than 32 people voting machine, to..... Listed under: [AVR ATmega Projects](#)

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856. [RFID Based Toll Plaza System](#) We know in offices, shopping malls and in many other places where only the person with authorization card is allowed to enter the room. These systems use RFID communication system. RFID is used in shopping malls to stop theft as the products are tagged with RFID chip..... Listed under: [AVR ATmega Projects](#)
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857. [0-99 Counter using AVR Microcontroller](#) In this tutorial we are going to design a 0-99 counter by interfacing two seven segment displays to ATMEGA32A Microcontroller. Here we count events based on number of times button is pressed. Before moving ahead, let's understand what is a seven segment display. A seven segment display..... Listed under: [LED Projects](#)
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858. [Temperature Measurement using LM35 and AVR Microcontroller](#) In this project we are going to design a circuit for measuring temperature. This circuit is developed using "LM35", a linear voltage sensor. Temperature is usually measured in "Centigrade" or "Faraheite". "LM35" sensor provides output based on scale of centigrade. LM35 is three pin transistor..... Listed under: [Temperature Measurement Projects](#)
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859. [RFID Based Voting Machine](#) We know in offices, shopping malls and in many other places where only the person with authorization card is allowed to enter the room. These systems use RFID communication system. RFID is used in shopping malls to stop theft as the products are tagged with RFID chip..... Listed under: [AVR ATmega Projects](#)
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860. [0-25V Digital Voltmeter using AVR Microcontroller](#) In this project we are going to design a 25V range digital voltmeter by using ATMEGA32A microcontroller. In ATMEGA, we are going to use 10bit ADC (Analog to Digital Converter) to build a digital voltmeter. Now the ADC in ATMEGA can not take a input..... Listed under: [Metering - Instrument Projects](#)
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861. [Distance Measurement using HC-SR04 and AVR Microcontroller](#) In this tutorial we are going to discuss and design a circuit for measuring distance. This circuit is developed by interfacing ultrasonic sensor "HC-SR04" with AVR microcontroller. This sensor uses a technique called "ECHO" which is something you get when sound reflects back after striking with..... Listed under: [Calculator Projects](#)
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862. [Touch Keypad Interfacing with ATmega32 Microcontroller](#) In this tutorial we are going to interface a 4x2 (8 key) touch keypad with ATMEGA32A microcontroller. We all know keypad is one of the most important input devices used in electronics engineering. This module does not have actual keys, but have specially designed capacitive metal pads,..... Listed under: [LED Projects](#)
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863. [4x4 Keypad Interfacing with ATmega32 Microcontroller](#) In this tutorial we are going to interface a 4x4 (16 key) keypad with ATMEGA32A microcontroller. We know that keypad is one of the most important input devices used in electronics projects. Keypad is one of the easiest ways to give commands or instructions to an electronic..... Listed under: [AVR ATmega Projects](#)
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864. [Flex Sensor Interfacing with AVR Microcontroller](#) In this tutorial we are going to interface FLEX sensor with ATMEGA8 microcontroller. In ATMEGA8, we are going use 10bit ADC (Analog to Digital Conversion) feature to do this job. Now the ADC in ATMEGA cannot take a input more than +5V. [caption id="attachment_34862" align="aligncenter"..... Listed under: [Sensor - Transducer - Detector Projects](#)

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865. [Joystick Interfacing with AVR Microcontroller](#) In this tutorial we are going to interface a joystick module with atmega8 microcontroller. A JOY STICK is an input module used for communication. It basically makes easy the user machine communication. A joystick is shown in below figure. [caption id="attachment_34858" align="aligncenter" width="600"] Joystick Interfacing with AVR Microcontroller[/caption]..... Listed under: [AVR ATmega Projects](#)
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866. [Anti-Theft Alert System using ATmega8 Microcontroller](#) In this project we are going to make a vibration alert system with ATMEGA8 microcontroller. This can also be used as a theft alert system, for that we are going to interface tilt sensor with ATMEGA8. A tilt sensor is shown in below figure. [caption id="attachment_34853" align="aligncenter" width="600"] Anti-Theft Alert System using ATmega8 Microcontroller[/caption]..... Listed under: [Sensor - Transducer - Detector Projects](#)
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867. [100mA Ammeter using AVR Microcontroller](#) In this project we are going to make a low range ammeter using ATMEGA8 microcontroller. In ATMEGA8, we are going use 10bit ADC (Analog to Digital Conversion) feature to do this. Although we have few other ways to get the current parameter from a circuit, we..... Listed under: [AVR ATmega Projects](#)
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868. [Light Intensity Measurement using LDR and AVR Microcontroller](#) In this project we are going to interface LDR with ATMEGA8 microcontroller, and with this we can measure LIGHT INTENSITY in the area. In ATMEGA8, we are going to use 10bit ADC (Analog to Digital Conversion) feature to measure the light intensity. An LDR is a transducer..... Listed under: [AVR ATmega Projects](#)
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869. [Fire Alarm System using AVR Microcontroller](#) In this project, we are going to make a Fire Alert System using ATMEGA8 microcontroller and fire sensor. Fire sensor can be of any type, however we are using IR (Infrared) based Fire Sensor. Although IR based Fire Sensors have some disadvantages mostly of inaccuracy, it..... Listed under: [Security - Safety Projects](#)
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870. [Alarm Clock using ATmega32 Microcontroller](#) In this project we are going to design a simple Alarm clock using ATMEGA32 timers. ATmega32A microcontroller has a 16 bit timer, and we will be using that timer to count the seconds and develop a digital clock. [caption id="attachment_34830" align="aligncenter" width="650"] AVR Microcontroller Based Digital Alarm..... Listed under: [Clock Projects](#)
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871. [Introduction to Octocoupler and Interfacing with ATmega8](#) In this tutorial we are going to interface an Optocoupler with ATMEGA8 microcontroller. Octocouplers are fascinating devices used to isolate the electronic and electrical circuits. This simple device isolates the sensitive electronics from robust electronics like motors, yet keeping the load in control over the source. [caption id="attachment_34818" align="aligncenter" width="650"] Introduction to Octocoupler and Interfacing with ATmega8[/caption]..... Listed under: [AVR ATmega Projects](#)
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872. [How to establish UART communication between ATmega8 and Arduino Uno?](#) Here we are going to establish a communication between an ATmega8 microcontroller and Arduino Uno. The communication established here is UART (Universal Asynchronous Receiver Transmitter) type. It's serial communication. By this serial communication data can be shared between two controllers, which is a required in various embedded system..... Listed under: [Android Projects](#)
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873. [8x8 LED Matrix Interfacing with AVR Microcontroller](#) In this session we are going to design an 8x8 LED display with 8x8 LED matrix and ATmega8 microcontroller, which can show alphabets or names. [caption id="attachment_34818" align="aligncenter" width="650"] LED Matrix Interfacing with AVR Microcontroller[/caption] A 8x8 LED matrix contains 64 LED (Light Emitting Diodes) which..... Listed under: [LED Projects](#)

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874. [Make Your Own Homemade Arduino Board with ATmega328 Chip](#) Arduino is an open-source development platform for engineers and hobbyists to develop electronics projects in an easy way. It consists of both a physical programmable development board (based on AVR series of microcontrollers) and a piece of software or IDE which runs on your computer and used to write and upload..... Listed under: [Arduino Programmer Projects](#)
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875. [Scrolling Text Display on 8x8 LED Matrix using AVR Microcontroller](#) In this tutorial we are going to design an 8x8 LED Matrix Scrolling Display using ATMEGA32, which will show scrolling alphabets. 8x8 LED Matrix contains 64 LEDs (Light Emitting Diodes) which are arranged in the form of a matrix, hence the name is LED matrix. We are..... Listed under: [LED Projects](#)
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876. [Atmega 32u4 Based USB Data Logger \(Part 23/25\)](#) In this project, a device will be designed that will read analog data from any analog sensor and will send the digitized form of that data to a personal computer on USB interface. On PC, a desktop application will store the data in an excel..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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877. [Controlling a BLDC Motor with an ESC](#) REQUIREMENTS: 1. Microcontroller (AtMega 16) 2. A Brushless DC motor (BLDC) 3. An Electronic Speed Controller (ESC) 4. Power source to drive the motor (LiPo battery) DESCRIPTION: Brushless motors have much more satisfying results as compared to brushed motors. The basic difference between them is..... Listed under: [Motor Projects](#)
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878. [AT89C2051 Development Stick](#) 89C2051 Development Stick kit offers an easy way of interfacing 89C2051 compatible MCU's. Slim design with plug in type approach Voltage regulator on board for stable and regulated supply to the MCU RESET switch for resetting the MCU 0592 MHz Crystal 4K external EEPROM Power-On..... Listed under: [Development Board - Kits Projects](#)
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879. [EGYduino – Arduino compatible board](#) EGYduino is a DIY Arduino clone made on a single sided PCB board. It's simple and cheap to build using home PCB fabrication methods and it's 100% compatible with Arduino. Description ATmega8 takes care of the USB to serial communication and should be burned with..... Listed under: [Android Projects](#)
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880. [ATmega64 Development Board](#) This project is a development board for Atmel ATmega64 microcontroller and can be used to easily develop custom AVR firmware or as an introduction board to microprocessors and programming. A development board is better to be used instead of a breadboard setup as it facilitates..... Listed under: [Development Board - Kits Projects](#)
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881. [DigiPot – Rotary Encoder Digital Potentiometer](#) Description The "potentiometer" is actually a rotary encoder (TW-700198) connected to a microcontroller that reads the signal from it and convert it to a value that is displayed on 7-segment displays. The value also is sent via i2c/spi/serial/usb to the host. Also 3 LED and..... Listed under: [AVR ATmega Projects](#)
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882. [Atmega168 TV-B-Gone](#) Yes, I know what you are thinking: "oh no, please not another TVBGone..." Anyway, this instructable is for the newbies as me which are still experimenting with Arduino, and prefer to program an Atmega168 in Arduino than an AtTyny85 with other methods. This circuit is..... Listed under: [Home Automation Projects](#)

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883. [Arduino atmega644/1284 clone](#) This project is about to DIY an Arduino board with an ATMEGA644P or 1284P to have more INPUTS/OUTPUTS than on the atmega328P. You can buy an arduino mega but it's more expensive. The microcontrollers will be bootloaded with Sanguino and the project seems to be..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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884. [Small Footprint ATmega328P Board](#) For my Word Clock project, for which I built a custom 8 x 8 LED Matrix with controller, I needed a much smaller footprint DIY-Duino (board for an ATmega328P microprocessor), one that would have all of the main functionality of my previous DIY-Duino boards (such..... Listed under: [Development Board - Kits Projects](#)
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885. [Flames effect with a 8x8 LED Matrix and ATmega328](#) A while ago I found some blog posts explaining how to use a LED matrix as a pendant (<http://hackaday.com/2013/01/10/8x8-led-matrix-pendant-sealed-in-a-block-of-epoxy/> and <https://sites.google.com/site/tinymatrix/>). The 8x8 matrix pendant looked cool, but it was missing detailed information on which parts to use and how to solder everything together..... Listed under: [LED Projects](#)
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886. [Remote controlled switch using Atmega 328p](#) Ever dreamt of controlling an appliance like a CFL or a fan at your finger tips and thinking for a cheap solution? Well, then you are looking at the right instructable!! This instructable will provide you with a cheap and best possible solution to control..... Listed under: [Home Automation Projects](#)
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887. [Easy Technique for Bootloading Atmega328pu and Atmega328p-pu# Xolcano](#) it is very difficult to bootload Atmega chips when you don't have proper knowledge about device signature ! each chips are associated with its own Signature.at the beginning I found very difficult in uploading bootloader file to Atmega 328pu and Atmega 328p-pu , although their..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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888. [Digital Wall clock Using Atmega-8 and RTC](#) Clock is one of the most essential house hold things. There are various types of clocks like good old Pendulum clocks, Analog clocks and the now trending modern Digital clocks. Digital clocks has many advantages over the analog clocks like the Accuracy in time, easy..... Listed under: [Clock Projects](#)
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889. [Running an HD44780 Display off the ATmega on a Gertboard](#) There was a thread on the Raspberry Pi forums about running a 16x2 HD44780 based display off the ATmega chip on the Gertboard. I normally use a shift register to run my display, so I wasn't much help to them. I decided to try and..... Listed under: [LCD Projects](#)
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890. [How to fix dead atmega and attiny avr chips](#) Atmega fusebit doctor, as name says it, device for repairing dead Atmega and Attiny family AVR's by writing fabric fusebits. Most common mistakes or problems are a wrong clock source (CKSEL fusebits), disabled SPI programming (SPIEN fuse) or disabled reset pin (RSTDISBL fuse). This simple..... Listed under: [How To - DIY - Projects](#)
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891. [Getting Started With the ATmega328P](#) In the Internet of Things movement, people across the globe are connecting their stuff – TVs, pets, even houseplants - to the internet and transmitting all sorts of data. If you're going to be a part of that movement, or want to dabble in creative..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)

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892. [ATmega DIP40 Minimal Board](#) After I wrote several articles about using ATmega microcontrollers (DIP40) in Arduino environment I had some feedback that I was asked how to be effectively put into operation this project. As I came into the Arduino world from classical microcontrollers development world, I have not..... Listed under: [Development Board - Kits Projects](#)
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893. [Program an ATmega168/328 with codebender](#) If you want to use an inexpensive ATmega168 or ATmega328p for your project, but you want the simplicity of the arduino code and codebender, this tutorial will guide you through! A brand new ATmega microcontroller does not come preconfigured to use with Arduino code. So..... Listed under: [Interfacing\(USB - RS232 - I2c - ISP\) Projects](#)
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894. [Alarm clock Using Atmega-328 and RTC](#) Hi everyone! This is my first instructable! After reading hundreds of instructables, I decided to make one myself. Clock is one of the most essential house hold things. There are various types of clocks like good old Pendulum clocks, Analog clocks and the now trending..... Listed under: [Clock Projects](#)
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895. [Atmega Alarmclock & Thermohumidity meter](#) First, rise and shine, let me introduce you to my project. I've crafted an Alarm clock with extended functionality, including a thermometer and a humidity meter. Everything started when my friend (who used to bring me some old electronic rubbish and I used to check..... Listed under: [Clock Projects](#), [Metering - Instrument Projects](#)
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896. [Interfacing Analog Joystick with AVR ATmega32](#) If you have played games on console you must be knowing what a joystick is. In games a joystick is generally used to control the motion of character or a vehicle (like plane or car). Joystick give a very realistic two dimensional control! Joystick are..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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897. [Working with TWI \(I2C\) sensors / Devices](#) Introduction The I2C is a multimaster, multislave serial single-ended computer bus and was invented by Philips in 1982. The atmel microcontrollers use a compatible to I2C serial bus that is named TWI (Two Wire Interface). The TWI supports serial communication at 100 kHz and 400 kHz. The..... Listed under: [Sensor - Transducer - Detector Projects](#)
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898. [Boolean Algebra Calculator](#) Power Supply: It can be defined as a device that supplies electrical energy to one or more electric loads. The term is most commonly applied to devices that convert one form of electrical energy to another, though it may also refer to devices that convert..... Listed under: [Calculator Projects](#)
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899. [Automatic Railway Gate Controller with High Speed Alerting System](#) The main aim of this project is to operate and control the unmanned railway gate in the proper manner in order to avoid the accidents in the unmanned railway crossing. In a country like ours where there are many unmanned railway crossings, accidents are increasing..... Listed under: [Security - Safety Projects](#)
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900. [Interfacing 16X2 LCD to AVR Microcontroller](#) Well this is not different from the way interfacing the LCD to 8051 or PIC microcontroller. The crystal oscillator will provide the clock to the microcontroller. The capacitors connected to the crystal will act as filters and help the crystal to resonate and oscillates..... Listed under: [LCD Projects](#)

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901. [Water Level Indicator](#) The Water Level Indicator employs a simple mechanism to detect and indicate the water level in an overhead tank or any other water container. The sensing is done by using a set of nine probes which are placed at nine different levels on the tank..... Listed under: [Sensor - Transducer - Detector Projects](#)
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902. [DTMF Controlled Home Automation System Circuit](#) Generally, appliances used in our home are controlled with the help of switches. These days, you can see automation of these appliances using many technologies. This article presents the controlling of home appliances using DTMF technology. DTMF is acronym for Dual Tone Multi Frequency. So, just..... Listed under: [Blog](#), [Home Automation Projects](#)
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903. [2 Digit Up/Down Counter Circuit](#) Generally, one can see the digital displays which display the score when buttons are pressed on score boards. The main heart of this score board is 2 digits up/down counter circuit. The 2 digits are displayed on two 7 segment displays. This article describes 2..... Listed under: [Calculator Projects](#)
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904. [Digital Temperature Sensor Circuit](#) Temperature sensors are widely used in electronic equipments to display the temperature. You can see the digital clock displaying the room temperature value. It is due to the temperature sensor embedded in it. Generally, temperature value is analog. It is converted to digital value and..... Listed under: [Temperature Measurement Projects](#)
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905. [RFID Based Attendance System – Circuit, Working, Source Code](#) Attendance in colleges is generally paper based which may sometimes cause errors. Taking attendance manually consumes more time. So the proposed attendance system uses RFID technology to take attendance. In this system, each student is issued an RFID tag. Controlling unit is in the institute..... Listed under: [Sensor - Transducer - Detector Projects](#)
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906. [Auto Intensity Control of Street Lights](#) Street lights are controlled manually in olden days. These days automation of street lights has emerged. But one can observe that there is no need of high intensity in peak hours i.e. when there is no traffic and even in early mornings. By reducing the..... Listed under: [Sensor - Transducer - Detector Projects](#)
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907. [Street Lights that Glow on Detecting Vehicle Movement](#) Street lights are switched on depending on the intensity of the Sun light on LDR. If the intensity of Sunlight on light dependent resistor is low, its resistance value is high. This value increases and becomes high when it is completely in dark. This resistance..... Listed under: [Sensor - Transducer - Detector Projects](#)
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908. [Sun Tracking Solar Panel](#) As the non renewable energy resources are decreasing, use of renewable resources for producing electricity is increasing. Solar panels are becoming more popular day by day. We have already read a post about how to install solar panel for home. Solar panel absorbs the energy..... Listed under: [Sensor - Transducer - Detector Projects](#)
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909. [PWM Based DC Motor Speed Control using Microcontroller](#) In many applications, it is important to control the speed of DC motor where precision and protection are essence. Here we will use a technique called PWM (pulse width modulation) to control the speed of DC motor. We can achieve speed control of DC motor..... Listed under: [PWM Projects](#)

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910. [Biometric Attendance System Circuit](#) Biometrics is the emerging technology used for identification. Biometric refers to automatic identification of a person based on biological characters such as finger print, iris, facial recognition, etc. In this article finger print based attendance system is proposed. Attendance in educational institutions, industries will require..... Listed under: [Sensor - Transducer - Detector Projects](#)
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911. [Temperature Controlled DC Fan using Microcontroller](#) A Temperature Controlled DC Fan is a system which automatically turns on a DC Fan when the ambient temperature increases above a certain limit. Generally, electronic devices produce more heat. So this heat should be reduced in order to protect the device. There are many..... Listed under: [Temperature Measurement Projects](#)
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912. [GSM Module SIM300 Interface with AVR Amega32](#) A GSM/GPRS Module like SIM300 can be used for any embedded application that requires a long range communication, like a robot in Chennai controlled by a person sitting in New Delhi! Or simply a water pump in a rice field turned on in the morning..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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913. [Ultrasonic Rangefinder HC-SR04 Interfacing with ATmega8](#) In this article I will describe how to interface a Ultrasonic Range Finder Module with a AVR ATmega8 microcontroller. I will provide a HEX file which you can burn into your ATmega8 directly to quickly test this whole setup. Ultrasonic range finder modules helps find..... Listed under: [Interfacing\(USB - RS232 - I2c - ISP\) Projects](#)
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914. [Simple Single Motor Control using AVR ATmega16](#) Microcontrollers are good when it comes to brain, but to do anything in real world they need muscles too ! Their muscles are electromechanical actuators like motors. Their are several types of motor available to do various type of motion. The simplest of them are..... Listed under: [Motor Projects](#)
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915. [AVR Dual RGB Matrix Driver](#) Multiplexing LEDs can be tricky, but we're working with RGB LEDs, so think of each RGB as three individual LEDs. For an 8 x 8 matrix, that is 192 total LEDs on a single matrix. Even though there are only 32 connection pins, it is..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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916. [AVR Chronograph from concept to PCB](#) A chronograph is a device used to measure the speed of a passing object. In it's simplest form, this involves two sensors of some kind that 'see' the object, some device that can measure time, and some output to deliver the data to the user..... Listed under: [Development Board - Kits Projects](#)
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917. [Running LED bicolor](#) This is a good project for beginners. It is easy to build.This running LED light uses seven bicolor led's red and yellow, they light up in a pattern that can be made within the program code.The program code is written in assembler. ATMELs AVR STUDIO..... Listed under: [LED Projects](#)
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918. [LED thermometer](#) his project shows the temperature on a three digit 7-segment display, it measures the temperature from -9.5 to 99 degrees Celcius in 0.5 C steps, or from 0 to 210 degrees Fahrenheit in 1.0 degrees steps. Because of the LED display the temperature is also..... Listed under: [LED Projects](#), [Temperature Measurement Projects](#)

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919. [LCD interface](#) This example is based on a LCD module with the Hitachi HD44780 LCD-controller. You can get these displays in various kinds, from 1 to 4 lines and from 8 to 40 characters per line. A display with 16 characters per line and 2 lines is used in..... Listed under: [LCD Projects](#)
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920. [RGB LED color mixer](#) Page 1 of 4 An RGB LED is a LED which has three LED's integrated in one packaging. These LED's have the colors Red, Green, and Blue. The RGB LED used here is a hyperflux LED with common cathode, which can draw 20mA current. Such a..... Listed under: [LED Projects](#)
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921. [Stepper motor driver](#) With this circuit you can drive a unipolar stepper motor. It operates in full step mode. The AVR attiny2313 micro controller controls the pulses for the stepper motor. The pulses are amplified by the ULN2003 driver. The driver accepts 5V inputs, the output for the..... Listed under: [LED Projects](#)
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922. [LED VU meter](#) Schematic and build Below is the schematic of the LED VU meter. The circuit is builds with the ATmega328 board an two LED boards connected to it. You can also build it on a breadboard. For more detail: LED VU meter... Listed under: [LED Projects](#)
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923. [Temperature indicator](#) This project uses a Dallas DS1621 temperature sensor which indicates the temperature of the device. The temperature sensor has an thermal alarm output, which becomes high when the temperature of the device exceeds a user defined value. When the temperature drops below a user defined..... Listed under: [Temperature Measurement Projects](#)
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924. [Running LED's using ATTiny2313](#) This running LED or LED chaser is a good project for beginners in the microcontroller technology. It is easy to build, and the assembler program code can be easily adapted. This running LED light has 15 red 3mm LED's. The 15 outputs of ports B and..... Listed under: [LED Projects](#)
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925. [Running LED's](#) This small project let you make running leds. For this project you need a attiny2313 microcontroller and 8 leds and 8 resistors. The leds can be programmed so that they show different patterns. Hardware The leds are connected to PORTB of the microcontroller via the..... Listed under: [LED Projects](#)
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926. [PC stepper motor driver](#) With this circuit you can control two unipolair stepper motors in full step mode via the RS232 serial port of your PC. A terminal program such as Hyperterminal can be used to control the stepper motors. The stepper motors can be driven one at a..... Listed under: [Motor Projects](#)
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927. [Photocell or LDR](#) A photocell or photo resistor is a Light Dependent Resistors (LDR). LDR's are sensors that detect light. They are small, inexpensive, low-power, easy to use and don't wear out. Overview A photocell or photo resistor is a Light Dependent Resistors (LDR). LDR's are sensors that..... Listed under: [Sensor - Transducer - Detector Projects](#)

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928. [Electronic cricket](#) his electronic cricket is a fun project. A real crickets chirp at night and faster in warmer temperatures. A cricket chirp is composed of a group of three sinus waves of a single frequency of about 5kHz. occurring in rapid succession. Introduction This electronic cricket is..... Listed under: [Game - Entertainment Projects](#)
-
929. [Relais Driver Board](#) This is a peripheral board with 4 relais, rated at 5A/250V each. The board has a ML10 output connector for connection with the AT2313 Project board. It has also 4 LED's for indication which relais is switched on. Hardware The circuit is simple, it consists..... Listed under: [Development Board - Kits Projects](#)
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930. [Dot matrix display](#) This is a Dot Matrix Scrolling Sign. A Dot Matrix Display has an 5x7 led matrix with 5 columns and 7 rows. The display is controlled by the ATmega328 microcontroller board. The rows are controlled by PORTB of the microcontroller, while PORTD puts the data..... Listed under: [LED Projects](#)
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931. [Clock/temperature LED display](#) This project is based on the timer/counter 0 example. It shows time, date and temperature on 7 segment displays. Instead of the LCD display the time is shown on a four digit 7 segment display with common cathode. The date and temperature is shown on..... Listed under: [Clock Projects](#)
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932. [LCD/switch interface](#) Page 1 of 2 This board can directly connected to the STK 500 board or the ATtiny2313 ISP program board with a 10 pole flatcable on the 10 pin header of the STK500 and the 10 pin header of the LCD/Switch board. The display has..... Listed under: [LCD Projects](#)
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933. [Digital Book Cricket with ATtiny 85](#) The project described here is a digital implementation of "book cricket game" which students normally use to play in their childhood time. The heart of the project is 8 bit MCU from AVR family called ATtiny85. ATtiny85 are small and cheap microcontrollers which are convenient..... Listed under: [Game - Entertainment Projects](#)
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934. [Attendance System using AVR and RFID](#) This project aims to automate the process of taking attendance on pen and paper and prevent any fraudulent entry. It uses RFID tags to record attendance. Each student is assigned a unique tag, which he/she is required to swipe over the reader to give his/her..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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935. [Interfacing Serial Bluetooth Modem with Computer using ATmega16](#) This article would give you a general idea about how to setup and interface any Bluetooth modem with your computer. There are many types of Bluetooth modems available in market, which vary in quality, cost, range, etc. Some of the well known Serial Bluetooth modems..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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936. [Smart Home Automation using AVR](#) in this technological world, automatic systems are being preferred over manual system. In this series Home Automation plays an important role for humans. In this unit we talk about basic needs to understand the project well and also for its future advancements. We are going..... Listed under: [Home Automation Projects](#)

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937. [Interfacing 4-wire Resistive Touchscreen with ATmega16 Microcontroller](#) Touch screens are two dimensional input devices. Nowadays most of the electronic gadgets use them. Laptops, smart phones, tablets and even some home appliances like washing machines & microwave ovens also use a touch screen nowadays. Why Touch screens? Touch screens are preferred over keypads..... Listed under: [LCD Projects](#)
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938. [How to Interface a GSM \(SIM 300\) Modem with ATmega32 to Send and Receive SMS](#) What is a GSM Modem? GSM stands for Global System for Mobile Communications.It is a standard set developed by the EuropeanTelecommunications Standards Institute (ETSI) to describe protocols for second generation (2G) digital cellular networks used by mobilephones. A Modem is a device which modulates and..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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939. [AVR I/O Ports](#) AVR microcontrollers are the advanced microcontrollers. From 1996 onwards these are come into existence. In AVR family there are so many controllers are available. Mainly the AVR family is sub grouped as ATmega, ATtiny, Xmega, UC3, SAM3 and SAM4. In these form 8 to 32..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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940. [Fastest Finger First Circuit using ATmega16](#) Fastest Finger first circuit is basically used in quiz type games where the reaction speed of a participant is significant. The circuit enables us to identify who responded first to the question by triggering a visual and audio indication. Components Required 1 x ATmega16 development..... Listed under: [Game - Entertainment Projects](#)
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941. [DIY: Retro Style Analog Volt Meter using Servo Motor](#) Digital equipments have rapidly replaced Analog equipments in the long run. Well that is because the former has lot of advantages over the latter. But do you miss those retro style analog measuring instruments? Those pointy indicators and graduated scales? Well I do and so..... Listed under: [Metering - Instrument Projects](#)
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942. [embRACE: The Embedded Race](#) embRACE, a game developed on the embedded platform, entirely coded in assembly language. The game has been programmed on an ATmega16 micro-controller, interfaced with a 16x2 LCD display module. The game possesses an interactive user interface and exclusive features like: -Main Menu -Pause Menu -Real..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [LCD Projects](#)
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943. [Latitude & Longitude Display System Using GPS & AVR Microcontroller](#) This project is a reference to budding engineers or a helping hand to those who willing to work and interface a GPS Receiver with microcontrollerand making their own channel to communicate with satellite, seeking for some useful information from satellite to make a effective and..... Listed under: [GPS Based Projects](#)
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944. [Controlling RGB LED colour using Atmega16](#) This tutorial will give you a brief introduction to the concept of colors and how different colors can be produced using RGB LED. The color would be controlled using an ATmega16 microcontroller. RGB LEDs are basically the combination of the 3 LEDs (Red, Green and..... Listed under: [LED Projects](#)
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945. [Speed and Direction Control of Stepper Motor using AVR Microcontroller](#) Stepper motor can be termed as digital motor because it operates on pulses. Unlike AC or DC motor that rotates continuously, stepper motor rotates in steps. It rotates in number of steps as per applied number of pulses. Stepper motor is used in many applications..... Listed under: [Motor Projects](#)

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946. [Accelerometer Based Hand Gesture Controlled Robot](#) In many application of controlling robotic gadget it becomes quite hard and complicated when there comes the part of controlling it with remote or many different switches. Mostly in military application, industrial robotics, construction vehicles in civil side, medical application for surgery. In this field..... Listed under: [Robotics - Automation Projects](#)
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947. [Digital Clock using Seven Segment Display and ATmega16](#) In this ATmega16 AVR project we will be designing and implementing a digital clock with the aid of a atmel AVR ATmega16 microcontroller and seven segment display. Before going through this digital clock AVR project it is recommended to complete the tutorial on Interfacing a Seven Segment Display with..... Listed under: [Clock Projects](#)
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948. [LED Light Bulb Controller using AVR Microcontroller](#) Previously before 10-15 years the majority of electrical lights were either light bulbs (with yellow light) or tube-light sticks (with white light). The major disadvantage of these lighting devices was they consume more electrical energy (in terms of Watt) and gives less luminance (brightness). Light..... Listed under: [LED Projects](#)
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949. [Speed and Direction Control of DC Motor using AVR Microcontroller](#) Controlling direction and speed of DC motor is very essential in many applications like- Robotic application – to change direction and speed of moving robot- Industrial application – to change direction and speed of rotating machinery- Domestic application – to vary speed of battery (DC)..... Listed under: [Motor Projects](#)
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950. [4 Wire Touch Screen Based Digital Magic Slate](#) Ever played with magic slates in your childhood? Well this project will show you how to make a digital magic slate using a PC, a touch screen and few other components. Components Required
1. 4-wire resistive touch screen with connector 2. ATmega16..... Listed under: [LCD Projects](#)
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951. [Intelligent LED light controller using AVR](#) Now a days LED light bulbs are becoming more and more popular because they have several advantages. Some of their advantages are listed below · Their energy (electrical) consumption is much more less · Their luminance is more · Their intensity can be varied · Listed under: [LED Projects](#)
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952. [DC Motor Control with Joystick & AVR Microcontroller](#) In many of the applications it is required to alter the direction of DC motor instantly. Like in washing machine, mixer, drilling machine winding – rewinding machine etc. Changing the direction of DC motor using joystick is most suitable and handy method. Joystick Control for..... Listed under: [Motor Projects](#)
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953. [GSM Based Intruder Alerting System](#) Did you know that most of the thefts at home happen when it is empty? But not everyone is rich enough to hire a security for their house and at the same time they themselves cannot be at home 24x7. Now what if there is..... Listed under: [Phone Projects](#)
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954. [GSM Based AC Appliance Control](#) This project would show you how to control an AC appliance remotely from anywhere using your mobile phone. This kind of project is useful in various applications. Say for example a farmer can switch ON or OFF the motor pump present near his field remotely..... Listed under: [Phone Projects](#)

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955. [Cell Phone Controlled Pick and Place Robot](#) Conventionally, wireless controlled robots uses circuits, which have a drawback of limited working range, limited frequency range and limited control. Use of mobile phones for robotic control can overcome these limitations. It provides the advantages of robust control, working range as large as the coverage..... Listed under: [Robotics - Automation Projects](#)
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956. [Light Tracker Demonstration](#) Electricity is the most required and important element of human life. We cannot imagine our day to day life without electricity. Electricity is generated using conventional (coal, diesel) and non conventional (water, wind, sunlight) energy sources. The recent and latest trend is to generate electricity..... Listed under: [Metering - Instrument Projects](#)
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957. [Variable Power Supply with LCD](#) Are you an electronic hobbyist? Then an adjustable power supply is a must for your various needs. This project explains how to make a LM317 based adjustable power supply unit with a digital display. Components Required 1. LM317 IC 2. Resistor – 240 Ohms 3. Listed under: [LCD Projects](#)
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958. [Interfacing Triple-Axis Accelerometer with AtMega16](#) Requirements AtMega 16 IC/development board 3-Axis accelerometer LCD screen 16X2 (for displaying X, Y and Z data) Description This project makes use of three out of the eight ADCs present in AtMega16 IC to display the corresponding digital data of X, Y and Z outputs..... Listed under: [Interfacing\(USB - RS232 - I2c - ISP\) Projects](#)
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959. [Atmega32 avr based Drone Quadricopter](#) atmega32 avr based Drone Quadricopter:IntroductionOur project is a novel hand held controller in which we use an accelerometer to wirelessly control the motion of a Parrot AR Drone Quadricopter.Rationale:The main idea of our project was building a cool glove controller for a flying platform, a..... Listed under: [Drones](#)
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960. [Audio Tone Generator using AVR Microcontroller](#) The circuit presented here demonstrates how to generate Audible Frequency from an AVR Microcontroller. The output of Microcontroller is always digital so to generate audible sound at the outset first it needs to be converted into Analog. A DAC (Digital to Analog Converter) is used..... Listed under: [Sound - Audio Projects](#)
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961. [Stepper Motor Angle Control using AVR Microcontroller](#) There are many applications in which it is required to set the position of an object at a desire angle. Some of the examples are 1. Satellite Dish Antenna positioning The Satellite Dish Antenna should be in straight alignment with Satellite in Space to receive..... Listed under: [Motor Projects](#)
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962. [Bluetooth Controlled Portable LED Display](#) The aim of the project is to make a portable LED display from SMD LEDs and to display the custom programmed patterns at our command. The core application of the project is to act as a portable display for event organisers or exhibitionists or consultants to..... Listed under: [LED Projects](#)
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963. [Coin Operated Timer Control Power Supply Box to Control AC Appliances](#) Saving electricity is a major concern for domestic and industrial units. We always try hard to save electricity in many ways to reduce our electricity bills, but due to some known and unforeseen circumstances our efforts do not normally transform in saving electricity. Adding to..... Listed under: [LCD Projects](#)

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964. [Sleeping Security – Smart Keypad Lock using AtMega16](#) This project is just a smart version of any keypad lock. What's smart about it is that it can detect whether it is needed by the user or not and accordingly switches itself to take a sleep. Making a microcontroller to sleep reduces power consumption..... Listed under: [Security - Safety Projects](#)
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965. [DIY – Waveform Generator using AVR Microcontroller](#) To interface 8-bit DAC with AVR microcontroller ATmega32 and generate different waveforms like Square Wave, Sine Wave, Triangular Wave, Staircase Wave and Saw-tooth Wave. Instruments · AVR Development Board · ADC – DAC card · Digital Storage Oscilloscope (DSO) · Power Supply Apparatus · Connecting..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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966. [Fully Customized Device On/Off Timer](#) Timers are used in many different applications for example in Industrial Applications, to switch ON or switch OFF any device or a machine load for a specific period of time. In the same way the timers are used in Domestic Appliances like in Air Conditioners,..... Listed under: [Clock Projects](#)
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967. [Mobile – Gesture Controlled Car](#) REQUIREMENT: AtMega 16 microcontroller L293D motor driver IC Bluetooth module (HC05) Chassis Motors & Wheels Mobile phone (Android + Bluetooth compatibility) Battery (for car section) DESCRIPTION: Have you ever wondered of operating a toy car with you own mobile phone? Yes I have made such..... Listed under: [Car Projects](#)
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968. [Un-interruptible Bench-top DC Power Supply With Display](#) This tutorial explains how to make your own power supply unit for all your electronics and embedded system experiments. It also has a backup battery which will be used in case of power cuts and a display. Components Required 1. SLA 12V battery 2. Banana Jack..... Listed under: [LCD Projects](#)
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969. [Fingerprint Detection using Microcontroller](#) REQUIREMENTS: AtMega 16 Microcontroller (development board) Fingerprint scanner module (R305) 16X2 Alphanumeric LCD (for user display) DESCRIPTION: In today's secure world biometric safety is on the top. Unlike other techniques which make use of passwords and numbers, that are needed to be remembered, biometric techniques..... Listed under: [LCD Projects](#)
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970. [How to display text on 16x2 LCD using AVR microcontroller \(ATmega16\)](#) This article is in continuation to the article Single character LCD display using AVR. The aforesaid article shows how to display a single letter on LCD. Moving forward towards learning to work with LCD, this article explains how to display a string on LCD. Displaying..... Listed under: [LCD Projects](#)
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971. [Display custom characters on LCD using AVR Microcontroller \(ATmega16\)](#) This is the most interesting article to play with LCD. After going through the article, you can create any character/symbol which cannot be created using the ASCII values for example smiley. You can even create small games. Conventionally 16X2 LCD is used to display text..... Listed under: [LCD Projects](#)
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972. [How to use inbuilt ADC of AVR microcontroller \(ATmega16\)](#) Microcontroller understands only digital language. However, the inputs available from the environment to the microcontroller are mostly analog in nature, i.e., they vary continuously with time. In order to understand the inputs by the digital processor, a device called Analog to Digital Converter (ADC) is..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)

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973. [Serial communication \(Data receive\) using AVR Microcontroller \(ATmega16\) USART](#) Communication between two entities is important for the information flow to take place. In general the information transport system can be parallel in which the complete byte of data is sent at a time, with each bit having a separate dedicated line or it can..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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974. [How to interface AVR microcontroller with PC using USART \(RS232 protocol\)](#) This article covers data transmission using 8 bit USART. The readers should have a basic understanding of serial communication and how to receive the serial data output. More details on these topics are available on Serial communication using AVR Microcontroller USART. The registers of USART..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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975. [Serial communication with AVR microcontroller using interrupts](#) In our previous articles on serial data transmission using AVR microcontroller we have demonstrated serial communication using the polling method. In Polling, the microcontroller waits for the RXC flag (in the case of serial receiver) to go high and then moves to the next instruction..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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976. [How to interface RFID with AVR microcontroller \(ATmega16\)](#) Knowingly or unknowingly the RFID technology is used by us in our day to day life. The most familiar example is seen in MNCs, schools and offices for daily attendance or automatic door opening system. The RFID contains two parts, namely, tag and receiver modem. When..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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977. [RFID interfacing with AVR microcontroller \(ATmega16\) using interrupts](#) This article covers how to extract and display the twelve byte unique tag ID received by RFID module on LCD using interrupt method. Before proceeding to this article readers must have knowledge of serial interrupt and LCD. In the previous article of RFID, polling method..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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978. [How to use internal ADC of AVR microcontroller using interrupts](#) This article is in continuation to AVR interrupts. There are two types of interrupts external and internal in AVR microcontroller. The aforesaid article covers external interrupts. AVR microcontrollers have seventeen internal interrupts. These internal interrupts are generated by the internal peripherals of Microcontroller like Timer,..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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979. [How to use inbuilt analog comparator of AVR microcontroller](#) Analog comparator is a device which compares two input voltages and generates output accordingly. The article on IR sensor explains the use of comparator in sensor designing. Comparators form an integral part of circuit designing in majority of the applications. AVR microcontrollers have in-built analog..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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980. [How to disable JTAG of AVR microcontroller](#) JTAG stands for "Joint Test Action Group" which was standardized as the IEEE 1149.1 Standard Test Access Port and Boundary-Scan Architecture in 1990. JTAG is generally used in IC debugging and device programming. Atmega16 consists of one JTAG port which shares four pins with PORTC. Until JTAG port..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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981. [How to interface LCD in 4 bit mode with AVR microcontroller](#) This article explains interfacing of LCD with ATmega16 using 4-bit mode. In this mode only four pins are used for sending data and command instructions. This mode has the advantage over the 8-bit mode as it uses less number of pins. The remaining pins of..... Listed under: [LCD Projects](#)

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982. [SPI \(serial peripheral interface\) using AVR microcontroller \(ATmega16\)](#) There are different protocols for serial communication between two devices like, USART, SPI, I2C etc. Before selecting any communication protocol, data transfer rate is an important parameter. SPI transfers data at high speed data. AVR microcontroller contains on chip SPI interface. This article will explore..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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983. [How to use fast PWM \(Pulse Width Modulation\) Mode of AVR microcontroller Timer](#) This article is in continuation of PWM generation using AVR timer. In the previous article, PWM generation using Phase correct PWM mode is described. However, there are some applications like DAC, power regulation and rectification etc. which require high frequency PWM wave. The PWM generation..... Listed under: [PWM Projects](#)
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984. [Phase Correct PWM \(Pulse Width Modulation\) Mode of AVR microcontroller Timer](#) Pulse Width Modulation is well known technique for controlling power electronics devices like SCR, IGBT etc. PWM is also used in motor speed controlling. Square wave generation by using AVR timers is explained in previous article. The AVR timers have feature of PWM wave generation..... Listed under: [PWM Projects](#)
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985. [Waveform Generation using AVR Microcontroller \(Atmega16\) Timers](#) At times we come across applications or situations wherein we need to generate square waves with the microcontroller. The square wave can be generated by programming a pin which toggles between 0 and 1 with a certain time delay. Alternatively, the inbuilt feature of AVR..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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986. [Serial communication \(USART\) with different frame size using AVR microcontroller](#) The previous article explains serial communication using 8-bit data transfer. AVR microcontroller also supports serial data transfer with frame size of 5, 6, 7 and 9 data bits. The size of data frame can be adjusted according to application. For example, consider a system that..... Listed under: [LCD Projects](#)
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987. [How to use External \(Hardware\) Interrupts of AVR Microcontroller \(ATmega16\)](#) This article introduces the concept of interrupts and the different types of interrupts in AVR Microcontroller (ATmega16). Interrupt as the name suggests, interrupts the current routine of the microcontroller. Microcontroller executes instructions in a sequence as per the programs. Sometimes there may be a need..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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988. [How to interface LED with AVR Microcontroller \(ATmega16\)](#) ATmega16 has 32 I/O pins to communicate with external devices. Before interfacing with external devices, these pins must be configured as input or output pin. This article demonstrates the basic I/O operation of ATmega 16 using LEDs. All the four ports can be configured to..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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989. [How to interface keypad with AVR microcontroller \(ATmega16\)](#) Keypad is most widely used input device to provide input from the outside world to the microcontroller. The keypad makes an application more users interactive. The concept of interfacing a keypad with the ATmega16 is similar to interfacing it with any other microcontroller. The article..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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990. [How to interface Servo Motor with AVR Microcontroller \(ATmega16\)](#) Servo motors find huge applications in industries in the field of automation, control & robotics. The servo motors are well known for their precise control and work on the principle of servo mechanism. The servo motors can be made to run at precise angle using..... Listed under: [Motor Projects](#)

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991. [How to use I2C / TWI \(Two Wire Interface\) in AVR ATmega32](#) This article explores the TWI interfacing between two ATmega32 controllers. Readers are advised to go through TWI Communication and TWI registers of ATmega32 before going further. TWI works in four modes: 1. MASTER as a transmitter. 2. MASTER as a receiver. 3. SLAVE as a..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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992. [How to take input from a particular pin of ATmega16](#) For understanding the human needs a system must be able to take input from user. The devices which can be used to take input for a system are keypad, touch screen, etc. In the article LED blinking, the microcontroller drives the LED or in embedded language..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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993. [How to interface serial ADC0831 with AVR microcontroller \(ATmega16\)](#) ADC is an electronics device that converts the analog signals to digital number proportional to the magnitude of voltage. The ADC chips like ADC0804, ADC0809 etc., give 8-bit digital output. The controller device needs eight pins to receive the 8-bit data (For more details about..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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994. [How to configure Watchdog Timers of AVR Microcontroller \(ATmega16\)](#) Some high end applications require multiple or critical calculations to be done by the microcontroller. This may lead to cases when the controller enters into wrong or infinite loops. As a result of this, the system either hangs up or gets crashed. The solution to..... Listed under: [Clock Projects](#)
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995. [How to interface GPS with AVR microcontroller \(ATmega16\)](#) GPS modem is a device which receives signals from satellite and provides information about latitude, longitude, altitude, time etc. The GPS navigator is more famous in mobiles to track the road maps. The GPS modem has an antenna which receives the satellite signals and transfers..... Listed under: [GPS Based Projects](#)
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996. [Interfacing SD Card with AVR Microcontroller](#) This project explains how to interface the SD card with an AVR microcontroller. In this project an ATMEGA16 microcontroller is used. The microcontroller runs on 5V power supply with a built in crystal frequency of 8 MHz. A 2GB SDSC card from Transcend is used in this particular project,..... Listed under: [Memory - Storage Projects](#)
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997. [How to Program in Boot Loader Section](#) In the AVR microcontroller the flash memory is divided into two parts, namely Application Section and Boot Loader Section. A code can be programmed into either the Application Section or the Boot loader Section (BLS). The code programmed into the Application section runs normally and..... Listed under: [LCD Projects](#)
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998. [How to Initialize Peripherals from Boot Loader Section](#) In almost all the microcontroller codes the peripheral initialization functions like uart initialization, spi initialization are written along with the different application codes. These initialization functions are actually repetitions of the original initialization functions. The same is the case with the external hardware initialization like..... Listed under: [LCD Projects](#)
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999. [How to Use SPM for Flash to Flash Programming](#) The Self Programming Mode (SPM) is a feature which enables a microcontroller to program its own flash memory. Using the SPM a microcontroller can program itself with an SPM code. The SPM is commonly used with the microcontroller Boot-Loader codes which help to program the..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)

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1000. [How To Use SPM To load Application from EEPROM](#) In any microcontroller the Boot-Loader is the first code which executes before the application code does. The major function of the Boot-Loader is to load the application code into the flash memory of the microcontroller and execute it. In AVR microcontroller the Self Programming Mode..... Listed under: [LCD Projects](#), [Memory - Storage Projects](#)
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1001. [How To Write a Simple Bootloader For AVR In C language](#) The BootLoader is a code which executes when a microcontroller is powered ON or reset. It basically sets an environment for the application code to execute. It is the Boot-Loader that sets the hardware and loads the application code from any storage medium or received..... Listed under: [LCD Projects](#)
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1002. [LCD Scrolling Display Module](#) A microcontroller is a device which has an inbuilt processor surrounded by few dedicated hardware modules. Once the microcontroller initializes them they start operating on their own. In case of an ADC it will do the sampling and digital to analog conversion all by itself..... Listed under: [LCD Projects](#)
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1003. [Electronic Voting Machine using Internal EEPROM of AVR](#) The microcontroller based voting machines made the process of voting and counting the voted lot easier than before. Previously the votes were marked in paper which are then stored safely in a box and inside a well secure room for days. The process of separating..... Listed under: [LCD Projects](#)
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1004. [Setup Arduino Software for Atmega328P with Internal Crystal on Breadboard](#) A breadboard Arduino will require an Atmega328P controller for these instructions. Note the "P" at the end of the name. You cannot use an Atmega328 because it has a slightly different device id number. It will require a different board configuration. Instructions for that are..... Listed under: [Development Board - Kits Projects](#)
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1005. [Playing video on nokia color LCD using an ATmega32](#) video Playing video on nokia color LCD using an ATmega32 Hi, I am introducing my new video player made using an atmega32 microcontroller and nokia color LCD. I got a 65K color LCD from an old nokia 6030 mobile phone. I directly soldered 10 thin..... Listed under: [LCD Projects](#)
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1006. [Make yourself a homemade clock with thermometer using ATMEGA128](#) In this step by step I wanna share my experiment with ATMEGA128 timer and interrupt using DS1307 and NTC to display homemade clock and thermometer. It displays hour,minute,second, day of week, day of month, month, and year, and the temperature in celcius Enjoy the project..... Listed under: [Clock Projects](#), [Home Automation Projects](#)
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1007. [MultiFunction LED Game Using An ATmega32 Microcontroller](#) First are my answers to the Make-To-Learn Contest: What did you make? I made a multi-function LED Array Program, like my previous one with Arduino UNO, but this time I made it with an ATmega32 microcontroller. I used regular C code to program it and..... Listed under: [LED Projects](#)
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1008. [Burn Arduino Bootloader on Atmega-328 TQFP and DIP chips on Breadboard](#) Parts required (Hardware) Arduino Uno Board (1) TQFP 32 to DIP 28 Adapter (1) Link Atmega TQFP 32 pin chip (1) Atmega DIP 28 pin chip (1) 10K resistor (1) 16MHz crystal (1) 18pf - 22pf capacitor (2) Tact Switch (1) Jumper wires (few) LED..... Listed under: [Other Projects](#)
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1009. [Burn BootLoader into Atmega328P using Arduino Diecimila](#) I have an old Arduino Diecimila and some new Atmega328P-PU chips. Shouldn't have but I brought some without bootloader to save some dollars. What next? search instructables to see if I can burn bootloader to ths chips. Unluckily not working. An error message "avrdude: stk500_getsync():..... Listed under: [Other Projects](#)
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1010. [Bootloading and Mounting Arduino Atmega328 – I made it at TechShop](#) This Instructable shows how to bootload and mount an Atmega328, Atmega328p or Atmega328p-pu for any project. This is a great way to save money by purchasing Atmega328 DIP package microcontrollers instead of using the Arduino development board itself. I put this together at techshop to..... Listed under: [Other Projects](#)
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1011. [Use ATmega328 Chip as a Storage Device and Store Text and Images in it](#) Hi everyone! In this instructable, I am going to show you how to store text and images in a small ATmega328P chip. Lets get started! This article is also available on Jordan's Lab Notebook! Step 1: Things Needed Things Needed: - Arduino Uno - ATmega..... Listed under: [Other Projects](#)
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1012. [Create yourself a message flasher with ATMEGA128](#) Guys, I wanna share my experiment on creating a message flasher with ATMEGA128 and LCD 16x2, It can be done on your weekend.... Step 1: Prepare the components I prepare all the components below, The most importants are ATMEGA128 TQFP 64 and LCD 16x2 Another..... Listed under: [Other Projects](#)
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1013. [Atmega16/32 Development Board With LCD](#) This instructable shows, how to do your own development board for Atmega16 or Atmega32 processors.The Internet is full of home made development boards, but I think that, there is room left for another one. This board have been very useful on my projects and I..... Listed under: [Development Board - Kits Projects](#)
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1014. [RGB Rotary Encoder with PWM and ISRs Using an ATmega328](#) Description A long time ago I bought a couple RGB rotary encoders from Sparkfun because they were cheap and I was already spending a bunch on other stuff. I thought they would be neat for some interfaces since it includes a push button. The interrupt service..... Listed under: [PWM Projects](#)
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1015. [Make yourself a speaking ATMEGA128](#) Guys, In previous weekend, I made myself a speaking ATMEGA128. I used ATMEGA128 and LM386 as an amplifier, Let's get started Step 1: The part I need for this project These parts are needed for this project : 1. LM386 2.ATMEGA128 3.USBISP 4.AVRStudio 5. Small..... Listed under: [Sound - Audio Projects](#)
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1016. [I2C Bus for ATtiny and ATmega](#) I love the Atmel AVR microcontrollers! Since building the Ghetto Development System described in this Instructable. I've had no end of fun experimenting with the AVR ATtiny2313 and the ATmega168 in particular. I even went so far as to write an Instructable on using switches..... Listed under: [Other Projects](#)
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1017. [Interfacing GY 26 with atmega640](#) Hello friend once again with new instructable in this I will show you how to interface GY 26 with UART when I started working on this very less resource where available over internet .Thus i thought to share my piece of work .GY 26 is..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)

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1018. [Using Atmega32 with Arduino IDE](#) Over time I have used all kinds of Atmel microcontrollers in various projects. One of the most suitable was ATmega32. I have a small collection of development boards for Atmega32/16, some bought as-is, some made on stripboard. Although the original Arduino boards offers a pleasant..... Listed under: [Other Projects](#)
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1019. [Standalone Arduino / ATmega chip on breadboard](#) Step 1: Parts needed I bought my parts from Digikey and Sparkfun Electronics - they're 2 of my favorite places to buy components. Anyway, here's the list: #1 - (Qty: 1) - ATmega328 chip with Arduino bootloader pre-installed (\$5.50) #2 - (Qty: 1) - 5VDC Switching..... Listed under: [Development Board - Kits Projects](#)
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1020. [Burning atmega328-pu and atmega328p-pu bootloader](#) Burning the boot loader in an atmega328 could be somewhat tricky but if u follow these steps correctly youll be able to bootload any type of atmega328 micro controller .. Step 1: "setting up the hardware" -List of stuff you'll need: - An Arduino board..... Listed under: [Other Projects](#)
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1021. [Homemade singing ATMEGA128](#) Hello guys, After experimenting with 8 octave tone generator, Now, I'm continuing on creating a singing ATMEGA128 Let's get started, no more delay.... Step 1: Prepare all the parts needed... Let's prepare the part we need, 1. ATMEGA128 2. The board itself, I created my..... Listed under: [Home Automation Projects](#)
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1022. [Speech Synthesis on Atmega128](#) I had this one project where the device was supposed to speak out the output. And I was too Lazy to actually go and build a PC based application and not that lazy to make it on a micro controller. So here is some of..... Listed under: [Other Projects](#), [Sound - Audio Projects](#)
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1023. [Standalone Atmega328](#) We all have a deep fondness to our Arduino with its familiar shades of blue/green, but the time has come to explore other project options. One that involve fewer pieces, fewer parts, and fewer dollars. Building a standalone Atmega328 is far simpler than you might..... Listed under: [Other Projects](#)
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1024. [The Bat Hat Using Atmega1284](#) Introduction "An ultrasonic range-finding hat with variable haptic feedback for obstacle detection." -Project Sound Bite For our ECE 4760 final project, we designed and implemented an ultrasonic range-finding hat that uses haptic feedback to alert its wearer about obstacles in his or her path. The..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1025. [Ultrasonic Pathfinder Using Atmega1284](#) Introduction: Our final project for the ECE 4760 course consists of a wearable device to provide aid for the visually impaired. An ultrasonic distance sensor located on a hat collects data of the surrounding environment scanning the area ahead of the user, and uses this..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1026. [Acoustic Wayfinder Using Atmega1284](#) Our acoustic wayfinding device utilizes ultrasonic range finders and haptic feedback to facilitate indoor navigation for the visually impaired. The technique of acoustic wayfinding uses auditory cues, such as sounds from the natural environment or sounds created artificially, to determine an individual's surrounding physical space..... Listed under: [Sensor - Transducer - Detector Projects](#)

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1027. [Clap-E acoustic tracking robot using atmega1284](#) An Introduction For the ECE 4760 final project, we designed and built a sound follower robot named Clap-E. As its name implies, Clap-E receives a clap sound and moves toward the source of clapping. It has the ability to change its position after multiple claps..... Listed under: [Robotics - Automation Projects](#)
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1028. [Acoustic Impulse Marker Using Atmega1284](#) Introduction "A device that tracks sound impulses with a three microphone array" We designed and build a 2-dimensional Acoustic Impulse Marker system which is capable of detecting a sharp sound anywhere in its vicinity and precisely marking its source vector with a servo based pointer..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1029. [Rock-Paper-Scissors-Spock-Lizard Game Using Atmega1284](#) Introduction This project implements rock-paper-scissors game that displays on the TV screen using camera to capture human gesture and doing image processing. Rock-paper-scissors-spock-lizard game is very popular among teenagers. Our idea comes from a very popular American comedy: Big Bang! In this TV show we..... Listed under: [Game - Entertainment Projects](#)
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1030. [Automobile parking simulator Using Atmega1284](#) 1. Introduction The game consists of two levels. In each level, a LCD TV screen displays the 2-D top view of the a parking lot, and the player needs to park the car into the proper parking spot by operating on a fake steering wheel,..... Listed under: [Car Projects](#), [Game - Entertainment Projects](#)
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1031. [Infrared Theremin Using Atmega1284](#) Introduction A modern-day twist on the classic theremin musical instrument. This project uses two IR sensors and the ATMEGA1284P microcontroller to create an inexpensive, easy-to-use theremin. The theremin is a musical instrument which is controlled by the electromagnetic field your body produces naturally. One..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1032. [GPS Running Watch Using Atmega1284](#) Runners who have moved to a new city may get lost trying to remember the route they carefully planned at home. Instead of stopping the run to pull out a phone, wait for the map to load, find where you are, and determine where you..... Listed under: [GPS Based Projects](#)
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1033. [DJ Party: A Collaborative Music Teacher using Atmega1284](#) Introduction "This device allows friends to learn songs, create their own songs, and collaboratively merge them." Our final project for ECE 4760 is a fully customizable button keyboard that has a variety of features to allow for collaborative music-making between friends. Each keyboard has eight..... Listed under: [Sound - Audio Projects](#)
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1034. [Wireless Pedometer Using Atmega1284](#) Introduction There's a simple question asked by runners, walkers, joggers, and anyone who moves. How fast am I going? Runners want to pace themselves, athletes are trying to train for events, and even on a day to day basis you might wonder how far you..... Listed under: [Radio Projects](#)
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1035. [Stabilized Gimbal System Using Atmega1284](#) This webpage describes the development of a Stabilized Gimbal Control System for the CUAir team, Cornell University's Unmanned Air Systems Team. The Stabilized Gimbal Control System will help the CUAir team compete at the Association for

Unmanned Vehicle System International (AUVSI) Student Unmanned Air Systems..... Listed under: [Security - Safety Projects](#), [Sensor - Transducer - Detector Projects](#)

1036. [Laser Tag with wireless logging using Atmega644](#) Introduction "A new spin on Laser Tag with Wireless Real-Time Updates" For our ECE 4760 final project, we designed and built our own laser tag system. We included many traditional laser tag features, but then added our own 4760 twist. For the purposes of a..... Listed under: [Other Projects](#)

1037. [Gesture Based Security Lock Using Atmega1284](#) Introduction Our final project is to design a security system which can be unlocked by means of a stored gesture pattern. The idea is to create a box like assembly, in which the user places his hand, makes a defined gesture and unlocks the system..... Listed under: [Security - Safety Projects](#)

1038. [Pushup Trainer Using Atmega1284](#) For our ECE 4760 final project, we choose to develop an electronic push-up trainer that could monitor people's movement, provide training package to optimize their push-up exercise and body health. A distance meter will be used to figure out whether the posture of the person..... Listed under: [Medical - Health based Projects](#), [Sensor - Transducer - Detector Projects](#)

1039. [ColdRunner – A Temperature Feedback Running Band Using Atmega1284](#) For our ECE 4760 final project, we designed and built a running band that provides feedback to users with temperature and vibration. This provides an unique way to monitor running habits with temperature feedback. The running band attaches to a user's upper arm and counts..... Listed under: [Temperature Measurement Projects](#)

1040. [Servo-Controlled Fire Extinguisher Using Atmega1284](#) Introduction We have created an autonomous, servo-controlled fire extinguisher that is capable of aiming photo sensors and a water nozzle along two axes to detect and extinguish candle fires a short distance (about 1 ft.) away using a small burst of water. Our inspiration originally..... Listed under: [Sensor - Transducer - Detector Projects](#)

1041. [The Webcam Mouse Using Atmega1284](#) For our ECE 4760 final project, we designed and built a pointing device with webcam-color-tracking based movement control. Our implementation allows the user to wear a set of finger-sleeves complete with buttons for clicking and scrolling and a red LED for color-tracking cursor control to..... Listed under: [How To - DIY - Projects](#)

1042. [Automated Drink Mixer Using Atmega1284](#) Abstract The automated drink mixer takes orders from a push-button menu, and moves a regular 16-ounce glass under a series of inverted bottles while dispensing specified amounts of mixers to make perfect non-alcoholic beverages. Introduction If you've ever been to a crowded bar or..... Listed under: [Home Automation Projects](#)

1043. [A Touchscreen Chinese Chess App Using Atmega1284](#) With the increasing popularity of smartphones and tablet computers, touchscreen has become one of the most common user interfaces encountered today. The idea of this project came from some apps on the smart phone. It is very interesting to play a virtual Chinese chess on..... Listed under: [Game - Entertainment Projects](#)

1044. [Beacon: A Zero Instruction Navigation Device Using atmega1284](#) Introduction to the Device Beac0n allows us to explore the tacit human understanding of technological feedback. The Beac0n is a gps pathfinder that is designed to be completely intuitive to the user. The goal is for the user to pick up the device, and with..... Listed under: [GPS Based Projects](#)

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1045. [Acoustic Modem Using Atmega1284p](#) Data transmission over sound is used in many communication protocols, the most common being Dual-Tone Multi-Frequency signaling (DTMF). It is used to dial phone numbers and the frequency combinations chosen for the digits are very familiar to the general public. It was also used in..... Listed under: [Sound - Audio Projects](#)
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1046. [A Moving Alarm Clock Using Atmega1284](#) Introduction We implemented a prototype for a moving alarm clock which runs away from the user when they try to silence the alarm. It has all the features of a "regular" alarm clock: settable time and alarm, snooze, and alarm on/off. The alarm clock displays..... Listed under: [Clock Projects](#)
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1047. [Precision Cooker: A Temperature Controlled Cooker Using Atmega1284](#) Precise time and temperature control are critical when cooking. Slight deviations in either temperature or cooking time can ruin delicate ingredients. Despite this fact, most modern day stovetops provide no data regarding their current temperatures and do not have built in timers. The stovetops that..... Listed under: [Home Automation Projects](#)
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1048. [Eye Mouse Using Atmega1284](#) Our final project moves and clicks a mouse cursor on a computer screen by tracking where the user's eye-movements using infrared eye-tracking technology and a gyroscope. The motivation for this project came from thinking about applications of infrared technology. We narrowed our ideas down to..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1049. [Scan-E: An optical blood pressure sensor Using Atmega1284](#) Introduction For this project, we created a noninvasive heart rate and blood pressure measurement tool with the intention of gathering data for large-scale analysis for the automatic prediction of heart disease. In modern society, patients often have access to a wealth of electronic data concerning..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1050. [Low-Budget Laser Projector Using Atmega1284](#) Introduction For our ECE 4760 final project, we designed a low-budget laser projector system. The project was broken into main sections: the custom hardware designed and fabricated to make up the projector, the circuitry controlling the hardware, and the custom software controlling the circuitry. We..... Listed under: [CNC - Printing Machines Projects](#)
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1051. [Autonomous Air-Hockey Goalie Using atmega 1284](#) This project is intended to perform the role of a goal-keeper in the popular arcade game Air Hockey. In this project, the robot shown below senses a puck coming toward it and moves in the direction of the puck's motion so as to stop it..... Listed under: [Game - Entertainment Projects](#), [Home Automation Projects](#)
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1052. [NFC Transmitter and Receiver Using Atmega1284](#) Introduction Our project is building one set of NFC module including a NFC transmitter and a NFC receiver both using ATmega1284p microcontroller. We will be using coupled coils to transmit message modulated by a high frequency carrier, whose frequency is the standard frequency for Near..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1053. [Remote Controlled POV Display Using Atmega1284](#) Introduction For our ECE 4760 final project, we designed and implemented a remote controlled persistence-of-vision (POV) display that is able to display multiple patterns based on remote input. The primary components of the display are a rotor and a motor. The rotor is mainly consisted..... Listed under: [LED Projects](#), [Sensor - Transducer - Detector Projects](#)

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1054. [POV Magic 8 Ball Using Atmega1284](#) 1.Introduction In our final project of ECE 4760, we designed a magic 8 ball, which is a rotating POV (persistence of vision) display controlled by voice commands. In our design, users can ask yes/no based questions via a small speaker, and the rotating POV part..... Listed under: [Game - Entertainment Projects](#)
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1055. [The Air Mouse Using Atmega1284](#) Introduction "A wireless mouse unit that requires no flat surface by using ultrasonic positioning." For our ECE 4760 final project,we have designed a surface-less mouse interface using ultrasonic transmission as our final project in this class. The idea is to have a ultrasonic transmitter as..... Listed under: [Interfacing\(USB - RS232 - I2c - ISP\) Projects](#)
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1056. [EEG Magic Cat Ears Using Atmega1284](#) Kang Li(kl694) and Zhenxuan Qiu(zq39) For our ECE 4760 final projec, we built a pair of toy "cat ears" using electroencephalography (EEG) with the AVR microcontroller. The basic function of it is that it can change the gesture of the "Ears" based on the participant's..... Listed under: [Game - Entertainment Projects](#)
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1057. [Drumming Teaching and feedback device Using Atmega1284](#) For our ECE 4760 final project, we designed and built a drum trainer that can be attached to most Japanese drum surface and will detect and wirelessly transmit different drum hit types to other players' drum trainers. The trainer is able to determine whether the..... Listed under: [Sound - Audio Projects](#)
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1058. [Thermistor Respiratory Monitor Using Atmega1284](#) Our final project for ECE 4760 is a respiratory monitor that was designed for low-resource environments. The device calculates a patient's breathing rate by detecting changes in temperature when the patient breathes through a mask. Features of the device include an alarm through a piezoelectric..... Listed under: [Medical - Health based Projects](#)
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1059. [Glove Mouse Using Atmega1284](#) For our ECE 4760 final project, we designed and built a wireless computer pointing device with accelerometer based movement control. Our implementation allows the user to wear a set of hardware (a glove and connected armband) and control a cursor through different hand orientations and..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1060. [Hand-Motion Chess Using Atmega1284](#) An Introduction "A glove embedded with accelerometers to play a hand motion-controlled chess game" project soundbyte For our ECE 4760 final project, our team designed and built a system with the ability to play the game of chess using embedded gloves. Each player wears a..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1061. [Color to Sound Player Using Atmega1284](#) Introduction We created a device that determines the RGB content of a surface and then speaks the color or plays a musical tone at the sound frequency mapped to the color. The device can convert the color to sound directly or function as a cassette..... Listed under: [Sound - Audio Projects](#)
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1062. [Multi-functional Music Box Using Atmega1284](#) Our final project is to build a multifunctional music box. This music box can generate different songs in different instrument sounds, i.e. piano, organ, by FM synthesis. The theme and harmony are in two different channels. Besides, the music box can also be electrical piano..... Listed under: [Sound - Audio Projects](#)

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1063. [Muscle music control Using Atmega1284p](#) Introduction For our ECE 4760 Final Project, we use an infrared LED and phototransistor armband to detect muscle inflections in arm and wrist movement which are used to manipulate the volume and speed of pre recorded songs. By pumping your fist, you will change the..... Listed under: [Sound - Audio Projects](#)
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1064. [Digital Reversi board using Atmega644](#) Introduction For our final project in ECE 4760, we designed and implemented a Reversi board consisting of hardware, a microcontroller, and a touch screen. Sixty-four bicolor (red and green) LEDs were implemented as the black and white pieces of the game. Players could simply light..... Listed under: [Development Board - Kits Projects](#)
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1065. [Audio Spectrum Analyzer Using Atmega644](#) Our ECE 4760 final project was an audio spectrum analyzer that would display a histogram-style visualization of an audio signal. We were able to successfully display the frequency spectrum content of an audio signal in real-time using a black and white histogram visualization with bins..... Listed under: [Sound - Audio Projects](#)
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1066. [Optical microphone and spectrum analyzer Using Atmega1284](#) We implemented an optical microphone which converts distant vibrations, including sound, to an audio signal. Measuring the reflection of a laser beam from windows or glass, it possible to hear sounds near the target. The system also includes frequency spectrum analysis with a real-time display..... Listed under: [Radio Projects](#), [Sound - Audio Projects](#)
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1067. [IFF System for Infantry Using Atmega1284](#) Introduction "An encrypted laser-based friend-foe identification system to prevent friendly fire in battle" This project implements an Identification Friend-or-Foe (IFF) system for use by soldiers to prevent friendly-fire. The inspiration for the project is derived from Identification Friend-or-Foe (IFF) transponder systems currently used on fighter..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1068. [Persistence of Vision Clock Using Atmega644](#) The goal of our project was to create a persistence-of-vision (POV) analog clock using an LED display. The clock has a visual alarm system which lights up the entire display for two seconds if it reaches an alarm time. The current time and alarm times..... Listed under: [Clock Projects](#)
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1069. [Virtuoso: A Touchscreen Music App Using Atmega644](#) n our final project, we designed an electronic multifunction instrument with a LCD touch screen and a microphone. The user can play three kinds of instruments on it -- xylophone, flute and piano. Each instrument has a different interface and timbre. The piano part has..... Listed under: [Sound - Audio Projects](#)
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1070. [NFC Secure Data Storage Using Atmega644](#) Summary "Enabling secure storage capabilities for sensitive data through standardized methods of encryption or multiple agent distribution." Our group chose to implement a secure form of storage for sensitive information such as passwords or identification numbers. This is modeled after Shamirs secret sharing algorithm. It..... Listed under: [RFID - NFC Projects](#)
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1071. [Ultrasound Gesture Detection Using Atmega644](#) Introduction In this project, ultrasound around 24kHz was used to detect movement near an object. Waving a hand or other solid object near the source of the ultrasound (speaker) causes a shift in the frequency of the sound, which is then detected by a microphone..... Listed under: [Sensor - Transducer - Detector Projects](#)

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1072. [Wireless, voice-controllable, household system Using Atmega644](#) Motivation We design a smart home control system which allow people control their home devices by voice command at home. This is a wireless, voice control system. People could control almost all the facilities at home including lights, fans or even back ground music. Right..... Listed under: [Sound - Audio Projects](#)
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1073. [Solar Powered Pulse Oximeter and Heart Rate Meter Using Atmega644](#) Introduction Pulse Oximeter is a non-invasive medical diagnostic device used to detect the oxygen saturation of the blood. Heart rate meter detects the number of beats per minute of the patient, normally referred to as bpm. The pulse oximeter is designed using an infrared and..... Listed under: [Medical - Health based Projects](#)
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1074. [RoboSLR Using Atmega644](#) Introduction Robo-SLR provides a remotely controllable stand for a Canon EOS 550D DSLR camera, allowing for adjustable tilt and pan functionality along with the ability to remotely view through the camera's viewfinder and take photos. An ATmega1284 microcontroller is used to control camera functions as..... Listed under: [Robotics - Automation Projects](#)
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1075. [Radio Station Tracker Using Atmega644](#) Our project is inspired by the commercial product, PicoDopp, which uses a similar scheme for foxhunting. Foxhunting is a contest where participants try to locate a transmitter, called the fox, simply by monitoring the signals it transmits. Typically this is done using highly directional antennas..... Listed under: [Radio Projects, Sensor - Transducer - Detector Projects](#)
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1076. [OBD-II Autocross/Track Data Logger for BMW E36 M3 Using Atmega644](#) Customer's Voice "Hello, I am interested in a race car logger than will be able to display and log crucial information during autocross and track events. I am interested in tracking vehicle speed, RPM, engine coolant temperature and lateral g-forces. Ideally, the data can be..... Listed under: [Car Projects](#)
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1077. [Brain-Computer Interface Using Atmega644](#) Introduction Our goal was to build a brain-computer interface using an AVR microcontroller. We decided that the least invasive way of measuring brain waves would be using electroencephalography (EEG) to record microvolt-range potential differences across locations on the user's scalp. In order to accomplish this,..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1078. [Digital Saxophone Using Atmega644](#) Abstract My final project was the design of a digital saxophone which can reproduce the sound of an actual saxophone through digitally synthesized electrical waveforms. The digital saxophone consists of a microphone to sense the user blowing into a mouthpiece, push-buttons to control the note..... Listed under: [Phone Projects](#)
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1079. [Virtual Saxophone Using Atmega644](#) Our ECE 4760 final project was to create a virtual saxophone that uses Direct Digital Synthesis (DDS) to synthesize the output notes. Pushbuttons are connected to a PVC pipe to mimic the saxophone's mechanical structure, and a microphone that detects noise is used to determine..... Listed under: [Phone Projects, Sensor - Transducer - Detector Projects](#)
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1080. [Auto-composing keyboard Using Atmega644](#) Project Overview We designed an electric piano that automatically composes a piece of music for the ECE 4760 final project. All the user need to do is to select a mood of the music and play two notes upon which the music is based, and..... Listed under: [Development Board - Kits Projects, Sound - Audio Projects](#)

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1081. [MicroKart 644 Using Atmega644](#) The Micro Kart 644 is a mobile device that provides additional capability to the traditional RC car experience. Allowable functions are recording multiple tracks, which consist of all user controls sent to the car over a 25 second interval, and replaying the tracks so the..... Listed under: [Car Projects](#)
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1082. [Touchpad Figure Recognition Using Atmega644](#) Our project implements a touchpad input system which takes user input and converts it to a printed character. Currently, the device only recognizes the 26 letters of the alphabet, but our training system could be easily generalized to include any figure of completely arbitrary shape,..... Listed under: [Development Board - Kits Projects](#), [LED Projects](#), [Sensor - Transducer - Detector Projects](#)
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1083. [Battle video game Using Atmega644](#) Introduction Our project is a simple game where two players control tanks in a stage with the ultimate goal of destroying each other. User input is achieved through the use of keypads, which are used to both control the tanks and fire missiles at one..... Listed under: [Game - Entertainment Projects](#)
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1084. [Sign language translator Using Atmega644](#) Introduction "A portable Glove Based Sign Language Translator with LCD Display, Speech Synthesis, and Sign Language Education Software" Sign language is a language through which communication is possible without the means of acoustic sounds. Instead, sign language relies on sign patterns, i.e., body language, orientation..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1085. [Evolutionary Altitude Control for a Helicopter Using Atmega644](#) Overview For our ECE 4760 project, we developed a self learning 1 degree of freedom (DOF) helicopter using a neural network learning algorithm and infrared (IR) distance measurement. The primary goal is to increase the helicopter height to a desired level in the quickest amount..... Listed under: [Game - Entertainment Projects](#)
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1086. [Digital Stethoscope Using Atmega644](#) "A digital stethoscope that can amplify, play, and record heart signals in real-time." Project Soundbyte The purpose of this project was to design and implement a digital stethoscope to serve as a platform for potential computer aided diagnosis (CAD) applications for the detection of cardiac..... Listed under: [Medical - Health based Projects](#)
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1087. [Power Manager: Remote Power Control Through LAN using Atmega644](#) Introduction Overview PowerManager is a remote power management system that can be controlled through a web browser on a local area network (LAN). Devices plugged into PowerManager's outlets can be turned on or off with the click of a button on a webpage. PowerManager runs..... Listed under: [Internet - Ethernet - LAN Projects](#)
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1088. [Heliowatcher solar tracker Using Atmega644](#) Documentation HelioWatcher: Automatic Solar Panel Control Jason Wright (jpw97) and Jeremy Blum (jeb373) Introduction We designed and built a system to automatically orient a solar panel for maximum efficiency, record data, and safely charge batteries. Using a GPS module and magnetometer, the HelioWatcher allows the..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1089. [Cooking Assistant for Automatic Temperature Control Using Atmega644](#) In some cooking scenarios, it is desirable to achieve a specific object temperature and keep the object at that temperature. However, it is difficult to maintain a constant temperature without constant attention. To aid cooking in this scenario, we created a device that can be..... Listed under: [Temperature Measurement Projects](#)

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1090. [SousVide immersion cooker using Atmega644](#) About What is this thing? For our ECE4760 Spring 2012 (Microcontrollers) Final Project at Cornell University we decided to create a sous-vide cooker (a type of immersion cooker) that can maintain a set temperature for extended periods of time. It can auto-calculate the appropriate time..... Listed under: [Home Automation Projects](#)
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1091. [BrainMap: fNIR imaging of the brain Using Atmega644](#) Introduction Our project records and extracts event-related features from a 36-point relative blood-oxygen concentration sensor array from the surface of the brain. We chose this project because of a combined interest in brain-computer interfaces. In an attempt to balance cost, complexity, and sensor density, we..... Listed under: [How To - DIY - Projects](#), [LED Projects](#)
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1092. [MAD-DOG Kick-Awesome Wi-Fi Audio Streamer Using Atmega644](#) Introduction "We developed a wireless receiver capable of receiving and playing audio transmitted over an 802.11 Wi-Fi network" project soundbyte For our ECE 4760 final project we developed a wireless receiver capable of receiving and playing audio transmitted over an 802.11 Wi-Fi network. Our system..... Listed under: [Radio Projects](#)
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1093. [Remote Controlled DMM With Minimum Mass Wireless Coupler Using Atmega644](#) Introduction In this project, we built a digital multi-meter utilizing near-field communication concept. The system established a bidirectional wireless communication between the measurement unit and the base unit. The measurement unit is in charge of measurement and transmitting the result to the base, while the..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1094. [Seven day alarm Using Atmega644](#) Introduction The variability of a college student's class and school work schedule gives way to an abnormal sleep/wake pattern that is not experienced any other age group. Few lucky students have the pleasure of having all their classes start at the same time every day..... Listed under: [Clock Projects](#)
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1095. [A Budget Pachinko Machine Using Atmega644](#) Pachinko is a game in which a ball drops down through a large quantity of pegs and the objective is to catch that ball in a fixed basket. The concept behind our machine is novel in that it was built using mostly discarded and salvaged..... Listed under: [Game - Entertainment Projects](#)
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1096. [Quadcopter Using Atmega644](#) Introduction Many embedded systems use sensors that combine an accelerometer and a gyroscope. Quadcopter is one of the examples of that. Already-built cheap toy-like quadcopters are available on e-bay around at \$25~\$30, but many hobbyists and avid AVR programmers build their own quadcopters. We thought..... Listed under: [Game - Entertainment Projects](#)
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1097. [Ultrasonic Security System Using Atmega644](#) Introduction We were inspired to build an ultrasonic security system for our final project by our housing situation this summer. Security is an important part of home. Especially if we are going to share a house with prior strangers without a lock on our room..... Listed under: [Security - Safety Projects](#)
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1098. [Smart Trash system Using Atmega644](#) Introduction top For our final project, we have designed and built a 'proof of concept' prototype for Project Green Stations, an externally funded student group with the following mission statement: Project Green Stations is all about changing the way people see the environment. Imagine the..... Listed under: [Other Projects](#)

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1099. [GPS Tracking Device for Cornell Engineering Quad Using Atmega644](#) Introduction "A GPS tracking devices capable of telling the user his/her approximate distance to buildings and attractions on a map downloaded from a remote station" -Project Soundbyte For our final project in ECE4760, we designed an GPS tracking device that has a capability of downloading..... Listed under: [GPS Based Projects](#)
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1100. [Autonomous Board Erasing Robot Using Atmega644](#) Abstract -A Roomba for boards For our ECE 4760 final project we created a board climbing robot capable of cleaning the board autonomously. The robot uses neodymium magnets to stick to the board and moves across it with two continuous servo motors. It has bumper..... Listed under: [Robotics - Automation Projects](#)
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1101. [Self-Reliant Power and Data Management System Using Atmega644](#) Introduction The tags used to monitor wildlife can either be passive or active. Passive tags simply identify an individual, whereas active tags may send out a radio beacon or even collect data. These active tags, more commonly referred to as "bio-loggers", are typically battery powered,..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1102. [A Wireless Programmable Pace Clock Using Atmega644](#) For our ECE 4760 final project, we designed and built a wirelessly programmable digital pace clock with a large format LED display and Android smartphone control and programming. This original design achieves the functionality of commercially available pace clocks but with an intuitive user interface..... Listed under: [Clock Projects](#)
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1103. [Rock Band Vocal Bot Using Atmega644](#) We have created a device that interprets the NTSC video signal from the video game Rock Band and outputs audio signals via a pair of speakers to simulate a human singer playing the vocalist part. We chose to pursue this project since we were interested..... Listed under: [Game - Entertainment Projects](#)
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1104. [DJ Multitouch — A FTIR Touchscreen Device Using Atmega644](#) Overview The DJ Touch is a portable turntable touchscreen and interactive LED display. Our end goal was to produce a low cost touchscreen device, and demonstrate its application in a common consumer application. Out of an interest in electronic music, and with the knowledge of..... Listed under: [LCD Projects](#)
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1105. [FaceAccess — A Portable Face Recognition System Using Atmega644](#) We created a standalone face recognition system for access control. Users enroll in the system with the push of a button and can then log in with a different button. Face recognition uses an eigenface method. Initial testing indicates an 88% successful login rate with..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1106. [Voice decoder for vowels Using Atmega644](#) Introduction In our final project, we created a smart voice decoder system that is capable of recognizing vowels in human speech. The audio input is sampled through a microphone/amplifier circuit and analyzed in real time using the Mega644 MCU. The user can record and analyze..... Listed under: [Other Projects](#)
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1107. [Ahhhh...BIU! video game Using Atmega1284](#) Introduction EVERYONE LOVES GAMES! In this project, I built a video game controlled by people's voice. The game is about jet fighters. People can play the game by themselves or with friends. The system recognize the command by distinguish "ahh" and "Biu". The fighters shoot..... Listed under: [Game - Entertainment Projects](#)

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1108. [Wireless, web-based, cardiac monitor Using Atmega644](#) Introduction "A composite personal health monitor solution bridges the gaps between patients and doctors." ---Engineering Goodwill This project creates a portable device implementing wireless technology and taking full advantage of the wide-spreading Internet to provide a convenient solution to monitor human health. The health information..... Listed under: [Other Projects](#)
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1109. [A Portable, Automated, web-based Bird Trapping Mechanism Using Atmega644](#) Background We designed and implemented an automated, portable bird-trapping mechanism, along with an associated system which is scalable Every year between early May and mid-June large amounts of tree swallows migrate to Ithaca, NY area to mate. The study of these birds invariably require a..... Listed under: [Motor Projects](#)
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1110. [Autonomous visually steered car Using Atmega644](#) Introduction For our final project, we re-engineered a remote control car to autonomously navigate through a track by detecting lanes and centering itself between them as well as detect objects in front of it and avoid collision. The RC car detects lanes through image input..... Listed under: [Car Projects](#)
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1111. [Step Sequencer Drum Machine Using Atmega644](#) Overview [top] As avid audiophiles, we wanted to apply our newly acquired knowledge of microcontrollers to build a fun consumer electronic device. Our project is a step sequencer drum machine. The user is able to program a 16-step percussion pattern using one of a wide..... Listed under: [Other Projects](#)
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1112. [LED-Following K'NEX Car Using atmega644](#) Introduction In a Nutshell Our ECE 4760 final project was a car made of K'NEX that follows a LED strip. What We Did For this project we made a K'NEX car that follows a path made by a LED strip. We used two phototransistors to..... Listed under: [Car Projects](#), [LED Projects](#)
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1113. [Rock-Paper-Scissors Sensor Gloves Using atmega644](#) For our ECE4760 final design project, we designed and built a two player game system for rock-paper-scissors. Our implementation involved the use of two sensor gloves (one for each player) that tracked bends in the user's fingers, to determine the symbol put out by each..... Listed under: [Game - Entertainment Projects](#)
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1114. [Ear Trainer Using Atmega644](#) Introduction Our project is a self-contained system that helps people develop the musical skills of perfect pitch and relative pitch. Push buttons allow the user to navigate a graphical user interface (GUI) on a liquid crystal display (LCD). In perfect pitch training mode, a note..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1115. [TI Calculator Wireless Chat Using Atmega644](#) INTRODUCTION: Our project is a wireless communication link which interfaces to the serial ports on the TI-83 and TI-84 calculators. SUMMARY: Our group created a wireless communication system for the widely popular TI 83/84 calculators. The system interfaces to each calculator through their 2.5mm serial..... Listed under: [Calculator Projects](#)
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1116. [Sonar SensCap Using Atmega644](#) SensCap is a device that guides the visually impaired around obstacles. Introduction We designed and built a device to be worn on the head and around the hip to aid the visually impaired maneuver around obstacles. It provides information about obstacles near and around the..... Listed under: [Sensor - Transducer - Detector Projects](#)

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1117. [A Keyboard Synthesizer Workstation using Atmega644](#) Our Keyboard Synthesizer project aims to create a multi-instrument keyboard that can record several different synthesized instruments and play back the track simultaneously. We took a children's toy keyboard and adapted the printed circuit board within to play a range of notes from various musical..... Listed under: [Sound - Audio Projects](#)
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1118. [Compact Guitar Pedalboard Using Atmega644](#) Introduction For our ECE 4760 final project, we designed and built an electric guitar pedalboard that will take in an analog audio signal from a guitar and add analog effects such as equalization, gain control, as well as digital effects such as distortion, compression, and..... Listed under: [Sound - Audio Projects](#)
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1119. [Embedded Foot Pronation Detection Using Atmega644](#) Introduction and Rationale Our ECE 4760 design project integrates three different kinds of sensor measurements to track a user's movement speed, regularity of gait, force on impact, pronation of foot, as well as other information that may be useful to a podiatrist. We believe there..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1120. [Human Tracking Fan System Using Atmega644](#) For our final project we decided to construct a human tracking rotating platform that supports a fan. The platform, using dual element Pyroelectric Infrared Sensors (PIR) sensors, rotates itself independently to direct air flow to whatever position a person moves to. In addition, the fan..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1121. [Invisible band Using atmega644](#) Introduction The goal of this project is designing microcontroller operated drum set and guitar which are only consist of drums sticks, pedals, and pick. This is done by implementing accelerometers which are connected to the microcontroller. By swinging the sticks and picking the guitar in..... Listed under: [Sound - Audio Projects](#)
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1122. [Sheet Music Notator Using Atmega644](#) Introduction We created a system that takes input from a piano and displays the musical notation for it on a television screen. The system uses hardware amplification and filtering of a microphone output with code in C compiled on two Atmel Mega644 microcontrollers. The basic..... Listed under: [Sound - Audio Projects](#)
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1123. [ToneMatrix Touch Sequencer Using Atmega644](#) ToneMatrix Touch by Jane Park, Michael Chin We can be reached at {jp624 | msc247} at cornell dot edu. ---a touch-based, interactive matrix that plays music corresponding to active grids and displays playback state using LEDs Introduction The ToneMatrix Touch (TMT, aka Teenage Mutant Turtle)..... Listed under: [LED Projects](#)
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1124. [Automated grapefruit segmenter Using Atmega644](#) Part I. High Level Design 1 Rationale and Problem Overview As regular grapefruit consumers, both of us could appreciate the value in automating the cutting procedure. We saw the problem as suitable for a final project because it is [very] challenging while requiring a combination of..... Listed under: [Home Automation Projects](#)
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1125. [Motion Sensing PowerPoint Controller Using Atmega644](#) Introduction For our Final Project in ECE 4760, we built a controller that interfaces with a computer running a PowerPoint display through USB. The device can control slide transitions based on hand motions or button presses as well as play MP3 files when it detects..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)

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1126. [Heat Control System Using Atmega644](#) Introduction This project was the first stage of developing a controller for a radiant floor heat system. The microcontroller will use inputs from thermostats, thermocouples, a flow meter, and pressure switches to control the operation of the pumps and valves to achieve improved efficiency of..... Listed under: [Temperature Measurement Projects](#)
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1127. [XBee RF Smart Energy Compliant Power Meter Using Atmega644](#) Motivation >A breaker-level power metering device for measuring energy on 4 different circuit lines and wirelessly outputting that energy data onto Google PowerMeter. Useful Links Google PowerMeter Smart Energy Alliance DOE - SmartGrid Energy Efficient Products Similar Projects Zigbee Wireless Relay Control & Power Monitoring..... Listed under: [Metering - Instrument Projects](#)
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1128. [3D Paint Using Atmega644](#) "A 3D canvas on which the artist can draw using trilaterated coordinates from ultrasonic delays." Project Soundbyte For our final project in ECE 4760, we designed and implemented a three-dimensional paint program consisting of hardware, a microcontroller, and a PC running MATLAB. All three modules..... Listed under: [Home Automation Projects](#)
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1129. [Hand controller for Parrot AR Drone Quadricopter Using Atmega644](#) Introduction Our project is a novel hand held controller in which we use an accelerometer to wirelessly control the motion of a Parrot AR Drone Quadricopter. Rationale: The main idea of our project was building a cool glove controller for a flying platform, a quadrotor..... Listed under: [Robotics - Automation Projects](#), [Sensor - Transducer - Detector Projects](#)
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1130. [Human Tetris — Video object tracking Using Atmega644](#) We have created a real-time video object tracking / shape recognition device, and a fun game library to demonstrate its abilities. For our project, we wanted to push the video sampling and processing capabilities of the ATmega644 8-bit microcontroller. Using a high-speed analog-to-digital converter as..... Listed under: [Sensor - Transducer - Detector Projects](#), [Video - Camera - Imaging Projects](#)
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1131. [Auditory navigator Using Atmega644](#) Introduction Navigation in the past has primarily relied on the use of a map, compass or other devices that must be interpreted visually. This project demonstrates the ability to navigate a user based on synthesized directional audio which allows the user to move to a..... Listed under: [GPS Based Projects](#)
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1132. [USB wireless tilt mouse Using Atmega644](#) Introduction We created a handheld mouse device that measures its tilt and then wirelessly transmits the data to a base unit, which is connected to a PC through a USB cable and can be recognized by certain modern computers as an actual mouse. The purpose..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1133. [Automated Rock Band player Using Atmega644](#) Introduction For our final design project, we built an automated Rock Band player that can beat any Rock Band song by decoding the Xbox 360 video output and sending the appropriate button push and strum signals to a modified Xbox controller. This project was particularly..... Listed under: [Sound - Audio Projects](#)
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1134. [Automated Pavlovian Classical Conditioning of Insects Using Atmega644](#) Introduction Several studies have shown that various insects possess learning and memory abilities. One approach researchers use to demonstrate such abilities is to "teach" the insect to exhibit a specific behavior in response to a stimulus. This "teaching" process is called Pavlovian conditioning. Such studies..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1135. [CMOS Camera Rock Paper Scissors Game System Using Atmega644](#) Introduction We created a rock paper scissors game that utilizes a CMOS camera to determine what hand the human player plays. The player is required to wear a glove that has black tape taped on each finger. When the player plays the hand, the camera..... Listed under: [Game - Entertainment Projects](#)
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1136. [RFID based Mobile Payment System Using Atmega644](#) Introduction and Rationale We used our ECE 4760 final project as a platform to develop a proof of concept for Mivo. Mivo is a low-cost, stripped down mobile payment system. Our prototype combines Radio Frequency Identification (RFID), Security Pin Authentication and Ethernet Data Transfer to..... Listed under: [RFID - NFC Projects](#)
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1137. [Talking voltmeter Using Atmega644](#) The Handy Lab Buddy is a tool every ECE should have. The four features of this tool include a talking voltmeter, logic probe, voltage averager, and frequency measurer. As a cheap and accurate device that outputs whatever being measured through speakers, it's one of its..... Listed under: [Metering - Instrument Projects](#)
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1138. [Heart Rate Display LED T-Shirt Using Atmega644](#) Introduction We have designed and built a LED t-shirt capable of displaying the heart rate of the wearer via a pulsing LED heart. Largely, our project consists of two components: the plethysmograph and the LED display. How we came up with the Idea We had..... Listed under: [LED Projects](#), [Medical - Health based Projects](#)
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1139. [Gesture Based Touchpad Security System Using Atmega644](#) Introduction The purpose of the project is to present a new approach on the design of security systems by using a touch sensitive device. Security is a permanent concern in a variety of environments ranging from physical access restriction in home and industrial settings to..... Listed under: [Security - Safety Projects](#)
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1140. [Flexicopter Using Atmega644](#) Introduction The purpose of our project is to control a toy helicopter using flex sensors attached to a glove. The flex sensors are intended to replace the remote control that is generally used to fly the helicopter. Additionally we also created another mode which will..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1141. [Acoustic Data Modem Using Atmega644](#) Introduction For our final design project, we designed and built a prototype acoustic modem to serve as a physical transport layer for digital communications. It converts between a digital communications scheme (RS-232) and an acoustically coupled communications scheme of our own design. Our project consists..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Other Projects](#)
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1142. [Adaptive Alarm Clock Using Atmega644](#) Introduction Elevator Pitch / 1-second Description An adaptive alarm clock that chooses the optimal time to wake up the user using an accelerometer that detects his/her body movements. Goals The goal of our final project was to create an alarm clock that is able to..... Listed under: [Clock Projects](#)
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1143. [Zigbee Wireless Relay Control and Power Monitoring System Using Atmega644](#) Introduction We designed a system for wirelessly controlling relays and monitoring current. This is used for a home load simulation. By wirelessly turning relays on and off by sending commands from a PC to a microcontroller we can change the total load (current) to our..... Listed under: [Metering - Instrument Projects](#)

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1144. [Low-Cost Portable Potentiostat for Biosensing Applications Using Atmega644](#) Introduction This project involves the design and construction of a low-cost portable potentiostat capable of performing cyclic voltammetry on three-electrode electrochemical systems. A potentiostat is an instrument used in chemical and biological tests that controls the voltage between two electrodes, working and reference, at a..... Listed under: [Other Projects](#)
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1145. [Point of Sale Terminal Using Atmega644](#) Introduction Point of Sale systems typically can cost up to thousands of dollars we do it very simply for seventy. For small stores, point of sale systems can be very expensive. One thousand dollars for a piece of machinery whose functionality is quintessentially simple can..... Listed under: [Development Board - Kits Projects](#)
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1146. [FM Radio Receiver Using Atmega644](#) Introduction The goal of our project was to design a low cost and user-friendly FM radio receiver. Our project uses a FM receiver integrated circuit to perform the pre-processing units that are needed before the desired audio signals can be heard. The radio frequency is..... Listed under: [Radio Projects](#)
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1147. [Mister Gloves – A Wireless USB Gesture Input System Using Atmega644](#) Introduction Mister Gloves is a wireless USB gesture input system that enables a person to use a computer by performing intuitive hand and finger motions in the air. While wearing a glove controller on the right hand, the user can move the cursor by forming..... Listed under: [Robotics - Automation Projects](#)
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1148. [Accelerometer Based Hand Action Recognition using Atmega644](#) Introduction We created a wearable game controller that uses accelerometers to acquire action of the hand and then maps an action to an arbitrary keystroke. The types of actions we are trying to recognize should be suitable as input control for video games. We placed..... Listed under: [Robotics - Automation Projects](#), [Sensor - Transducer - Detector Projects](#)
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1149. [Home energy managment Using Atmega644a](#) Introduction Our project implements a smart algorithm in order to power a house with a photovoltaic, batteries or the power grid. For this project, we worked closely with a research team whose goal is to power a home with minimal power from the power grid. Listed under: [Home Automation Projects](#)
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1150. [Self-Adaptive Hybrid Electro-Magnetic Levitation and Active Balancing System Using Atmega644](#) Introduction In short, our project is just an isolated floating plate. Just as our title explained, it is mainly a floating plate that is segregated from all outside vibration using electromagnetic force. This purpose of the project is to design a system that complements common..... Listed under: [Metering - Instrument Projects](#)
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1151. [Digital Oscilloscope Using Atmega644](#) Introduction The goal of our project is to design a digital oscilloscope with 20 kHz bandwidth. The scopes that we use in ECE 4760 lab cost over one thousand dollars. The motivation of our project is to produce an affordable, easy to make oscilloscope for..... Listed under: [Metering - Instrument Projects](#)
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1152. [Optical eye tracking Using Atmega644](#) Introduction We have endeavored to develop a means by which eye gaze can be detected. This goal was achieved using the same principles learned in Lab4, where we recorded the motor speed of a small hub fan using the combination of IR emitter plus phototransistor,..... Listed under: [Sensor - Transducer - Detector Projects](#)

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1153. [Guitar Blocks Using Atmega644](#) Introduction We present to you, the ultimate guitar -- no strings attached (literally)! This guitar features an infrared strumming system and a fret board with physical buttons. It sounds like a real acoustic guitar and it works like a real acoustic guitar, but in the..... Listed under: [Sound - Audio Projects](#)
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1154. [Haptic Exercise Coach Using Atmega644](#) Introduction The goal of this project was to assist the user in learning the proper technique for a physical exercise, in our case a dumbbell bicep curl. As our understanding of biology and anatomy improves, the design of physical exercises is improved by the application..... Listed under: [Medical - Health based Projects](#)
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1155. [ATmega644 JTAG Debugger](#) Introduction The purpose of this project was to design and implement a debugger for the ATmega644 that communicated through its JTAG interface and was capable of controlling program execution by setting breakpoints and accessing registers and memory. We have three main objectives in this report:..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1156. [Ultrasonic Haptic Vision System using Atmega644](#) Introduction The ultrasonic haptic vision system enables a person to navigate hallways and around large objects without sight, through the use of an ultrasonic rangefinder that haptically interfaces with the user via tiny vibrating motors mounted on the users head. The idea behind this project..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1157. [Haptic appointment manager Using Atmega644](#) Introduction The Haptic Appointment Manager manages all of an individuals appointments, ensuring they arrive on time and in the right location by subtly guiding them throughout the day. This system uses a GPS receiver and a compass to maintain awareness of its absolute and rotational..... Listed under: [GPS Based Projects](#), [Sensor - Transducer - Detector Projects](#)
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1158. [3D ultrasonic mouse Using Atmega644](#) Introduction Ultramouse 3D times the delay of high-frequency sound waves from the unit held by the user to each of three receivers and passes this information along a serial cable to the computer. The accompanying open-source API provides easy functions that let any Win32/C++ application..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1159. [3D scanner Using Atmega644](#) Introduction This goal of this project is to make an effective, low-cost 3D scanner. Summary Our project implements the hardware necessary for a laser triangulation 3D scanner as well as a PC user interface for controlling the scanner and acquiring data via an Ethernet connection..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1160. [Gesture Recognition Based on Scratch Inputs Using Atmega644](#) Contents Introduction High Level Design Program/Hardware Design Results of the Design Conclusions Appendix A: Commented Code Gesture Recognition Code PC Interface Code Appendix B: Schematics Appendix C: Cost Details Appendix D: Tasks Appendix E: Gestures References Introduction Our project utilizes a microphone placed in a..... Listed under: [Phone Projects](#)
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1161. [LED Sensor Piano Keyboard Using atmega644](#) Introduction Our project utilizes an array of LEDs that work as light sensors to generate a musical tone, simulating a piano keyboard. The basic idea is to use LEDs as both emitters and sensors. For our project specifically, we used a total of 63 LEDs,..... Listed under: [Development Board - Kits Projects](#), [LED Projects](#), [Sensor - Transducer - Detector Projects](#)

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1162. [Touchpad/Infrared Music Synthesizer Using Atmega644](#) Touchpad/Infrared Music Synthesizer "Generate music with your laptop touchpad!" Wei-jiunn (Vic) Jang Kalina Jordanova The Touchpad Infrared Music Synthesizer uses a laptop touchpad and an infrared distance sensor to control tone, volume and decay length of musical notes. Operating in one of six modes, this..... Listed under: [Sound - Audio Projects](#)
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1163. [Der Kapellmeister Using Atmega644](#) Introduction This project is implemented with a glove, resembling a conducting baton that analyzes gestures and interprets them into musical elements. Der Kapellmeister is a simple tool that tests a user's ability in basic conducting, using a real conducting baton. As a user performs a..... Listed under: [Robotics - Automation Projects](#), [Sound - Audio Projects](#)
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1164. [IR harp using Atmega644](#) INTRODUCTION Wouldnt it be cool to be this guy? Powerful laser shining into the audience, playing strings by sweeping your hands across the beams, rocking out in a room full of fog and fawning girls? We thought so. It turns out lasers are expensive, fog..... Listed under: [LED Projects](#)
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1165. [Digital Receipts System Using Atmega644](#) Introduction Our final project is a conceptual prototype of a digital receipt system. The basic idea is when making a purchase with a credit or ATM card, the transaction information is automatically packaged and sent to a webserver where it can be logged in a..... Listed under: [Other Projects](#)
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1166. [OBD-II Automotive data interface using Atmega644](#) Our goal for this project was to build an OBD-II compliant device that would communicate with any OBD-II enabled car and read back real time data as well as perform basic performance testing and diagnostics. If you've ever had to take your car into the..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1167. [Traction control system Using Atmega644](#) Introduction For our ECE 4760 Final project we have developed a traction control system that detects wheel slip and adjusts the velocity of the wheels accordingly. Robotic vehicles are becoming increasingly complex and often need high levels of movement control. Specifically, when the wheels of..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1168. [ACL Research: Foot Acceleration Sensor Atmega324p](#) Introduction This project was designed to aid a research study by Cornell Professors Bob Nafis and Yingxin Gao on the reasons behind the higher rate of ACL injuries suffered by female athletes. This injury rate can be up to three to eight times higher than..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1169. [Fart Intensity Detector Using Atmega644](#) INTRODUCTION Our project is a fart intensity detector which ranks fart magnitude on a scale from 0-9 according to sound, temperature, and gas concentrations. The inspiration for this project was to determine who could generate the worst flatulence measurable in a personally unbiased manner. To..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1170. [Dual-Channel Mobile Surface Electromyograph Using Atmega644](#) Introduction For our final project, we built a surface electromyograph to collect and analyze data on muscle activity, which supports two channels, implements wireless transmission, and can be worn as mobile unit. Surface electromyography (EMG) is a noninvasive technique to record the activation signals of..... Listed under: [Phone Projects](#)

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1171. [Tissue Impedance Digital Biopsy Using Atmega644](#) Introduction Our project measures and analyzes the electromechanical properties of tissue using a probe containing a microarray of electrodes, to aid as a tool in predicting the health of the tissue sample. "Despite significant efforts to develop early detection strategies for breast cancer, the diagnostic..... Listed under: [Medical - Health based Projects](#)
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1172. [GPS Data Logger with Wireless Trigger Using Atmega644](#) Introduction The goal of this project was to create a portable GPS logger that could be wireless triggered by an external device, such as a camera. Our device that we have designed operates in two modes. The first works as a basic GPS logger, which..... Listed under: [GPS Based Projects](#)
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1173. [Self-Adjusting Window Shade Using Atmega644](#) Introduction The self adjusting window shade will automatically raise, lower, open, and close your blinds by itself. A computer terminal acts as a remote to broadcast instructions to the window shade via RF. These manual adjustments are stored into the microcontrollers system along with the..... Listed under: [Home Automation Projects](#)
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1174. [Weather Canvas Using Atmega644](#) Introduction The Weather Canvas is a robust outdoor weather monitoring system coupled with an indoor LED display. The outdoor system consists of a microcontroller, temperature sensor, humidity sensor, home-made anemometer, a Hot Wheels radar gun modified to measure precipitation, and a solar panel to measure..... Listed under: [LED Projects](#)
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1175. [Autonomous Self-parking car Using Atmega644](#) Introduction We created an RC Car that can identify a parking space and parallel park by itself. The RC Car drives down a street searching for a parking space to its right using a distance sensor. When the car has identified a space, the car..... Listed under: [Car Projects](#)
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1176. [The Autonomous Tennis Ball Picker Using Atmega644](#) Introduction and Motivation In the tennis and sports equipment market, there are very few advanced electronic devices assisting in the feeding and picking of tennis balls or any other kind of balls. Tennis players do not prefer picking up over five hundred balls after a..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1177. [BalanceBot Using Atmega644](#) Introduction The BalanceBot is a singular axis self balancing robot that is capable of adjusting itself to changes in weight and position. We developed the Balance Bot (BB or B2) from a single servo and a single accelerometer. This was very much a proof of..... Listed under: [Motor Projects](#)
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1178. [Multiple PID motor controller \(with Wiimote!\) using Atmega644](#) Introduction The main idea for our project was to implement an inexpensive solution to the current CU Snake Arm motor-driving system by using a Mega644 microcontroller instead of multiple 3-Amp motor controllers as the snake arm was originally intended to be driven. Since we used..... Listed under: [Microcontroller Programmer Projects](#)
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1179. [Wireless Persistence of Vision Device with Realtime Control Using Atmega644](#) Introduction We set out to make an easy to interact with, highly customizable POV display. In deciding on a project we looked for a challenge that would have a good mix of hardware and software problems. We ended up primarily concentrating on looking at unusual..... Listed under: [Microcontroller Programmer Projects](#), [Radio Projects](#)

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1180. [Programmable RGB Spinning LED Display Using Atmega32](#) Introduction For our final project, we built a mechanism that spun a linear array of seven LEDs at a velocity that made it appear as if a message was being displayed using persistence of vision for the human eye. To accomplish this, we first had..... Listed under: [LED Projects](#)
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1181. [Alarm clock with speech synthesis Using Atmega32](#) 1. Introduction We designed an intelligent alarm clock which can be programmed from the computer to speak custom messages and also detect whether the user is on his bed or leaving his room. Sensors are pervasive in industrial, aerospace, and medical fields. Although they can..... Listed under: [Clock Projects](#)
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1182. [Blackout game Using Atmega32](#) 1 Introduction Black Out is an electronic puzzle game that is a derivative of Lights Out released by Tiger Toys in 1995 but with a few additional twists. The game consists of a 4 by 4 grid of LEDs with each LED having a..... Listed under: [Game - Entertainment Projects](#)
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1183. [ESD Foam Touch Controlled Brick Blaster Using Atmega32](#) Introduction As technological devices become more advanced and a bigger part of our daily lives, the user interface of devices is becoming more important; intuitive and modern interface provides a real means of transferring the pure computational power of a device to the user experience..... Listed under: [Sound - Audio Projects](#)
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1184. [NES EMULATION USING ATMEGA32](#) OVERALL DESIGN GOAL The overall goal of our project was to recreate the Nintendo Entertainment System (NES) using Atmel Microcontrollers. We decided early on the adding audio to the mix was likely going to be too much work in the time that we had to..... Listed under: [Sound - Audio Projects](#)
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1185. [Laser Audio Transmitter Using Atmega32](#) Introduction This project is a proof-of-concept device that transmits an audio signal using a laser beam, while removing the need for the user to align the beam themselves. For our project, we created a mono-axial transmitter/receiver setup that converts an analog audio signal, via a..... Listed under: [Radio Projects](#), [Sound - Audio Projects](#)
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1186. [Voice Tuner and its Effects Using Atmega644](#) Introduction Sound Bite Our project implements a tuner that continuously outputs the frequency of an input microphone signal with a high degree of accuracy. Project Summary This project's goal is to use a sensitive microphone, computer speakers and a properly designed circuit so that for..... Listed under: [Sound - Audio Projects](#)
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1187. [Wireless Music Player Using Atmega32](#) Our wireless music player allows the user to listen to uncompressed digital audio streamed over a wireless link. The music player reads uncompressed audio data from an SD card in an immobile "base station." A pair of Xbee transceiver modules are used to stream data..... Listed under: [Radio Projects](#)
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1188. [Multisensor Data Transmission Using Atmega32](#) Introduction For our final project we built a prototype of a circuit intended for a picosatellite that measures temperature and acceleration, sending the information wirelessly back to a base station receiver. The N-Prize is an amateur rocketry competition challenging groups to launch a very small..... Listed under: [Sensor - Transducer - Detector Projects](#)

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1189. [Heliostat Skylight Using Atmega644](#) Introduction With the increasing awareness of sustainable and green building, more and more people are concerned with the efficiency of energy use at home and at work. For our ECE 476 Final Project, we developed a microcontroller-based, interior illumination system - The Heliostat Skylight. By..... Listed under: [LED Projects](#)
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1190. [Wii Conductor Using Atmega32](#) Introduction Our project can be described as a simplified implementation of Wii-Music, utilizing a Nintendo Wii Remote (Wiimote) to play a gesture-based music game with the player as a virtual music conductor. We decided to do this project since it exploited two of the Wiimotes..... Listed under: [Interfacing\(USB - RS232 - I2c - ISP\) Projects](#)
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1191. [Musical Blocks Using Atmel ATmega 644](#) Introduction The purpose of this project is to create musical blocks that output music without requiring some sort of musical talent. Musical Blocks tracks the position of the blocks on a flat surface in a range seen by the Wiimote. The path of the blocks..... Listed under: [Sound - Audio Projects](#)
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1192. [Programmable Synthesized Guitar Using Atmega644](#) Introduction Our project recreates the experience of playing an acoustic guitar electrically using vibration sensors, push buttons and the Karplus-Strong algorithm. Our basic idea is to model an acoustic guitar as closely as possible and then implement additional functions not available to the conventional guitar..... Listed under: [Sound - Audio Projects](#)
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1193. [Robot Plotter Using Atmega32](#) Motivation Deciding a direction of the final project in ECE 4760 can be very difficult. With small Micro Controller Unit, we can build anything and everything. We felt compelled to find something very creative and ingenious and had looked around our surrounding and have found..... Listed under: [Robotics - Automation Projects](#)
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1194. [PowerBox: The Safe AC Power Meter Using Atmega32](#) Introduction We designed a device that measures and graphs various aspects of AC power and acts as a computer-controlled remote switch. With the recent push for green energy and environmental friendliness, more and more people are concerned about their personal daily power usage. We developed..... Listed under: [Calculator Projects](#)
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1195. [Rhythm Ring: Interactive Rhythm Sequencer Using Atmega32](#) I. Introduction The Rhythm Ring interactive rhythm sequencer is an engaging musical device that enables the user to create a plethora of rhythms and beat patterns with the touch of their own fingers. Besides being fun to play with, the Rhythm Ring provides a tangible..... Listed under: [Sound - Audio Projects](#)
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1196. [Trumpet MIDI Controller Using Atmega32](#) The Trumpet MIDI Controller allows trumpet players the freedom of synthesizing from and composing on their native instrument. The Trumpet MIDI Controller combines custom hardware and software with the Yamaha Silent Brass pickup mute to convert any standard trumpet into a fully functional MIDI controller..... Listed under: [Sound - Audio Projects](#)
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1197. [Air Drums Using Atmega32](#) Introduction One Sentence Sound Bite Air Drums is an electronic drum kit played in the air that eliminates the need for tactile drum pads. Summary We created an electronic percussion set with three upright percussion sounds and a floor bass drum sound. The upright instruments..... Listed under: [Sound - Audio Projects](#)

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1198. [Dueling Banjos Using Atmega32](#) Introduction Our project was to create two individual microcontrollers that can play banjo notes cooperatively to play two-part songs using nothing but sound to communicate and synchronize. Humans have had the ability to synchronize musical instruments together to achieve a single, coordinated multi-part song for..... Listed under: [Sound - Audio Projects](#)
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1199. [Intelligent wireless pedometer Using Atmega32](#) Introduction For our ECE 476 Final Project, we have built an intelligent, wearable pedometer. This wireless pedometer can calculate many useful statistics such as the number of steps a user has taken, the distance and the speed the person has walked/run, as well as the..... Listed under: [Internet - Ethernet - LAN Projects](#)
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1200. [Networked Biometric Authentication Using Atmega32](#) Introduction: Due to the increasing need for securing data and places, the biometric authentication industry is seeing large market growth. We decided to build a scalable, small, and efficient device that can be used to secure doorways throughout a complex. We use a FingerPrint Cards..... Listed under: [Calculator Projects, Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1201. [5x5x5 LED Cube – Orientation Independent 3D Display Using Atmega32](#) Introduction Our project, in one sentence, is an orientation independent 3D LED display. We were inspired by various videos on youtube of similar cubes but also by the idea of creating an interactive 3-dimensional display. We built a 5x5x5 LED cube display and controller board..... Listed under: [LED Projects](#)
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1202. [BordFree Using Atmega32](#) Introduction BordFree is a resurrection of the classic Microsoft hit SkiFree featuring an innovative tilt-control scheme. BordFree places users in the boots of a snowboarder navigating a challenging ski slope. BordFree players will see their character on a color TV scrolling from bottom to top..... Listed under: [Game - Entertainment Projects](#)
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1203. [High Speed Photography Controller Using Atmega32](#) The goal of this project was to build a versatile, yet easy to use, sensor-triggered camera controller for high speed photography. Dan Furie (djf35) Scott Linderman (swl28) High Level Design Inspiration Our motivation came from photographs that captured a very small moment in time, such..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1204. [3D Maze in a Box video game Using Atmega32](#) Introduction Maze in a Box is a portable game in which you tilt a TV to navigate your way around a 3D maze as though you were in it. We created Maze in a Box as a challenge to generate 3D looking graphics using the..... Listed under: [Game - Entertainment Projects](#)
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1205. [3D Video Game Control Using Atmega32](#) Introduction Our project is a 3-dimensional game control for a video game displayed on a black and white television set. Motivation and Overview In the recent push in technology, many new computer and game interfaces have been created, many of which include wireless control. Our..... Listed under: [Game - Entertainment Projects](#)
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1206. [Gesture-driven Tetris Using Atmega32](#) Introduction Our project takes a classic video game and adds a twist with a handheld, gesture based controller. IT'S SUPER TERRIFIC AMAZING TETRIS EXTREEEEEEEEEEEEEEEEEEEEE!!!!!! We decided to undertake this project because the idea of combining the massive coding required for the Tetris game with the..... Listed under: [Robotics - Automation Projects](#)

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1207. [Data Acquisition System With Controller Area Network and SD Card Using Atmega32](#) Introduction This project implements a high speed data acquisition system using Mega32 microcontrollers and a Controller Area Network (CAN). Recording data is essential to testing and developing a racecar. Recording what each sensor is doing can tell an engineering how the car is performing, and..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1208. [Automotive On-Board Diagnostics Reader Using Atmega32](#) Introduction Our project is a hand-held device that is capable of communicating with any vehicle that uses pulse-width modulation (PWM) data-link layer. Such devices are commonly referred to as On-Board Diagnostic scanners. Vehicles that typically fall into this category are Fords made between 1996 and..... Listed under: [Car Projects](#)
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1209. [Neural Net Helicopter Using Atmega32](#) Introduction and High Level Design Our project was to design a two degree-of-freedom stationary helicopter, autonomously controlled by an evolving neural network. A normal helicopter has six degrees of freedom, which makes any form of control exceptionally hard, let alone autonomous control. What our design..... Listed under: [Game - Entertainment Projects](#)
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1210. [Accelerometer Controlled R/C Vehicle Using Atmega32](#) INTRODUCTION In our final design project for ECE 476: Microcontrollers, we decided to build a vehicle controlled, using accelerometers, by a remote control that wirelessly transmits, using RF technology, data to the vehicle to move in any direction. The accelerometers will be mounted on a..... Listed under: [Car Projects](#)
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1211. [ROBOT ARM Using Atmega32](#) Introduction Our project is a twenty four and half inch aluminum frame robotic arm with four degrees of freedom. In our project we made the arm the second player in the classic game of Tic-Tac-Toe to demonstrate its programmable repeatable motion. The arm consists of..... Listed under: [Robotics - Automation Projects](#)
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1212. [Help Quit Smoking Watch Using Atmega32](#) Introduction: The Help Quit Watch is a watch that smokers can wear to help them quit smoking. The Help Quit Watch contains a smoke detector that detects whenever the smoker smokes and plays an encouraging clip to help the smoker stop. It then records statistics..... Listed under: [Medical - Health based Projects](#)
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1213. [Electronic Impact Vest Using Atmega32](#) Our one sentence "sound byte"... *POP* Finally, a fair and balanced way to score Tae Kwon Do matches without the moaning and groaning of everyone. The Electronic Hogu system uses piezoelectric force sensors to determine how much force is delivered by the impact of a..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1214. [TriWheeler robot Using Atmega32](#) Introduction The TriWheeler is a radio-controlled robot with three wheels. The lack of the fourth wheel is far from the only thing that renders it distinctively different from typical radio-controlled units. In addition to the capability of being freely controlled with a remote control, The..... Listed under: [Robotics - Automation Projects](#)
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1215. [Music Wand: Real-Time Optical Scanning of Sheet Music Using Atmega32](#) Introduction The Music Wand is a device that optically reads printed sheet music in real-time and synthesizes the notes which are read from the page. The device uses a linear image sensor mounted on the end of a handheld wand to scan printed sheet music..... Listed under: [Sound - Audio Projects](#)

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1216. [Teaching an old clock Using Atmega32](#) While exuding retro style, the alarm clock in its original state lacked many desirable features of today's alarm clocks. The only controls consisted of a single on/off switch. It also lacked AM/PM indication, making it impossible to sleep for more than 12 hours. Our project..... Listed under: [Clock Projects](#)
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1217. [Shark Tag Microcontroller Platform Using Atmega32](#) Introduction The goal of this project was to develop a working bench-top microcontroller platform for a shark tag. It is to be used for on-animal, in-situ data logging applications involving sharks and potentially other large pelagics. For this project I used the Atmel Mega32 microcontroller..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1218. [Ghost Writing Robot Using Atmega32](#) Summary We used two stepper motors to drive a steel ball scavenged from a ball-bearing. These motors were controlled by a PS/2 mouse wirelessly using the RCR-433 and RCT-433 receiver/transmission combination mentioned in lecture. We then took the PS/2 protocol, made it compact, modified existing..... Listed under: [Robotics - Automation Projects](#)
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1219. [Rocket Inertial Navigation System using Atmega32](#) Introduction Was that a ... projectile? a rocket? an [XXXXX] missile? That was a dynamically controlled parachute guidance system looking for its target. The purpose of this project was to design a dynamically controlled parachute guidance system using an Atmel ATmega32 microcontroller. A set of..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1220. [Guitar Tuner Using Atmega32](#) Introduction: Motivation for Design The Mechanix is a motorized guitar tuner for a standard 6-string electric or acoustic fixed bridge guitar. Named in honor of Megadeth guitar legend Dave Mustaine, the Mechanix is a unique and innovative product which has numerous patent possibilities. Traditional handheld..... Listed under: [Sound - Audio Projects](#)
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1221. [SCHEME INTERPRETER USING ATMEGA32](#) Introduction The purpose of this project is to create a Scheme interpreter using C language and Mega32 microprocessor. Using limited resource and memory in the microprocessor, the interpreter should function and work for basic Scheme commands. The main target of the project is to use..... Listed under: [Microcontroller Programmer Projects](#)
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1222. [Mini-Golf Simulator Using Atmega32](#) Introduction This project simulates 9 holes of a minigolf course using the TV to display the course (top down view), an anchored plastic ball containing two accelerometers, and a putter. Summary We used a hollow plastic ball containing two accelerometers for each planar axis with..... Listed under: [Game - Entertainment Projects](#)
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1223. [Battle Tank – A 3d Atmega32 Based Video Game](#) Introduction Our project is a wireframe 3D video game based on the classic Atari arcade game, Battlezone (Copyright Atari Corp, 1980). For those that have never heard of the game, Battlezone is a game in which the player maneuvers a tank through a flat environment,..... Listed under: [Game - Entertainment Projects](#)
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1224. [LaserSimon – An Innovative Take On An Exciting Game Using Atmega32](#) Inspiration Our project was first inspired by our shared enjoyment of classic laser tag. We initially started out with a game in mind that entailed playing two player laser tag with remote-controlled helium blimps. Due to a number of logistical issues that came up while..... Listed under: [Game - Entertainment Projects](#)

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1225. [Snake Arm Glove Project Using Atmega32](#) Introduction For our project, we designed a glove that can be used to control the Cornell University robotic Snake arm thereby enabling a surgeon to remotely operate the snakearm as a colonoscope in conjunction with a vision guide system (aka TV goggles). The glove allows..... Listed under: [Robotics - Automation Projects](#)
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1226. [Wiimote Crane Using Atmega32](#) I. Introduction We used the Wiimote's IR tracking capability and Bluetooth to wirelessly control a robotic crane arm. The Wiimote is a powerful gadget and we wanted to build a new hack with it. Our crane is composed of three servo motors, one of which..... Listed under: [Game - Entertainment Projects](#), [Robotics - Automation Projects](#)
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1227. [Radio Frequency Beacon Finder Using Atmel Mega32](#) This project is a radio frequency receiver that will help the user trace the direction and distance of transmitter beacon(s) operating at 433MHz frequency. In this ECE 476 final project, we have built a radio frequency receiver unit with an LCD screen that will..... Listed under: [Radio Projects](#)
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1228. [A portable, color, tilt-controlled video game system Using Atmega32](#) Introduction The Weeboy is a portable color video game system that is not dependent on stationary displays or external power sources and features novel tilt-based control. Our purpose for designing this project was to demonstrate that a complete portable video game system could be implemented..... Listed under: [Game - Entertainment Projects](#)
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1229. [TouchPad video game Using Atmega32](#) Content Page 1. Introduction 1.1 Sound-Bite Our final project recreates Rush Hour as a video game that is played using a touchpad implemented using 2D electric-field (E-field) sensors. 1.2 Motivation Rush Hour appealed to us as one of the better puzzles out there. Its level of difficulty..... Listed under: [Game - Entertainment Projects](#)
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1230. [Music-controlled Puppet Using Atmega32](#) Introduction The purpose of this project was to design a dancing puppet which is musically controlled by the microcontroller. This is a simple, inexpensive dancing puppet, which can dance to any tune you want. For as little money as possible, you can bring Pinocchio to..... Listed under: [Sound - Audio Projects](#)
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1231. [Line-following car Using atmega32](#) Introduction Our project is a battery-powered toy car that is able to follow a path against a background of contrasting color. <> The front of the car is fitted with an array of three photosensors, which allows the car to detect the path..... Listed under: [Car Projects](#)
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1232. [PeanutBot, The Audio Homing Robot Using Atmega32](#) Introduction Sensing in autonomous vehicles is a growing field due to a wide array of military and reconnaissance applications. The Adaptive Communications and Signals Processing Group (ACSP) research group at Cornell specializes in studying various aspects of autonomous vehicle control. Previously, ACSP has examined video..... Listed under: [Robotics - Automation Projects](#)
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1233. [Model retina: color tracker Using Atmega32](#) Objective and Background <> Objective: The gift of sight is precious; that is why we tried to model an artificial retina with the properties of color detection, saccades, and pursuit tracking. Structure of a Retina: A retina lies in the back of the eye and..... Listed under: [Sensor - Transducer - Detector Projects](#)

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1234. [Evolving neural robot Using Atmega32](#) Introduction Our final project in ECE 476 is a mobile robot with a developed neural network such that it evolves to avoid collisions into a circular vertical white wall while traveling at the fastest speed and straightest line possible without human intervention or external computers..... Listed under: [Robotics - Automation Projects](#)
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1235. [MCU MIDI synthesizer using Atmega32](#) Introduction Our final project is a music synthesizer that is capable of producing a variety of musical sounds, by modify, the attack, decay, sustain, release times, and applying special effects such as a low pass filter or a halftone shifter. Our original interest for this..... Listed under: [Sound - Audio Projects](#)
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1236. [AirJam: wearable air guitar Using Atmega2](#) Introduction Why a working, wearable air guitar? Bottom line, it's just that cool. Who doesn't want a machine that will take their jamming and turn it into rock they can hear? With just a glove, a pick and a little practice you can rock the..... Listed under: [Sound - Audio Projects](#)
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1237. [UDP/Ethernet Controlled Temperature Regulator Using Atmega32](#) Introduction This project implements a microcontroller based temperature regulator which can be controlled via the Ethernet port on any common personal computer. As the world becomes more networked, the power of our ability to communicate with many different systems instantly continues to prove it's worth..... Listed under: [Temperature Measurement Projects](#)
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1238. [Morse code interpreter, with speech synthesis Using Atmega32](#) Introduction This project implements a system that translates Morse Code to text and speech and translates text to Morse Code. With our limited experience with Morse Code, our first task was to do some research on the components of Morse Code and the standards associated..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1239. [Complex impedance analyzer Using Atmega32](#) Introduction Our device is an impedance analyzer that determines the complex impedance of any R-C circuit within an impedance range. Our original plan for creating this device was to develop a body fat measurer, a portable device that could allow users to monitor their health..... Listed under: [Other Projects](#)
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1240. [iPod controller Using Atmel Mega32](#) Introduction Have you ever imagined, "What does that cable I plug into my iPod every day actually do, and how do I take advantage of it for myself?" We did too, and that's what we aimed to do with our 476 project. The iPod is,..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1241. [USB Magnetic Mouse/Touchpad Using Atmega32](#) Introduction Many digital artists draw with mice on computer or use tablets. However, tablets are often very expensive. Using the mouse is not always as accurate and one needs a steady hand. Our project attempts to create a lower budget alternative to the tablet that..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1242. [Braille reader using Atmel mega32](#) Introduction BlindAid is a portable tool that reads Braille and signals close objects. It is ideal for those unfortunate people who just turned blind and have not mastered Braille reading and blind cane usage. It can also be used as a learning instrument that helps..... Listed under: [Home Automation Projects](#)

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1243. [Ultrasonic ParKontroller Using Atmel Mega32](#) Introduction Are you afraid that your brand new Hummer is going to get scratched while parking it in a tight space? Do you have trouble backing your large Mercedes S-class into your small garage? Fear no more! Our ultrasonic ParKontroller can sense how far you..... Listed under: [Car Projects](#)
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1244. [Retractable Alarm Clock \(RAC\) Using Atmel Mega32](#) 1.1 Motivation: Alarm clocks are essential in almost everyones daily life. For most of us, we start our day to the sweet noise of our alarms. While some people wake up instantaneously to the first chirp of an alarm, some struggle everyday to get out..... Listed under: [Clock Projects](#)
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1245. [Automatic pet feeder Using Atmel Mega32](#) Introduction Our project is an automated pet feeder that is controlled by a wireless infra-red remote control. As pet lovers, we understand that the responsibilities of life sometimes inhibit pet owners from properly caring for their pets. Pet care should be fun, not burdensome, and..... Listed under: [Home Automation Projects](#)
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1246. [Programmable medication scheduler using atmel mega32](#) Introduction The Newest Innovation in Patient Compliance The Portable Programmable Medication Scheduler (PPMS) is a modern solution to the century old problem of patient compliance, featuring four medication bins, audio/visual alarms, a graphic LCD, and serial communication with a Java Swing PC GUI. The conjunction..... Listed under: [Medical - Health based Projects](#)
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1247. [CalcParser Using Atmel Mega32](#) Introduction CalcParser is a command line calculator. Controlled by a serial connection, CalcParser parses and evaluates an arithmetic expression and has the capabilities to perform symbolic polynomial differentiation with respect to a user-defined variable. It can also evaluate the differentiated expression at a given constant..... Listed under: [Calculator Projects](#)
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1248. [Firefly synchronization Using Atmega32](#) Introduction This project implements a 2D matrix of bidirectional LEDs to simulate how fireflies in a population synchronize their flashing. Fireflies are an extraordinary species of bioluminescent animals which are able to synchronize the timing of their light emission within a flashing population. In places..... Listed under: [Development Board - Kits Projects](#)
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1249. [Graphing calculator Using Atmel Mega32](#) Introduction A perfect tool for high school students that will pursue a career in engineering, the graphing and statistics calculator combines the functionality of a scientific calculator with graphing capabilities as well as being able to compute simple statistics. The purpose of this calculator is..... Listed under: [Calculator Projects](#)
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1250. [Speech Recognition Jukebox Using Atmega32](#) Introduction For the Final Project in ECE 476: Designing with Microcontrollers, Robbins and Saha developed a Speech Recognition Jukebox, comprised of a speech recognition system that activated a simple music player. The speech recognition system was capable of recognizing four commands and could cycle through..... Listed under: [Development Board - Kits Projects](#)
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1251. [Sound Source Triangulation Game Using Atmega32](#) Introduction The goal of this project is to determine the time and location of a sound source in all three dimensions (x,y,z) using an economical and easily reproducible setup. To accomplish this goal, we decided to try and triangulate the sound source using a 4..... Listed under: [Game - Entertainment Projects](#)

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1252. [Touch Screen Controlled R/C Car Using Atmel Mega32](#) Introduction For our final design project, we chose to build a touch screen radio controlled car. Essentially, the RC car will follow a path drawn by the user on the touch screen as it is drawn in real time. Speed and direction of the car..... Listed under: [Car Projects](#)
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1253. [AppleII emulator Using Atmel Mega32](#) The goal of this project was to develop a system capable of emulating an Apple II personal computer. This project attempted to reconstruct a functional Apple II emulated on Atmel ATmega32 processors. Due to time constraints, a fully functional Apple II was not produced; however,..... Listed under: [Microcontroller Programmer Projects](#)
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1254. [HDD analog clock with LCD touchscreen Using Atmel Mega32](#) Introduction The clock is one of the oldest inventions in human history and has been used for centuries as in instrument for measuring time. There are many ways to implement this ancient technology by simple and practical methods. However, si [caption id="attachment_18482" align="aligncenter" width="531"] HDD..... Listed under: [Clock Projects](#), [LCD Projects](#)
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1255. [CUAUV Voltage Sniffer Using Atmel Mega32](#) Introduction The Cornell University Autonomous Underwater Vehicle team (CUAUV) is an undergraduate engineering team that designs and builds a fully autonomous, robotic submarine. Over the past year, the team – of which both Manoj Lamba and Ian Wang are members – has had a stringent..... Listed under: [Metering - Instrument Projects](#), [Sensor - Transducer - Detector Projects](#)
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1256. [CUSat diagnostic board using Atmel mega32](#) 1 Introduction Our final project is the CUSat Diagnostic Board (CUDB). This board will be used for monitoring CUSat system health as well as performing various functions allowing for easy integration and debugging of CUSat components. [caption id="attachment_18448" align="aligncenter" width="600"] CUSat diagnostic board using Atmel..... Listed under: [Development Board - Kits Projects](#)
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1257. [SearchBot Using Atmel Mega32](#) Introduction The SearchBot is a fully functional model car that can be controlled wirelessly through the PC or autonomously search for red balls scattered on a flat surface. Autonomous vehicles are just now being realized in labs around the world and will soon have major..... Listed under: [Car Projects](#)
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1258. [Robotic Vacuum Cleaner Using Atmel Mega32](#) Introduction As our final project, we decided to design and build a robot capable of vacuuming the floor of a room or area without any human interaction other than just starting the unit. We realized the need for a cheap and convenient product that can..... Listed under: [Robotics - Automation Projects](#)
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1259. [Cooler-Bot Using Atmel Mega 16L](#) Introduction Cooler-Bot is an autonomous vehicle that uses ultrasonic transducers to sense distance and direction to a remote ultrasonic mobile unit that it is designed to follow. Our original goal was to design a vehicle that would carry a beverages for the user and follow..... Listed under: [Car Projects](#)
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1260. [MCU/FPGA color video Game Platform Using Atmel Mega32](#) Overview: A system consisting of an ATMEL MEGA32 chip, Altera FLEX10K FPGA, and a library of source code for the Atmel processor to generate 256-color VGA video signals in real time optimized for game development. Introduction: The Nintendo Entertainment System sports 2 KB of RAM..... Listed under: [Game - Entertainment Projects](#)

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1261. [Musical Water Fountain Using Atmega32](#) Introduction Our final project is a musical water fountain loosely based on the fountain in front of the famed Bellagio hotel and casino. The basic idea of the project is to take an input from an iPod (or any sound source), sample the sound and..... Listed under: [Sound - Audio Projects](#)
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1262. [Machine de Karaoke Using Atmega32](#) Introduction Sound bite Our project is a karaoke recording machine which is capable of removing the voice component of a music file and storing the users singing voice with the background music to an external compact flash memory. It can also be used as a..... Listed under: [Sound - Audio Projects](#)
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1263. [Dual Control R/C Car Using Atmega32](#) The purpose of this project was to take a traditional remote controlled car and create our own control mechanisms. To control the car, we used a dual-axis accelerometer and LEDs (light emitting diodes) configured as photo-detectors. The control mechanism was selected using a single pole..... Listed under: [Car Projects](#), [Game - Entertainment Projects](#), [Sensor - Transducer - Detector Projects](#)
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1264. [Guitar Synthesizer and Game Using Atmega32](#) Introduction Compose your own virtual guitar masterpiece or follow along with a preprogrammed classic. No experience needed! We developed a guitar synthesizer with video component inspired by the popular video game Guitar Hero. The original game consisted of only reproducing popular rock and roll songs..... Listed under: [Game - Entertainment Projects](#)
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1265. [Lighting control system Using ATMEL Mega32](#) Loucetios™ is a state-of-the-art, self-configuring lighting control system solution for bedrooms, offices and perimeter areas. Under automatic operation, the system senses luminosity inside and outside a room, controls the angle of the blinds and dims the lamps to maintain a prescribed level of illumination inside..... Listed under: [Home Automation Projects](#)
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1266. [Intelligent Multimedia System Atmel mega32](#) Introduction This project implements a multi-function multimedia system that allows the user to sing with the music video and generate some fancy sound effects. In recent decades, multimedia becomes quite popular in our daily life. In fact, multimedia system has existed for a long time..... Listed under: [Game – Entertainment Project Ideas](#), [Sound - Audio Projects](#)
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1267. [Ultrasonic spotlight tracker using Atmel mega32](#) Introduction A spotlight that follows you on its own! The ultrasonic spotlight tracker is a system that uses a wireless beacon to track a targets location using both RF signals and ultrasound waves. It then drives a light source to point at the location of..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1268. [Galvanic skin response meter using Atmel mega32](#) Introduction Our project measures the user's skin conductance for monitoring his or her mental state. Summary Medical experiments have shown that the magnitude of the electrical conductance in a person's skin is directly correlated to their emotional state. The short term changes in electrical conductances..... Listed under: [Metering - Instrument Projects](#)
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1269. [VOICE RECOGNITION SECURITY SYSTEM USING ATEGA32](#) When we think of programmable speech recognition, we think of calling FedEx customer service call center with automated voice recognition response systems. We also think of PC-based speech recognition Dragon NaturallySpeaking. Now we took that a step further. We are talking about speech recognition in..... Listed under: [Security - Safety Projects](#)

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1270. [SecureLED: Better Access Control Using ATmega32](#) Introduction Overview SecureLED is an optical access control device which replaces current RFID or Magnetic Strip technologies with a cryptographically secure, contact-less device which communicates over commodity Light Emitting Diodes (LEDs). Project Summary This project started with one central premise: current physical access control systems..... Listed under: [LED Projects](#)
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1271. [Capacitance sensor MIDI keyboard Using Atmel mega32](#) Introduction The objective of this project was to build a keyboard based on capacitive sensors and then use the MCU to create MIDI encodings for all notes played. The output from the sensors is detected by the MCU using its ADC capability. The sound is..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1272. [The Grillzilla Using ATmega32](#) Introduction: One Sentence Sound Byte: "Grillzilla - A wireless meat grilling thermometer which alerts the user whether their entrée is cooked according to USDA recommendations via LCD and voice feedback." Summary of what we did: As the weather starts to get warmer a common type..... Listed under: [Home Automation Projects](#), [RFID - NFC Projects](#)
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1273. [Sign language coach Using Atmega32L](#) Introduction Objective The goal of this project is to design a useful and fully functional real-world product that efficiently translates the movement of the fingers into the American Sign Language. Background The American Sign Language (ASL) is a visual language based on hand gestures. It..... Listed under: [LCD Projects](#), [Robotics - Automation Projects](#), [Sensor - Transducer - Detector Projects](#)
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1274. [Radial Chalker Using Atmel Atmega32](#) Introduction We developed a new way for student groups to chalk advertisements for events. This project is a radial printing device for drawing with chalk/markers on flat surfaces. High-Level Design dea Rationale and Sources Anyone who has done any sidewalk chalking knows that it is..... Listed under: [Motor Projects](#)
-
1275. [GoConn Bicycle Computer Using Atmega 32](#) Introduction This project is a bicycle computer that includes velocity monitoring, calorie computation, an audio/visual alarm, and a wireless remote. Bicycles are great for transportation as well as exercise. Unfortunately, many bicycles across campus and around the world are stolen everyday. We designed a computer..... Listed under: [How To - DIY - Projects](#)
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1276. [Handwriting Recognition System Using Atmel Mega32](#) I. Introduction Simply write; your computer will undersand! We have designed and implemented a Handwriting Recognition System using a touch screen from a Palm Pilot m125, a black and white TV and a Mega32 microcontroller. Unfortunately, due to the lack of specifications regarding the built-in..... Listed under: [LCD Projects](#), [Sensor - Transducer - Detector Projects](#)
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1277. [Programmable remote control Using Atmega32](#) Introduction The goal of our project was to develop a remote control whose buttons would be readily programmable by recording the signal from another remote control. After revising several standards on infrared signals, we determined that the approach to take was to record the signal..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1278. [Flat Bed Scanner Using Microcontroller](#) Introduction Quite possibly the slowest and lowest resolution of any scanner on the market today, but it sure is mesmerizing to watch.. and it actually works! That's about the best way to describe this behemoth of a project, which involved countless hours of building,..... Listed under: [CNC - Printing Machines Projects](#)

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1279. [Digital Stethoscope Using Atmega32](#) Introduction Our project is a digital stethoscope that displays your heartbeat on any television. It also calculates beats per minute and alerts you if your rate falls out of a specified range. [caption id="attachment_17908" align="aligncenter" width="234"] Digital Stethoscope Using Atmega32[/caption] At the highest level, the..... Listed under: [LCD Projects](#), [Medical - Health based Projects](#), [Sensor - Transducer - Detector Projects](#)
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1280. [TRISHUL -Autonomous navigating robot Using Atmel Mega32](#) Introduction We decided to do this project due to our keen interest in the robotics. We were also looking for a project that involved a perfect mix of hardware and software complexity. This project enabled us to use new hardware such as sensors, stepper motors..... Listed under: [Robotics - Automation Projects](#)
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1281. [Nova Strike video game Using Atmega32](#) Introduction Nova Strike is a 2D space shooter game implemented with an Atmel ATmega32 microcontroller. The inspiration came from our love of video games and fond memories of playing space shooters on our TI-89 graphing calculators in high school (instead of paying attention in calculus..... Listed under: [Game - Entertainment Projects](#)
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1282. [Digital Compass Using Mega 32](#) I. Introduction The goal of this project is to build a digital compass that displays both the direction and cardinal points on a television. Other functionalities were added to complement the sensor interface, such as, temperature display, magnetic declination input and disability option. At the..... Listed under: [Sensor - Transducer - Detector Projects](#), [Temperature Measurement Projects](#)
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1283. [MiniGolf video game with putter Using Atmel Mega32](#) Our project is creating a miniature golf game, complete with a putter and golf ball to simulate a real putting stroke. We chose to construct a mini golf game because not only is it interesting, but it has a large balance of computer programming as..... Listed under: [Game - Entertainment Projects](#)
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1284. [Electr-O-Sketch Using Atmega 32](#) Introduction We created a project in which a user could control the movement of an Etch A Sketch using a typical serial mouse. The public was introduced to the EAS in 1960 and since then it has stayed virtually the same. This nostalgic toy is..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1285. [Pong2 Using Atmel Mega32](#) Introduction PONG, a video game that simulates a game of Ping-Pong between two players, has a long and pervasive history, and is said to be the first video game ever created. For our final project, we decided to pursue PONG with a twist. We designed..... Listed under: [Game - Entertainment Projects](#), [LCD Projects](#)
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1286. [Handheld Ultrasonic Rangefinder Using Atmel Mega32](#) Introduction Our ultrasonic rangefinder is capable of allowing the user to determine his or her distance from an object or wall. When deciding on what type of project to design and construct, we decided that we wanted to create something that would have some practical..... Listed under: [LCD Projects](#), [Sensor - Transducer - Detector Projects](#)
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1287. [Beverage Monitor Using Mega32](#) Introduction We created a wireless device to affix to the bottom of a pitcher that alerts the wait staff when the pitcher is empty. We used the a priori knowledge that when a pitcher is empty the pitchers bottom is perpendicular to the ground. By..... Listed under: [Sensor - Transducer - Detector Projects](#)

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1288. [The Ultimate MP3 Radio Using ATmega32](#) Introduction Perusing through the impressive list of past projects, we decided to make our final project a combination of two technologies—wireless technology and the MP3 player. Specifically, we decided to create an MP3 player that broadcasted the songs to an FM dial. We call this..... Listed under: [Internet - Ethernet - LAN Projects](#), [Sound - Audio Projects](#)
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1289. [SmartBlinds Using Mega32](#) Overview The SmartBlinds system uses a microcontroller to control the angle of a set of miniblinds used at home, in the classroom, or on the job. Using SmartBlinds, a user can more effectively control the light coming into the room, or have an alarm that..... Listed under: [Home Automation Projects](#)
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1290. [Keypaw Using Atmel Mega32](#) 1 Introduction The Keypaw is a 12-button input device that provides computer users with an ergonomic, fully-configurable alternative to the traditional QWERTY keyboard. The Keypaw is a microcontroller-driven device with 12 buttons mounted on two handsets; 1 button is provided for each finger, and 2..... Listed under: [Development Board - Kits Projects](#)
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1291. [Home Security System Using Atmel Mega32](#) Introduction This is a digital home security system with voice feature which can monitor room temperature, smoke, motion, and windows & doors. The goal of this project is to utilize the after-market parts and build an integrated home security system. Besides traditional magnetic switch equipped..... Listed under: [Security - Safety Projects](#)
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1292. [A Wand Based Barcode Scanner Using Atmel MEGA32](#) Introduction Our project is a UPC-A Barcode Scanner complete with a pricing/description database interface. Our original goal for this project was to build a standard barcode scanner from scratch, but as the project evolved so had to our specification of the project. We initially sought..... Listed under: [Metering - Instrument Projects](#), [Sensor - Transducer - Detector Projects](#)
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1293. [Implementation of a \(31, 16\) BCH code on a Microcontroller Using Atmega32](#) Introduction: Error correcting codes are used throughout digital communication systems today. Cell-phones, CD players, satellites, digital pagers and many other communication devices all use varying amounts of error control to achieve a certain degree of accuracy in transmitting information. The idea behind error control codes..... Listed under: [Radio Projects](#)
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1294. [The Breath-o-Matic Using Atmega32](#) Introduction Let us introduce the Breath-o-Matic alcohol sensor. The Breath-o-Matic is an electronic, non-invasive method of measuring a human's blood alcohol content (BAC). Its elegant, yet discombobulated design embodies a cheerful mix of mechanical and semiconductural components. Simply blowing into the mouthpiece causes the Breath-o-Matic..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1295. [TV/Keypad Interface for Winamp Using Atmel MEGA32](#) MP3 is presently a household term; the reader will likely own a few, barring any intervention from the RIAA. Since it's not always practical to sit in front of a monitor and keyboard when you want to listen to music (e.g. in a car, on..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1296. [Eye in the Sky Security System Using Atmel Mega32](#) Introduction We have used the Atmel Mega32 AVR microcontroller to construct an affordable, high end security system designed to protect valuables in a single room of a house or property. According to national surveys conducted by the department of Justice, property crimes are ten times..... Listed under: [Security - Safety Projects](#)

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1297. [Xylophone Using Mega32](#) Introduction Our final project is a programmable, self-playing xylophone with random melody generation and a pitch detection based interface. From early mechanical devices to today's musical greeting cards, history has seen numerous examples of automated music machines. This project represents a quick, modern take on..... Listed under: [Sound - Audio Projects](#)
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1298. [Scorched Earth video game using Atmel Mega32](#) For our design project, we decided to replicate the video game known as Scorched Earth: The Mother of All Games where two tanks fire missiles at one another by adjusting angles and power while adjusting for variable wind. The objective of Scorched Earth is to..... Listed under: [Game - Entertainment Projects](#)
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1299. [Wonderswan Development Cartridge Using Atmel Mega32](#) Introduction Short Summary This project allows a Wonderswan developer to upload 64 kB of code/data and execute it on real Wonderswan handheld gaming hardware. Long Summary We started by opening up one of our Wonderswan cartridges and identifying the various chips and circuitry found inside..... Listed under: [Game - Entertainment Projects](#)
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1300. [Star Duel video game Using Mega32](#) 1. Introduction 1.1 Project Summary Our project is a space dogfighting video game where two players attempt to destroy each other using a variety of ships and weapons. The battlefield is a 128x100 pixel area on a TV, and a small planet resides in the..... Listed under: [Game - Entertainment Projects](#)
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1301. [The Big Red Guide Using Atmel AVR Mega32](#) If this is your first time on the Cornell Campus, you need not worry! Cause we have the best guide for you! Introduction The Cornell Campus is quite large, and finding your way around can get a bit frustrating. The Big Red Guide is a..... Listed under: [GPS Based Projects](#), [Security - Safety Projects](#)
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1302. [MISSILE COMMAND USING ATMEL MEGA 32](#) Introduction For my ECE 476 Design Project, I built Missile Command using the Atmel Mega 32 microcontroller. My version of Missile Command is based on Atari's 1981 version. After looking at some of the past ece476 final projects, I noticed no one had tried to..... Listed under: [Game - Entertainment Projects](#)
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1303. [3D gForce Mouse Using Mega32](#) Introduction "Our 3D gForce Mouse will enable use to move the cursor in the air freely with the capacity of scrolling" The rationale for this design is two fold. We wanted to do this design because we wanted to make a zero-impact pointing device for..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1304. [Stationary Helicopter Using Atmel Mega32](#) Intro Summary Thinking about what a CDE (culminating design experience) should be, we devised a project that combines the microcontroller programming principles learned in ECE 476: Microcontroller Design with the control theory concepts learned in ECE 472: Feedback Control Systems to create an academically viable..... Listed under: [Motor Projects](#), [Sensor - Transducer - Detector Projects](#)
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1305. [INFRARED TRACKING SYSTEM USING ATMEGA32](#) Introduction Infrared (IR) Our project is an infrared (IR) tracking system. A beacon, placed on the object to be tracked, continuously emits infrared signals in all directions. The signals coming from the beacon are detected by 2 IR receivers mounted on 2 stepper motors, which rotate..... Listed under: [Featured](#), [Game - Entertainment Project Ideas](#), [Sensor - Transducer - Detector Projects](#)

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1306. [Arkanoid Video Game using Atmega32](#) Introduction [caption id="attachment_16604" align="aligncenter" width="224"] Arkanoid Video Game using Atmega32[/caption] High Level Design After working with the ATmega family of processors for the first six lab assignments, and working extensively with generating television screen images, we decided that a video game would be a viable..... Listed under: [Game - Entertainment Projects](#)
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1307. [Reversi Video Game Using ATmega32](#) Introduction "Our project implements the game, Reversi, on TV with a smart artificial intelligence and a host of other features!" It's our childhood game. We were so excited when we found out that we can actually build it for our 476 final project. We looked..... Listed under: [Game - Entertainment Projects](#)
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1308. [Guitar Special Effects Using Atmega32](#) <Introduction> In the last few decades technology has constantly pushed music further and further into the digital realm. Digital technology has infiltrated all aspects of music-making, from its creation to its recording, editing and production. We have decided to join this technology movement by fitting..... Listed under: [Sound - Audio Projects](#)
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1309. [Tap the Dance using Atmel Mega163](#) Introduction Nowadays in the video gaming industry, one of the most popular categories of game is music and motion simulation game. There are games where players are required to play the drum according to the matching signals and the music of the game; there are..... Listed under: [Game - Entertainment Projects](#)
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1310. [kaOS operating system and loader using atmega32](#) Introduction We have created a real-time, multithreaded, preemptive operating system called kaOS for the Atmel Mega32 microcontroller, which loads and executes programs from a Secure Digital or MMC card. We wrote this OS and created the SD/MMC card reader as a final project for Cornell's..... Listed under: [RTOS - OS Projects](#)
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1311. [Keyboard mania using Atmega32](#) INTRODUCTION "Keyboard mania gives users an opportunity to learn and gain a unique taste of playing an electronic piano without the presence of a music teacher." Summary of our Project We designed an electronic musical instrument, called keyboard mania, able to play an octave of..... Listed under: [Sound - Audio Projects](#)
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1312. [ECE 476 Spring 2005 by Arthur Zhang.\(ayz2\) and Yewen Ying.\(ydy2\) using atmega32](#) Introduction Soundbyte TV Jezzball with dangling mouse, created by Cornell ECE476 students Arthur Zhang and Yewen Ying, is a hot, new, cool, retro look back to when times were simpler, computers were slower, and TV's were black and white. Overview From the beginning, because of..... Listed under: [Game - Entertainment Projects](#)
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1313. [Duckhunt video game using Atmel Mega32](#) Introduction to Duck Hunt For our final project in ECE476, we implemented a multi-duck and multi-player version of the Nintendo classic Duck Hunt on the Atmel Mega32 microcontroller. In 1985, Nintendo released a game for the Nintendo Entertainment System (NES) called Duck Hunt, and it..... Listed under: [Game - Entertainment Projects](#)
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1314. [The Contender video game using Atmel Mega32](#) Introduction The pitch "The Contender" is an interacting boxing game in which the player actively participate in the game with real time punching, ducking, dodging, etc. The Description and Motivation This game is a twist of a popular arcade game called "Mocap Boxing", short for..... Listed under: [Game - Entertainment Projects](#)

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1315. [The Big Red Juicer using Atmel Mega32](#) Introduction The Juicer is a wirelessly controlled, programmable juice maker which will mix each ingredient of a recipe to the exact proportions every time. The Juicer will take a recipe selection serially via either the keyboard or the wireless remote and dispense the juices into..... Listed under: [Home Automation Projects](#)
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1316. [Color Tetris video game using ATmega32](#) Color TET Brief DescriptionThe project is a color "Tetris" based game compatible with NTSC TV. Summary and motivationThe project basically utilizes a Mega32 chip, along with a RGB-NTSC converter and a sync generator to produce color on a standard NTSC TV. The code for a..... Listed under: [Game - Entertainment Projects](#)
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1317. [WeatherDog Using ATmega32](#) Introduction Our project was a real-time weather update system that accepted an airport code from the user via a keyboard, looked up the code on an internet database, and displayed the resulting weather information on a television screen. We used the PS/2 protocol, between a..... Listed under: [LCD Projects](#), [Metering - Instrument Projects](#)
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1318. [Neural net robot using ATmega32](#) Introduction Our project consisted of an elementary eight neuron network that used Hebbian Learning to train a robot to respond intelligently to input light stimuli. First, we decided upon a task that would accurately denote Hebbian learning. One of the most common examples of conditional..... Listed under: [Robotics - Automation Projects](#)
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1319. [Wireless Electromyograph using ATmega32](#) Introduction This project implements a wireless surface electromyograph that displays the signal using a television as an oscilloscope. Electromyography detects the electrical signals that the human body generates to contract muscles. Detecting very low voltages in the millivolt range on the skin surface is not..... Listed under: [Internet - Ethernet - LAN Projects](#), [LCD Projects](#)
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1320. [Stepper Motor Indexer & Decoder ECE 476 Using ATmega32](#) 1. Introduction For our final project we built an ATmega32 based stepper motor controller which measures the angular position of the motor shaft using an optical encoder and quadrature decoder. Our system performs 3 basic functions: (1) Communicate with a PC by means of a..... Listed under: [Motor Projects](#)
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1321. [A Microcontroller Based Turbidity Meter using AtmelMega32](#) Introduction Low-Cost Turbidity Meter for Underdeveloped Countries Our project is a collaboration with an independent research project being conducted by senior civil and environmental engineering student James Berg. The goal of this project is to create a low cost turbidity meter for use in under..... Listed under: [Metering - Instrument Projects](#), [Temperature Measurement Projects](#)
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1322. [A Motion Capture System Using Accelerometers using AVR Mega32](#) By: Kris Young and Dan Li See the results section for movie clips of the motion capture system in action. Abstract Human-Computer interface may perhaps be both the most limiting and liberating aspect of humans working with computers.It can, for instance, limit the input complexity..... Listed under: [Metering - Instrument Projects](#), [Video - Camera - Imaging Projects](#)
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1323. [Wireless Telemetry using Atmel Mega32](#) I.Introduction Soundbyte:A Wireless Data Telemetry system that receives acceleration, proximity and external temperature data from a remote vehicle and displays them on an NTSC television screen. The rationale behind this project is to provide the user with information regarding the vehicles acceleration, proximity to other..... Listed under: [Metering - Instrument Projects](#)

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1324. [Portable Security System Using ATmega 32](#) Introduction Consider you are in a research lab that handles highly hazardous material. You don't want anybody to enter the room, to even come close to the door. Or consider yourself doing something highly confidential in a room that you would like to know if..... Listed under: [Security - Safety Projects](#)
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1325. [Blood Pressure Monitor Using Mega32](#) Introduction Our final project is to design and build a portable blood pressure monitor device that can measure a user's blood pressures and heart rate through an inflatable hand cuff. The device is consisted of three main parts: external hardwares (such as cuff, motor, valve,..... Listed under: [Medical - Health based Projects](#)
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1326. [Missile Command video game using Atmega32](#) 1. Introduction Brian Smith and Cem Ozkaynak, two Seniors enrolled in ECE 476 at Cornell University, seek to rekindle the mood of impending nuclear annihilation by distant 'Evil Empires' through the classic 1980's video arcade sensation Missile Command. [caption id="attachment_16403" align="aligncenter" width="600"] Missile Command video..... Listed under: [Game - Entertainment Projects](#)
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1327. [BlindBot usisng Atmel Mega32 MCU](#) Introduction Our project is an autonomous toy car that tracks a high pitched audio signal. Using two microphones, a microcontroller, and two DC motors on an existing remote controlled car and, we implemented our own control logic to detect high pitched 3.5kHz audio signals..... Listed under: [Game - Entertainment Project Ideas](#), [Robotics - Automation Projects](#)
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1328. [Super Breakout using Atmel Mega32](#) Get ready for the next generation of the classic game Breakout which features a standalone device, interactive user control, and new and improved game modes including two player cooperative and competitive modes. Introduction Breakout is a game of speed, skill, and anticipation. The player will..... Listed under: [Game - Entertainment Projects](#)
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1329. [Connect Four with Programmable Infrared Receiver Atmel Mega32](#) We have designed a programmable infrared receiver which can utilize any pulse coded IR signal to play Connect Four from a remote distance. The programmable infrared receiver device we have created can decode any pulse-width modulated signal of an IR remote control, store it in..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Radio Projects](#)
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1330. [MIDI DRUM CONTROLLER USING MEGA 32 MICROCONTROLLER](#) [INTRODUCTION] MIDI Drum Controller Our Final Project for ECE476 was to build a MIDI drum machine using the MEGA 32 microcontroller. We wanted to make an actual product that can produce "good-quality" percussion sounds. Our drum machine would be played via a keyboard..... Listed under: [Sound - Audio Projects](#)
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1331. [Inverted Pendulum Balancer Using Atmel Mega32](#) Introduction The goal of this project was to build and implement an inverted pendulum balancer, in the vertical two dimensional plane, using Proportional-Integral-Derivative (PID) feedback control. [caption id="attachment_16620" align="aligncenter" width="600"] Inverted Pendulum Balancer Using Atmel Mega32[/caption] The inverted pendulum balancer is a radio controlled car..... Listed under: [Game - Entertainment Projects](#)
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1332. [Vocal Trainer Using Atmel Mega32](#) Introduction With the Vocal Trainer, expect to resurrect your singing, and ultimately become a vocal expert! The purpose of this Vocal Trainer, designed by Anderson Lin and Jerry Chiang, is to train people in singing accurate pitches, and ultimately become a vocal expert. Also, the..... Listed under: [Sensor - Transducer - Detector Projects](#), [Sound - Audio Projects](#)

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1333. [Variable Traffic Controller](#) Introduction Our project is a Traffic Controller that is sensible to traffic condition and adjust the traffic lights accordingly. Our project tries to simulate the traffic at an intersection, and with the use of sensors (Hall Effect in our case), we adjust the traffic of..... Listed under: [Car Projects](#)
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1334. [RoboDog using ATmega32](#) Introduction The project, Robodog?is an autonomous car that follows sound. The car can follow almost any audible sound that human can create by using three onboard microphones. This project was possible because of the fact that the speed of the sound is relatively slow compare..... Listed under: [Game - Entertainment Projects](#), [Robotics - Automation Projects](#)
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1335. [PC temperature control using Atmel Mega32](#) Abstract Our project is a standalone temperature and fan monitoring and control unit for the PC. It uses the temperature readings to adjust fan speeds in order to regulate temperature and noise. The system is flexible in that it can be configured to be either..... Listed under: [Temperature Measurement Projects](#)
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1336. [MOS 6502 Emulation on an Atmel Mega32](#) ECE 476 - Spring 2003Christopher Foster and Jeff Puchalski When Chris and I first started tossing around project ideas, I sputtered out: 'Hey! Wouldn't it be cool if we could emulate a Nintendo using some Atmel chips?' Chris replied 'Ooh, that'd be awesome, then I..... Listed under: [Other Projects](#)
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1337. [A Portable Battery-Powered Roguelike Video Game Using Atmel MEGA32](#) I. Introduction This project is a portable battery-powered video game based on the 1984 cult classic PC game "Rogue". I designed a hardware-based roguelike video game because I am a long-time Rogue addict and thought it would be cool to make a portable plug-and-play imitation..... Listed under: [Game - Entertainment Projects](#)
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1338. [Dual control RC car using Atmel Mega32](#) Introduction We have always liked playing with remote controlled (RC) cars, so we decided it would be fun to modify certain aspects of it. This led us to the idea of changing the remote control so that the car responds to different types of input..... Listed under: [Game - Entertainment Projects](#)
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1339. [Digger video game using Atmel Mega32](#) Introduction Sound Bite We implemented a black-and-white video (TV) game adaptation of the old DOS classic known as Digger, by Windmill Software. Summary On the Game Start screen, a choice between a multiplayer mode and an AI mode is offered. The multiplayer mode supports three..... Listed under: [Game - Entertainment Projects](#)
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1340. [Digital voice recorder using Atmel Mega32 microcontroller](#) Our project is a digital voice recorder with distortion abilities that stores multiple tracks onto a DataFlash memory card. We programmed an Atmel Mega32 microcontroller to sample a microphone, and store the samples into an external memory source. We give the user the option of..... Listed under: [Sound - Audio Projects](#)
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1341. [Digital Guitar Tuner](#) Introduction We constructed an analog-to-digital guitar that captures an input signal and uses the waveform zero-crossings to determine whether the note is at the correct frequency. The hope was that this frequency tuner could be used in a home setting where each of us can..... Listed under: [Sound - Audio Projects](#)
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1342. [Voting Machine Using Atmel Mega32](#) Introduction Our project is an electronic voting system. The system allows for quick and accurate voting electronically. The system uses a client/server architecture, which allows voters to cast ballots on the client terminal. Each client interfaces with the server, which keeps track of the entire..... Listed under: [CNC - Printing Machines Projects](#), [Home Automation Projects](#)
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1343. [Frequency Division Multiplexing for a Multi-Sensor Wireless Telemetry System Using Atmel MEGA32L](#) Our System acquires several different sensor inputs, FM modulates each level by manipulating Direct Digital Synthesis increment values, transmits the resulting signal on a commercial FM radio band, and receives and decodes the original sensor levels. Introduction The problem of encoding multiple input signals into..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1344. [CubeSat Diagnostics board using Mega128](#) Introduction Sound Byte This project is a proof of concept diagnostic & testing board for use with the power board in the Cubesat Satellite and will be developed further to become a component of the CUSat Satellite. Summary of What We Did and Why This..... Listed under: [Radio Projects](#)
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1345. [Gauntlet of uComputation using Atmel Mega32](#) Introduction The project involves an experiment in implementing a human-computer interface by tracking finger and wrist motions. Brief: "Ever wish you could control a computer just by moving your fingers or your hand?" We did. The primary goal is to design and build a functional..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1346. [Laser Communications System Using ATMega32](#) Introduction Laser communications systems are wireless connections through the atmosphere. They work similarly to fiber optic links, except the beam is transmitted through free space. While the transmitter and receiver must require line-of-sight conditions, they have the benefit of eliminating the need for broadcast rights..... Listed under: [Internet - Ethernet - LAN Projects](#)
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1347. [Digital Mirror Message Machine](#) Introduction For our final project, we decided to build a digital message machine which displayed on a mirror. This is a variation from other digital message machines we had seen in stores and in past final projects. Instead of quickly moving a wand of LED's..... Listed under: [LED Projects](#)
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1348. [Memory Video Game Using Atmel Mega32](#) Introduction The main goal of this project was to write and develop a graphical version of the card game commonly referred to as Memory for use on an Atmel Mega32 microcontroller unit. Memory is a card game where the player tries to match pairs of..... Listed under: [Game - Entertainment Projects](#)
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1349. [TREASURE HUNT OF THE HIGH SEAS ATMEL MEGA32](#) INTRODUCTION Sail the high seas searching for treasure and protecting your ship from pirates in a video game in which a system of lasers discerns the direction of wind and you specify wind magnitude, sail height, and rudder position. Originally, we had the idea of..... Listed under: [Game - Entertainment Projects](#)
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1350. [PacMan Video Game Using Atmel AT90S8515 microcontroller](#) Introduction The goal of our project was to replicate the great arcade classic Pac-Man on television in black and white. The inspiration for this project came from our love of video games and our introduction to NTSC TV signal generation in Labs 3 and 4..... Listed under: [Game - Entertainment Projects](#)
-
1351. [SpaceInvaders Video Game Using Mega32](#) Introduction Our final project is the classic Atari version of spaceinvaders on the MEGA32. The story: A horde of space invaders are attempting to land on the planet's surface. You play a heroic pixilated thing on the ground trying to stop them one bullet at..... Listed under: [Game - Entertainment Projects](#)
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1352. [Space Fighter Video Game Using ATMega32](#) Introduction Our project is a fighter game. The user controls a fighter, which moves around the TV screen. The user starts the game with a defined number of lives. It has two kinds of enemies: the asteroids and the monsters. Asteroids drop randomly from the..... Listed under: [Game - Entertainment Projects](#)
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1353. [Frogger Video Game Using Atmel Mega32](#) Introduction Sound Bite One word: FROGGER!! Why Frogger? We chose Frogger for several reasons. First, we believe that it is an entertaining game, which is complex enough to implement as a project. Second, Frogger allows us to use knowledge that we have acquired in this..... Listed under: [Game - Entertainment Projects](#)
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1354. [MIDI synthesizer Using Atmega32](#) Introduction: MIDI Synthesizer Our Final Project for ECE 476 was building a MIDI synthesizer using a MEGA 32 microcontroller. At first we wanted to tear apart an old keyboard and use the MCU to decode directly from the sensors which detected key presses. We then..... Listed under: [Development Board - Kits Projects](#)
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1355. [Radio Control Car using Mega32](#) Introduction: We like car and we like to build our own Atmel Mega32 MCU based radio-controlled NSX. We set three goals in the initial project proposal and they are as the following: (1) Build a RC NSX with the same performance as the original car..... Listed under: [Car Projects](#)
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1356. [Sound Effects Processor Using Mega32](#) Introduction As you can see from the title, our project, in a nutshell, is a Sound Effects Processor (for the lack of a better name), which is capable of taking an audio input, adding effects to it digitally and passing an analog output to an..... Listed under: [Sound - Audio Projects](#)
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1357. [BattleShip Game using Atmel Mega32](#) Introduction : For our final project, we decided to create the classic game of Battleship that was displayed on a TV and controlled by keypad inputs. We both enjoyed playing the board game when we were young and we occasionally would do battle against each..... Listed under: [Game - Entertainment Projects](#)
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1358. [Wireless Keyboard Using Atmega32](#) Introduction: For our project, we designed a wireless keyboard that uses RF to transmit signals to the computer. In our design, we use a regular, 102 key ps/2 keyboard and connect it to our transmitter circuit. On the computers side, we connect our receiver circuit..... Listed under: [Internet - Ethernet - LAN Projects](#)
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1359. [TV Minesweeper Using Atmel MEGA 32](#) Introduction For our final project, we have decided to build a minesweeper game with a microcontroller and a PS/2 mouse to be displayed on the TV. Minesweeper is a famous game that comes with the MS-Windows operating system, and the objective of the game is..... Listed under: [Game - Entertainment Projects](#)
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1360. [Vehicle Performance Meter Using Atmel Mega32](#) INTRODUCTION The DomMeter is a car performance meter that measures acceleration to compute values important to car enthusiasts. Specifically, the DomMeter calculates the 0-60mph time, 0-30mph time, 0-100mph time, quarter mile, eighth mile time and braking time, the max acceleration during that interval, distance travelled..... Listed under: [Metering - Instrument Projects](#), [Temperature Measurement Projects](#)
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1361. [Tetris Video Game](#) Introduction For our 2003 ECE476 Design Project, we designed a Tetris game that was playable via a 16 button keypad and was displayed on a black and white television at a resolution of 128x100. The heart of the hardware system consists of the ATMEL Mega32..... Listed under: [Game - Entertainment Projects](#)

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1362. [Cornell Hockey Using Atmel Mega32](#) News April 27, 2003 The project is due for us tomorrow, since we have the Monday evening lab slot. We spent a little time in the lab fixing the last few bugs, tweaking a little, and taking some pictures. We have an enclosure for the..... Listed under: [Game - Entertainment Projects](#)
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1363. [Gray-scale Graphics: Dueling Ships](#) A 4-bit gray-scale video system demonstrated by a multiplayer game Our project displays a 128-by-96-pixel image in 4-bit gray-scale (16 intensities) by using a memory-map compression scheme. The equivalent uncompressed display would require 6-KB of memory ($128 \times 96 \text{ pixels} \times 4 \text{ bits/pixel} = 6,144$ Listed under: [Game - Entertainment Projects](#)
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1364. [Laser Light Show Using Atmega32](#) Introduction Single sentence summary A programmable laser light show that allows the user to specify the pattern displayed via three motor speeds and the length of time that this pattern is held. Project Summary For this project, we designed a system to guide a laser..... Listed under: [Sensor - Transducer - Detector Projects](#)
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1365. [Wireless Drawing Device Using Atmel Mega163](#) Introduction: For our final project, we want to build a wireless drawing device. The user uses a keypad or a mouse to draw on the TV through a wireless communication medium (RF - 433.92 MHz). The user should be able to move the drawing pointer..... Listed under: [Internet - Ethernet - LAN Projects](#)
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1366. [IntelliBOT Using Mega 32](#) Introduction For our final project we decided to build a robot that could navigate from one location to any given target and avoid obstacles in its way. The robot body used a very primitive design that included a cardboard box for the body and Minute..... Listed under: [Robotics - Automation Projects](#)
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1367. [Sheet Music Generator using Mega32 Microcontroller](#) Introduction If you are a music buff, then our sheet music generator will be the answer to your dreams. You plug in the instrument of your choice and as you play the keys our system will create the sheet music that attests to your musical..... Listed under: [Sound - Audio Projects](#)
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1368. [Multi-Zone Fire Alarm System Using Mega32 Microprocessor](#) Introduction We designed a multi-zone fire alarm system with a VT100-compatible user interface. The system is microprocessor controlled using the Mega32 microprocessor. The system communicates to the VT100-compatible user interface via a RS232 connection. A fire is detectable by a number of fire detection devices..... Listed under: [Security - Safety Projects](#)
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1369. [PC-CONTROLLED SCANNING TUNNELING MICROSCOPE Using ATMega163](#) INTRODUCTION For our final project, we designed a scanning tunneling microscope (STM) that could be used to gather information about the surface topography of metals and semiconductors at the sub-micron scale. The STM is controlled from a graphical user interface running on a PC. The..... Listed under: [Other Projects](#)
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1370. [Tic-Tac-Toe on TV Using Atmel Mega163](#) Adventures in TV land The goal of this project was to play a simple game outputted to a television via direct NTSC signal generation into a composite video input of a television. Obviously, the outputting of material to a television is the most challenging..... Listed under: [Game - Entertainment Projects](#)

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1371. [Hard Drive Based AVR Programmer Using Mega163](#) The project which we are presenting is not the project we presented in our proposal. We initially planned to build a WWVB time-code receiver, which would demodulate a 60 kHz signal and extract an extremely precise time according to the National Institute of Standards and..... Listed under: [Microcontroller Programmer Projects](#)
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1372. [Autonomous Car](#) Introduction Our vehicle uses optical sensors to follow a line on the floor. Some autonomous vehicles used in manufacturing use a similar concept. Following magnetic strips embedded in the factory floor. The versatility of an optical design should be readily apparent. Since re-routing the vehicle..... Listed under: [Car Projects](#)
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1373. [Safety-sensor vehicle using Mega163](#) Introduction cars and vehicles have been integrated into society as one of the most efficient, easiest, accessible means of transportation available. But while it is a convenient and common means of transportation, it is also an incredibly dangerous mode of transport. Thousands of people die..... Listed under: [Car Projects](#)
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1374. [MP3 Player Using Atmel Mega103L](#) Introduction Using MPEG Layer-3 compression, 40 MByte audio files have been compressed to approximately 3.5 MBytes. With the wide availability of MP3 files via the Internet, portable MP3 players have become increasingly popular. MP3 players are currently available that utilize either Compact Discs, SmartMedia, Compact..... Listed under: [Sound - Audio Projects](#)
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1375. [Digital Music Synthesizer Using Atmel 90s8515 chip](#) Introduction: Our ECE 476 Spring 2002 final project is a musical synthesizer that mimics the sounds produced by a piano and a clarinet. We wanted to create a device that could produce different musical signals by direct digital synthesis. Using Fourier analysis of the signals,..... Listed under: [Sound - Audio Projects](#)
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1376. [The Rotating Globe Using Atmel Mega163](#) Introduction For years scientists and scholars alike have been plagued by one common obstacle which, until now, has proven to be impossible to overcome. How do you find the country you want on a globe? Sure, the easy answer is to just use the longitude..... Listed under: [Motor Projects](#)
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1377. [Spring 2002 Gmouse Using Atmel ATMEGA163](#) Introduction With all focus of computer technology advancement placed on processors and memory, sometimes the most simple of components are overlooked. This is especially the case with the mouse, a device that has changed very little since its conception by Xerox. It still retains its..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1378. [Laser Tag](#) Introduction What is Snipertag? Snipertag is a variation upon the very popular 'Lasertag' game. In 1986, a company called Worlds of Wonder came up with the idea for a combat game that worked around a set of commercially produced toy laser guns and sensors. As..... Listed under: [Game - Entertainment Projects](#)
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1379. [Fish: Video Controller](#) Introduction: The basis of this project is to create the game fish on the Atmel board. In the game fish, the big fish eat the small fish, so your job is to eat the fish smaller than you while not getting eaten by those bigger..... Listed under: [Game - Entertainment Projects](#), [Video - Camera - Imaging Projects](#)

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1380. [Fertilizer Feed Rate Controller](#) Abstract For a final project for EE 476 at Cornell University under the instruction of Bruce Land I designed and built a fertilizer flow rate control unit tailored to the needs of Lin Davidson. Instead of conventional mechanical drive methods, the delivery rate was controlled..... Listed under: [Home Automation Projects](#), [Motor Projects](#)
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1381. [gEECSHIP](#) Introduction Sound byte For our final project, we are redesigning the classic battleship game to suit the needs of engineers. We are removing the need for communication, but keeping the feel of battleship. So what are we really doing? Instead of having engineers mumble battleship..... Listed under: [Game - Entertainment Projects](#)
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1382. [Final Project EKG Monitoring System](#) Introduction Unexpected cardiac death, also known as sudden death is a frequently fatal form of arrhythmia which kills more than a quarter of a million people each year in the United States. Confronted with the devastating effects of unexpected cardiac death and with the pursuit..... Listed under: [Medical - Health based Projects](#)
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1383. [Larry Pellach and Brian Silverstein](#) Introduction Imagine being able to monitor the status of a given room or area from anywhere in the world, at anytime. In today's booming technological atmosphere, this dream doesn't sound so far off. However, imagine being able to do this cheaply, while not sacrificing efficiency..... Listed under: [Temperature Measurement Projects](#)
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1384. [Analog Modem Design Project](#) Introduction: We thought it would be interesting to try and construct a simple modem out of the ATMEL 8535. The main motivation for doing this was to test some DSP theories about the effects of transmission power, noise, and modulation technique on the bit error..... Listed under: [Phone Projects](#)
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1385. [Security Entrance System](#) Overview: Our security system is a stand alone device that allows access to registered users identified by their magnetic cards.(For this project, "access" is represented by a lit LED, showing how the system could be used to control an external locking mechanism.)The system includes features..... Listed under: [Security - Safety Projects](#)
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1386. [EE476 – Final Project Hummer RC Truck](#) Introduction: For our final project, we decided to enhance the controls of a Hummer RC truck. Our main objective was to demonstrate that an Atmel microcontroller together with basic hardware building blocks can replace all of the car's original circuitry. Improving the RC truck's handling..... Listed under: [Car Projects](#)
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1387. [EE 476 Final Project Portable MP3 Player](#) Introduction In the recent years, the MPEG Layer III (MP3) music compression format has become an extremely popular choice for digital audio compression. Its high compression ratio, and near CD quality sound make it a logical choice for storing and distributing music - especially over..... Listed under: [Sound - Audio Projects](#)
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1388. [Autonomous Vehicle](#) INTRODUCTION As technology develops, computers are making people's lives progressively easier and safer. Someday they will be able to drive automobiles, resulting in reduced deaths and accidents. We decided to make a prototype of a self controlled car. We started with a Hot Shot II..... Listed under: [Car Projects](#), [Radio Projects](#)

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1389. [Design of a REE476 Final Project: eal-Time Digital Guitar Tuner](#) Introduction The goal of this project is to design an algorithm for a real-time digital guitar tuner and implement it using an Atmel AT90S8535 microcontroller. Each of the six strings of a guitar has a unique fundamental frequency, and our goal is to measure this..... Listed under: [Microcontroller Programmer Projects](#), [Sound - Audio Projects](#)
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1390. [Whack-A-Cap: miniature representation of a popular amusement game](#) Introduction: Our final project code calls for the implementation of an amusement game often bannered as "Test-Your-Strength" or less accurately (but more commonly) known as "Whack-a-Mole." Our machine is in essence a miniturized version of what can be found in most theme parks across the..... Listed under: [Game - Entertainment Projects](#)
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1391. [CU Organizer](#) Introduction: One of the newest and fastest growing additions to the digital age in the 1990s has been the handheld personal computer. Given a little flash memory and a good LCD, anything is possible and commercial products like the 3Com PalmPilot and IBM Workpad are..... Listed under: [LCD Projects](#)
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1392. [Automatic Etch-A-Sketch Controller](#) Introduction For our final project, we set out to write a Controller for the classic toy, the Etch-A-Sketch. What this basically means, is that we use an Atmel micro controller to control two stepper motors connected to the knobs of the Etch-A-Sketch. Thus, an order..... Listed under: [Microcontroller Programmer Projects](#)
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1393. [EE476 Final Project Real-time Debugger By Emre Tezel & Cagdas Ozgenc](#) Objective: To design a debugger that is capable of tracing AT90S1200 user programs while the micro-controller is attached to external peripherals. The debugger will be able to display I/O activities, and dump the values of the registers. Parts Required: Atmel STK-200 starter kit (kit includes..... Listed under: [Microcontroller Programmer Projects](#)
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1394. [Clifford Systems JI1000 Car Alarm System](#) Introduction The design philosophy behind the JI1000 is a simple, yet powerful microcontroller based mobile security system. At the heart of the JI1000 is the Atmel AT90S4414 8-bit RISC microcontroller. We used the 4414 for this design because a microcontroller is well-suited for a security..... Listed under: [Car Projects](#), [Security - Safety Projects](#)
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1395. [Eye Snake](#) Soundbyte If you ever thought you couldn't control things with your eyes, think again here's the game Snake that allows 4 modes of multi-level game play with buttons or with your eyes, using electro-ocular potential. Project Summary While brainstorming for a 476 final project..... Listed under: [Game - Entertainment Projects](#)
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1396. [Hangman!](#) Introduction For our final project, we used an Atmel AT90S8535 microprocessor to create a hangman game. The letters are displayed on a 16-character LCD, and are input ("guessed") using a 16-button keypad. The 8 LED's on the Atmel development board are used as our "hanging..... Listed under: [Game - Entertainment Projects](#)
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1397. [Programming the Game Simon](#) Introduction Many of the simpler electronic games of the past decade can be easily programmed on the AVR microcontrollers we are using this semester, using only the lights and switches available on the evaluation boards. For our final project we programmed the game Simon using..... Listed under: [Game - Entertainment Projects](#)
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1398. [A m -Controller Based Thermostat Using Atmel AT90S8535 microcontroller](#) Introduction The goal of our final project was to design a thermostat using an Atmel AT90S8535 microcontroller. The thermostat was to compute the current temperature once per second and then send an on/off signal to a heating device which would then regulate the temperature to..... Listed under: [Temperature Measurement Projects](#)
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1399. [Bar Inventory System: Drinking for Class Instead of Because of Class](#) Introduction Project Summary Our project is an expandable bar inventory system that implements wireless communication. The bar inventory system was an interesting project, because it involved both hardware and software together, since we are comprised of one analog designer and one computer programmer, both of..... Listed under: [Arduino Programmer Projects](#)
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1400. [RC Car Controller Using Atmel 4414 chip](#) Overview: We decided to build transmitter and receiver modules for a radio-controlled (RC) car, as well as implement variable-speed motor control and a continuous steering function. The simple speed controls included in most RC kits seldom offer more than three forward speeds and one reverse..... Listed under: [Car Projects](#)
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1401. [Sine Wave Synthesizer](#) Introduction Every group wants their final project to be something that will be remembered long after they're gone. Some do highly sophisticated and complex projects that entail upwards of a hundred hours to complete. Yet others go out of their way to develop something 'cool'..... Listed under: [Sound - Audio Projects](#)
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1402. [Temperature and Pressure Control using the AT90S8535](#) Overview: This project involves the implementation of control and monitor for dual processes. The variables monitored are pressure and temperature. The input control is a 16 button keypad and the output is monitored in a 16 character LCD The device can be widely deployed as..... Listed under: [Temperature Measurement Projects](#)
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1403. [Automated Juice Mixer](#) Introduction Sound Bite The Automated Juice mixer is a juice mixing device that allows user to create desired drinks with up to four different ingredients through a user friendly interface. Summary Mixing juices can be a very tedious job. We have created a juice mixer..... Listed under: [Home Automation Projects](#)
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1404. [Leonardo Arduino clone a single-sided PCB using ATmega32U4](#) DESCRIPTION This project is to make a clone of Arduino Leonardo in a simple way. That is why the distribution of the pin does not match the standard Arduino (have to make many jumpers on the motherboard or use both sides). However, most Arduino Leonardo characteristics are..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1405. [Head-Controlled Keyboard And Mouse using ATmega32](#) Easy Input is a head-controlled keyboard and mouse input device for disabled users. The system uses accelerometers to detect the user's head tilt in order to direct mouse movement on the monitor. The clicking of the mouse is activated by the user's eye blinking through..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Sensor - Transducer - Detector Projects](#)
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1406. [How to drive 595 shift registers with ATmega168](#) Driving a shift register using an AVR chip's built-in hardware is really quite easy. Most of their offerings have an SPI module, or Serial Peripheral Interface. A shift register is exactly that, a peripheral device that communicates via a serial line. All we need to..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)

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1407. [HexiLogger, an Arduino based data logger using ATmega328](#) The purpose of this project was to create a simple, portable device that would periodically read sensors and then store the sensor data so it could be retrieved later. The result is the HexiLogger, "hexi" because it can support up to six different sensor inputs..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1408. [Enhancing An FM Transmitter's Firmware using ATmega48](#) This hack is about rewriting the firmware of PLL FM transmitters based on AVR microcontrollers to add more functionalities. They're commonly available on eBay from various sellers and for prices ranging from \$40 to \$80, depending mostly on the RF output power. If you don't..... Listed under: [AVR ATmega Projects](#), [Radio Projects](#)
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1409. [4-key keyboard using ATtiny85](#) Introduction: A good while back, I made the 1-key-keyboard project. Ever since it has always been in the back of my mind that the ATtiny microcontroller, which I used in this project, had still 3 IO ports which were unused. Only recently I've found the..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1410. [RSS Reader using ATmega8 microcontroller](#) I spent part of an afternoon developing a hardware RSS reader (most of my time was spent on the python side of things). It's pretty simple and uses an AVR microcontroller connected to a computer via a serial cable. Hardware I am using the Dragon..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [LCD Projects](#)
-
1411. [Virtual Archery using ATmega1284P](#) Introduction We decided to create a virtual archery game for our ECE 4760 final project. This game consists of an ATmega1284P microcontroller, a TV for display, and multiple pieces of hardware. All of these devices communicate together to simulate a three-round game of archery with..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1412. [Arduino – Modifying a Robot Arm using ATmega328](#) Essentially another tutorial involving controlling DC motors. In this post I'm going to first alter a robot arm I had built previously from a beginners kit so that it can be controlled from Arduino. Then I'm going to write a series of posts on different..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Robotics - Automation Projects](#)
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1413. [Honey I Shrunk The Arduino using ATmega328p](#) As you might be able to tell from recent posts, I've been doing quite a bit of work with an Arduino. I've now got at least one project that I'd like to make a little more permanent, rather than it just being a bunch of..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1414. [DIY Polygraph Mask using ATmega32](#) Introduction A polygraph (often and incorrectly called a 'lie detector') is a machine which plots in real time several human biological signals such as pulse rate, galvanic skin resistance (GSR), blood pressure, and breathing rate. This machine, in conjunction with a certified examiner, is then..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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1415. [USB Sensors with ATtiny Microcontrollers](#) Working with embedded electronics, you will eventually ends up with some sensor between your hands, here I'll show how to make a graph out of it! This project involves a light sensor, a tiny 8-pin AVR USB key with the V-USB stack, a GNU/Linux system..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Sensor - Transducer - Detector Projects](#)

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1416. [An electronic dice using ATmega8](#) Abstract: Travel to outer space sounds very exciting but now we are here in our space ship and we have about 10 square meters for 5 people. It will take another week until we reach the first space station. I took my mp3 player with..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1417. [Algorithmic 8-bit workshop using ATmega328](#) I was asked to give a workshop regarding sound art in Super Public Art School that is held at Titanik-gallery in Turku. As I have been working lately with microcontroller based sound synthesis I searched for a good topic around this area. So the idea..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1418. [Watch controlled robot using AVR microcontroller](#) Here is my Chronos watch controlled rover. The rover has a CC1110 minikit that receives SimpliciTI messages from the watch and sends this to an Arduino (AVR) over serial. The Arduino controls the motors and the servo controlling the robot arm. I have called this..... Listed under: [AVR ATmega Projects](#), [Robotics - Automation Projects](#)
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1419. [Solar Power / Panel Inverter – Grid-Intertie Inverter using Attiny45](#) For the last year I've been working on a prototype for a Solar Inverter that can be Grid Intertied. A solar inverter takes the 12V DC (or other voltages) from the solar panels and converts it to 120V AC which is the power that most..... Listed under: [AVR ATmega Projects](#), [Battery Projects](#)
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1420. [DigiThermo 0-100.0 °C using AT89C4051](#) Introduction The DigiThermo is a device designed for measuring time and temperature used in chemistry laboratory. The circuit of Digithermo employs a 89C4051, 20-pin CMOS Microcontroller with built-in 4kB code memory. Temperature was measured by LM35D, National Semiconductor Temperature sensor producing 10mV/°C. The CA3162, 3-digit..... Listed under: [AVR ATmega Projects](#), [Temperature Measurement Projects](#)
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1421. [Clock ControllerV1.1 using AT89C2051](#) Builda digital clock that turns AC load on/off with preset time. sourcecode with sdcc for 8051. The Clock Controller V1.1was designed to be an exemplary of using 'C' language to control timer0interrupt, 7-segment LED and keypad scanning. It provides 1-bit sink currentdriving output, for driving a..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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1422. [Night Light Saver V5.0 using AT89C2051](#) Introduction The Saver V5.0 runs simple clock emulation program, turns a night light on and off with preset time, say 19:00 to 22:00 everyday. The design features low cost, easy installation, no battery backup and no EMI. The AT89C2051 uses external oscillator generated by schmitt..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)
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1423. [Experimenting the 2051 withC Programming using 89C2051](#) Learn yourself, how to write a simple program using Clanguage for the 89C2051/89C4051. Write a C source program, compile,and download the HEX code to the chip directly, connect DC adapter, seewhat happen after power up the board. No need ICE, in-circuit programmer,everything can be made..... Listed under: [AVR ATmega Projects](#), [Microcontroller Programmer Projects](#)
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1424. [MakeYour Own Single-Side PCB for Easy-Downloader V1.1 using AT89C2051](#) The EasyDownloader V 1.1 , a Flash Writer for 89C2051/4051 which was designedby Wichit Sirichote, used a Double-SidePCB. I think, it's difficult to make my ownPCB by myself. So that I decided to design a Single-SidePCB instead. My first prototype board wasmade using hand-writing with..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)

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1425. [Easy-DownloaderV1.1 for ATME89C2051](#) Build your own a personal writer forprogramming HEX code into Flash based microcontroller AT89C2051(2k) andAT89C4051(4k). Simple hardware and Easy use software in DOS and Windowversion. Single-side and double side PCB files included.sourcecode with sdcc version! Introduction The first version of the Easy-Downloaderwas designed in 1997..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1426. [Easy-Downloader V1.1 with SDCC using AT89C2051](#) Complete schematic, orcad pcb layout of Easy-Downloader V1.1 and modified firmware with sdcc. I am very happy to use sdcc for writing firmware of my project. The compiled code is very compact and nice. After I succeeded writing a new firmware of xtimer and Easy-downloader..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1427. [AT89C2051 PROTO BOARD](#) This single sided proto board provides an economical solution for developing and testing the projects around Atmel 20 pin series u-controllers (89Cx051 & AVR) Figure 1 shows the circuit diagram of proto board. All port connections are available for user interface around the proto area..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#)
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1428. [xTimer V1.0 using AT89C4051 microcontroller](#) My wife asked me to find another timer for using in the kitchen. She got one already with analog setting, but it needs one AA size battery. Digital setting may not easy for human interface. However I will make it for easy time setting. When..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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1429. [Night Light Saver V6 using AT89C2051](#) This new version has internal Ni-MH battery backup, reset button and simple time setting. Now the circuit board was embedded with lamp fixture. Preset turn on period is from 18:00 to 22:00 everyday. You may let the saver turn on whenever you want. The period..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)
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1430. [AT89C4051 to work as a Real time Digital clock](#) Its a digial clock which make use of AT89C4051 to work as a Real time clock. Figure 1 shows the circuit diagram for the digital clock. Port 1 of the controller (AT89C4051) is used as the data lines for the LCD (starting from pin 7-..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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1431. [xTimer with 4094 using ATME89C2051 microcontroller](#) The original version of xTimer used MAX7219 for driving 7-segment. This new design uses a cheap CMOS shift register, 4094 for LED interface. Each 4094 drives a 0.5" 7-segment without the need of limiting resistor. The left-hand LED is timer function with buzzer alarm output..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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1432. [AT89C4051 to work as a Real time clock](#) Its a digial clock which make use of AT89C4051 to work as a Real time clock. Figure 1 shows the circuit diagram for the digital clock. Port 1 of the controller (AT89C4051) is used as the data lines for the LCD (starting from pin 7-..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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1433. [Mathematical Manipulation of Pure Sine Wave Inverter Using Atmel 89S2051](#) Introduction Approach used for creating the pure sine wave described in this paper is done through manipulation of mathematical representation of the original sine wave. It is done by dividing half the sine wave into m (even number) segmentations, where area under a quarter of..... Listed under: [AVR ATmega Projects](#), [PWM Projects](#)

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1434. [Testing Device for DiSEqC-Switches using ATtiny13-20Pi](#) This is my first AVR-project on this page. The DiSEqC-Tester allows to test DiSEqC-switches that uses 1.0 or 1.1 protocols. (DiSEqC-Switches with 2.0 and 2.1 protocol have backwards compatibility with 1.0 & 1.1 respectively and also may be tested). The device every second sends a..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1435. [Atmel AVR Infrared Downloader using ATmega8](#) AVR IR Downloader is one of final assignments at Electrical Engineering Brawijaya University of Malang, Indonesia. The basic idea was came from our lecturer at campus, Ir. Nanang Sulistyanto. If this project was successfully made, it will be used to program our automatic machine's uC..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#)
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1436. [Flickr images on a Nokia LCD using ATmega48](#) LCDs are often used in microcontroller projects. Most used are these green character displays with two or more rows to display menus, status or debug messages. With mass production of mobile phones, color LCDs get that cheap, that they can be used as replacement. Some..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [LCD Projects](#), [Phone Projects](#)
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1437. [USB AVR in-system Programmer using ATtiny2313](#) Introduction. Nowadays, USB is the most popular connection between PC and peripherals such as AVR programmers, printers, scanners etc. For that reason I had to modify my old serial AVR In-System-Programmer (ISP) to work with USB connection. You can say, "use a USB to Serial adaptor to..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Microcontroller Programmer Projects](#)
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1438. [USB controlled DDS signal generator with ATmega88](#) A simple signal generator which produces sine waves (or any waveform really) at audio frequencies using DDS and is controlled a USB serial connection. Only 2 chips are used in this circuit. The AVRATmega88 which produces the signal, and an FT232R for the USB interface..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#), [Radio Projects](#)
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1439. [AvrUsb500 — an open source Atmel AVR Programmer using ATmega8](#) Why Stk500 and USB? Until the beginning of this year a simple parallel port programmer was the only good programmer as it could be used for any device. All device dependent information is stored in the programmer software on your computer. The problem is however..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Microcontroller Programmer Projects](#)
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1440. [HVProg using ATmega8535 microcontroller](#) Compatible with AvrStudio Supports all AVR Controllers Parallel and serial High-Voltage-Programming Small and easy layout with only a few parts STK500 protocol Schematics and board layout available Introduction The project started as an enhancement of Martin Thomas Evertool project. He has rebuilt the AVRISP..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#)
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1441. [The WhereAVR using ATmega8 microcontroller](#) Introduction The WhereAVR is a small, lightweight, low-power, and low-cost APRS tracker with a full compliment of analog and digital I/O, as well as the ability to decode ax.25 packets. This allows for the reception of remote commands without the need for a "real" TNC..... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)
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1442. [Video Overlay using ATmega8 microcontroller](#) A few years ago I set about trying to design a very cheap and simple way to superimpose flight data on live video being transmitted over amateur television. Specifically, the data would include things like Latitude, Longitute, and Altitude, among other text including an identifier..... Listed under: [AVR ATmega Projects](#), [Video - Camera - Imaging Projects](#)

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1443. [Stealth USB CapsLocker using Tiny45 microcontroller](#) This device plugs into a USB port and implements a USB HID keyboard. Instead of doing anything useful, it waits between 30 seconds and 8 minutes and sends the scancode for the Caps Lock key. This will toggle the Caps Lock status on or off..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1444. [etherrape using ATmega644 microcontroller](#) Project Overview short description: microcontroller with ethernet usability status: beta start: April 2006 platform: Atmel ATmega644 Abstract With this project, we'll be creating hard- and software for enabling ethernet on an Atmel microcontroller. fd0 first built a prototype of it on lochraster and then made..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#)
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1445. [AVR DDS signal generator V2.0 using ATmega16](#) Finally second and improved AVR DDS signal generator is here. First AVR DDS V1.0 generator was only an attempt of running DDS algorithm without any amplitude control. This time I still wanted to keep things simple like minimum count of widely accessible components circuit, single..... Listed under: [AVR ATmega Projects](#), [Radio Projects](#)
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1446. [Atmel AVR-firmware based universal USB-Interface using ATTiny2313](#) Scanning the web on microcontroller based USB solutions, I stumbled over Objective Development's freeware USB solution based on Atmel's AVR architecture. I decided to build up their reference design PowerSwitch with an ATTiny2313 MCU. Since I never used AVR chips before, the first challenge was..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1447. [A Portable Battery-Powered Roguelike Video Game using ATmega32](#) I. Introduction This project is a portable battery-powered video game based on the 1984 cult classic PC game "Rogue". I designed a hardware-based roguelike video game because I am a long-time Rogue addict and thought it would be cool to make a portable plug-and-play imitation..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1448. [Evertool using ATmega16 microcontroller](#) Evertool is an AVRISP/STK500-protocol and JTAGICE compatible Programmer/JTAG debugger. ISP Programmer compatible with Atmel AVRISP, directly accessible with AVRStudio and avrdude JTAG debugger compatible with Atmel JTAGICE, directly accessible with AVRStudio and AVaRice Evertool supports all AVR devices Atmel supports with their AVRISP and JTAGICE..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#), [Microcontroller Programmer Projects](#)
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1449. [The Tuxgraphics AVR NTP clock using ATmega168](#) The Network Time Protocol (NTP) has revolutionized the world. Suddenly one could have anywhere in the world accurate time and date. NTP is a simple UDP based protocol and can be implemented in a Microcontroller. Using the tuxgraphics ethernet board and a LCD display we..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#), [LCD Projects](#)
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1450. [Printed circuit board 'Multiuse tiny1' using ATmega8](#) Project overview This small PCB, which I named Multiuse tiny1 was originally designed to convert NES/SNES controllers to USB. Since there is not a lot of space available inside an SNES controller, I designed the PCB to be as small as necessary. The PCB has..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#)
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1451. [Cheap and Simple Learning Board using AT89S51](#) Build your own a cheap simple Microcontroller learning board S-52. The board is based on ATMEL's new ISP chip AT89S51, AT89S52, or AT89S53. This board can be used by beginners for learning Assembly and C language programming. Single sided PCB file included. Introduction I..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#)

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1452. [Sensor Interfacing using ATmega8 microcontroller](#) If you've ever tried to hook up a 3.3V sensor to a 5V micro, you know what I'm talking about - connecting these two can be a problem! There are several ways in which a 3.3V device can be safely connected to a 5v microcontroller..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Sensor - Transducer - Detector Projects](#)
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1453. [The Prototino™ using ATmega168 microcontroller](#) What is a Prototino™? The Prototino™ is an Arduino clone with a built in prototyping area. Designed to make a permanent version of your project once you have perfected it on a breadboard but without the expense of embedding your original Arduino into..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#)
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1454. [How-To: Super simple serial terminal using ATMEGA128](#) This hack shows how to make a dumb terminal out of a keyboard, LCD screen, and an 8-bit microcontroller. From time to time, a portable dumb terminal can be handy for when you have to rescue a headless server that's acting up or if you..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#), [LCD Projects](#)
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1455. [The Game of Life using ATtiny2313 microcontroller](#) The reason for making this project is that I was always fascinated by Conways Game of Life. It's a great demonstration of the fact that simple things with a very simple set of rules can do wonderful things: spawn more of them, modify themselves, do..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#), [LCD Projects](#)
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1456. [HappyJTAG2 – JTAG AND SPI AVR8 interface using ATmega32](#) New version released ! V2.45 (Check version list for details) This construction is based on HappyJTAG Idea, to implement JTAG interface into target avr system and debug it remotly via USB, without specific JTAGICE hardware. All job is done by PC softraware. HappyJTAG version is..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1457. [Tetrapuzz – Tetris clone for AVR using ATmega168](#) This is a projected that I finished development on over a year ago and I'm just now getting around to documenting it. I wanted to program Tetris from scratch and make it modular so it could be used with different displays. Right now I know..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#)
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1458. [Dot Matrix Arduino Clock using ATMega168](#) The great adventure that is building clocks continues. Points of interest in this build is that it was the first chance I got to play with the dot matrix display I picked up over winter break, and it's the first time I've soldered and used..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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1459. [ATtiny breadboard headers using ATtiny2313](#) These tiny controller boards are build to provide a quick start for projects with 8 and 20 pin AVR microcontrollers, e.g. ATtiny13, ATtiny45, ATtiny85 and ATtiny2313. They don't include any fancy stuff, they are just as simple as possible. Where is the problem? Whenever I..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#)
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1460. [Arduino-based master clock for schools using ATmega128](#) If your school, or kids school, or other location relies on a central master clock that is broken, you may have a use for this device. New master clocks are available of course, but school budgets are under extreme pressures, and it really is a..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)

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1461. [FabISP, a fab-able in-system programmer using ATtiny44](#) The FabISP is an in-system programmer for AVR microcontrollers, designed for production within a FabLab. That is, it allows you to program the microcontrollers on other boards you make, using nothing but a USB cable and 6-pin IDC to 6-pin IDC cable. It's based on..... Listed under: [AVR ATmega Projects](#), [Microcontroller Programmer Projects](#)
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1462. [AT89LP2052 / AT89LP4052 Parallel Port Programmer](#) Programming the AT89 LP2052/LP4052 Flash Memory, Lock Bits and User Fuses The AT 89LP2052 / 89LP4052 microcontroller provide two interfaces with same command format for device programming. The serial ISP Programming interface of the new 2052/4052 microcontroller needs one additional SS Signal for device programming. This SPI signal will..... Listed under: [AVR ATmega Projects](#), [Microcontroller Programmer Projects](#)
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1463. [Batwatch using ATtiny13V microcontroller](#) Overview Batwatch is a simple monitor for a solar panel battery charger, using an Atmel ATtiny13V. It periodically measures the charge current and battery voltage, and shows them by blinking two LEDs. I built this circuit into the plug of a VW solar charger panel..... Listed under: [AVR ATmega Projects](#), [Battery Projects](#)
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1464. [Minimalist Arduino using ATmega328P microcontroller](#) Overview Here at the Transistor, we love the Arduino platform, so we decided to make our own Arduino Clone. The Minimalist Arduino is designed for use in permanent or custom circuits on solderless breadboards, stripboard, or custom PCBs. It contains only the bare minimum parts..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#)
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1465. [AVR DDS signal generator V1.0 using ATmega8](#) Sometimes when tuning various electronic hardware we need simple signal generator with various waveform and frequency. One of the options is to by a professional with variable gain professional coating and many additional functions. But if you are an amateur you might want to build..... Listed under: [AVR ATmega Projects](#), [PWM Projects](#)
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1466. [GSM Remote Control – GSM Module](#) This GSM Mobile is used for our Remote Control (for example Gate Control, Temperature Control....). We use the word 'module' because, unlike what we did in our remote control projects, this time around the mobile phone is not mounted on a printed board, but rather on..... Listed under: [AVR ATmega Projects](#), [Phone Projects](#)
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1467. [HUB ISP – Solving the USB-Only "Chicken or Egg" Problem using ATMEGA328P](#) Many excellent ISP (In System Programming) designs exist for 8 bit AVR microcontrollers. However, most require a pre-programmed microcontroller, or the "Chicken or Egg" problem: you can't program microcontrollers unless you have one already programmed. Parallel Port or Serial Port solutions have existed, but many..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1468. [Interfacing Atmel AVR with Graphics Liquid Crystal Displays using ATmega32](#) AVR SED1520 Library This is a C-library for avr-gcc/avr-libc to access SED1520-based graphics-LCDs. The modules used to develop the library only support "write to LCD", read-modify- write on the display RAM is not possible. So this Library uses a "framebuffer" which holds the display-content in..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#)
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1469. [AVR Thermometer using AT90S2313 microcontroller](#) Introduction I bought the LED module from BanMor' last week, just 30Baht. The module provide a prewired multiplex of 4-digit common anode LED, that's great. See the soldering pad of these signal in the 1st picture below. I thought, my friend gave me the AT90S2313 chip, and with..... Listed under: [AVR ATmega Projects](#), [Temperature Measurement Projects](#)

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1470. [Signal Microcontroller Simulator using AT90S8515](#) Introduction: The purpose of this project was to extend the Mixed Signal AVR simulator written in Fall 02 so that any single-issue microprocessor could be included in the simulation environment rather than limiting the simulations to systems based around ATMEL AT90S8515 series microcontrollers. In order..... Listed under: [AVR ATmega Projects](#), [Radio Projects](#)
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1471. [Air-Mouse using ATmega32 microcontroller](#) I. Introduction The Cornell University Airmouse Initiative is a motion sensing glove with buttons on it that plugs into your computer to function as a mouse. Many tasks that are performed on the computer require the use of both a keyboard on the mouse, and..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#), [Sensor - Transducer - Detector Projects](#)
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1472. [kaOS operating system and loader using ATmega32](#) Introduction We have created a real-time, multithreaded, preemptive operating system called kaOS for the Atmel Mega32 microcontroller, which loads and executes programs from a Secure Digital or MMC card. We wrote this OS and created the SD/MMC card reader as a final project for Cornell's ECE..... Listed under: [AVR ATmega Projects](#), [RTOS - OS Projects](#)
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1473. [RFID security system using ATmega32 microcontroller](#) Introduction and Motivations: For our final project, we designed and built (and exhaustively tested) an RFID-based proximity security system for use with Cornell Identification cards, which have been RFID-embedded since fall of 2003. The idea for this project was sort of spawned from our general..... Listed under: [AVR ATmega Projects](#), [RFID - NFC Projects](#), [Security - Safety Projects](#)
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1474. [The Reflow Soldering Oven with LCD Display using ATmega32](#) Introduction Our project consists of making a reflow soldering device using a normal toaster oven with a graphical LCD display for control and GUI. Soldering is an important and difficult task for custom printed circuit board design especially for integrated circuits that come as chip..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#), [LCD Projects](#)
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1475. [Self-powered solar data logger using ATmega32](#) Introduction: My project is a self-powered solar data logger. Put out in the sunlight, it will measure the light level and log this to memory to be later downloaded to a computer. The system is powered by a small solar panel and battery. Summary: The..... Listed under: [AVR ATmega Projects](#), [Battery Projects](#), [Metering - Instrument Projects](#)
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1476. [Wall of Pong using ATmega32 microcontroller](#) Wall of Pong is a fast-moving, interactive, laser-based pong game playable on any flat surface. The system uses a digitally controlled laser projection platform to draw a pong ball onto any flat surface. This allows for a large playing area that can be set up..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1477. [A Wearable Wireless Sensor System using ATmega644V](#) Introduction In this digital age, new interfaces for musical expression provide much broader musical possibilities than have ever existed before. There is a constant quest to be in harmony with one's instrument so that music can flow freely from the imagination and take form effortlessly..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Sensor - Transducer - Detector Projects](#)
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1478. [Design a Customizable Virtual Keyboard using ATmega32](#) Introduction It is becoming increasingly difficult for users to interact with the slew of portable gadgets they carry, especially in the area of text entry. Although miniature displays and keyboards make some portable devices, such as cell phones and PDAs, amazingly small, users' hands do..... Listed under: [AVR ATmega Projects](#), [Sensor - Transducer - Detector Projects](#)

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1479. [Adaptive Cancellation of Periodic 60 Hz Noise using ATmega32](#) An active noise canceler to eliminate the 60 Hz noise found in electrical signals due to AC power-line contamination. 60 Hz noise is frustrating for anyone trying to make sensitive measurements of low voltage processes (eg. Electrocardiogram measurements), record audio from electrical instruments (eg. guitar..... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)
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1480. [The Self-Driving Toy Car using ATmega1284 microcontroller](#) "A car that can track its own location and calculate the direction and distance needed to get to a final destination given by user inputs." Elevator Pitch For our final project, we built a self-driving car that takes in inputs for a final destination and..... Listed under: [AVR ATmega Projects](#), [Game – Entertainment Project Ideas](#)
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1481. [RFID Checkout System Design using ATmega644 microcontroller](#) The Elevator Pitch We successfully implemented a prototype RFID checkout system that will enable consumers to instantly pay for their entire purchase upon arrival at the register, increasing customer satisfaction, reducing retailer costs, and ultimately lowering consumer prices. Summary Shopping in the present day usually..... Listed under: [AVR ATmega Projects](#), [RFID - NFC Projects](#)
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1482. [Project Development Board using ATTiny2313 microcontroller](#) This is my first time using the AVR. I like to learn using the ATTiny 2313, because it is faster than MCS-51, cheap and the circuit is very simple. The chip has only 20 pins. I was interested because I want to build a simple..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#)
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1483. [Data Acquisition System using ATmega8](#) Introduction We can use a PC for connecting the homemade data acquisition hardware and produce the GUI for user friendly graphical presentation easily. One of the project that uses Visual Basic is the Data Acquisition & Logging System using AT89C51 made by Abbas Raza. In..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#), [Temperature Measurement Projects](#)
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1484. [ATMEL AVR ATmega 8535/16/32 and ATMEL AT89S5x Family Learning Kit](#) Both Mainboard Features Pin compatible for 40-pin AVR and AT89S5x family Microcontrollers Single sided PCB, header for 4 I/O ports, ISP port and RS-232 port Built in +5V voltage regulator LM7805 with heatsink Built in +5V and +12V (depend on input voltage) with terminal screw..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#), [Home Automation Projects](#)
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1485. [AVR Programmer using ATTINY2313 microcontroller](#) INTRODUCTION AVR910 is a very useful programmer. It can program almost complete range of AVR chips. The original version made by Klaus is here, <http://www.mikrocontroller-projekte.de/Mikrocontroller/AVR-Prog/AVR-Programmer.html>. The programmer uses ISP capability of AVR chips. AVR910 first appeared in AVR910 application note by ATMEL. It is one..... Listed under: [AVR ATmega Projects](#), [Microcontroller Programmer Projects](#)
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1486. [4x4 keypad example using AVR-GCC C language](#) This is as simple routine how to read 4x4 keypad keys using AVR-GCC language. The keypad is connected to AVR microcontroller 8 bit port. In this example it is B port. You can change ports depending on your needs – this is only an example..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1487. [Servo motor control using Atmega8 microcontroller](#) Servo motors are so called "closed feedback" systems. This means that motor comes with control circuit, which senses if motor mechanism is in desired location and if not it continuously corrects an error until motor reaches proper point. Servo motors are widely used in robotics,..... Listed under: [AVR ATmega Projects](#), [Motor Projects](#)

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1488. [AVR LCD menu routine using ATmega8 microcontroller](#) Lets have some practice and write simple AVR LCD menu routine. For this we need to write LCD control library. I decided not to use one from AVRLIB. LCD controlling isn't difficult just a few lines of code unless you want to make it more..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#)
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1489. [Simplified AVR LCD routines using ATmega8 microcontroller](#) Controlling numeric LCD isn't so tricky as it may look like. Of course you can find numbers of LCD libraries. One of more universal you can find in AVRLIB library for WinAVR AVR GCC compiler. Main disadvantage of such universal libraries that they compile all..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#)
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1490. [Measuring motor speed and display result on LCD using ATmega8 microcontroller](#) For measuring motor speed there can Optical interrupter used like H21A1. This is a device where IR LED and photo-transistor is coupled in to plastic housing. The gap between then allows interrupting signal with opaque material and this way switching the output from ON to..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [LCD Projects](#), [Motor Projects](#)
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1491. [AVR-GCC 4 bit and 8 bit LCD library using ATmega8 microcontroller](#) Standard alphanumeric LCD display controlled by 74HC164 LCD controller can accept 8 bit data bytes or 4 bit nibbles. Earlier my 4 bit and 8 bit LCD libraries were split in separate files as they were used in different projects. Now they are merged in..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [LCD Projects](#)
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1492. [Output number when button is pressed using Atmega16 microcontroller](#) This is simple demo program of reading button state, lighting LEDs, sending information via USART. 8 buttons are connected to Atmega16 port A, 8 LEDs to port B via current limiting resistors. While none of buttons arent pressed there is running light on LEDs performed,..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1493. [Simple signal drawing on graphical LCD routines using Atmega8 microcontroller](#) During spare time I have been playing with graphical LCD. This time I decided to display simple signals that are stored in microcontroller memory. The idea was to read signal values from look-up table and display waveform on Graphical LCD. To make things more interesting..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#)
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1494. [Programming AVR ADC module with WinAVR using Atmega8 microcontroller](#) Most of AVR microcontrollers have Analog to Digital Converter (ADC) integrated in to chip. Such solution makes embedded designers life much easier when creating projects and programming them. With no need external ADC PCB takes less space, easier to create programs – it saves time..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Sensor - Transducer - Detector Projects](#)
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1495. [Running TX433 and RX433 RF modules with AVR microcontrollers using Atmega8](#) Sometimes in embedded design you may want to go wireless. Might be you will want to log various readings of remotely placed sensors, or simply build a remote control for robot or car alarm system. Radio communications between two AVR microcontrollers can be easy when..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Radio Projects](#)
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1496. [Temperature sensor with time and date display on graphical LCD using Atmega32](#) Some time ago I've build a prototyping board with graphical LCD. It have served for various small projects and prototypes. Had a spare temperature sensor DS18B20 and decided to put simple temperature display

project. GLCD board is equipped with Atmega32 microcontroller running at 16MHz. DS18B20..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#), [Sensor - Transducer - Detector Projects](#)

1497. [AVR-GCC LCD library – mixed pin support using Atmega328P](#) Some time ago we have posted alphanumeric AVR-GCC LCD library. It works fine in 8-bit and 4-bit modes. But it has some limitations that some people may find annoying. One of them is requirement that LCD pins has to be byte aligned for instance in..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#)

1498. [Led Blink Code – Hello World Led using atmega16 in C](#) Configuring the microcontroller before running it the first time: Fuse bytes : high and low Program them once before you start using the micro-controller Disable JTAG to free up PORTC for normal use Set the correct clock option With the hardware set up, run..... Listed under: [LED Projects](#)

1499. [Remote Control based Robot using C language](#) Concept The customer's demands were to develop and build a kit, consisting of a small mechatronic system with educational concept. In particular, he asked for a driverless robot for training purposes abroad. The idea behind this is that our customer needs a kit for sending..... Listed under: [Game - Entertainment Projects](#), [Robotics - Automation Projects](#)

1500. [On/Off Controller – Interfacing Touch LCD LC7981 using ATmega Microcontroller](#) Concept of Touch LCD LC7981 using ATmega An on/off controller is the simplest form of a temperature control device. The output from the device is either on or off, with no middle state. An on-off controller will switch the output only when the temperature crosses the..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [LCD Projects](#)

1501. [Multichannel USB Analog Sensor using ATmega48 Microcontroller](#) Sometimes it's tempting to re-invent the wheel to make a device function exactly the way you want. I am re-visiting the field of homemade electrophysiology equipment, and although I've already published a home made electrocardiograph (ECG), I wish to revisit that project and make it much..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Sensor - Transducer - Detector Projects](#)

1502. [Door Chime Privacy Sentry using Attiny12](#) An ATtiny12 controller as a timer and some switching circuitry turns the doorbell off for 10 hours at the same time each day. The string of resistors across the top of the board are series connected to make a 728 Ohm 2 watt resistor. The..... Listed under: [Home Automation Projects](#), [Security - Safety Projects](#)

1503. [DIY USB password generator using ATtiny Microcontroller](#) Having done half a dozen V-USB tutorials I decided it's time to whip up something cool. As USB keyboards were an area untouched. I decided to make a small USB HID keyboard device that types a password stored in EEPROM every time it's attached. A..... Listed under: [How To - DIY - Projects](#)

1504. [Barker Code-Locked Loop Synchronous Demodulator using ATtiny2313 microcontroller](#) A simple, low component count phase locked loop that locks onto and detects the amplitude of an incoming baseband 7 bit Barker code using a switched resistor demodulator that is driven directly by a microcontroller's output pins. Balanced modulators using resistors and a microcontroller's output..... Listed under: [Other Projects](#)

1505. [Prime Calculator is Complete using ATmega8 Microcontroller](#) My microcontroller-powered prime number generator/calculator is virtually complete! Although I'm planning on improving the software (better menus, the addition of sound, and implementation of a more efficient algorithm) and hardware (a better enclosure would be nice, battery/DC wall power, and a few LEDs on the..... Listed under: [Calculator Projects](#)

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1506. [LED Dog Collar using ATTINY2313 Microcontroller](#) LED Dog Collar So this is a pretty simple project, but I thought it was a clever idea. I have 2 dogs, a lab and a lab mix. The lab "Sunshine" likes to runaway a lot if we let her outside at all. She always..... Listed under: [LED Projects](#)
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1507. [Making a USB based AVR Programmer using ATMEGA8 Microcontroller](#) Around time when I was beginning to learn about microcontrollers. I had exchanged my laptop with a senior at college for his desktop - that's because the only way I knew how to program an ATMEGA chip was through either a serial port or a..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Microcontroller Programmer Projects](#)
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1508. [BUILD A SIMPLE SERIAL PROGRAMMER FOR AVR DEVICES using ATtiny2313 Microcontroller](#) Atmel described a simple programmer based on the AT90S1200 (NOT the AT90S1200A) controller in their application note. AVR910 (a modification to use the AT90S2313 is also given below). The circuit is so small and simple. I was able to put two of them together without..... Listed under: [Microcontroller Programmer Projects](#)
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1509. [LED DOT Matrix Pong using ATmega16 Microcontroller](#) The classic pong game. Two players. Press the buttons to move paddles up/down. Ball bounces back and forth. If you fail to catch it, your opponent gets one point. Score difference is showed with blue LEDs. Blue LED = lead by one point. If you..... Listed under: [LED Projects](#)
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1510. [How to control Stepper Motor using AT89C51 Microcontroller](#) As explained in earlier article, Stepper motor is operated by energizing the stator coils in an ordered sequence. When the input sequence of signal is applied to the motor leads, it starts rotating in steps. AT89C51 microcontroller has a current rating of 50mA. It can..... Listed under: [How To - DIY - Projects](#), [Motor Projects](#)
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1511. [LED Menorah using ATtiny13 microcontroller](#) Last week on hack-a-day I saw their post on an LED Menorah that was powered by a 9v battery with the lights controlled by dip switches. I thought to myself, "gee, that's not a very creative design". There was redemption in the minimalist designs linked..... Listed under: [LED Projects](#)
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1512. [PS/2 to C64 Mouse Adapter using ATmega8 microcontroller](#) A pixel artist friend of mine wanted a mouse to try his skills on a real C64. I thought I could help him by making an adapter that would allow a regular PS/2 mouse to be used with a Commodore 64. The most popular and..... Listed under: [Development Board - Kits Projects](#)
-
1513. [MP3 Player using ATmega128 microcontroller](#) History I decided to do this project for several reasons: Frst I like music, second I have a huge collection of MP3, and third I wanted to be able to play them anytime in my living room. I began the project with one major restriction..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Sound - Audio Projects](#)
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1514. [How to drive 595 shift registers with AVR hardware SPI using ATmega168 microcontroller](#) Driving a shift register using an AVR chip's built-in hardware is really quite easy. Most of their offerings have an SPI module, or Serial Peripheral Interface. A shift register is exactly that, a peripheral device that communicates via a serial line. All we need to..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)

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1515. [ATtiny12 fuse restorer using microcontroller](#) This restores the fuses in an ATtiny12 via High Voltage Serial Programming. Plug an ATtiny12 into the 8 pin socket and hold down "GO!" button. The LED will come on at the end of the programming process, which only takes a couple hundred millisecond. The..... Listed under: [AVR ATmega Projects](#)
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1516. [LED Matrix Display using TD62783 microcontroller](#) Last Sunday I gave a workshop in TOG as part of it's Engineers Week 2011 activities. We spent the day assembling a 8x8 Red/Green LED Matrix Display circuit which I designed in strip board. The circuit forms an interface between a micro controller and a..... Listed under: [LED Projects](#)
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1517. [3 channel, 8 bit EEPROM DAC with DS interface using ATtiny12 microcontroller](#) Low power. EEPROM memory for autonomous operation, 16 bytes available for general purpose use. Low cost. This device provides three channels of 8 bit pulse-width modulation. Output pulse duty cycle ranges from 0 to 255/256 in 255 steps. DACs may be loaded by the DS..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1518. [AvrPhone using ATmega128 microcontroller](#) AvrPhone is a simple mobile phone with touchscreen. His brain is AVR ATmega128 microcontroller (128 kB flash, 4 kB SRAM) and user interface, the 2.4 "LCD display with touch foil and ILI9325B controller, equipped with a 16-bit bus. The communication with the old GSM module..... Listed under: [Phone Projects](#)
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1519. [Real Time Clock/Calendar/Alarm with Interpreter for battery backed-up and battery powered operation with DS interface using ATtiny12](#) Based on the Atmel ATtiny12L-4PI microcontroller -A real Time Clock/Calendar for less than US\$1.50 in moderate quantity. This is the timekeeping test circuit. It includes a one-transistor circuit to switch in the 5V power supply when present and drop back to the 3v battery the..... Listed under: [Battery Projects](#), [Clock Projects](#)
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1520. [DS interface test tool using ATtiny2313 microcontroller](#) The DS protocol was designed to provide firmware-based bidirectional host-to-slave inter processor communications for situations in which no hardware solution is available and the host and/or the slave in incapable of tending the interface in real time. The only specialized hardware required is two bidirectional..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1521. [Audio Spectrum Monitor using S1D15200 microcontroller](#) This is an evaluation use of a small graphics LCD module. Last summer, SG12232C graphic LCD module has been sold sold for 1500 Yens from Akizuki Denshi and I bought it. However I could not find good application for the LCD module and it was..... Listed under: [Sound - Audio Projects](#)
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1522. [Minimum Mass Waveform Capture using AVR microcontroller](#) Capturing repetitive waveforms at 1 million samples per second using PWM and a comparator. Download AVR Studio Source wfcao 030326 .asm The impetus for developing this technique came from my own need to capture repetitive waveforms using the least expensive and lowest part-count means possible..... Listed under: [Metering - Instrument Projects](#)
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1523. [AVR mod player using ATmega325 microcontroller](#) In 2006, I took part in an electronic demo competition on a Dutch forum (see this topic). Because computer demos like they used to have on old machines like the Amiga or Commodore are hardly made anymore since hardware has come such a

long way,..... Listed under: [Sound - Audio Projects](#)

1524. [Longboard Wheel Display using AVR microcontroller](#) If you're a resident of Seattle, I highly recommend you check out the Bubble events group. One of their regular events over the summer is something called "Nocturnal Push" where you can get decked out in your best glow gear and cruise the Alki Beach..... Listed under: [LED Projects](#)

1525. [AttoBasic HOME using Atmega168 microcontroller](#) This is the central location for resource for all versions of AttoBasic for Atmel AVR controllers and Adurino computers Devices directly supported include ATMEGA328, ATMEGA168, ATMEGA88M, ATMEGA32U4, ATMEGA32, ATMEGA163, ATMEGA8515, ATTINY2313, AT90S8515, AND AT90S2313 Versions of AttoBasic run on several AVR controllers with 2K or..... Listed under: [Home Automation Projects](#)

1526. [A Superhet/Direct Conversion AM receiver for 181.818 kHz using Attiny2313](#) Downloads Download the AVRStudio assembly source vflo13041105A.asm (html format) Download the AVRStudio Hex file vflo13041105A.hex (html format) Photo of completed receiver. Its pocket sized, but not intended to be used that way because the antenna is a highly directional ferrite loopstick. Its only a matter..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Sound - Audio Projects](#)

1527. [1750 Meter Lowfer Band amplitude modulated RF source using ATtiny2313 microcontroller](#) This is a low power signal source I put together one evening to provide 187 KHz RF signals for an anticipated receiver investigation. Under Federal Communications Commission rules inside the United States, one is allowed to operate a transmitter without a license under certain conditions..... Listed under: [Metering - Instrument Projects](#)

1528. [Frequency Meter with 100 MHz RF desktop channel using ATtiny2313 microcontroller](#) This basically the frequency meter section of the frequency meter/pulse generator based on the AT90S2313 described elsewhere on this site, combined with the 100 MHz RF interface described in the page about the RS-232 to 100 MHz RF desktop channel adapter. Built and align this..... Listed under: [Metering - Instrument Projects](#)

1529. [RS-232 to 100 MHz RF desktop channel adapter using ATtiny2313 microcontroller](#) Downloads AVR Studio assembler source code 2jun2002version.asm AVR Studio hex file 232lin.hex This is an adapter that allows a terminal to communicate via a 100 MHz data channel with peripherals on the same desk top. Keystrokes from the terminal are are received through the RS-232..... Listed under: [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)

1530. [Low cost RF for simple data link and remote control using ATtiny12 microcontroller](#) Wireless data links don't have to be difficult to build or adjust They can be built quickly using inexpensive and readily available parts. Overview This is a simple, low cost RF data link that can send data reliably over a distance of one to two..... Listed under: [Interfacing\(USB - RS232 - I2c - ISP\) Projects](#)

1531. [Minimum Mass Wireless LCD Display using ATtiny2313 microcontroller](#) A 2 line X 16 character LCD display that is battery operated and works without an external connection. The basic MinThe basic Minimum Mass Wireless Coupler technology is described and links to other projects on this site that use the Minimum Mass Wireless Coupler are..... Listed under: [Internet - Ethernet - LAN Projects](#), [LCD Projects](#)

1532. [A Low Power PLL FM Transmitter using LMX1601 and ATtiny2313 microcontroller](#) An LMX1601 Phase locked loop, a discreet FET VCO, and an AVR micro controller combine to make a stable, easy to use monophonic FM transmitter that includes a an audio activated switch that turns the transmitter on only when its being used. Notice: Before operating..... Listed under: [Radio Projects](#)

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1533. [A Simple FM Stereo Transmitter using ATTINY12 microcontroller](#) The parts to the right of the green capacitor are the FM radio transmitter. The parts between the 8 pin DIP and the transmitter are the resistor matrix. One capacitor, C5, is mounted on the back of the board, and one other capacitor, C11, had..... Listed under: [Radio Projects](#)
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1534. [DIY mobile phone – Create your own mobile phone](#) This DIY cell phone created at MIT manages to have something for just about every major contemporary subculture or hipster subset I can think of. Nerds and tinkerers? Check. Wooden case for the steampunk set? Check. Huge antenna for the retro, skinny-jeans-wearing set? Check. Big..... Listed under: [How To - DIY - Projects](#), [Phone Projects](#)
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1535. [Are you being spied – A Simple Field Strength Indicator \(field strength meter\)](#) This project is a broadband field strength sensing probe that has a 15cm antenna. It is able to detect radio energy and read the output on a common multimeter millivolts scale. It can be used to test 4MHz, 35 MHz, 55 MHz, 100 MHz, 384 MHz,..... Listed under: [Blog](#), [Circuits](#)
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1536. [What is a stun gun – How to Make Stun Gun](#) What is Stun Gun An electroshock weapon is an incapacitant weapon used for incapacitating a person by administering electric shock aimed at disrupting superficial muscle functions. One type is a conductive energy device (CED) fires projectiles that administer the shock through a thin, flexible wire. Other electroshock weapons such as stun guns, stun batons,..... Listed under: [Blog](#), [Circuits](#)
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1537. [How a Microwave oven works?](#) Bill details how a microwave oven heats food. He describes how the microwave vacuum tube, called a magnetron, generates radio frequencies that cause the water in food to rotate back and forth. [caption id="attachment_8043" align="aligncenter" width="563"] microwave interior structure[/caption] He shows the standing wave inside..... Listed under: [Blog](#), [Circuits](#)
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1538. [Multifunction 330 MHz Remote Control With an ATTINY2313 Simulating the PT2264 Encoder](#) This 330 MHz remote control sends timed sequences of control pulses to accomplish complicated tasks. You can probably tell that I used a lot of solder flux on this board. Lots of flux not only helps the solder wet to the copper, but it also..... Listed under: [AVR ATmega Projects](#), [Radio Projects](#)
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1539. [Circuit and firmware to support Seiko-Epson G1216B1N000 dot graphics display using ATtiny2313](#) A serial interface and bias supply for the Seiko-Epson G1216N000 using an AT90S2313 because there just aren't enough applications examples for this display on the web. Download Assembler source code I was looking for an LCD display that I could use to display waveforms on..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#)
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1540. [A serial interface for the Truly MTC-C162DPLY-2N using ATmega8515](#) The 10k potentiometer, just above the ISP connector near the lower middle of the board, is used to adjust the display contrast according to your vertical viewing angle. DOWNLOADS ATTINY2313/AT90S2313 AVRStudio assembler source, LDCbutons040904Ca.htm ATTINY2313/AT90S2313 AVRStudio assembler source, UPDATED FOR COMPATIBILITY WITH NEWER VERSIONS OF THE..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#)
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1541. [Simplest LED Flasher Circuit](#) As simple as it gets and still works This LED flasher occurred to me while reading about negative resistance in transistors. It was reported that Leona Esaki, who was at Sony at the time, had been surprised to see a negative resistance region while investigating..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)

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1542. [A 1.5 Volt, 1970's Style LED Flashing Red Caboose Marker Light using tiny microcontroller](#) A circuit that drives a red LED from a 1.5 volt battery and simulates an incandescent light. Duty cycle can be changed by selecting resistor values. Photo 1. This printed circuit board is 3 cm long. The first prototype was made with through hole parts..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1543. [White LED Stroboscope](#) Finally, white LED's are bright enough to use in a practical stroboscope. This circuit can operate as a bench-top stroboscope that, in conjunction with an oscilloscope or frequency meter and bench top power supply can accurately measure rotational speeds, or it can be operated hand-held..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1544. [White LED Battery Powered Power Failure Light](#) Overview Where I live most of the time, the AC power drops out upon occasion. This used to leave me groping around in the dark for a flashlight. I could have bought a battery-backed up "emergency light" for about US\$35, but being basically metal boxes..... Listed under: [AVR ATmega Projects](#), [Battery Projects](#), [LED Projects](#)
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1545. [Atmega8 Pinout Diagram](#) ATmega8 is an atmel's low-power 8-bit AVR RISC-based microcontroller combines 8KB of programmable flash memory, 1KB of SRAM, 512K EEPROM, and a 6 or 8 channel 10-bit A/D converter. The device supports throughput of 16 MIPS at 16 MHz and operates between 2.7-5.5 volts. [caption id="attachment_7971"..... Listed under: [Blog](#), [Circuits](#)
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1546. [SKL14 -1A Schottky diode will fit everywhere](#) SKL14 can be used in switch-mode power supplies or as protection diodes and thanks their really miniature dimensions, they are also suitable at the lack of PCB space. SMT Technologies enable a substantial increase of current density thanks to a very good heat transfer from..... Listed under: [Blog](#), [Circuits](#), [News](#)
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1547. [A White LED Night Light Design](#) BUT FIRST AN IMPORTANT NOTE: This project uses lethal voltages. If you are not experienced in working with lethal voltages, read this project, but don't build it. You only have one life, and AC power can take it from you very quickly, or leave you..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#), [LED Projects](#)
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1548. [Series Connected Voltage Boost Circuit for a Battery Operated LED Lantern](#) Photo. This is the test circuit -the basic driver is only two transistors, two resistors, the circuit was evaluated using a white LED, but when it was time to button it up and archive it, I replaced the expensive white LED with a cheap green..... Listed under: [AVR ATmega Projects](#), [Battery Projects](#), [LED Projects](#)
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1549. [FAST PRECISION LED DRIVER](#) What it is The circuit allows a precision regulated drive current to be set to drive an LED, and in response to a TTL level signal, the LED is switched on and off with rise and fall times of less than 500 nanoseconds and less..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1550. [Remote Controlled \(R/C\) Airplane LED Flasher using ATTINY12 microcontroller](#) Downloads Download the AVRStudio assembly source for the program: T12astrobe081028A Download the AVRStudio assembly source for the include file: T12astrobe081028A.hex Find updates at www.projects.cappels.org

Overview This was designed to flash a pair of LEDs to be mounted on the wing tips of a Parkzone Citabria..... Listed under: [AVR ATmega Projects](#), [LED Projects](#), [Radio Projects](#)

1551. [Single and Two Cell White LED Drivers Without Inductors](#) Three inductor-free circuits that allow a white LED or UV LED to be driven from one (1.5 volt) or two flashlight cells (3 volts total) are described. The circuits on this page are: The two cell (3 volt) circuit four transistors. The simple single cell..... Listed under: [AVR ATmega Projects](#), [Battery Projects](#), [LED Projects](#)

1552. [1 Watt White LED Power Supply Circuit for battery operation](#) Download FreePC project file, gerber and png copper and silk-screen: 1wattledbuck.zip Introduction I have some 1 watt warm white LEDs left over from a project and the application for them was obvious: A better battery operated lamp for use when the power fails, which it does..... Listed under: [AVR ATmega Projects](#), [Battery Projects](#), [LED Projects](#)

1553. [Attention-Getting Auxiliary Warning Light Flasher/Driver](#) Overview The circuit shown in Figure 1 is capable of driving an LED array requiring up to several amps with a burst of flashes before coming on until power is removed. It is intended to be used as an auxiliary warning light driver. The initial..... Listed under: [AVR ATmega Projects](#), [LED Projects](#), [Security - Safety Projects](#)

1554. [White LED Drive Circuit using Tiny microcontroller](#) Be Careful About Peak Current A note of caution: These LEDs are comparatively expensive, so I suggest putting a small resistor (1 to 10 Ohms) in series with the cathode of the LED and measuring the peak current as inferred from the IR drop using..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)

1555. [Low Capacitance Scope Probe Adapter](#) An adapter to allow low capacitance probing of high frequency circuits. Overview My boss, Dave, said "Just hold the probe close to the cathode lead." Dave had worked at Tektronix for many years, and his ability to make difficult measurements was second only to his..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)

1556. [AC Current Probe for Oscilloscopes](#) Overview I needed several current probes when designing the deflection circuits and high voltage supply for a computer display monitor, and the lab in which I was consulting only had one current probe, which I shared with the other four engineers on the project. We..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)

1557. [A Portable Precision Voltage Reference using microcontroller](#) Introduction It has been said that a man with one watch knows what time it is, but a man with two watches is never sure. The same can be said for a person who has more than one voltmeter. In my situation, I have several..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)

1558. [Simple LM335 Thermometer using microcontroller](#) Not too many parts. When a voltmeter is connected across the outside terminals of the output connector, its display reads out in degrees C. I've been fascinated by the LM335 for some time - maybe my obsession with stability finally gave way to my fascination with..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)

1559. [Minimum Mass Waveform Capture and Display using AT90S2313 microcontroller](#) A 128 x 64 graphic LCD is in the clear plastic box at the top. It is connected to the waveform capture and control unit in the green pencil box below the display. Downloads AVR Studio 3.5 ASSEMBLY SOURCE for the waveform capture controller. AVR..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)

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1560. [Broadband RF Field Strength Probe using Atmel AT90S1200A AVR controller](#) Download auto-zero assembly code This broadband probe has a small antenna (about a 15 cm length of insulated wire). Radio Frequency energy coupled to the antenna is detected and made available to drive millivolt level signals to the input of a DVM (Digital Volt Meter)..... Listed under: [AVR ATmega Projects](#), [Radio Projects](#)
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1561. [A Field Strength Meter Using A Biased Schottky Detector using microcontroller](#) Downloads Download the Download FreePC files in and the detector board layout png file in zipped forma: schottkydedtector080309 Find updates at [www.projects.cappels.org](#) Starting to do a little work at 330 MHz, I decided that my existing field strength meters were not adequate for for my..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1562. [Precision Audio Frequency Peak Detecting Probe using microcontroller](#) This is a handy companion for a digital voltmeter. Its allowed me to do a lot of things I used to use my oscilloscope for, and in addition it measures voltages to much greater precision.Using an LM324 quad op amp, this peak detector provides 2%..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1563. [Cellphone Operated Robot using ATmega16 AVR microcontroller](#) This Instructible is entered in the Category: 13 - 18 of the National Robotics Week Robot Contest MY URL-<http://avadhutelectronics.blogspot.com/> MY Email- avadhut.deshmukh@gmail.com Video :Cellphone Operated Robot Step 1 Component Required Component Required: IC1 - MT8870 DTMF decoder IC2 - ATmega16 AVR microcontroller IC3 -..... Listed under: [AVR ATmega Projects](#), [Phone Projects](#), [Robotics - Automation Projects](#)
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1564. [HF AC Millivoltmeter Adapter using microcontroller](#) Encased in a pencil box to keep the point-to-point wiring on the back of the board from shorting to wires and things on the workbench, the plastic case also holds the offset and gain post as well as the input connector and the switches that..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1565. [PHduino pH Meter Using Arduino](#) About This project describes an open software open hardware pH meter using an Arduino/Freduino board. In other words, this is an electronic circuit to be connected with a glass electrode pH sensor. It was possible by the idea from my friend Mr. Denis Vidal, the..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1566. [A Microcontroller Based Digital Lock-In Milliohmmeter using ATtiny2313 microcontroller](#) A milliohmmeter is just the tool for checking trace resistance on a printed circuit board, tracking down shorted traces, and measuring the contact resistance of a switch or connector. Its the kind of tool that would come in real handy occasionally, but not often enough..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1567. [Dutchtronix AVR Oscilloscope Clock using Atmega328 microcontroller](#) Hardware features: Connects to your analog scope in X-Y mode using BNC cables or probes (1x, 10x) Uses the Atmel AVR Atmega328p with 32KB flashmemory On board 5V power regulator for use with user provided wall adapter (8-15V DC center positive) Power plug (5.5mm outside)..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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1568. [I2C Tiny USB using ATtiny45 microcontroller](#) Attach any I2C client chip (thermo sensors, AD converter, displays, relais driver, ...) to your PC via USB ... quick, easy and cheap! Drivers for Linux, Windows and MacOS available. The i2c-tiny-usb project is an open source/open hardware project. The goal of i2c-tiny-usb is to..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)

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1569. [TRUE RMS-TO-DC Adapter For DVM using microcontroller](#) Specifications Input: AC, DC or AC+ DC to > 10 KHz Ranges: 200 mv, 2V, 20V, 200V, 600V full scale Accuracy: $\pm 1\%$, depending on divider resistor selection Crest Factor: 1 to 3, up to 5 with degraded accuracy Input impedance: 1 Megohm shunted by 20..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1570. [MMC/SD/SDHC AVR Interface using ATmega8 microcontroller](#) MMC/SD/SDHC card library This project provides a general purpose library which implements read and write support for MMC, SD and SDHC memory cards. It includes low-level MMC, SD and SDHC read/write routines partition table support a simple FAT16/FAT32 read/write implementation The circuit The circuit which..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Memory - Storage Projects](#), [Security - Safety Projects](#)
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1571. [A Pretty Good Wattmeter For Bench Use using microcontroller](#) Briefly, • AC True Watts using two quadrant multiplier • Optimized for 120 VAC (can be changed) • 15 watt full scale (can be changed) • Uses DVM floating on AC Neutral as display • Requires moderately high level of analog circuit skill • Very..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1572. [RS-232 Freq. Meter/Pulse Generator Based on Atmel ATtiny2313 using microcontroller](#) Simplicity in circuitry was the design direction. Zero mass (firmware only with no physical components) would be the ultimate achievement. This instrument doesn't have any front panel controls because the user interacts via an RS-232 terminal program at 9600 baud. I needed a frequency meter for..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1573. [Analog audio panel for PC using ATmega328 microcontroller](#) Have you ever struggled with audio settings in control panel in middle of a VoIP call? Or, wondered if the other guy can hear you properly? I have. My work requires great deal of remote conference calls using PC. The first thing I wonder always..... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)
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1574. [Preamp and 330 + MHz Prescaler for A Little More Serious Frequency Meter using microcontroller](#) Overview After finishing Little More Serious Frequency Meter I had planned to make a suitable preamp and prescaler for it, and set about to gather ideas and parts. I was inspired by one fellow who had built the meter and the 2 line X16 character..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1575. [A Little More Serious Frequency Meter using ATtiny2313 microcontroller](#) This is design for a frequency meter based on AVR microcontrollers. Maximum input frequency is specified to be 30 MHz in the multi-chip configuration, and in single-chip configuration, there are both 5 MHz and 10 Mhz versions operating with 10 and 20 MHz crystals, respectively..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1576. [HF/VHF/UHF TEST OSCILLATOR using microcontroller](#) Its built into a plastic project box with an aluminum cover (on the bottom). The controls are as follows: Large golden knob is coarse tuning, small black knob with a blue index stripe is fine tuning, the green LED is the power on indicator, the..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1577. [RF Inductance Meter using microcontroller](#) I needed a way to measure hand-wound RF inductors in my second lab, and since I would only be doing this occasionally, I didn't need anything fancy, and since once a friend finishes his AT90S1200-based design, I plan to make one myself, I figured I'd..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)

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1578. [LC Determination by Resonant Frequency Measurement using microcontroller](#) A well known L/C measurement circuit is pressed into service to make a bare bones measurement circuit. Download the AVRStudio assembly source: lgm031227l.asm. Download the AVRStudio hex file: lgm031227.hex. Left-to-right: The 5 volt regulator, the LM393 oscillator (a 0.047 uf capacitor is mounted on the..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1579. [Battery Checker Circuits using microcontroller](#) The "Battery Good" checker. When the button is pressed, the green LED will glow if the battery voltage is above the preset threshold. This version has a higher parts count than the "Battery Low" version, but a bonus is that it can drive an LED..... Listed under: [AVR ATmega Projects](#), [Battery Projects](#)
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1580. [A 1 Khz Digital Sine Wave Signal Source using ATmega8515 microcontroller](#) 1 Khz From a Quartz Crystal 1 V P-P Sine Wave Calibrated Output 1 KHz Square Wave Output 900 mv Inverted Sine Wave Output (Uncalibrated) Downloads Download the WINAVR main source for the 2313 version of the firmware: 2313sine.c. Download the complete zipped WINAVR project..... Listed under: [AVR ATmega Projects](#), [PWM Projects](#)
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1581. [A Noise Generator per IEC 268-1, IEC 268-5, and IEC 268-7](#) A related article on this site: True RMS-To-DC Adaptor for DVM Introduction This project came about when I needed to perform some reliability tests on some headphones according to IEC 268-7. The test requires operating the headphones at their rated input power for a number..... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)
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1582. [MAX038-Based Sweep/Function Generator With Markers using AVR ATtiny2313 microcontroller](#) Take Maxim's MAX038 function generator chip, add some frills, and you have a pretty nice tool for the bench. Downloads: Main Circuit Schematic Power Supply Schematic You can build this with switches instead of buttons if you don't want to use a micro controller. Here..... Listed under: [AVR ATmega Projects](#), [PWM Projects](#)
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1583. [An Isolated Adjustable Auto transformer using microcontroller](#) This is a means of testing AC mains operated circuits at variable AC voltages, and it also provides isolation to allow safe measurements of that circuit. A fused isolation transformer and a variable auto transformer connected together in a grounded, fire safe box. What..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)
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1584. [A 10 Bit LED Digital Panel Meter With Auto Ranging Based On The ATMEGA8](#) Downloads Download the AVRStudio assembly source for the program: M8DPM091109A.asm Download the AVRStudio hex file: M8DPM091109A.hex Find updates at www.projects.cappels.org Overview - A 10 bit digital panel meter for positive voltage only. - Input resistance: about 130k - Ranges: 0 to 10.20 volts and 0..... Listed under: [AVR ATmega Projects](#), [LED Projects](#), [Metering - Instrument Projects](#)
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1585. [Photocell Amplifier using microcontroller](#) This is a low frequency amplifier with an adjustable transimpedance that is intended to be used to take relative measurements of a wide range of photo currents. Not having many parts, this amplifier can be put together in a short amount of time. Find updates..... Listed under: [AVR ATmega Projects](#), [Solar energy projects](#)
-
1586. [A SIMPLE MANUAL CURVE TRACER using microcontroller](#) Measure current vs voltage or voltage vs current over limited range with good accuracy. This was built on a phenolic board which was mounted on a plastic box. The box serves two purposes: It holds the circuit off the workbench, and it makes a nice,..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)

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1587. [A Pretty Good LC Meter Based on the AVR using ATTINY2313 Microcontroller](#) Calculates and displays L and C from oscillation frequency using reference components. No relays, no range switching, a minimum of controls. And it is pretty accurate too! Note: After reading this article, check out the improved, modified An Even Better LC Meter... The 2 line..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1588. [An Even Better LC Meter Based on the AVR ATTINY861](#) An improvement over "A Pretty Good LC Meter." Enhanced capacitance self calibration, accurate operation without precision components, and only one micro controller. Downloads Download or view the WINAVR main source file: lcm.c Download the complete package including the LCD library: Even-Better_LCM.zip (LCD Library provided with..... Listed under: [AVR ATmega Projects](#)
-
1589. [GSM GPS module shield for Arduino](#) Shield for Arduino designed and based on the module GSM/GPRS SIM900 or the GSM/GPRS & GPS module SIM908, to make calls, voice and data connections via GPRS allow maximum customization and provide many configurations. With a microphone and a headset with a 3.5 mm jack (just the standard..... Listed under: [AVR ATmega Projects](#), [GPS Based Projects](#)
-
1590. [Interfacing DRAM Memory using AVR microcontroller](#) Is it possible to use DRAM with microcontroller AVR? Yes, it is possible. Jesperh has proved it. He hooked up a DRAM to a small processor (in this case an Microcontroller Atmel 8515), and handle the RAS/CAS sequencing and refresh in software. The type of..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
-
1591. [Ponyprog Circuit for AVR & PIC16F84 using microcontroller](#) Comments: All resistors are 1/4W.The circuit is powered by 9...15V DC or AC. When In Circuit Programming (ISP) connectors are used, is possible the programmer to be powered from target's power source. Diodes D2 and D6 protect the regulator LM7805, when target's power is used..... Listed under: [AVR ATmega Projects](#)
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1592. [Ponyprog Circuit for ATMEL'S AVR using microcontroller](#) The ATMEL AVR programmer works with the Windows program "Ponyprog" which works under 95, 98, XP. On board the AVRs that can be programmed are those in the schematic. For other members of AVR family or the rest programmable ICs that Ponyprog can program, there..... Listed under: [AVR ATmega Projects](#)
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1593. [EPROM adapter for ATMEL 89 Series Flash Microcontroller Programmer](#) Devices The EEprom programmer software supports the following devices. 28C16 28C256 28C17 29C256 28C64. Hardware Diode D1 and resistor R1 provide the VDD isolation when programming the 24 pin devices. The jumper J3 must be shorted for 24 pin devices, and open circuit for 28..... Listed under: [AVR ATmega Projects](#)
-
1594. [PCB Exposure Box with Countdown timer using ATMEGA8 microcontroller](#) Tired of spending hours and hours in wire soldering? Do your circuits look ugly and you are looking for a way to produce professional-like PCBs? Then you had better try photoetching. And the first step to do that is to have the right equipment that..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
-
1595. [89Sxx Development Board using microcontroller](#) Introduction of 89Sxx There are some 89Sxx development board, here is another one. I have designed this single side development board to be used as a tool for learning MCS-51 Microcontrollers, and for easy microcontroller project development. The 89Sxx development board features : 89Sxx 40-DIL based..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#)

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1596. [Wireless Coupler Terminal Interface using AVR microcontroller](#) This is a Minimum Mass Wireless Coupler that connects a terminal, or PC running terminal software, to other Minimum Mass Wireless devices by means of a 1200 baud data channel at 181.818 kHz. The basic Minimum Mass Wireless Coupler technology is described and links to..... Listed under: [AVR ATmega Projects](#)
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1597. [RF Field Strength meter using AVR microcontroller](#) The hot melt glue that covers the circuit serves multiple purposes: It helps to keep the temperature even among the three transistors (to minimize thermal drift), it protects the components from physical damage, and it holds the battery holder on the board. As I used..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1598. [Digital Telemetry using ATmega8 microcontroller](#) The ATmega8 microcontroller-based Low-Cost Telemetry Device (LTD) is an efficient telemetry keyer. The LTD measures the voltage levels of up to four analog channels via its on-chip 10-bit ADC, converts the measurements to numbers, and then sends the data in Morse code to an external..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1599. [LC Resonant Frequency Meter using AVR microcontroller](#) A well known L/C measurement circuit is pressed into service to make a bare bones measurement circuit. Download the AVRStudio assembly source: lgm031227l.asm Download the AVRStudio hex file: lgm031227.hex Left-to-right: The 5 volt regulator, the LM393 oscillator (a 0.047 uf capacitor is mounted on the..... Listed under: [AVR ATmega Projects](#)
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1600. [AVR LED RF Field Strength using microcontroller](#) Useful as a transmitter tune-up meter or an RF sniffer, this is an RF field strength indicator that is loosely based on the Broad Band RF Field Strength Probe, described elsewhere. It detects RF via a square law detector, basically its a crystal set with..... Listed under: [AVR ATmega Projects](#)
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1601. [Control Relay Card with USB port Atmel using Atmega8 microcontroller](#) Once upon a time, though a circuit of this type of calling Searches Banim made with Microchip PIC Series devreydi 6 pcs rörele control pcb computer program code can be done via usb port usb drive and 9-12 volts AC regulated power supply section of..... Listed under: [AVR ATmega Projects](#)
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1602. [Temperature Sensor Thermometer using AT89C51 and DS1621 microcontroller](#) DS1621 temperature sensor circuit digital thermometer to tell if using. Operation of the circuit is simple, as are as follows: temperature sensor from the numeric value being sent to the microcontroller and the microcontroller using the I2C serial communication protocol, this value will more basiyor.Biraz If the LCD tomicrocontroller interprets..... Listed under: [AVR ATmega Projects](#), [Sensor - Transducer - Detector Projects](#), [Temperature Measurement Projects](#)
-
1603. [About Atmel and Combination Lock Application using AT90S2313 microcontroller](#) Microcontroller Microcontroller 's (MCU) is a kind of CPU (CPU) can be seen as. MIB MCUs from slower and less capable of addressing memory, but they are designed for the implementation of real-time control problems both cheaper and easier to use. The major difference between CPU and..... Listed under: [AVR ATmega Projects](#), [Security - Safety Projects](#)
-
1604. [Led Animation Circuit with PC Connectivity using AT90S2313 microcontroller](#) Animator is a device, rather 5 × 16 matrix LED , which are used to display simple animation. Initially, the device serves to something completely different and it was controlled directly from the parallel port for the program is written in Pascal. The idea has proved to be a..... Listed under: [AVR ATmega Projects](#)

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1605. [Color Sensor Circuit with AT89S52 ADC0808](#) This color of the surface color to red when you bring to the surface, a sensor to read the LDR, yellow, blue.Red, yellow and blue lights in different surface finishes as a different yansıtmalarını works by taking a foothold. Will be reflected from the surface to..... Listed under: [AVR ATmega Projects](#), [Sensor - Transducer - Detector Projects](#)
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1606. [Serial interface with 2X16 LCD display using ATmega8515 microcontroller](#) The 10k potentiometer, just above the ISP connector near the lower middle of the board, is used to adjust the display contrast according to your vertical viewing angle. DOWNLOADS ATTINY2313/AT90S2313 AVRStudio assembler source. LDCbutons040904Ca.htm ATTINY2313/AT90S2313 AVRStudio assembler source. UPDATED FOR COMPATIBILITY WITH NEWER VERSIONS OF..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1607. [G1216B1N000 dot graphics display using AT90S2313 microcontroller](#) Download Assembler source code I was looking for an LCD display that I could use to display waveforms on the workbench. The selection criteria for the display module itself was straight forward: 1. Dot graphic with sufficient resolution to display a simple waveform, 2. Available..... Listed under: [AVR ATmega Projects](#)
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1608. [LCD Date Time Application using AT89S52 microcontroller](#) This application can be installed at the same time an alarm indicating the date and time produced by Atmel with 8051 -based microcontroller AT89S52 tasarlanmıştır. Uygulamamızın using the Keil compiler using the C programming language using codes written in different types of intervention. Proteus simulation..... Listed under: [AVR ATmega Projects](#)
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1609. [Dot Matrix Display Applications using AT89C2051 microcontroller](#) 4 Piece AT89C2051 micro-controller matrix display has a project carried out with proteus isis simulation and has asm hex code files Atmel AT89C2051 • Compatible with MCS ® -51Products • 2K Bytes of reprogrammable Flash Memory - Endurance: 10,000 Write / Erase Cycles • 2.7V to 6V Operating..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1610. [100 MHz RF oscillator using ATtiny12 microcontroller](#) I needed a frequency reference for tuning up the RS-232 to 100 MHz RF desktop channel adapter elsewhere on this site, when I found this Saronix crystal oscillator in my junk box. A few minutes with AVRStudio produced an ATtiny12 to make a tone -..... Listed under: [AVR ATmega Projects](#)
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1611. [Atmel Test Card using ATmega32 microcontroller](#) PCB and the schema (sch) P-CAD 2004 Schematic drawings prepared by V18.00.2690 also c languagecode through the test has been prepared with an alternative link. ATMEGA-32 Development Board Power 7V to 12V (4mm sockets) protected against reverse polarity Visualization by 8 LEDs Statements of eight..... Listed under: [AVR ATmega Projects](#)
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1612. [Computer connected Flower Water Circuit using ATmega8 microcontroller](#) Interestingly, I understand a project is determined by the required hours of irrigation irrigation data via a computer data exchange rs232 com port are made out of a project source code and is not easily implemented scheme, For more detail: Computer connected Flower Water Circuit using..... Listed under: [AVR ATmega Projects](#)
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1613. [Multimeter with Atmel using Atmega8-16pu microcontroller](#) Atmega8 Multimeter "Multimeter" was the only title to einfel to me first. Voltmeter (only positive DC) 0.00 - 9.99 volts and 10.0 - 30.0 volts with automatic range switching. Frequency counter 0 .. 7999 MHz (Theoretische) with automatic Switching time Basis Logic tester L - prohibited area..... Listed under: [AVR ATmega Projects](#)

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1614. [Decoding 4 buttons with two I/O's on AVR using ATtiny12 microcontroller](#) Just the solution for AVR applications in which I/O is tight, such as the ATtiny12. This should work well on other kinds of controllers that have independently controlled I/O direction registers, such as PIC and 6805 controllers. This is a solution was devised for those..... Listed under: [AVR ATmega Projects](#)
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1615. [EEPROM Driver for AVR with RAM using ATtiny15 microcontroller](#) Download the test program with driver: i2cm030710F.asm I had been putting off writing a driver for some 24LC64 and 24LC256 EEPROMS I was thinking about using, when I came across a temperature logger application written by Sean Ellis. The Temperature logger was posted on on www.avrfreaks.net..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1616. [Analog Multiplexer using AVR microcontroller](#) This technique uses digital I/O pins to multiplex analog voltages into an analog input on the microcontroller. The method is most suitable for signals that do not need to be sampled frequently and it may be extended to accommodate a large number of inputs, though..... Listed under: [AVR ATmega Projects](#)
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1617. [PWM Waveform Capture using AVR microcontroller](#) Described are the waveform capture method, example firmware and hardware designs. This material formed the basis of an article that was first published in the October, 2003 issue of Circuit Cellar magazine. The only components added to the operating Atmel AT90S2313 circuit (one capacitor and two..... Listed under: [AVR ATmega Projects](#), [PWM Projects](#)
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1618. [1 KHz Synchronous Detector using AVR microcontroller](#) Downloads: Assembler source deco030511C.asm AVR Studio hex file is deco030511C.hex Overview This circuit employs a synchronous demodulator to separate a 1 KHz signal from noise and measures the amplitude of the 1 kHz signals once a second at about 60 microvolts per count..... Listed under: [AVR ATmega Projects](#)
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1619. [Morse Code Alarm Clock using ATtiny2313 microcontroller](#) Morse Code Alarm Clock Modification (Almost) Trivial application of an AT90S2313 or ATtiny2313 in an alarm clock to change the alarm from "BEEP BEEP BEEP BEEP BEEP BEEP BEEP BEEP..." to "WAKE UP" in Morse code. This was designed in response to a request and..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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1620. [89C517 Segment Display using the Digital Time](#) Data from Port0 7447 entegresinde and 7-segment displayreaches ' s.7447 - integration mikrodenetleyiciden from binary code to show in the 7 segment displayis used. So when it comes to 0000 a, b, c, d, e, f LEDs lights up g edi fireproof.7 segment displayis connected in parallel to each other ' s.Using the same..... Listed under: [AVR ATmega Projects](#)
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1621. [8 Channel PWM using AVR microcontroller](#) The assembly code given here was written to see what it would take to make an AT90S1200 generate 8 channels of proper PWM. In this case, by proper, I mean with the maximum high frequency content consistent with the needed duty cycle and give clock..... Listed under: [AVR ATmega Projects](#), [PWM Projects](#)
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1622. [AVR Programmer with ATmega8-16](#) About AVR Programmer This simple AVR Programmer will allow you to painlessly transfer hex programs to most ATMEL AVR microcontrollers without sacrificing your budget and time. It is more reliable than most other simple AVR programmers available out there and can be built in..... Listed under: [AVR ATmega Projects](#)
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1623. [AT89C52 DS1302 DS18B20 LCD On Time-Temperature](#) Original Atmel micro controllers to use the at series with a good example of ds1302 ds18b20 circuit 2 × 16 lcd indicator can be set with 4 buttons on The first button press and a bout at 2 minutes (time) setting with the buttons 2 and..... Listed under: [AVR ATmega Projects](#)
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1624. [Capacitance Meter using AVR microcontroller](#) Digital Capacitance Meter This is a simple capacitance meter which can measure capacitance value easy. There are some measurement methods for capacitance, at one time the capacitance was measured with a impedance bridge or a dip meter. Recently typical capacitance meters can measure capacitance and..... Listed under: [AVR ATmega Projects](#)
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1625. [Atmel Avr Project Circuit Archive 360 MB using ATmega8 microcontroller](#) I collected a lot of site in the internet for various atmel avr projects will not work with the idea of a day's archive is a grown up pretty. Atmel will be a solid resource for people interested in the firm. Atmel AVR Project Circuit Archive; Listed under: [AVR ATmega Projects](#), [Memory - Storage Projects](#)
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1626. [PC Temperature Meter using ATtiny15 microcontroller](#) Port-Powered Temperature Meter This is a four-channel temperature measurmet adapter that works without external power supply. It will suitable for measuring temperature and logging its data with a PC. The circuit diagram is very simple and no adjustment is required, everybody will able to build..... Listed under: [AVR ATmega Projects](#), [Sensor - Transducer - Detector Projects](#), [Temperature Measurement Projects](#)
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1627. [Computer controlled marquee at90s2313 74hc595](#) With all the details on a circuit different from that to which the shared a marquee computer control program atmel at90s2313 source software image format you have the source schema and pcb, orcad drawings. Marquee on a circuit different from that to which Marquee in..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)
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1628. [Frequency counter using AVR microcontroller](#) Universal Counter The frequency counter is the most popular instrument in the home maid instruments. I think that the reason why it is built widely is: it can be built easily because it is digital circuit, it is generic measurement and many construction kits are..... Listed under: [AVR ATmega Projects](#)
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1629. [8 channel LCD Teperature meter using microcontroller](#) Description This is the fully featured, jammed packed temperature readout unit. I can measure temperature from up at 8 DS1820 digital temperature sensors all on the same 1-wire bus. That's right only 3 wires are needed to go to all the temperature sensors, GND, VCC..... Listed under: [AVR ATmega Projects](#), [LED Projects](#), [Temperature Measurement Projects](#)
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1630. [Packet Radio using AVR microcontroller](#) Here is some experimental hardware and software to transmit and receive AX.25 packets. It is essentially a PIC-E clone designed around a Atmel AT90S2313 with a few extra bells and whistles. I had picked up a couple of MXCOM MX-614s at the TAPR display (l..... Listed under: [AVR ATmega Projects](#), [Radio Projects](#)
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1631. [Nixie Clock with AVR using ATmega48 microcontroller](#) Introduction: This is the hardware and source code for an Atmel ATmega48 based four digit Nixie Tube Clock. Description: This was my second Nixie clock project. I wanted something a little smaller / cheaper / simpler then my rather large B-7971 clock. I will post..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)

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1632. [Atmel AT89C2051 hardware keyloggers circuit with using AT89C2051 microcontroller](#) Atmel On the PC keyboard PS 2 AT89C2051 keyloggers circuit connection cable connects to the circuit between what is written in the wake of the program running on the pc upon AT24C512 writes eeprom eeprom reading with KeeLog has decided to release an early version of..... Listed under: [AVR ATmega Projects](#)
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1633. [AVR terminal for serial port using TSOP1738 microcontroller](#) description (hardware) Above and below you can see the terminal. The LCD display is represented by the connector X1. It has a HD44780 compatible LCD controller and I'm using the 4-bit interface to send data to the LCD controller. The LED's are multiplexed. I've seen..... Listed under: [AVR ATmega Projects](#)
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1634. [Atmel atmega projects l35 heat time display keypad using ATmega microcontroller](#) Atmel ATMEGA series of three projects are made with micro-controllers delivering projects bahramelectronic.ir Thank you brother Bahram's administrator. 1 - ATMEGA16 LCD display temperature measurement (LM35) 2 - ATmega8 application of the keypad display with 7 segmet 3 - ATMEGA32 with a thermometer (LM35) hours. For more detail: Atmel atmega projects l35 heat time display..... Listed under: [AVR ATmega Projects](#)
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1635. [Atmel Bascom avr 8051 project, the circuit archive using AT89S8252 microcontroller](#) Atmel series (AT89C2052, AT90S2313, AT89S8252, etc.). wide range of PIC microcontrollers with an archive of high-quality circuit atmel version you can find a lot of. Usb, alarm, lcd, nokia 3310, nokia 6100, display, LED, sms, telephone and so on. schema files to Protel PCB circuit has a lot of..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1636. [Heart of LEDs using microcontroller](#) One of the requests we received after publication of the Christmas Star was "can you do different shapes?" Well, with Mother's Day coming up soon, we thought a heart would be appropriate. Now you can have something different to give to that special Mum or..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1637. [Atmel atmega128 clock ds1307 tda5410 hard disk using atmega128 microcontroller](#) Previously called " Corrupted HDD Evaluate under the heading "corrupted hard disks to evaluate the application, I mentioned a couple of hours on the web projects I had used it with emery hardisk hours now, but quite professional and all of the shared resources, shared project Circuit atmel ATMEGA..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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1638. [Lux meters attiny26-16 light measurement circuit using attiny26 microcontroller](#) Lux meter circuit atmel attiny26-16 microcontroller based on the value of the LED displays on the display lux with LEDs placed on 2sk1061 MOSFETs. Interestingly, all of the source files in an application (pcb, diagrams, code) calibration circuit is shared also provided information to Lux meter circuit diagram: The Lux..... Listed under: [AVR ATmega Projects](#)
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1639. [Atmel avr usb programmer using ATMEGA8 microcontroller](#) A lot of programmers are growing for a USB programmer for Microchip PIC controllers are 😊 Atmel avr usb programmer circuit atmelcilerde not idle in addition to the USB communication does not require a material ATmega8 ATMEGA48 can be done with either the source code of software..... Listed under: [AVR ATmega Projects](#)
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1640. [LCD Car Accelerometer using microcontroller](#) Introduction The circuit is drawn for measurement of acceleration from -1000 mg until + 1000 mg. It can be placed in kantra'n the car and be supplied from the sheath of electric lighter. The circuit includes one indicative LED and a screen LCD. Description The..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#), [Sensor - Transducer - Detector Projects](#)
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1641. [AVR LCD Microcontrolled Oscilloscope using ATmega32 microcontroller](#) Features Frequency measurement Voltage input Power supply Liquid Display Crystal Measurement display area Information displaying area: Auto triggering 10Hz - 7.7 kHz (firmware 2.0 and above) 24V AC / 30V DC 12V DC 128x64 pixels 100x64 pixels 28x64 pixels (Used from firmware 2.0 and above) Auto Introduction A..... Listed under: [AVR ATmega Projects](#)
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1642. [VGA Monitor adaptor using AVR microcontroller](#) Background of the project. Several months ago I tried to connect a microcontroller system to a VGA monitor to output data in the form of text. I was surprised to find little on this subject on the internet, to assist me in achieving this goal..... Listed under: [AVR ATmega Projects](#), [Video - Camera - Imaging Projects](#)
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1643. [Midi Generator using ATtiny26-8PI microcontroller](#) This circuit based on ATtiny26 but it could be anyone microcontroller of AVR family. Produce stable one MIDI tone and you can change it by press some keys like to change midi channel 0-15 , velocity 0-127, pitch 0-127. It is start from center tone..... Listed under: [AVR ATmega Projects](#)
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1644. [Universal Serial Bus \(USB\) Connectors Pinout](#) All Types of USB Pinout Diagrames Universal Serial Bus connectors. These USB connectors let you attach mice, printers and other accessories to your computer quickly and easily. The operating system supports USB as well, so the installation of the device drivers is quick and easy, too. Compared to other ways of..... Listed under: [Blog](#), [Circuits](#)
-
1645. [USB AVR programmer using ATtiny2313 microcontroller](#) Introduction. Nowadays, USB is the most popular connection between PC and peripherals such as AVR programmers, printers, scanners etc. For that reason I had to modify my old serial AVR In-System-Programmer (ISP) to work with USB connection. You can say, "use a USB to Serial adaptor to..... Listed under: [AVR ATmega Projects](#)
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1646. [10 Bit analog to digital converter using ATtiny26 microcontroller](#) Study the Analog to Digital capabilities of Atmel ATtiny26. This tiny but mighty IC is really a miracle. One special thing is the internal 10-inputs multiplexed ADC circuit which can covert analog voltages to bytes. This check circuit uses only 3 inputs. Of course you..... Listed under: [AVR ATmega Projects](#)
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1647. [SMS control 4 way remote control relays using ATtiny2313 microcontroller](#) Introduction With this circuit we can control up to 8 devices (4 devices in our example project), by sending a specific SMS message with any mobile phone. It's very useful in the case that, at the place we have the devices, we have not a wired..... Listed under: [AVR ATmega Projects](#), [Phone Projects](#)
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1648. [RF 2 channel remote control 418MHz using AVR microcontroller](#) Introduction How many times you needed some remote control to handle some electric device ? Many times. There are lot of remote controls like infrared, RF, SMS (like my other circuit) and more. The basic small-range remote controls are 2, Infrared and RF (Radio Frequency)..... Listed under: [AVR ATmega Projects](#)
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1649. [RCEN fuse programmer using AT90S1200A microcontroller](#) Introduction: As you know the AT90S1200 microcontroller includes an internal RC oscillator that is disabled by default. If you want to change it (enable or disable) you must to program it with parallel mode. The most programmers work on serial mode that is not possible to program..... Listed under: [AVR ATmega Projects](#)

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1650. [80x32 LED matrix display using ATmega32 microcontroller](#) The LEDMATRIX interface News: Now with lcd4linux driver I recently purchased 10 SLM1608 (SLM1606) LED matrix display units from Ebay (you might also contact the seller directly at op16@gmx.de). These are 16x16 LED matrix units with a green and a red LED per pixel allowing..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1651. [i2c interface to USB interface using attiny45 microcontroller](#) Attach any I2C client chip (thermo sensors, AD converter, displays, relais driver, ...) to your PC via USB ... quick, easy and cheap! Drivers for Linux, Windows and MacOS available. The i2c-tiny-usb project is an open source/open hardware project. The goal of i2c-tiny-usb is to..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1652. [Acceleration sensing USB interface using Atmega8 microcontroller](#) Contents The hardware The USB interface Calibration PC assisted calibration Self calibration Software Drivers Joystick drivers Maemo drivers The input event subsystem Setting permissions Enigma FAQ Downloads The TiltStick is a small acceleration sensing device in form of a USB stick. It's using a two..... Listed under: [AVR ATmega Projects](#), [Sensor - Transducer - Detector Projects](#)
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1653. [Wireless Lan for AVR microcontrollers](#) The complete WLAN solution for AVR and other CPUsThe page is about equipping an Atmel AVR microcontroller based system with a Prism WLAN interface. This document is intended for people that already have experiences with the AVR microcontrollers and teaches them how to add a..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#)
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1654. [AVR Compiler toolchain for MAC using ATmega8 microcontroller](#) The following instructions are from early 2007 and are pretty outdated by now. They are still here for reference, but they are not maintained anymore and very likely won't work with recent versions of MacOS anymore. After having developed software for the AVR under Windows..... Listed under: [AVR ATmega Projects](#)
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1655. [Java virtual machine for the Atmel AVR ATmega8](#) The NanoVM is a java virtual machine for the Atmel AVR ATmega8 CPU, the member of the AVR CPU family used e.g. in the DLR Asuro robot, manufactured by AREXX engineering. With the NanoVM, the Asuro can be programmed in the popular Java language using..... Listed under: [AVR ATmega Projects](#), [CNC - Printing Machines Projects](#)
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1656. [EPROM adapter for ATMEL 89 Series Flash Microcontroller Programmer Ver 2.0](#) Devices The EEprom programmer software supports the following devices. 28C16 28C256 28C17 29C256 28C64 Hardware Diode D1 and resistor R1 provide the VDD isolation when programming the 24 pin devices. The jumper J3 must be shorted for 24 pin devices, and open circuit for 28..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1657. [Digital Stop Watch with ATmega8 using microcontroller](#) In this tutorial we will make a "Digital Stop Watch" using an AVR ATmega8 Microcontroller. This will help you learn many concepts like Multiplexed Seven Segment Display Interfacing Using AVR Timers Using Interrupts And many others too. The code is written in C language for..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1658. [Relay Timer with ATmega8 AVR MCU](#) Timer are widely used in industrial and domestic application for automating tasks. Microcontrollers can be used to design versatile and accurate timers with ease. Here I present a simple timer that can be used to turn on/off a load after user specified time. The Timer..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)
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1659. [Remote Controlled Fan Regulator using ATmega8 microcontroller](#) This device can be used to remotely control the speed of an AC fan and to switch it on or off. The remote control is a cheap NEC Format remote, usually supplied with small DVD players. Three buttons are used to command the circuit. The..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)
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1660. [ATmega8 based RPM Meter](#) How you can make a simple RPM Meter using AVR ATmega8. The RPM meter we will be making is a contact less type, i.e. it measures the RPM of a rotating object without actually making any contact with it. An IR reflectance sensor will be..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1661. [ATmega8 Based Smart Code Lock](#) Here is a project for beginners using Atmel AVR ATmega8. The project uses some techniques that are very useful for designers to learn and utilize. Alphanumeric LCD Module Interfacing. 4x4 Keypad interfacing. PWM Control of LED (Used to dim the back-light of LCD, like in..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1662. [ATmega8 Based Multi channel IR Remote](#) Today I will present an easy to build Multi channel IR Remote control system. It can control heavy loads (Up to AC 220V 6 Amps or smaller) with a touch of remote control. A total of 5 devices can be controlled from a distance of..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1663. [AVR RGB LED and Sound Show using ATmega168 microcontroller](#) The tutorial is well planned and executed. I really liked the RGB LED and Sound show given at the end. I will try it and tell how it works. Till then you can read the rest of the article here. Working with Atmel AVR Microcontroller..... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)
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1664. [Visualize ADC data on PC Screen using USART AVR Project using microcontroller](#) ADC (Analog to digital converter) is a commonly used peripheral. We use it everyday to interface with several analog sensors. Many times a nice visualization of ADC data is required during learning about new sensors. For example you just bought a analog sound sensor, and..... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)
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1665. [PC Controlled Robot using ATmega32](#) In this tutorial we will discuss a simple PC controlled robot. The Robot PC link will be a RS232 serial line. The robot will have only five commands. Move forward (RS232 char 'F' or 'f') Move backward (RS232 char 'B' or 'b') Turn Left (RS232..... Listed under: [AVR ATmega Projects](#), [Robotics - Automation Projects](#)
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1666. [AVR ATmega8 Project LED Moving Message Display using ATmega8 microcontroller](#) An interesting project that can be done using Microcontroller is a LED message scroll er. It teaches you a quite lot of things. So I decided to make one. I made the hardware design modular and cascadeble That means the whole display is made up..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#)
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1667. [PS2 Keyboard Interface with AVR MCU using ATmega8 microcontroller](#) A PC keyboard is an old and trusted human machine interface. Most peoples are familiar with it. When a text entry is required it is the best method. If we can interface the PC keyboard with an AVR MCU we can create a whole lot..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)

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1668. [Line Following Robot using AVR ATmega8](#) One of the most basic autonomous robot you can build is a line following robot(LFR). This type of robot is run over a white surface which has an arbitrary path drawn over it by using black paint. The task of the robot is to run..... Listed under: [AVR ATmega Projects](#), [Robotics - Automation Projects](#)
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1669. [SMS Based Voting System – AVR GSM Project using ATmega32 microcontroller](#) Hi friends ! Here I am showing a microcontroller based project called the "GSM Based Voting System". Using this system you can ask your users to vote for any of the four options. Four available options are identified by a letters 'A', 'B', 'C' and..... Listed under: [AVR ATmega Projects](#), [Phone Projects](#)
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1670. [Interfacing TCS3200 Colour Sensor with AVR ATmega32](#) Detecting colour of an object can be an interesting and useful electronic application. It can be realized using a colour sensor like TCS3200 and a general purpose microcontroller like AVR ATmega32. TCS3200 Colour Light to Frequency Converter Chip TCS3200 chip is designed to detect the..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1671. [AVR Music Player with Alarm Clock using AT90USB1286 microcontroller](#) This music player project built based on AT90USB1286 microcontroller. It uses VS1033D music decoder which integrates music file decoding and digital-to-analog output. Other main part including 16x2 character LCD display, ST7066/HD44780 compatible, using 3.3V instead of 5V and DS1307 real time clock. By finishing this..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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1672. [AVR Power Usage Logger using ATmega168 microcontroller](#) This ATmega168-based project monitors household power usage and logs it to an SD card. Signals from voltage and current detectors amplified LMC6484AIN quad op-amp and then AVR microcontroller computes the power consumption using the formula $P=V \times I$. The voltage and current are each sampled at 9615..... Listed under: [AVR ATmega Projects](#)
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1673. [Energy Monitoring Transmitter using Atmega328 microcontroller](#) This energy monitoring transmitter, known as emonTx, is an Atmega328-based small wireless energy monitoring node. It also fully compatible with Arduino IDE. EmonTx is designed to take inputs from multiple CT sensors, optically from a pulse-output utility meter and from multiple one-wire temperature sensors. The..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#)
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1674. [Wireless Human Health Monitor using ATmega644 microcontroller](#) The aim of this ATmega644-based project is to build a portable device implementing wireless technology and taking full advantage of the wide-spread Internet to provide a convenient solution to monitor human health. The health information acquired on the portable side transmits to the server wirelessly..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#), [Medical - Health based Projects](#)
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1675. [AVR Digital Hum Nuller using ATmega168 microcontroller](#) This ATmega168-based digital comb filter built to clean a realtime audio signal. It can remove the ubiquitous 60Hz (50Hz in some countries) hum noise caused by power lines and household electrical wiring. Since the noise is not strictly sinusoidal it is necessary to remove all..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1676. [DC Servomotor Controller System Meter using ATtiny2313 microcontroller](#) The ATtiny2313-based project is an experiment on the closed loop DC servomotor control system (SMC) by Elm Chan. It can be used for practical use with/without some modifications. The closed loop servo mechanism requires real-time servo operations, such as position control, velocity control and torque..... Listed under: [AVR ATmega Projects](#), [Motor Projects](#)

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1677. [Low Picofarad Capacitance Meter ATtiny2313 microcontroller](#) This little instrument, named as Pico C, can be used to measure capacitances down to fractions of a picofarad. It built based on ATtiny2313 microcontroller. It has range: <1 pF to 2000 pF (guaranteed); 2500 pF possible and resolution: 0.1 pF. To read the result,..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1678. [Ear Trainer using ATmega644 microcontroller](#) The goal of project is to helps people develop the musical skills of perfect pitch and relative pitch. Push buttons allow the user to navigate a graphical user interface (GUI) on a liquid crystal display (LCD). In perfect pitch training mode, a note is played..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1679. [AVR Data Logger with MicroSD using ATmega32 microcontroller](#) This project shows you how to store data into microSD card in files with FAT32 format using microcontroller AVR ATmega32. The MCU receives sensor's data through internal ADC. You can connect up to 8 different sensors to the system. In this project, Dharmani uses one..... Listed under: [AVR ATmega Projects](#), [Sensor - Transducer - Detector Projects](#)
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1680. [AVR Code Debugger using AVR microcontroller](#) AVR Code Debugger is useful tool to help you debug code without require resource in the MCU you are debugging. It only use 1 I/O pin, and is connected to a serial port from the host PC. Using a VT100 terminal to capture the output..... Listed under: [AVR ATmega Projects](#), [RTOS - OS Projects](#)
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1681. [Electric Spinning Wheel using ATmega8 microcontroller](#) The Electric Eel Wheel is a smart electric spinning wheel which helps you spinning the fiber of your choice into yarn easily instead of traditional wheel. This Electric spinner is lighter and smaller, making it easier to take your spinning with you. You can control..... Listed under: [AVR ATmega Projects](#), [Motor Projects](#)
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1682. [Atmega Rechargeable Battery Capacity Tester using ATmega168 microcontroller](#) This ATmega168-based battery tester allows you to find out the overall capacity of the rechargeable battery. It can shows how long will a battery last from the time it's fully charged to the time that the "low battery" indicator comes on your device. It can..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1683. [Simple Automatic Battery Discharge Analyzer using ATmega48 microcontroller](#) The project allows you to analyze characteristics of unknown/junk battery especially the capacity and variation of the voltage on discharge. It is controlled with a PC via a serial port. No external power supply is required because it is powered by RS-232C signals. It uses..... Listed under: [AVR ATmega Projects](#), [Battery Projects](#)
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1684. [AVR Security Keypad Lock using ATtiny2313 microcontroller](#) The Security Keypad Lock Project is a basic access control system based on ATtiny2313. It can be modified to protect just about anything. The "Code Lock" ability will allow the rightful user to deploy the platform to any property that requires simple password-protection. The "AVR"..... Listed under: [AVR ATmega Projects](#), [Security - Safety Projects](#)
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1685. [Speaking Calculator using AVR ATmega88 microcontroller](#) This Speaking Calculator project is an interesting device built just by three chips that can be very useful to blind people. The system has four basic operations (addition, subtraction, multiplication and division), and the functions: clear all, change of sign (+/-), inverse (1/x), square root..... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)

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1686. [Handy Password Managing System, Lord of the Keys using AVR ATmega168](#) The Lord of the Keys is password managing system that able to store many usernames and passwords inside a Java Card™ smart card (one of the most secure methods to store confidential information). Whenever a dialog box appears in an application or web browser requesting..... Listed under: [AVR ATmega Projects](#), [Security - Safety Projects](#)
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1687. [AVR LED Candle using ATtiny85 microcontroller](#) This LED candle is built to mimic the look of a traditional candle without the dangers associated with an open flame. It uses high brightness LED and is controlled by ATtiny85. It could be useful as movie props where you cannot afford to have a..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)
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1688. [Mini Logic Analyzer using ATmega8 microcontroller](#) Mini Logic analyzer is ATmega8-based electronics tool that can be used to watch and analyze logic transitions 0 or 1 of a digital data signal. It comes with Nokia 3310/5110 LCD to display signal and it has 4 channel inputs. A digital data signal can..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1689. [Clever Clapper using ATtiny2313 microcontroller](#) A "Clapper" is a device that will turn on or off an AC appliance that is plugged into it, such as a lamp or fan when it "hears" you clap twice in approximate succession. Pete has built a Clever Clapper with various task. If user..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1690. [AVR Ultrasonic Spheroid Levitation Device using ATmega16 microcontroller](#) Introduction The goal of this project was to design and build a gaming device capable of levitating a ping pong ball at varying heights based on the proximity of the user to the device, utilizing a multi-tasking kernel on the ATmega16 platform. The project incorporates..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1691. [AVR Based Mobile Phone using AVR ATmega128A microcontroller](#) AvrPhone is ATmega128A-based simple mobile phone with touch screen and SIM100S GSM module. The display uses 2,4" LCD with a resistive touch screen and ILI9325B driver (16 bit parallel bus). The LCD breakout board contains SD card slot and XPT2046 touchscreen controller. They both are..... Listed under: [AVR ATmega Projects](#), [Phone Projects](#)
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1692. [AVR Wide Range LC,F, ESR Meter using AVR ATmega88PA-PU microcontroller](#) LCFesR meter is a precise, wide range meter that can measure inductivity (L), capacity (C), frequency (F) and equivalent series resistance of a capacitor in-circuit (ESR) based on AVR ATmega88PA-PU microcontroller. It can be easily built with homemade one or double-faced PCB and available electronic..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1693. [AVR Touchpad Handwriting Recognition using ATmega644 microcontroller](#) This ATmega644-based project implements a touchpad input system which takes user handwriting input and converts it to a printed character. Currently, the device only recognizes the 26 letters of the alphabet, but it could be easily generalized to include any figure of completely arbitrary shape,..... Listed under: [AVR ATmega Programmers](#), [AVR ATmega Projects](#), [LCD Projects](#)
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1694. [AvrX, Real Time Kernel using AVR microcontroller](#) AvrX is a Real Time Multitasking Kernel for AVR microcontrollers written in assembly. Total kernel size varies from ~500 to 700 words depending upon which version is being used. Since the kernel is provided as a library of routines, practical applications take up less space..... Listed under: [AVR ATmega Programmers](#), [AVR ATmega Projects](#)

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1695. [AVR High Voltage Programmer Using Arduino AVR microcontroller](#) AVR microcontroller uses fuse bits to set its operational parameters like watchdog timer settings and change speed of the internal oscillator. Most fuse bits can be set or reset without worry. You can flash it into one state and then flashed back again using an..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1696. [STK500 Compatible ISP using AVR microcontroller](#) AVR-Doper is an STK500 compatible In System Programmer (ISP) and High Voltage Serial Programmer (HVSP). It comes with a built-in USB to Serial adaptor to connect to modern host computers which often don't have a serial interface. The project implements a low speed USB device..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1697. [TinyRealTime, Small Real Time Kernel for AVR using atmega644 microcontroller](#) Real-time kernel (RTK) is useful to run several task or protocol on one CPU. Since only one task at a time can be executed by MCU, RTK used to make each task think it owns the whole machine. RTK will handle which task has to..... Listed under: [AVR ATmega Programmers](#), [AVR ATmega Projects](#)
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1698. [Ultrasonic Security System using Atmega644 microcontroller](#) This portable security system is built based on Atmega644 microcontroller. It can detect intruders based on their physical presence. The system uses URM37v3.2 ultrasonic sensor which is connected to MCU through rs232 serial communication. To rotate sensor for wide coverage range, the system is equipped..... Listed under: [AVR ATmega Projects](#), [Security - Safety Projects](#)
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1699. [Auto Sensing Sous-Vide Cooker using AVR microcontroller](#) This low cost AVR-based Sous-Vide Cooker is able to auto-calculate the appropriate time for cooking a certain thickness of meat using heat transfer equations. It can maintain a set temperature for extended periods of time. The project implements advanced features such as a water level..... Listed under: [AVR ATmega Projects](#), [Sensor - Transducer - Detector Projects](#)
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1700. [AVR Thermocouple Temperature Meter using ATmega164 microcontroller](#) The benefit using thermocouple sensor for measure temperature is it has wide range measurement (-200 °C to +1350 °C / -328 °F to +2462 °F range for Type K), inexpensive, interchangeable, and is supplied with standard connectors. To get temperature value from output of a..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1701. [AVR Based Car Diagnostic Tools using ATmega169](#) This project focuses on tapping into GM pre-1996 car and light truck diagnostic information. These systems are commonly referred to as OBDI, or ALDL (Assembly Line Diagnostic Link). They are based, in part, on the GM-specific 8192-baud ALDL standard that was used starting in the..... Listed under: [AVR ATmega Programmers](#), [AVR ATmega Projects](#)
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1702. [5 Channel USB Analog Sensor with AVR using ATmega48 Microcontroller](#) This project demonstrates how to build a simple module to read analog sensor and send the data to PC using USB connection. The project uses ATmega48 as main processor and USB FTDI serial-to-usb cable. Simply put header pins on your device which you can plug..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1703. [AVR Switch Timer using ATmega8 Microcontroller](#) To get better UV expose, Andrianakis has built new Switch Timer that will turn of his UV exposure box after some time. The timer uses ATmega8 as main processor and two 7-segments LED as display. There are two buttons for set and start the timer..... Listed under: [AVR ATmega Projects](#), [Calculator Projects](#)

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1704. [Wireless Internet Radio Receiver using AT90CAN128 Microcontroller](#) This stand-alone internet wireless music player, named as Wireless MP3 (WMP3), uses Atmel AVR AT90CAN128 microcontroller as main 'brain'. The device can play music from internet radio stations like Shoutcast (www.shoutcast.com), connect to shared network drives and play mp3 files. Ubiquitous 802.11b wireless link is..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#)
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1705. [Low-cost AVR programmer](#) Before using this programmer.... Be carefull with using this programmer, because it has no insulation circuitry! Especially when using high voltages e.g. 110/230 Vac on your project. One mistake and your day can be ruined, your expensive PC distroyed! Part list: 7x 220 ohm 1x..... Listed under: [AVR ATmega Programmers](#), [AVR ATmega Projects](#)
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1706. [SP12 serial programmer software](#) SP12 supports the following devices: AT90S1200, AT90S2313, AT90S8515, AT90S4414, AT90S2323, AT90S4434, AT90S8535, AT90S2343, ATtiny22, AT90S2333, AT90S4433, ATtiny12, ATtiny13, ATtiny15L, ATtiny26, ATtiny25, ATtiny45, ATtiny85, ATtiny2313, ATtiny861, ATmega103, ATmega603, ATmega161, ATmega162, ATmega163, ATmega168, ATmega8515, ATmega8535, ATmega8, ATmega16, Atmega32, ATmega48, ATmega88, ATmega128, ATmega2561, AT90PWM3. Source: Pitronics Download the..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1707. [AVR assembly language](#) What is an AVR ? First of all AVR stands for: Advanced Virtual RISC. The founders are Alf Egil Bogen Vegard Wollan RISC (also forms AVR). An AVR is a small microcontroller (chip, IC) which is switching digitally (controller) by means of so called i/o's..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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1708. [White 7-segments clock ATtiny26](#) Part list 1x ATtiny26 1x xtal 4.096MHz 2x 27pf ceramic 4x 7-segment white CC 2x pushbutton 1x 78L05 1x 47uF/16V electrolytic 1x 0.1uF/16V tantalium 1x 10k 1x 100n multilayer 8x 150 Ohm 4x 6k8 Ohm 4x BC327-25 PNP Features (BETA) 1. Select Hrs/Min or Min/Sec..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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1709. [Controlling internal DAC AT90PWM3 using microcontroller](#) Part list 1x AT90PWM3-16SQ 2x SLO2016 LED display 1x 22uF/25V elco SMD 2x 0.1uF/16V tant. 1206 2x 10 kOhm 1206 3x 100n multilayer 1206 1x coil 10uH SMD 1x rotary encoder (Sharp) Digital voltage control unit his is how a value is stored into..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1710. [Controlling SpeakJet with an AVR microcontroller using ATmega88 microcontroller](#) Core Features: · Programmable, 5 channel synthesizer. · Natural phonetic speech synthesis. · DTMF and other sound effects. · Programmable control of pitch, rate, bend and volume. · Programmable power-up or reset announcements. · Multiple modes of operation. · Simple interface to microcontrollers. · Simple..... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)
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1711. [Modular User Interface System using ATmega88 microcontroller](#) The IOSTRING is a modular physical user interface system which consists of a series of three basic board modules designed around the Atmel AVR AtMega88 MCU. Each module type can handle switches, pushbuttons, rotary selector switches, rotary shaft encoders, potentiometers, LED's, LCD displays, and an..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1712. [Switching between Red, Green and Blue \(or Blue1 or/and Blue2 for an RGBB type\) using AVR microcontroller](#) Switching between Red, Green and Blue (or Blue1 or/and Blue2 for an RGBB type): An RGB LED is a LED which has three (or four for an RGBB type) semi-conductor LED's in one normal housing i.e. standard 5 mm. The Red LED is made of..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)

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1713. [AVR Based Operating System using ATmega32 microcontroller](#) kaOS project is real-time, multithreaded, preemptive operating system for the Atmel Mega32 microcontroller. It can loads and executes programs from a Secure Digital or MMC card. The system waits for a card to be inserted and a reset button to be pressed, at which point..... Listed under: [AVR ATmega Programmers](#), [AVR ATmega Projects](#)
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1714. [3D Color LED Graphics Display using ATmega32 microcontroller](#) This 3-dimensional graphics display system which named as MalaTron consists of 125 RGB LEDs arranged in a cube of 5x5x5 dimension. Each LED is a multicolor Red, Green and Blue LED and the control circuit of the system can individually control the intensity of each..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1715. [A GLCD connected to an AVR microcontroller using ATmega8 microcontroller](#) A GLCD connected to an AVR microcontroller The PVG120602EGE is a 128x64 pixel graphic (grey) LCD with lightblue EL backlight and two KS0108 controller chips and one KS0107 line (columns) driver (64 display lines COM1 - COM64) The first KS0108 drives segments 1 to 64..... Listed under: [AVR ATmega Projects](#), [Video - Camera - Imaging Projects](#)
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1716. [Open Source AVR Temperature Controller using ATmega48 microcontroller](#) The open source project allows you to control DC appliances based on the temperature of two thermistor inputs. It uses AVR ATmega48 as main processor. The controller has both green and white LEDs to indicate status. The project output is connected to N-Channel MOSFET, AOD444,..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#), [Temperature Measurement Projects](#)
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1717. [Pinning LCD display 1601 using microcontroller](#) Pinning LCD display 1601A: Pin no. Symbol Function 1 Vss GND 2 Vdd + 5V 3 Vo Contrast Adjustment 4 RS H/L Register select signal 5 RW H/L Read/write signal 6 E H->L Enable signal 7 DB0 H/L Data bus line 8 DB1 H/L Data..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#)
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1718. [Simple USB AVR programmer, USBasp using ATmega8 microcontroller](#) USBasp is low cost USB in-circuit programmer for Atmel AVR microcontrollers. The hardware consists of an ATmega88 or an ATmega8 and a couple of passive components. The programmer uses a firmware-only USB driver, no special USB controller is needed. Its programming speed is up to..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1719. [Controlling 7-segments LED displays using AVR microcontroller](#) The many possibilities....Non Multiplexed: 1. One or two displays directly to the i/o's 2. One display with a 74LS247 3. Two displays with a 74HC595 and two 74LS247 Multiplexed: 1. Two displays with a 74LS247 and 2 i/o's 2. Two displays with a 74HC595 and..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1720. [Programming AVR ATxMega using USBasp and ATxmega microcontroller](#) ATxmega programmer has different interface than 8-bit AVR's. It uses PDI interface instead of ISP. If you don't want to buy new programmer for ATxmega you can try this little hack done by Szu. He uses USBASP (USB in-circuit programmer for Atmel 8-bit AVR controllers)..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1721. [TIL311 / INL0397-1 Hexadecimal Display using AVR microcontroller](#) Pin numbers: PIN 1 LED SUPPLY VOLTAGE PIN 2 LATCH DATA INPUT B PIN 3 LATCH DATA INPUT A PIN 4 LEFT DECIMAL POINT CATHODE PIN 5 LATCH STROBE INPUT PIN 6 OMITTED PIN 7 COMMON GROUND PIN 8 BLANKING INPUT PIN 9 OMITTED PIN..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)

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1722. [Head-Controlled Keyboard And Mouse For Disabled, using AVR and ATmega32 microcontroller](#) Easy Input is a head-controlled keyboard and mouse input device for paralyzed users. The system is built based on AVR ATmega32. It uses user's head movement to control mouse movement on the monitor and user's eye blinking to activate mouse click. Two main sensor used..... Listed under: [AVR ATmega Projects](#), [Sensor - Transducer - Detector Projects](#)
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1723. [Advance Fire Alarm through Mobile Phone using microcontroller](#) An automatic fire alarm system is designed to detect the unwanted presence of fire by monitoring environmental changes associated with combustion. In general, a fire alarm system is classified as either automatically actuated, manually actuated, or both. Automatic fire alarm systems are intended to notify Listed under: [AVR ATmega Projects](#), [Phone Projects](#)
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1724. [93C66 EEPROM chip with an AVR microcontroller](#) How to program a 93C66 EEPROM chip with an AVR microcontroller? The 93C66 is a serially (MICROWIRE) Electrically Erasable Programmable ROM (EEPROM) chip with 4 kbit (4096 bit, can be ORGANized as 256 x 16bit or 512 x 8bit) memory space. Here a DIL version..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1725. [DS1669 Digital Potmeter UP/DOWN using microcontroller](#) Part list:1x AT90S1200-12PI 1x DS1669 (Dallas) 1x 78L05 2x 1N4007 1x 4MHz X-tal 2x 27pf 1x 22pF 1x 47uF/16V 1x 100n polycarbonate 3x 100n multilayer 1x 100 ohm 1x 10k ohm 1x 820 ohm 1x 100k trimpot 1x 10k lin. potmete DS1669 Digital Control: With..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1726. [DS1802 Digital Volume Control using microcontroller](#) Part list: 1x AT90S1200 1x DS1802 (Dallas) 1x 78L05 1x 8MHz ceramic resonator 1x 22pF 1x 47uF/16V 1x 47n polycarbonate 4x 100n multilayer 1x 100 ohm 1x 10k ohm 1x 820 ohm 1x 100k trimpot 1x 10k lin. potmeter Digital Controlled Potmeter: (also known as..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
-
1727. [Helianthus: The Solar Tracking System using ATmega16 microcontroller](#) Renewable energy solutions are becoming increasingly popular. Photovoltaic (solar) systems are but one example. Maximizing power output from a solar system is desirable to increase efficiency. In order to maximize power output from the solar panels, one needs to keep the panels aligned with the..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1728. [16 LED Knight Rider using 74HCT138 microcontroller](#) Part list: 8x LED (red) 1x 180 ohm 1x 10k ohm 1x 33k ohm 1x 2u2/16V 1x 74HCT191 1x 74HCT132 2x 74HCT138 1x 78L05 1x 47uF/16V 1x 100n 2x 1N4007 Yet another version: Here an example with 4 TTL ICs. This is I think the..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [LED Projects](#)
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1729. [8 LED Knight Rider using AVR microcontroller](#) Another version: In this version I took PORTB of the AT90S1200 AVR microcontroller as you can see in the diagram, because this makes it simpler to let 8 LEDs flash back and forth. Set the Data Direction Register of port B as an output, the..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1730. [6 LED Knight Rider using ATtiny22 microcontroller](#) Part list: 6x high eff. LED 2x 330 ohm 1x ATtiny22* 2x 1N4007 1x 100n 1x 47uF/16V 1x 78L05 * The ATtiny22 is obsolete, replace with one of the following AVRs: AT90S2343 / ATtiny13 / ATtiny45. History of the back and forth flashers.... In the..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)

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1731. [Temperature Sensor Using ATmega8 and display using LCD\(16x2\)](#) STEP 1: Circuit Diagram LCD other Pin's 1,2,3,15,16 as usual not shown. Temperature Sensor (LM35) Circuit STEP 2: Programming Code Compile Using Codevision AVR View C Code STEP 3: Burn The Hex In ATmega8 View Hex Code (Make Sure grounds are common otherwise it will..... Listed under: [AVR ATmega Projects](#), [Sensor - Transducer - Detector Projects](#)
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1732. [PCM Audio Based Door Bell using Atmega32 microcontroller](#) This is a simple procedure to play PCM audio on any AVR microcontroller. AVR's high speed PWM is used to play the audio. It almost sound fine and can be used for simple projects that require sound effects. The code is compiled in winavr GCC..... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)
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1733. [AVR Based CRO using Atmega16 microcontroller](#) STEP 1: Circuit Diagram Components ATmega16 MAX232 0.1uf Capacitor --- 4pcs DB9 Connector 7805 for 5v power supply STEP 2: Programme Code (Compile using Codevision AVR & Burn in Atmega16) View C Code STEP 3: Here We have used ADC5 of ATmega16 so..... Listed under: [AVR ATmega Programmers](#), [AVR ATmega Projects](#)
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1734. [Dotmatrix using ATtiny2313 microcontroller](#) On this page you will find a scrolling LED sign based on the ATtiny2313 AVR microcontroller, which you can build yourself (when finished) Other names for this device can be: Moving message sign, Message crawler, Scrolling message, message display, etc. The idea is to let..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1735. [Easy Breadboarding using ATmega microcontroller](#) When I'm fiddling about with electronics I want to be comfortable about it. Therefore I built some things to make by breadboarding life a little simpler. One example is the Network Breadboard Interface. Another one is this little project. These little pcb's can be put..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#)
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1736. [Monochrome Composite Video using Atmega8](#) This article describes the design of a Text on TV project. It takes serial data and displays text on a TV screen. The hardware part of this project is pretty simple. It uses an Atmega8 microcontroller that runs with a 16 MHz crystal. The article..... Listed under: [AVR ATmega Projects](#), [Video - Camera - Imaging Projects](#)
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1737. [Tea Timer using ATTiny2313 microcontroller](#) I usually drink a lot of tea, and sometimes the tea tastes a lot better than average, which means that most times I make tea I fail at least partially. The taste of the tea depends on a lot of variables: The make of the..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)
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1738. [Kitchen Timer using ATTiny2313 microcontroller](#) At the moment I do not have a kitchen timer. Not because I do not want one, (they're cheap enough to buy) but because it seems impossible to buy a kitchen timer with a decent user interface. That means I have to build my own,..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)
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1739. [Power usage monitor using Atmel AVR using Atmega168 microcontroller](#) This project uses Atmega168 microcontroller to compute the power usage at home and logs it to an SD card. It has a graphical LCD display too that shows the power usage as a strip chart. Besides, the voltage and current waveforms can also be displayed..... Listed under: [AVR ATmega Projects](#), [Temperature Measurement Projects](#)

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1740. [Programmer UsbAsp using AVR microcontroller](#) This morning (2009-12-31) I built my 4th AVR programmer. USBasp. I built this one because I wasn't completely happy with my 3rd programmer and because I want to play with a software USB stack. I do know that it works (I just reprogrammed 2 old..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1741. [Programmer using ATMEGA8 microcontroller](#) The programmer I use is built from a kit I bought at Tuxgraphics. There are several reasons I bought this kit. It is open source, works with avrdude. It connects to USB. It is a lot faster then my old programmer (Programs an ATMEGA8 in..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1742. [Beamer Control using attiny2313 microcontroller](#) Beamer Control: Schematic Source code I made this project for Henk. He has a beamer for watching movies and a motor controlled screen. The purpose of this project is very simple. If he turns his beamer on, the screen must to down. And if the..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)
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1743. [Door Opener using ATTiny2313 microcontroller](#) Door Opener: Schematic Source code I made this little project for Hans, yet another brother of mine. (I have 5 brothers.) He had a garage door to control and bought a little RF transmitter and receiver to control his door. Leo made a nice cabinet..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)
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1744. [Dimmer using ATTiny2313 microcontroller](#) Dimmer: Schematic Source code I made this project for Leo, a brother of mine. We had an old remote control of a video recorder laying around and he wanted some dimmers for all the lights in his house. I didn't have much experience with programming..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)
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1745. [2 Bit u Stepper using microcontroller](#) This is the second stepper motor driver circuit I build. The first one had 4 linear current sources and got so hot it was barely usable. It had some cool leds though. When I was searching for a better schematic on the internet I couldn't..... Listed under: [AVR ATmega Projects](#), [Motor Projects](#)
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1746. [Oscilloscope using AVR microcontroller](#) Designing a professional digital oscilloscope is a pretty complex task wich makes them also pretty expensive. Therefore I concluded it's nothing more than a daydream to design one of those. It's far more realistic to limit the design of this instrument to something a bit..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1747. [LC Meter using AVR microcontroller](#) LC Meter: Schematic Source code This is the project I am currently working on (2010-01-23). The LC meter is based on Elmcie or Elsie and other similar LC meters. This project is in a very early prototype stage and is at the moment only capable..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1748. [Power Supply using AVR microcontroller](#) Katja & Guido at Tuxgraphics sell a very affordable little AVR controlled power supply. That power supply can be controlled by sending it commands by I2C. Because I already have a pretty universal network connected to my PC it seems very logical to me to..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)

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1749. [Looking for expanding RAM for your Atmega128](#) An Atmega128 microcontroller has got 4K of built in static RAM, which is pretty enough for small and medium range projects that do not involve huge amount of data processing. But if you think you need more than that for your application, you can expand..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1750. [Cellphone controlled robot vehicle using ATmega16 microcontroller](#) When we talk about wireless robot vehicle, we usually think about the RF circuits. But this project is different. It uses a mobile phone to control the motion of a robotic vehicle, and therefore, the range of operation is as large as the coverage area..... Listed under: [AVR ATmega Projects](#), [Phone Projects](#)
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1751. [Multi-channel temperature logger using Atmega48 microcontroller](#) This project describes how to use all the 8 ADC channels of an Atmega48 microcontroller to read temperature sensors and the measured data to a PC for logging by using the built-in USART capabilities of the chip. For demonstration, the temperature sensor used is LM335..... Listed under: [AVR ATmega Projects](#), [Temperature Measurement Projects](#)
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1752. [Turn your TV into a Digital Voltmeter using Atmel's AVR 90S1200 microcontroller](#) This is an interesting voltmeter project that display the measured voltage on a TV screen, in giant digits as well as with analog bar. It also records the maximum and minimum values of measurements. The project was built by Alberto Ricci Bitti and was published..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1753. [A physical display device for website visitors based on Atmega168](#) If you have a blog or website and want to make a physical device to display the number of visitors, this project might be interesting to you. It describes about a similar device that can be directly connected to the internet via router and counts..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#)
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1754. [A multifunction digital meter using Atmega128 microcontroller](#) This is a multifunction bench test instrument built using an Atmega128 microcontroller and incorporate a lot of functions like voltmeter, ammeter, logic analyzer, frequency generator, frequency counter and also provides regulated DC power supply. This device is interfaced with a Windows PC to display the measurements..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1755. [AVR digital clock with white seven segment LED display using ATtiny26 microcontroller](#) This is a digital clock project based on an ATtiny26 microcontroller, displaying time on four seven segment LEDs. The seven segment LEDs glow bright white and are multiplexed through PORTB pins, whereas the segments are driven by PORTA pins. The time is normally shown in..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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1756. [Portable 2.4 GHz Spectrum Analyzer using Atmega8 microcontroller](#) There are plenty of wireless devices available on the market that broadcast in the 2.4 GHz ISM band. Such devices include Bluetooth, WiFi, Zigbee, wireless USB, cordless phones, wireless mice and keyboards, etc. This project describes a wireless spectrum analyzer to examine the surrounding radio..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#)
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1757. [VGA monitor tester using ATTiny2313 microcontroller](#) If you are a computer technician and want to avoid the need of a PC on your desk to generate test rasters, this is something you need to build. This is an embedded monitor tester that you can use to test if a VGA monitor..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)

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1758. [Digital oscilloscope GLCD using Atmega32 microcontroller](#) This project describes how to make a digital oscilloscope using an Atmega32 microcontroller and a graphics LCD. The GLCD used has 64*128 pixel dots (GDM12864A with KS0108 processor) and the AVR runs at 16 MHz using an external crystal oscillator. To enhance the speed further,..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1759. [AM radio transmission using AVR using Atmega324 microcontroller](#) When you think about building a radio transmitter circuit, the first thing that comes in mind is it requires too many analog components. But wait a minute, this guy demonstrates an AM transmission using a microcontroller. The interesting part is it uses a plant as..... Listed under: [AVR ATmega Projects](#), [Radio Projects](#)
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1760. [Open source color video game development system based on AVR](#) This project describes an open source color game development platform based on an AVR microcontroller. You can code a color, high resolution, smooth video game, like Super Mario Bros or Commander Keen on this system. All video processing is done by software in background using..... Listed under: [AVR ATmega Projects](#), [Video - Camera - Imaging Projects](#)
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1761. [USB business card with a computer chip board using ATtiny85 microcontroller](#) Have you ever seen a business card with a computer chip embedded on it? This one does. It has an ATtiny85 microcontroller chip that stores all your personal details. You plug it into a USB port of your computer, and find the details about the..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1762. [Experimental board using ATTiny2313 microcontroller](#) This is an experimental board for ATTiny2313 microcontroller that provides a 10-pin connector for in-circuit serial programming, and other header pins to access I/O pins. The AT2313 microcontroller runs on an external 10Mhz crystal. The board has a push button reset switch for resetting the..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#)
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1763. [Automate lights in your kitchen area using ATTiny84 microcontroller](#) This project describes an automatic light system for kitchen sink where you need sufficient light to properly clean your dishes and vegetables. It uses an ATTiny84 microcontroller with a PIR motion sensor. When motion is detected, the microcontroller turns on the light. The light source..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)
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1764. [AVR displays body temperature on a Nokia 3310 LCD using Atmega8 microcontroller](#) This project describes how to measure temperature with Atmega8 and a thermistor and display it on a Nokia 3310 LCD. A thermistor is a device that changes its resistance with temperature. With a proper resistor divider network, the temperature can be measured by measuring the..... Listed under: [AVR ATmega Projects](#), [Phone Projects](#)
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1765. [Open Source USB AVR Programmer for Students and Hobbyists using Atmega8 microcontroller](#) If you cannot afford to buy a USB programmer for AVR, don't worry, you can make one by yourself. This programmer uses a Atmega8 microcontroller with a few external passive components. The good thing is you don't need any USB controller because it is implemented..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1766. [AVR based remote controlled fan regulator](#) This project is from Extreme Electronics that describes an AVR-based (Atmega8) remotely controlled fan regulator. The control commands are received through a DVD player remote control. With three buttons on the remote control, you can turn the fan On and Off and also control the..... Listed under: [AVR ATmega Projects](#), [Video - Camera - Imaging Projects](#)

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1767. [50 MHz range frequency counter using ATtiny45 microcontroller](#) A wide range frequency meter is an useful tool for an electronics lab. This projects describes a frequency meter based on AT90S231 microcontroller that can measure input frequencies up to 50 MHz. The measured frequency is displayed on 6 digit multiplexed seven segment displays. It..... Listed under: [AVR ATmega Projects](#)
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1768. [Easy Data Logger with Virtual USB using ATtiny45 microcontroller](#) "V-USB is a software-only implementation of a low-speed USB device for Atmel's AVR® microcontrollers, making it possible to build USB hardware with almost any AVR® microcontroller, not requiring any additional chip." For further details on V-USB and licensing, visit <http://www.obdev.at/products/vusb/index.html> This is a data logger..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1769. [Tetris and Snake with one AVR using Atmega168 microcontroller](#) This project describes two games – Tetris and Snake, both programmed inside an Atmega168 microcontroller. You can plug this device to a PAL TV and have fun playing the games. The circuit diagram is very simple and uses resistors to generate composite video output. For..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1770. [Build an AVR Xmega Prototyping Board using AVR microcontrollers](#) The AVR ATXmega chip is a newer offering in Atmel's AVR line. The Xmega is billed as a hybrid 8/16-bit MCU, which means you can use your normal development environment to program Xmegas (as compared to AVR32 and Atmel's ARM line). Because the Xmega uses..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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1771. [Development Board With LCD using Atmega16 microcontrollers](#) This instructable shows, how to do your own development board for Atmega16 or Atmega32 processors.The Internet is full of home made development boards, but I think that, there is room left for another one. This board have been very useful on my projects and I..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#)
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1772. [Blinking, Singing, Marioman using Attiny microcontrollers](#) Use an attiny13a, two LEDs and a greeting card speaker to create a blinking Marioman that plays the Super Mario Brothers theme song. This can be an easy low-cost project for anyone who is looking for a fun way to break into AVR programming! The..... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)
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1773. [Reading Switches with using Attiny microcontrollers](#) There have been several Instructables dealing with outputs from the ATtiny2313 and similar AVR devices. For example, <http://www.instructables.com/id/Ghetto-Programming%3a-Getting-started-with-AVR-micro/>, <http://www.instructables.com/id/Drive-a-Stepper-Motor-with-an-AVR-Microprocessor/>. Working on the latest one from The Real Elliot, which showed how to control stepper motors, I found that it would be really helpful to be..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1774. [Halloween Robot using Attiny microcontrollers](#) Halloween Robot controlled by an old wingman joystick. I don't recommend this for beginners with electronics only because some things like joysticks and power adapters are not all the same and must be modified. Additionally I provide programming code which will only be useful for..... Listed under: [AVR ATmega Projects](#), [Robotics - Automation Projects](#)
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1775. [The simple joule thief using AVR microcontrollers](#) The Joule Thief is such an easy and simple device, but what it does is amazing. It can use a battery that is not usable in any other electronic device and give it life again. It can even take a battery that won't even power..... Listed under: [AVR ATmega Projects](#), [Battery Projects](#)

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1776. [ISP Breadboard Header using AVR microcontrollers](#) When I was first working with AVR microcontrollers, I relied a lot on tutorials I found on the web, but nearly all of them raised the question of how to attach a programmer to the microcontroller when you aren't using a development board. Most of the time,..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1777. [Portal "Still Alive" on using ATmega16 microcontrollers](#) Yet another Portal-related instructable , but Different ! This one shows you how to : 1)Build a very cheap device that plays an 8-bit version of Still Alive from Portal 2)On the same hardware , but with a different chip , play the "radio tune"..... Listed under: [AVR ATmega Projects](#), [Radio Projects](#)
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1778. [Atmega8 measures ambient temperature and relative humidity using HSM-20G sensor](#) In one of my previous posts, I discussed about Sensirion's SHT11 and SHT75 sensors, which are capable of measuring both temperature and relative humidity. They are digital sensors and provide fully calibrated digital outputs for temperature and relative humidity. I also illustrated how to interface those..... Listed under: [AVR ATmega Projects](#), [Temperature Measurement Projects](#)
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1779. [A complete starter guide to AVR's using attiny2313 microcontroller](#) Have you played with Arduino's and now have a taste for microcontrollers? Have you tried to go beyond Arduino but got stopped by the dense datasheets? This is the instructable for you! I was working on an instructable for the epilog contest which would wirelessly..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1780. [An universal programming adapter for the Atmel STK500 using AVR microcontroller](#) You have an STK500 development board for the AVR controllers from Atmel? And you want to use it with a newer AVR controller which is not supported by any of the 8 sockets on board? And you do not own an STK505 extension board? Welcome..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#), [LED Projects](#)
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1781. [Building a digital light meter with a calibrated LDR using Atmega8 microcontroller](#) Measurement of light intensity is a prime necessity in several occasions. The diversity of such needs make their way to various branches of physics and engineering as well as in media. For instance, in engineering, such kinds of measurements are needed to design optimum lighting..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1782. [Intelligent temperature monitoring and control system using AVR microcontroller](#) Controlling temperature has been a prime objective in various applications including refrigerators, air conditioners, air coolers, heaters, industrial temperature conditioning and so on. Temperature controllers vary in their complexities and algorithms. Some of these use simple control techniques like simple on-off control while others use..... Listed under: [AVR ATmega Projects](#), [Temperature Measurement Projects](#)
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1783. [AVR acoustic spectrum analyzer using Atmega8 microcontroller](#) AVR acoustic spectrum analyzer, based on Atmega8 AVR microcontroller, operational amplifier, and few other components. Use any HD44780 compatible LCD or VFD, connect audio signal, and enjoy the effect 😊 You can build in this into your amplifier, pc, car-audio, or other device. On this..... Listed under: [AVR ATmega Projects](#), [Microcontroller Programmer Projects](#)
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1784. [Wireless Accelerometer Controlled rgb-LED's using atmega168 microcontroller](#) MEMS (Micro-Electro-Mechanical Systems) Accelerometers are in widespread use as tilt-sensors in mobile phones and cameras. Simple accelerometers are available both as ic-chip's and cheap development pcb-

boards. Wireless chips are also affordable and available in assembled circuits, with matched antenna-network and decoupling-caps onboard. Hook both wireless..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#)

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1785. [Mini RGB Light Cube using AVR microcontroller](#) This is basically a knockoff of the Hypnocube, instead of being 64 LEDs, thus costing at least \$150 to make, I made a smaller version of 8 LEDs for under \$30. The result is a 2x2x2 cube where each light is independently controllable. I'm not..... Listed under: [AVR ATmega Programmers](#), [AVR ATmega Projects](#), [LED Projects](#)
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1786. [Control Anything with one AVR pin using Attiny2313 microcontroller](#) This instructable shows how to control a group of led's with one microprocessor output. The micro I will be using is an Atmel Attiny2313. Step: 1 Parts and Tools Parts: Attiny2313 (got 5 free samples from Atmel) 20 pin socket Resistors (any size will work,..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1787. [Color Sensor using Atmega16 microcontroller](#) This is a simple color sensor using Atmega16 MCU and can sense Red ,Green and Blue color. How it works: the sensor consist from LDR sensor and RGB LED ,so when the object putted on the sensor the light that emitting from RGB LED will reflected from the object to..... Listed under: [AVR ATmega Projects](#), [Sensor - Transducer - Detector Projects](#)
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1788. [Ambient Light Gift Badge using ATTiny13 microcontroller](#) After Christmas I was in the situation that my nephew's birthday celebration came near. I asked him if he had a special on his wish list and he told me that he doesn't have a wish at all, for the moment. He still had not..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1789. [3 Easy Holiday Gifts using ATTiny microcontroller](#) Every year the holiday season rolls around and I get stuck on what to give for my friends and family. People always say that it's better to make the gift yourself than buy it at a store so this year I did just that. The..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1790. [YAFLC \(Yet Another Flickering LED Candle\) using Tiny45 microcontroller](#) There are numerous posts on Instructables about how to make a flickering LED candle. This is my version. The project requires the following components: 1. Tiny45 AVR Microcontroller (Tiny13 would also do) 2. 1W Warm white (or yellow) LED 3. Perspex tube 4. AA or..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)
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1791. [Rechargeable Battery Capacity Tester using ATmega168 microcontroller](#) Do you have a pile of AA rechargeable batteries in your drawer? Some are old, some are new, but which sets would you bring with your camera on your next trip, and which ones are past their useful life? I like using rechargeable batteries, but..... Listed under: [AVR ATmega Projects](#), [Battery Projects](#)
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1792. [Power your Arduino/AVR with a Hand-Cranked Battery using ATmega8 microcontroller](#) If you've ever wanted to power your Arduino or AVR from a battery for development testing (batteries have different power delivery qualities than, say, transformed AC or even a regulated wall wart in DC) testing but were tired of going through batteries (Hey, I admit..... Listed under: [AVR ATmega Projects](#), [Battery Projects](#)
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1793. [Arduino FTDI Header using ATmega8 microcontroller](#) So, you want to program a bootloaded AVR. Or possibly, you have an Arduino Lilypad and no way to program it. There are a few solutions available to you: You could buy a USB to FTDI adapter (available at Adafruit, Sparkfun, etc), you could buy..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1794. [Autonomus Wall Following Obstacle Avoiding Arduino Rescue Bot](#) I'm an Electrical Engineering major and each year my college's branch of IEEE competes in a student hardware competition. Last year's competition was inspired by the natural disasters in Haiti and Chile (the competition was held one week after the earthquake in Japan). This was..... Listed under: [AVR ATmega Projects](#), [Robotics - Automation Projects](#)

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1795. [How to use a 74HC595 Shift Register with a using AVR ATtiny13 microcontroller](#) If you have been playing with microcontrollers and electronics then you have likely seen LED dot matrix displays and other projects that use shift registers like 7-segment displays and more. This instructable goes over a quick intro to the 74HC595 8-Bit Serial to Parallel Shift..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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1796. [\\$10 ATtiny85/45 POV display!! \(works really well\)](#) Hey guys! This is an Instructable for making your own ATtiny85/45 5 LED POV (Persistence Of Vision) display! This is my second Instructable, also for the Elemental LED contest, so drop a comment and vote it up! The total parts cost for this POV display..... Listed under: [AVR ATmega Projects](#), [LED Projects](#), [Video - Camera - Imaging Projects](#)
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1797. [The \\$9 Quasi-duino \(Almost-duino\) using ATmega328 microcontroller](#) Do you currently have an Arduino and want to make it smaller for cheap? The Quasi-duino is for you (Italian for almost-duino). This makes a functional "almost" Arduino, in a very small form factor using the narcoleptic library for pico-power operations on a pico-space breadboard..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1798. [Soldering an SMT MOSFET Driver with a hotplate using microcontroller](#) Soldering SMD components isn't as hard as you might think. In fact it's easy. If you follow this instructables you'll soon see just what great results you can obtain at home using just a hotplate. It's not just being able to make small circuit boards..... Listed under: [AVR ATmega Projects](#), [PWM Projects](#)
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1799. [\\$1.50 Arduino TV Annoyer!! \(Turns TVs on when you want them off\) using microcontroller](#) Hey Arduino fans! Here is an 'ible for making a device that turns TVs on when you want them off, and off then you want them on! If you hide it in something inconspicuous, it would make a great April Fools joke or gag gift..... Listed under: [AVR ATmega Projects](#), [Video - Camera - Imaging Projects](#)
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1800. [Programming Arduino Bootloader without Programmer using ATmega168 microcontroller](#) OH NO!!! You've screwed up and now the Arduino bootloader on your 'duino is gone! What are you going to do? Go spend money for a programmer??? Well don't! I've got a solution that only requires your 'duino and some wires! So its not the..... Listed under: [AVR ATmega Projects](#), [Microcontroller Programmer Projects](#)
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1801. [Music Playing Alarm Clock using ATmega644 microcontroller](#) This Instructable will be about designing a music player from using various building blocks. You will understand the communication between the microcontroller, memory, computer, LCD display, RTC, IR remote, and the music file decoder. I will try my best to to teach you in a..... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)
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1802. [Door Activated LED Lighting using Hall Effect Sensors using Attiny85 microcontroller](#) I've been meaning to make something cool for my dorm room this coming semester and decided that some custom closet lights would look great. In this Instructable, I'll show you how to make some nice-looking LED lights that will turn on automatically using a hall..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)
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1803. [Getting Started with Atmel AVR and BASCOM using attiny26 microcontroller](#) I have seen plenty of Instructables showing how to work with microprocessors, but they all assume that you have worked with them before and know what you are doing. I have not seen an Instructable that takes you from nothing and builds on each step..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)

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1804. [How to use the Dragon Rider 500 with your AVR Dragon using ATtiny2313 microcontroller](#) This instructable is a crash course in how to use some of the features of the Dragon Rider 500 from Ecros Technologies. Please be aware that there is a very detailed User's Guide available on the Ecros website. The Dragon Rider is a interface board..... Listed under: [AVR ATmega Projects](#), [Microcontroller Programmer Projects](#)
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1805. [Make a breadboard adapter for your AVR microcontroller using attiny2313](#) If you like to play around with micro controllers you know this hustle: You want to test a part of a program and first you need to completely wire up the uC on the bread board. Not with these handy parts any more! These are..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1806. [How to program a AVR \(arduino\) with another arduino using attiny2313 microcontroller](#) * you've got your arduino with atmega168 and you bought an atmega328 at you local electronics store. It doesn't have an arduino bootloader * you want to make a project that doesn't use arduino - just a regular AVR chip (like the USBTinyISP) - you..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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1807. [Creating a charlieplexed LED grid to run on ATTiny85](#) This instructable was inspired by my first AVR microcontroller project that I've been working on for some time now. I wanted to start learning more about the AVR microcontroller and see how much I could do with the minimum amount of hardware... no extra chips,..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1808. [How to control a 16x2 LCD using an AVR ATtiny2313](#) If you are just getting into microcontrollers there's alot to know as you have likely found out. There's alot of good online tutorials for the Atmel AVR's and chances are you have see a few of those by now. I recently got into microcontrollers and..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [LCD Projects](#)
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1809. [How to program a AVR \(arduino\) with another arduino using atmega168 microcontroller](#) This instructables is usefull if: * you've got your arduino with atmega168 and you bought an atmega328 at you local electronics store. It doesn't have an arduino bootloader * you want to make a project that doesn't use arduino - just a regular AVR chip..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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1810. [Singing Pumpkins/ Arduino using microcontroller](#) Lets start off by saying that I am a noob to micro controllers like Arduino. After looking through instructables for a while I saw the things that arduino could do. That is when I realized that I had to get one and learn the whole..... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)
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1811. [Turn a TV-B-Gone into a super camera remote!](#) Intro: My Nikon DSLR has an infrared remote function (remote sold separately) that is really handy, but fairly limited in range. A while ago, I bought a TV-B-Gone Kit from it's inventor Mitch Altman, and it can turn TV's off from a great distance. I..... Listed under: [AVR ATmega Projects](#), [Video - Camera - Imaging Projects](#)
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1812. [Vintage Toothbrush Timer using ATmega328p](#) My last visit to the dentist convinced me that I should really brush my teeth at least two minutes. I decided to build a special toothbrush timer: it would detect when a brush is taken out, measure two minutes and notify when the time is..... Listed under: [AVR ATmega Projects](#), [Medical - Health based Projects](#)

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1813. [Custom Tron Disc Mod using ATmega328](#) In this Instructable, I cover modding the store-bought Deluxe Identity Disc to an upgraded version with 64 leds, controlled by an AVR MCU. The upgraded version is costume-ready and would be an excellent addition to your Tron costume - it'll also look great on your..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1814. [Build Your Own BARBOT using AVR microcontroller](#) Ever wanted a robotic liquor server?I purchased a Lynxmotion robotic arm last year and an Arduino (deci) to play around with. I had it serial controlled with a joystick and it was a great way to start in robotics. More recently I wanted to take..... Listed under: [AVR ATmega Projects](#), [Robotics - Automation Projects](#)
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1815. [Ard-e: The robot with an Arduino as a brain using microcontroller](#) Hopefully after reading this instructable you will be able to take your first step into robotics. Ard-e cost about \$90 to \$130 depending on how much spare electronics you have lying around. The main costs are: Arduino Diecimella- \$35 <https://www.makershed.com/ProductDetails.asp?ProductCode=MKSP1> Bulldozer kit- \$31 <http://www.tamiyausa.com/product/item.php?product-id=70104> Servo-..... Listed under: [AVR ATmega Projects](#), [Robotics - Automation Projects](#)
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1816. [Turn signal biking jacket using microcontroller](#) This tutorial will show you how to build a jacket with turn signals that will let people know where you're headed when you're on your bike. We'll use conductive thread and sewable electronics so your jacket will be soft and wearable and washable when you're..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1817. [The 74HC164 Shift Register and your Arduino using GD74HC164 microcontroller](#) Shift registers are a very important part of digital logic, they act as glue in between the parallel and serial worlds. They reduce wire counts, pin use and even help take load off of your cpu by being able to store their data. They come..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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1818. [Using a Dot Matrix LED with an Arduino and Shift Register](#) The Siemens DLO7135 Dot matrix LED is one amazing piece of optoelectronics. It's billed as a 5x7 Dot Matrix Intelligent Display (r) with Memory/Decoder/Driver. Along with that memory, it's got a 96-character ASCII display set with upper and lower case characters, a built-in character generator..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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1819. [Arduino EMF \(Electromagnetic Field\) Detector](#) A while back I saw an EMF (Electromagnetic Field) Detector at makezine.com that used a led bargraph. I decided to modify it to use a 7-Segment LED Display! Here's my project. Sorry I don't have any pictures of it in use. Hopefully I can post..... Listed under: [AVR ATmega Projects](#), [Sensor - Transducer - Detector Projects](#)
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1820. [Arduino magnetic stripe decoder using microcontroller](#) This instructable shows how to use some freely available code, an arduino, and a standard magnetic stripe reader to scan and display the data stored on magnetic stripe cards such as credit cards, student IDs, etc. I was inspired to post this after reading the..... Listed under: [AVR ATmega Projects](#), [Memory - Storage Projects](#)
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1821. [Arduino XMAS hitcounter using AVR microcontroller](#) Christmas is coming closer, so here is my contribution to put you in the right mood. It is a blog hitcounter, that rings a bell. Literally. It puts a smile on your face, every time someone hits your blog. It consists of an Arduino board,..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)

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1822. [The Lightning Simulator/Breathalyzer/Graphic Equalizer – Using Arduino Powered](#) The LED strips are mounted on an outdoor trellace which functions as a lightning simulator, outdoor breathalyzer, graphic equalizer synced to music, and a few other effects with sound. Materials: 8 12v RGB Waterproof Flexible LED Strips 10ft long (usledsupply.com) - \$800 8 RGB 4A/Ch Amps (usledsupply.com) -..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#), [LED Projects](#)
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1823. [Make a Web Connected Robot \(for about \\$500\) \(using an Arduino and Netbook\)](#) This Instructable will show you how to build your own Web Connected Robot (using an Arduino micro-controller and Asus eee pc). Why would you want a Web Connected Robot? To play with of course. Drive your robot from across the room or across the country,..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#), [Robotics - Automation Projects](#)
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1824. [Interfacing ATmega32 with an LCD and a DAC](#) Hi techies!! This is one more of my circuits, interfacing ATmega32 with an LCD and a DAC. it also includes two general purpose push-buttons and In System Programming connector. The controller is operating with 14.7456 MHz frequency crystal, convenient for generating standard baud rates (for..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#), [LCD Projects](#)
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1825. [Arduino and Touchpad Tic Tac Toe using microcontroller](#) Or, an exercise in input and output multiplexing, and working with bits. And a submission for the Arduino contest. This is an implementation of a tic tac toe game using a 3x3 array of bicoloured LEDs for a display, a simple resistive touchpad, and an..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1826. [The 4x4x4 LED cube \(Arduino\)](#) In this instructable I will show you how to make a 4x4x4 LED cube that will be controlled by an Arduino Demulionove. now yes you might say" that Arduino has only 14 I/O pins well also the 6 analog pins can be used as pins..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1827. [Arduino Laser Tag – Duino Tag](#) Duino tagger- General introduction Duino tag is a laser tag system based around the arduino. Finally a laser tag system that can be tweaked modded and hacked until you have the perfect laser tag system for office ordnance, woodland wars and suburban skirmishes. Laser tag..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1828. [Ardu-pong! the Arduino based pong console](#) A while back the instructables robot made a post on Facebook about some guys who played pong on an Arduino (<http://wayneandlayne.com/projects/video-game-shield/games/#pong>) but after looking around, i saw that everyone who did this was only worried about making it work. and often resulted as a very hard..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1829. [How to make a multi-layered acrylic and LED sculpture with variable lighting levels](#) Here you can find out how to make you very own n as made for the exhibition www.laplandscape.co.uk curated by art/design group Lapland. More images can be seen at flickr This exhibition runs from Wednesday 26 November - Friday 12 December 2008 inclusive, and had..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#), [LED Projects](#)
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1830. [Garduino Upgrade, Now with more Twitter!](#) A couple months ago I came across two great instructables. The first was the Garduino, an arduino controlled garden to help you grow plants at home. The second was the Tweet-a-Watt, a project that teaches you how to monitor your home power usage using Xbees..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#)

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1831. [Garduino: Gardening + Arduino](#) Garduino is a gardening Arduino. So far, Garduino: -Waters my plants whenever their soil moisture level drops below a predefined value. -Turns on grow lights, but only when it's dark out and only long enough to make the plants get 15 hours of total light..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#)
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1832. [Control a Schlage electronic deadbolt with an arduino!](#) This instructable will walk you through the process of dismantling and hacking a Schlage electronic deadbolt in order to control it with an arduino. Step 1 Purchase the lock and unpack it I got mine on sale for \$99 at Lowe's. Remove it from the..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1833. [The Arduino Weather Station / Thermostat using ATmega328 microcontroller](#) I've always been interested in monitoring my local weather, and noticed the difference between what weather.com and accuweather.com think my local weather is, and what I see out the window. I also wanted better control over my heating and A/C system. As a computer and..... Listed under: [AVR ATmega Projects](#), [Sensor - Transducer - Detector Projects](#), [Temperature Measurement Projects](#)
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1834. [Arduino All-in-One Getting Started Guide](#) An all-in-one tutorial to getting started with the Arduino open-source electronics prototyping platform. This guide is meant for the beginner but should be also be useful to you if you already tinker with electronics but want to get started with the Arduino. I'll cover: -..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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1835. [Arduino Powered Binary Clock using ATmega168 microcontroller](#) This instructable will help you to build an Arduino Binary Clock. The original idea for this instructable was designed by Daniel Andrade. My instructable uses surface mount components, but can easily be adapted to through-hole components if you wish. You can follow my other Instructable..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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1836. [Interface a rotary phone dial to an Arduino](#) An old rotary phone can be used for a number of purposes in your Arduino projects - use it as a novel input device, or use the Arduino to interface a rotary phone to your computer. This is a very basic guide describing how to..... Listed under: [AVR ATmega Projects](#), [Phone Projects](#)
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1837. [Digital Window Sticker \(Arduino Controlled\) using ATmega328 microcontroller](#) A bumper-sticker sized L.E.D. matrix that displays images in sequence from an SD card, to produce an animated sign or "window sticker." Arduino controlled! Also includes Windows, Mac, and Linux code for converting .xbm image files into Digital Window Sticker files. Perfect for a shop..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1838. [Arduino Watch Build Instructions](#) The Arduino Watch provides augmented sensing of temperature and range, 16-bit color drawing program, Breakout game, and also tells the time in your choice of digital, binary, or analog. Additional sensors, devices, and programs are easy to add as any standard Arduino. The source code..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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1839. [Mushroom Environment Control – Arduino Powered](#) This is my first Arduino project aimed at helping me with my other hobby which is growing oyster and shiitake mushrooms indoors. In a nutshell, the controller takes in two temperature readings, 1 Humidity reading and 1 Co2 reading and triggers a set of four..... Listed under: [AVR ATmega Projects](#), [Medical - Health based Projects](#)

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1840. [How to connect Arduino and RFID](#) On this instructable I will try to show how to interface a RFID sensor with the Arduino. I am using the RFID sensor from seestudio the serial version of it. There are a few parts you will gonna need. I also bought some RFID keys..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#), [RFID - NFC Projects](#)
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1841. [How To Smell Pollutants](#) This Instructable explains how to use a gas sensor with your Arduino. This lets your Arduino smell (and hence you program responses to) overall gas levels for a variety of nasties, including ethanol, methane, formaldehyde, and a bunch of other volatile organic compounds. My cost..... Listed under: [AVR ATmega Projects](#), [Sensor - Transducer - Detector Projects](#)
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1842. [Temperature Control For Kitchen Appliances](#) In this Instructable, I will step through controlling the temperature of most kitchen appliances. As an example, I will use an old Westbend Poppery popcorn maker (aka. coffee roaster), but these same techniques will be applicable to most hot plates, coffee makers, and waffle irons..... Listed under: [AVR ATmega Projects](#), [Temperature Measurement Projects](#)
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1843. [Wireless Altoids Display](#) This Instructable will show you how to modify an Altoids tin for a wireless 2x16 character display. Using an Altoids tin was inspired by the need to have a small yet protective enclosure for a pair of Xbee modules recently bought from Sparkfun. I purchased the..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#)
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1844. [Secret Knock Detecting Door Lock](#) Protect your secret hideout from intruders with a lock that will only open when it hears the secret knock. This started out as a bit of a joke project, but turned out to be surprisingly accurate at judging knocks. If the precision is turned all..... Listed under: [AVR ATmega Projects](#), [Security - Safety Projects](#)
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1845. [Gmail and RSS Notifiers using the Arduino](#) I've been really interested in doing J4mie's Physical Gmail Notifier ever since it came out in February. I only recently dropped into the project and got to learn a lot about python, plists, and arduino auto-reset functionality. I'm going to share what I've learned because..... Listed under: [AVR ATmega Projects](#), [Sensor - Transducer - Detector Projects](#)
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1846. [Magnetic Levitation using the Arduino](#) It's been only a couple weeks since I discovered Arduino, an open source microcontroller platform. I was looking for a cheap interface between my laptop and electronic circuits. Arduino with its price \$35 and easy to use development environment was the best choice. So after..... Listed under: [AVR ATmega Projects](#), [Sensor - Transducer - Detector Projects](#)
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1847. [Wi-Fi Enabled Coil Gun with iPhone App](#) We've covered loads of airsoft, nerf, and gun projects, and here's another superb project to add to our collection. It's a coil gun placed on a turret which is triggered via Wi-Fi. Additionally, it uses remote targeting and shooting through an iPhone, iPod Touch or..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#), [Phone Projects](#)
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1848. [Superb DIY Retro Lighting Design](#) What is it? It is a decorative lamp; a very, very impractical decorative lamp employing a few vintage display devices and a couple of LEDs too. A friend of mine was one of a group of artists who produced Ascension (the giant origami-crane tent) at..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)

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1849. [A credit card sized Ethernet Arduino compatible controller board using ATmega168 microcontroller](#) I love the Arduino as a simple and accessible controller platform for many varied projects. A few months ago, I purchased an Ethernet shield for my Arduino controller to work on some projects with a mate of mine - it was a massive hit -..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#)
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1850. [Light for life: Glowing button cycling jacket](#) Not everyone wants to look like an athlete while cycling to work or school. This cycling-jacket, made of hemp and wool, is equipped with lots of shining bright LEDs. It looks just as good during the day as it does during the night. Embedding the..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1851. [The Word Clock – Arduino version using ATmega168 microcontroller](#) Major updates - A much better enclosure for this clock has been designed - check out <http://www.instructables.com/id/The-Wordclock-Grew-Up/> Last month I wanted to build a special gift for my beautiful wife, Megan. She has a teaching background in English, so what better present to make for..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#), [LED Projects](#)
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1852. [Arduino R/C Lawnmower \(painted\) using Atmega168 microcontroller](#) What this is: This instructable will show you how to make your Arduino into an R/C interface that you can use for just about anything requiring remote control. I will also show you how I built an R/C lawnmower using my Arduino, a cheap R/C transmitter and..... Listed under: [AVR ATmega Projects](#), [Robotics - Automation Projects](#)
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1853. [How to have fun with Arduino \(and become a Geek in the process\)](#) Do you wish to earn your geek card - pronto? Lets get started! This guide will start you on the path to the dark side using the open source Arduino development and prototyping platform. It will introduce you to microcontrollers, get you started with a..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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1854. [Control Electronics using an Arduino and Infrared LEDs](#) Learn how to use infrared LEDs to send signals to your TV and other electronic devices via an Arduino. First, the Arduino will interpret IR pulses sent out by the TV remote, save them to memory, then "replay" them upon the user's command. You can..... Listed under: [AVR ATmega Projects](#), [LED Projects](#), [Other Projects](#)
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1855. [Arduino animatronics- make your awesome costumes more awesome! using ATmega328 microcontroller](#) Here's how to add lights, sound and action to your favorite Halloween project using the open source Arduino microcontroller. Arduino is easy to learn to use and it opens up a whole new world for costume builders and creature creators. If you want to learn..... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)
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1856. [Using the iRobot Create's Command Module with Linux using avr microcontroller](#) Since iRobot hasn't provided linux users with a way to use the command module, I had to figure it out myself. Don't be intimidated, it's not hard at all, really. All you need to do is run a couple of scripts. Lets get started, shall..... Listed under: [AVR ATmega Projects](#), [Microcontroller Programmer Projects](#), [Robotics - Automation Projects](#)
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1857. [Use Visual Studio 2010 to Compile AVR Hex Files using AVR microcontroller](#) I'm not a huge fan of Microsoft, but man, they do make one slick programming IDE. In searching around for a solution to use the IDE to program AVR's I came across some scattered instructions. As I love the intellisense feature of Visual Studio (VS)..... Listed under: [AVR ATmega Projects](#), [Microcontroller Programmer Projects](#)

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1858. [Laser Tripwire takes a Photo, Uploads it to Twitter](#) This instructable will show you how to construct a laser tripwire that can twitter and grab an image from a webcam, as well as execute any command you can put in a bash script. This instructable is actually quite simple and is even suitable as a beginner..... Listed under: [AVR ATmega Projects](#), [Video - Camera - Imaging Projects](#)
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1859. [The Household Informer using atmega168 microcontroller](#) Who wants to go outside to see if the mail has arrived? In the cold winter or rain I'd rather not have to put on a jacket and shoes, only to find that there was no mail. This project will notify you of the mail..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)
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1860. [The \\$9 Quasi-duino \(Almost-duino\)](#) Do you currently have an Arduino and want to make it smaller for cheap? The Quasi-duino is for you (Italian for almost-duino). This makes a functional "almost" Arduino, in a very small form factor using the narcoleptic library for pico-power operations on a pico-space breadboard..... Listed under: [Circuits](#)
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1861. [Turn Your Arduino Into an ISP](#) Learn how to turn your Arduino into an AVR In System Programmer. This will allow you to burn bootloaders onto new chips or program AVR's without a bootloader. Step 1: Materials To begin you will need: * Arduino (I will be using the Uno) *..... Listed under: [AVR ATmega Projects](#), [Video - Camera - Imaging Projects](#)
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1862. [GuGaplexed Valentine LED Heart using ATtiny13V Microcontroller](#) GuGaplexing is a new LED display multiplexing technique. Compared to Charlieplexing, GuGaplexing allows you to control twice as many LEDs, with just a few additional components. GuGaplexed Valentine LED Heart project has 40 LEDs arranged in an 'Arrow Piercing a Heart' arrangement using only 5..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#), [LED Projects](#)
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1863. [Smoke & Fume Absorber](#) Demo video Smoke & Fume Absorber A Long History The ancient Egyptians produced lead and other important metals like gold and silver as early as 5000 BC. In the Roman era, lead was used for coinage, jewelry and other everyday items including the production of..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1864. [Use Google Voice Search through Arduino & Bluetooth](#) With Google announcing the launch of Voice Search for desktop, we couldn't help thinking that there was even more fun to be had with talking to a computer. So, we went ahead and built an open source dev board to inspire people to build their..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#)
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1865. [Arduino powered hangman giftbox/lockbox using ATmega328 microcontroller](#) A medium sized box that requires the user to succeed in a game of hang man in order to gain access to the contents of the box. Great gift Idea!!! my Arduino sketch will be included in this instructible sorry for the poor quality pictures!..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1866. [Beginner's Guide – AVR Programming](#) You will get this done in 30 min. Step 1: Parts 1. 1 X any type of circuit board 2. 1 X Atmel AVR Atmega16 microcontroller 3. 8 X 330 ohms Resistors 4. 8 X LEDs 5. 1 X AVR Programmer (just use for download..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)

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1867. [Assembling the ZIFduino USB 1.2 using ATMEGA168 microcontroller](#) The ZIFduino, for all intents and purposes, is an Arduino with a ZIF socket. It's geared toward those that want to do prototyping on the platform, but then move the ATmega chip to a stand-alone environment. The pin layouts are exactly the same, so it..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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1868. [Assembling the Dragon Rider 500 for use with the AVR Dragon using ATmega88 microcontroller](#) Not long ago the Atmel company came out with a great tool for use with the AVR line of microcontrollers called the AVR Dragon. This small USB device provides professionals and hobbyists alike the ability to use: In System Programming (ISP), JTAG, Debug Wire, and..... Listed under: [AVR ATmega Projects](#), [RTOS - OS Projects](#)
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1869. [Fun Hackable Speaker Timer using ATmega328 microcontroller](#) This is a fun speaker timer I made for some upcoming conferences. It uses a 4-digit charlieplexed LED (pseudo 7-segment) display and is driven by a AVR ATmega328 or an Arduino. It allows a default time to be set, can be paused, and will put..... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)
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1870. [Slaveflash with Attiny24 ver. 2.0](#) You might have noticed the Slaveflash I built with an Attiny 24, the instructable can be found here: [Slaveflash-trigger-for-digital-with-Attiny24](#) After building the first prototype I collected all my old flashes I got over the years and had four more slaveflash-triggers to built. I already figured..... Listed under: [AVR ATmega Projects](#), [Memory - Storage Projects](#)
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1871. [Getting started with LCD's and Microprocessors using ATmega8](#) In this Instructable, find out how to control LCD's with a ATmega8 and Bascom. Demo You will need: - Breadboard - Wires - ATmega8 - Programmer - Bascom AVR (There is also a demo version for Free) - 10k resistor - 100k resistor - 10k..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#)
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1872. [Programming adapter from 10 pin to 6 pin for AVR's](#) This is the last one of my 'Things that make life easier' series, I published in the last few days. It's very simple, but most of the time the simple things are the most helpful. I always used the big 10 pin jack for programming..... Listed under: [AVR ATmega Projects](#), [Microcontroller Programmer Projects](#)
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1873. [Direction Aware Messaging LED Spin Top using Tiny44 microcontroller](#) We recently built a LED spinning top with message display. Its an improved version of a similar top published by Elektor in their December 2008 issue. The Elektor top can be spun only in one direction. The synchronization required to print message on the LEDs..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1874. [Annoying Beeper using Microcontroller ATtiny13](#) Play a prank on your friends (enemies?) by hiding a high-pitched beeper which sounds off at random time intervals. This instructable uses minimal parts. All that is required is: battery microcontroller speaker Why don't I just use a 555 timer chip? You certainly could. I..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1875. [Open Source Temperature Controller- Appliance Heat Exchanger](#) video Open Source Temperature Controller- Appliance Heat Exchanger Here's a heat exchanger demo using the open source temperature controller. Full heat exchanger available here Intelligent controller, schematics, and code

available here The open source temperature controller allows you the flexibility to control DC appliances based..... Listed under: [AVR ATmega Projects](#), [PWM Projects](#)

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1876. [Instalacion del controlador USBasp \(USBasp drivers setup\) – Dark Side Electronics](#) English version available at the bottom Se enseñara paso a paso como instalar los controladores (drivers) necesarios para el correcto funcionamiento del programador USBasp para microcontroladores AVR. Primero, mencionaremos algunas consideraciones para evitar fallos por usos indebidos del programador. También se mencionará el protocolo y..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1877. [How to Read Binary/Hex Thumbwheel Switch with an AVR Microcontroller](#) This instructable will show you how to read the number on a binary pushwheel or thumbwheel switch using LED's or an AVR microcontroller (I'm using an ATmega328p but this can be adapted for any AVR or probably another microcontroller of your choice). Multiple thumbwheel switches..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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1878. [DIY Digital Thermometer Using ATmega8](#) This instructable will show you how to make a thermometer that displays the temperature of the air. It's not the most accurate thermometer in the world, but for this price and the fact that it was homemade... This instructable will show you how to make..... Listed under: [AVR ATmega Projects](#), [Temperature Measurement Projects](#)
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1879. [Power Your Arduino From Your Car](#) The Arduino -- and AVRs in general -- have a wide range of power supply options ranging from around 1.8V to 5.5V. The choice of voltage is usually determined by the desired clock speed or power consumption requirements. The Arduino and its many variants have..... Listed under: [AVR ATmega Projects](#), [Car Projects](#)
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1880. [Build the Penguin game system using ATmega32/644 microcontroller](#) Gotta love microcontrollers.They do lots of stuff ... you can find them in computer mice , traffic lights , toys , and almost all electronic devices nowadays. Well , this is a project that pushes an 8-bit ATmega32 microcontroller to the limits. As you guessed..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1881. [Electronic Tic-Tac-Toe with RGB LEDs](#) video Electronic Tic-Tac-Toe with RGB LEDs RGB LED game to play Tic-Tac-Toe for two players. Uses 2 AVR Microcontrollers: Mega16 and Mega8. RGB LEDs allow each user to choose his/her color to represent Cross/Nut. For more details, click: Electronic Tic-Tac-Toe with RGB LEDs... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1882. [Drive a Stepper Motor with an AVR Microprocessor using ATTiny2313 microcontroller](#) Got some scavenged stepper motors from printers/disk drives/etc lying around? Some probing with an ohmmeter, followed by some simple driver code on your microprocessor and you'll be stepping in style. Step 1 Get to Know Steppers Basically, you're going to need to figure out where..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Motor Projects](#)
-
1883. [Getting started with LCD's and Microprocessors](#) In this Instructable, find out how to control LCD's with a ATmega8 and Bascom. You will need: - Breadboard - Wires - ATmega8 - Programmer - Bascom AVR (There is also a demo version for Free) - 10k resistor - 100k resistor - 10k variable..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#), [LCD Projects](#)
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1884. [Slaveflash-trigger for digital cameras with Attiny24](#) When flashing with digital compact cameras, the camera usually uses several small flashes before making the actual picture. This is o.k. if the built-in flash is the only flash you have, but if you want to use an external second flash you have a problem:..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)

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1885. [Apple-style LED pulsing using a \\$1.30 MCU using ATTiny85 microcontroller](#) The Atmel ATTiny85 chip is an 8-pin MCU that is totally awesome. If you've been programming with the bigger boys (the ATmega series), these are a nice adventure - you're rather limited in the number of output pins, but a creative design gives us a..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1886. [Watch futurama on an 8x8 pixel screen using atmega168 microcontroller](#) here's how to convert otherwise reasonable quality video into pixelated garbage and play it on a 2 color 8x8 led matrix, with no sound and only moderate sync. ingredients: - (1) 8x8 2 color led matrix - (1) atmel avr atmega168 - (2) 74hc595 shift..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#)
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1887. [AVR/Arduino RFID Reader with UART Code in C](#) RFID is the craze, found everywhere - from inventory systems to badge ID systems. If you've ever been to a department store and walked through those metal-detector-looking things at the entrance/exit points, then you've seen RFID. There are several places to find good information on..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [RFID - NFC Projects](#)
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1888. [How To Make A Grounding Wrist Band](#) In my life i deal with lots of sensitive electronics every day and frying these electronics is a big concern when touching them. Most people think its hard to fry electronics with static electricity. Its not, one touch could send your \$100 graphics card down..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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1889. [Telnet to your Arduino/AVR!](#) The other day I was wanting to check on one of my AVR's but I was upstairs and god knows it was too much of a hassle to go downstairs to where the microcontroller was. But, there were two idle computers sitting upstairs next to..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#)
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1890. [A protective case for the Atmel AVR Dragon using AVR](#) This instructable will show you how to easily modify a readily available plastic case to hold and protect your AVR Dragon PCB. Atmel promotes their AVR Dragon as a low cost development product tool for use with their AVR microcontollers. While the product does come..... Listed under: [AVR ATmega Projects](#), [Microcontroller Programmer Projects](#)
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1891. [Ghetto Development Environment Using Microcontrollers](#) A while back, I posted up a quick and dirty "el cheapo" method of getting started programming the Atmel AVR series chips: Ghetto Programmer (version 1.0) Since then, I've vamped, re-vamped, and otherwise improved my setup. Thought it'd be nice to document it. The goal..... Listed under: [AVR ATmega Projects](#), [Microcontroller Programmer Projects](#)
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1892. [USB RFID Reading Keyboard using USnooBie](#) video USB RFID Reading Keyboard Demo This is a step by step tutorial on how to build a RFID tag reading USB keyboard using the USnooBie. This tutorial is provided with the project files. The code files are heavily commented with references to relevant..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [RFID - NFC Projects](#)
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1893. [New Jar of Fireflies](#) When I ran across the Jar of Fireflies Instructable sometime this past summer, I knew I had to build it. Full credit to Keso for an excellent set of instructions! I wouldn't have gotten to the point of developing the firefly behavior without such a solid base for..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)

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1894. [FanBus Digital Fan and LED Interface for PC using ATmega168 microcontroller](#) Last year I modified a blue LED fan with RGB LED's to enhance the look of my server case. Last summer I built a gaming computer and ever since I wanted to light it up with multiple controlled lights and fans. I finally figured out..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1895. [Augmenting a Microcontroller using AVR](#) Microcontrollers (MCUs) are fantastic little ICs that give an extra element of versatility to your electronics, robotics or other project. But they're really not much use on their own. To function, all MCUs need some sort of support components, and a board to live on..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1896. [Development system for PIC and AVR microcontrollers](#) After testing many systems development for PIC and AVR microcontrollers, none satisfy me. So I created this system with breadboard that has satisfied me. Step 1: More space free In this development system, I put two protoboards turned 180 degrees from each other. The space..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#)
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1897. [VUSBTiny AVR SPI Programmer Using ATtiny85](#) after making a usbtiny isp programmer and using it for 6 months, i was looking at making another one for carrying around. i like the simplicity of the usbtiny isp design but would like to make it even smaller and take less parts. one thing..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1898. [Direction Aware Messaging LED Spin Top](#) video Direction Aware Messaging LED Spin Top We recently built a LED spinning top with message display. Its an improved version of a similar top published by Elektor in their December 2008 issue. The Elektor top can be spun only in one direction. The synchronization..... Listed under: [AVR ATmega Projects](#), [LED Projects](#), [Other Projects](#)
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1899. [Tiny AVR Microcontroller Runs on a Fruit Battery](#) Some of the fruit and vegetables we eat can be used to make electricity. The electrolytes in many fruit and vegetables, together with electrodes made of various metals can be used to make primary cells. One of the most easily available vegetable, the ubiquitous lemon..... Listed under: [AVR ATmega Projects](#), [Battery Projects](#)
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1900. [Fire-free LED Matchstick Using a Tiny13 microcontroller](#) video Fire-free LED Matchstick I just completed a new project: a fire-free and fire-safe LED matchstick. To light this matchstick you strike it against a normal matchbox filled with neodymium magnets. The LED matchstick has an inductive sensor that detects the magnetic field as you..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1901. [How to use an LED Array Module using AVR](#) With a single LED you can indicate the state of something: on or off. That might be a little boring. With an array of LEDs you can display characters or even some simple blocky graphics. That might add a little pizzaz to a small microcontroller..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1902. [Programmable LED using Atmel ATtiny13v Microcontroller](#) Inspired by various LED Throwies, blinking LEDs and similar instructables I wanted to do my version of an LED controlled by a microcontroller. The idea is to make the LED blinking sequence reprogrammable. This reprogramming can be done with light and shadow, e.g. you could..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)

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1903. [Hacking your Digg Button with a Removable Interface Cable using AVR](#) The Digg Button from adafruit industries www.adafruit.com is a very simple DIY electronics kit suitable for beginners. It consists of a microprocessor, a 3-digit display, a button and some available i/o pins. As it comes from adafruit, it's a counter that displays the number of..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#)
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1904. [Getting started with VMUSIC2](#) The VMUSIC2 is a complete MP3 player module from FTDI, Inc. which makes it easy to integrate MP3 functionality in to your next microcontroller project. It has two interfaces: SPI or UART (serial) Some example applications: 1. Make your robot talk and play sound effects..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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1905. [Jar of Fireflies using AVR ATTiny45 Microcontroller](#) This project uses green surface-mount LED's along with an AVR ATTiny45 microcontroller to simulate the behavior of fireflies in a jar. (note: the firefly behavior in this video has been greatly sped up in order to be easier to represent in a short film. The..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1906. [I2C Bus for ATtiny and ATmega168](#) I love the Atmel AVR microcontrollers! Since building the Ghetto Development System described in this Instructable, I've had no end of fun experimenting with the AVR ATtiny2313 and the ATmega168 in particular. I even went so far as to write an Instructable on using switches..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1907. [16-key Keypad Decoding with an AVR MCU](#) This instructable will show you how to interface a 16-key keypad to your AVR microcontroller and read the key when a key is pressed. I'll introduce the keypad first, then the 74HC922 16-key decoder IC as a pin-saving mechanism, then finally how to take the..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1908. [Connecting Nokia 3310 LCD to USB using AVR](#) What do you do with an old phone, a microcontroller and lots of time? You hook the old phone's LCD screen to the computer USB of course! In this project we're going to communicate with a Nokia 3310 LCD display over USB! How are we..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#), [Phone Projects](#)
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1909. [Repair dead AVR's – Attiny fusebit doctor \(HVSP\)](#) Did you make a mistake while programming fusebits, or purposely disabled reset pin (RSTDISBL) or ISP programming (SPIEN)? No need to buy or make inconvenient HV programmer only for unlock couple of Tiny AVR's. This Attiny fusebit HV doctor will cure your dead tiny microcontrollers,..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1910. [ISP 6 pin to 8 Pin Socket Using ATTiny45](#) The reason i mainly built this project was to program the ATTiny45, which has a 8 pin connection, while my USBtinyISP (from Ladyada) only has a 10 pin and 6 pin connection. After snooping around the internet for about 3-4 weeks i found nothing what..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1911. [Micro controller programming: Making a set of traffic lights using Microcontroller ATTiny2313](#) So you wana learn how to programme a micro controller? This tutorial has been designed as a next step, following the fantastic tutorial 'Ghetto Programming: Getting started with AVR microprocessor on the cheap.' by The Real Elliot link you should read this before progressing onto..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)

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1912. [Instalacion del controlador USBasp \(USBasp drivers setup\) – Dark Side Electronics using AVR microcontroller](#) English version available at the bottom Se enseñara paso a paso como instalar los controladores (drivers) necesarios para el correcto funcionamiento del programador USBasp para microcontroladores AVR. Primero, mencionaremos algunas consideraciones para evitar fallos por usos indebidos del programador. También se mencionará el protocolo y..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#), [Microcontroller Programmer Projects](#)
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1913. [How to Read Binary/Hex Thumbwheel Switch with an AVR Microcontroller using ATmega328p microcontroller](#) This instructable will show you how to read the number on a binary pushwheel or thumbwheel switch using LED's or an AVR microcontroller (I'm using an ATmega328p but this can be adapted for any AVR or probably another microcontroller of your choice). Multiple thumbwheel switches..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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1914. [AVR LCD Namebadge Using ATtiny2313](#) So, you're going to a conference/meetup/nerdfest and you want to do something that sets you apart from normal people. An LCD namebadge powered by an ATtiny2313 is a great way to do that. This is a general purpose LCD display unit powered by a 9V..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#)
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1915. [Power Your Arduino From Your Car using AVR microcontroller](#) The Arduino -- and AVRs in general -- have a wide range of power supply options ranging from around 1.8V to 5.5V. The choice of voltage is usually determined by the desired clock speed or power consumption requirements. The Arduino and its many variants have..... Listed under: [AVR ATmega Projects](#), [Battery Projects](#), [Car Projects](#)
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1916. [Making a set of traffic lights Using Arduino](#) This tutorial will step you through the process of creating a set of controllable and configurable traffic lights whilst also teaching you the basics of Arduino. Some knowledge is needed and I highly recommend reading and following through on most if not all of the..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1917. [LoveBox – The box of love using ATtiny2313 Microcontroller](#) As most guys I don't tell my wife that "I love you" as often as I should, but this little gadget will at least improve that situation as bit. So by combining a nice box and some hardcore electronics nerdiness I've made a nice christmas..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1918. [Stripboard Arduino using ATmega168 microcontroller](#) In this, my first Instructable I'm going to show you how to make a stripped down Arduino for a fraction of the price, using Stripboard/Veroboard. Material List: 1x Atmel ATmega168 = \diamond 2.65 1x Stripboard = 72p 1x 7805 Voltage regulator = 26p 2x LEDs =..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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1919. [Build a Complete AVR System and Play Mastermind Using Microcontrollers](#) The game Mastermind has been around a long time, and I remember getting a board version with colored pegs when I was a kid. I love this game, as it is solvable simply by pure logic. One player (or a computer/microcontroller) chooses a sequence of..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1920. [Using Arduino to communicate with embedded project using AVR ATMEGA microcontroller](#) Building a stand-alone AVR ATMEGA project sometimes leaves you with no easy to read output from your project. But you can use an Arduino to act as a communications bridge between your embedded

project and your PC's Serial Monitor program! I'm building an embedded multi-channel..... Listed under: [AVR ATmega Projects, Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)

1921. [AVR mini board with additional boards using attiny2313 microcontroller](#) Somewhat similar to PIC 12f675 mini protoboard, but extended and with additional boards. Using attiny2313. Step 1 Scheme Let us first start with a scheme. The scheme is pretty obvious since it only connects attiny2313 with the pins and the only additional elements are resistors..... Listed under: [AVR ATmega Projects, Development Board - Kits Projects](#)

1922. [How to add more Outputs to your Microcontroller using 74HC595 microcontroller](#) This Instructable will show you step-by-step how to add 8 extra digital outputs, using only 3 of your microcontroller's digital outputs. Step 1 Which Microcontroller Should You Use? In order to do this Instructable with your microcontroller, you will need to make sure that it has the..... Listed under: [AVR ATmega Projects, How To - DIY - Projects](#)

1923. [Guia para programar uC AVR – Dark Side Electronics using AVR microcontroller](#) La forma más sencilla y rápida de programar un micro-controlador (uC) de la familia AVR, usando el programador USBasp, es utilizado el programa eXtreme Burner - AVR de Extreme Electronics. En esta guía te detallaremos como programar tu propio uC. Para esto necesitarás lo siguiente:..... Listed under: [AVR ATmega Projects, Microcontroller Programmer Projects](#)

1924. [Getting started with ubuntu and the AVR dragon using atmega8 microcontroller](#) Here's what i did to get started using the AVR Dragon to program ATMEGA8 microcontrollers using ubuntu (This is aimed at beginners, I myself am also being a beginner, so any improvements from more experienced users are greatly appreciated). After finally switching my laptop and..... Listed under: [AVR ATmega Projects, Microcontroller Programmer Projects, RTOS - OS Projects](#)

1925. [Led dimmer 2 channels using Attiny13 microcontroller](#) This is Attiny13 2 channels dimmer with 5 program modes and speed control: 1. Dim between 2 channels 2. Dim 2 channels together 3. Blink mode 1 4. Blink mode 2 5.Blink mode 3 Step 1 Hardware Dimmer is based ot Attiny13V: - 1k flash..... Listed under: [AVR ATmega Projects, LED Projects](#)

1926. [Adding ICSP header to your Arduino/AVR board using ISP10PIN microcontroller](#) So you may have been playing with Arduino's, or rather, Hackduino's. If you made your own Hackduino or similar project, you may be wondering how to add the ICSP header. Basically, using the ICSP header will allow you to use an external programmer to 'upload'..... Listed under: [AVR ATmega Projects, Microcontroller Programmer Projects](#)

1927. [Synchronizing Fireflies using Microcontroller ATtiny13](#) Have you ever asked yourself how do hundreds and thousands of fireflies are able to synchronize themselves? How does it work, that they are able to blink all together without having a kind of boss firefly? This instructable gives a solution and shows how this..... Listed under: [AVR ATmega Projects, Development Board - Kits Projects](#)

1928. [The Arduino LED Cube using LED microcontroller](#) Are you bored? Do you want to make something amazing to impress your friends with? Let's try making an LED cube..... A work of art, that lights up..... Step 1 What in the world is and LED? LED is an acronym for Light Emitting Diode,..... Listed under: [AVR ATmega Projects, LED Projects](#)

1929. [LED matrix using shift registers](#) This instructable is meant to be a more complete explanation than others available online. Notably, this will provide more hardware explanation than is available in the LED Marquee instructable by led555. Goals This instructable presents the concepts involved with shift registers and high side drivers..... Listed under: [AVR ATmega Projects, LED Projects](#)

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1930. [Charlieplexing 7 segment displays using Atmel Tiny26 microcontroller](#) Charlieplexing of discrete leds has been the topic of a few other instructables. The Charlieplexing LEDs- The theory and the How to drive a lot of LEDs from a few microcontroller pins comes to mind. They are both excellent and should be read by anyone..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1931. [AVR32 Development Board at Home](#) This is my first instructable. So plz comment and help me out with any mistakes i might commit . I have created a pcb for avr 32 ,its a development board .I saw that there none online with pcb that could be done at home so..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#)
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1932. [Faraday For Fun: An Electronic Batteryless Dice using Microcontroller ATTiny13](#) There has been a lot of interest in muscle powered electronic devices, due in large part to the success of Perpetual Torch Perpetual Torch, also known as battery-less LED torch. The battery-less torch consists of a voltage generator to power the LEDs, an electronic circuit..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1933. [DIY Electronic Birthday Blowout Candles](#) Step 1 The Circuit Step 2 Building the Circuit board Step 3 Soldering the Circuit board Step 4 Programming the Micro Step 5 Using the Candles To power the circuit, you need 4 batteries of 1.2V, AA or AAA size or 3 batteries of 1.5V..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1934. [Buggy – A Crafty Programmable LED Creature using Microcontroller Atmel Attiny44v](#) Buggy is a programmable LED craft project using a homemade, single-sided, PCB board, and a programmable AVR Attiny44v microcontroller. Buggy has two bi-colored LED eyes and can sense visible and IR light and emit sounds using a piezo speaker. Not counting the board, there is..... Listed under: [AVR ATmega Projects](#), [Microcontroller Programmer Projects](#)
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1935. [LED Hanukkah Menorah using Microcontroller ATtiny13](#) I wanted to make an LED menorah for a friend. In planning this I decided I wanted to keep the parts-count very low and use components I had on hand. I think I have achieved my goals and couldn't be happier at the outcome of..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1936. [How to choose a MicroController](#) It used to be that the number of different microcontroller chips available to the hobbyist was pretty limited. You got to use whatever you could manage to buy from the mail-order chip dealer, and that narrowed down the choice to a small number of chips..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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1937. [Swiss AVR Knife using Microcontroller ATtiny84](#) The Swiss AVR Knife bundles a number of AVR programming projects together in a single convenient Altoids Gum Tin. Because of the flexibility afforded by microcontroller programming, it also provides a starting point for any number of projects based on LEDs and sound output. The..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1938. [How To Communicate With An Alien Artifact or ...](#) Close Encounters of the Curiously Minty Kind. This Instructable will show you how to build an Altoids version of the 'Close Encounters' mothership, and how to interact with it. This may be vital training for that day when the Bright White Beam comes to suck..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1939. [LED Microcontrolled Stained Glass Firefly Pendant using Microcontroller ATtiny45 chip](#) This Instructable will walk you through the steps needed to make a stained glass pendant with anLED that blinks in a pattern using a microcontroller. The blink pattern is an actual firefly song of a type of Japanese firefly. It is a scaled down version..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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1940. [AVRSH: A Command Interpreter Shell for Arduino/AVR](#) Ever wanted to be "logged in" to your AVR microcontroller? Ever thought it would be cool to "cat" a register to see its contents? Have you always wanted a way to power up and power down individual peripheral sub-systems of your AVR or Arduino in..... Listed under: [AVR ATmega Projects](#), [RTOS - OS Projects](#)
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1941. [Build your own \(cheap!\) multi-function wireless camera controller using Microcontroller AVR ATmega8](#) Introduction Ever fancied building your own camera controller? IMPORTANT NOTE: Capacitors for the MAX619 are 470n or 0.47u. The schematic is correct, but the component list was wrong - updated. This is an entry into the Digital Days competition so if you find it useful, please rate/vote/comment..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#), [Video - Camera - Imaging Projects](#)
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1942. [A sunrise and sunset lamp with LEDs](#) You know it, in the winter time it is hard to get up, because it is dark outside and your body just won't wake up in the middle of the night. So you can buy an alarm-clock that wakes you up with light. These devices..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1943. [Ghetto Programming: Getting started with AVR microprocessors on the cheap.](#) Microprocessors are so cheap these days. If only there were a way to program them up just as cheaply... *wavy dream-sequence lines* In this instructable, find out how to build up a complete AVR microprocessor toolchain: compiler, programmer software, programmer hardware, and some simple demos..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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1944. [Servo Controlled Labyrinth using Microcontroller ATmega32](#) Do you know this classic wooden labyrinth game with two knobs for X and Y rotation? So, I've decided to modify one by connecting two standard servos to the knobs and let a microcontroller (ATmega32) play the game. Credits: - To CarlS www.instructables.com/id/Servo-Controlled-Marble-Maze/ for inspiration..... Listed under: [AVR ATmega Projects](#), [Motor Projects](#)
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1945. [LED Scrolling Dot Matrix Font & Graphics Generator 5x8 5x7 8x8](#) If you are into geeking it out with projects of the electronical kind, then you have likely wanted to create a dot matrix display or a POV. To do this you will need to have a font file or table to read the characters from..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#), [LED Projects](#)
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1946. [Color Changing Digital PC Fan Controller using Microcontroller ATmega168](#) We've all seen LED fans that you can put in your computer to make it look cool. They usually come in blue, sometimes red or green and consist of a basic PC fan with 4 bright LED's mounted in the 4 corners. They source their..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#), [LED Projects](#)
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1947. [Atmel Xmega USB/Serial Arbitrary Waveform Generator](#) This instructable walks you through programming and using the Boston Android Xmega evaluation board to work as a simple arbitrary waveform generator taking advantage of the integrated 12bit DAC and high speed DMA controller. I have provided precompiled firmware as well as source code which..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)

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1948. [LED Cube 4x4x4 using Microcontroller Atmega16](#) Amazing 3 dimensional LED display. 64 LEDs makes up this 4 by 4 by 4 cube, controlled by an Atmel Atmega16 microcontroller. Each LED can be addressed individually in software, enabling it to display amazing 3d animations! 8x8x8 LED cube now available, by popular demand:..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1949. [Infrared Proximity Sensing Coffee Table Module & Color Changing Glowing Faucet using Microcontroller ATMEGA48](#) This is merely an instructable to explain how this device operates. I hope everything is not too obfuscated. This prototype consists of three 8x8" modules. Each module operates independently of each other. Each module consists of 4 "pixels". Each pixel is 4 inches square and..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)
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1950. [The Multi-format Clock – Gift contest](#) I tend to have good ideas when I don't need them but when I need them I always face the black wall of no inspiration. I had to come up with an idea for a present for Jeff-O. After a long week without inspiration, I came..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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1951. [Make a 8x10 L.E.D Matrix using the Arduino and 4017 decade counter](#) In this instructable I will show you how to build a quite fancy 8 by 10 L.E.D matrix(with scrolling text and animations) using the Arduino and 4017 decade counter. This type of matrix is easy to make and program and it is a good way..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1952. [LED Binary Calculator using Microcontroller ATtiny2313](#) You can't calculate binary values "as is" on most handheld calculators and using the windows one is just a pain, so i decided to make my very own (binary only) calculator. This calculator supports all the basic functions like : NOT,OR,AND,XOR, addition,subtraction,multiplication,division and modulo. So join me as we..... Listed under: [AVR ATmega Projects](#), [Calculator Projects](#), [LED Projects](#)
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1953. [Debugging AVR code in Linux with simavr using Microcontroller ATTiny85](#) I recently started programming AVR chips, namely the ATTiny85. They can be programmed using C, compilers are readily available in Ubuntu, and you can do a LOT with them - just search for avr on this site! Anyway, I was having some trouble with my..... Listed under: [AVR ATmega Projects](#), [RTOS - OS Projects](#)
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1954. [Power your Arduino/AVR with a Hand-Cranked Battery](#) If you've ever wanted to power your Arduino or AVR from a battery for development testing (batteries have different power delivery qualities than, say, transformed AC or even a regulated wall wart in DC) testing but were tired of going through batteries (Hey, I admit..... Listed under: [AVR ATmega Projects](#), [Battery Projects](#)
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1955. [USB controlled home automation hack using Microcontroller ATmega8](#) Hack a wireless home automation system to be USB controlled using two AVR microcontrollers! Check out the video! The system is really more responsive, but the browser on my phone is slow. Skills ans tools There are two ways of hacking an RF remote to..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1956. [Music Playing Alarm Clock using Microcontroller AT90USB1286](#) This Instructable will be about designing a music player from using various building blocks. You will understand the communication between the microcontroller, memory, computer, LCD display, RTC, IR remote, and the music file

decoder. I will try my best to to teach you in a..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#), [Game - Entertainment Projects](#), [Sound - Audio Projects](#)

1957. [Rechargeable Battery Capacity Tester using Microcontroller ATmega168](#) Do you have a pile of AA rechargeable batteries in your drawer? Some are old, some are new, but which sets would you bring with your camera on your next trip, and which ones are past their useful life? I like using rechargeable batteries, but..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)

1958. [Mechanized Android Figure using Microcontroller ATtiny44A](#) These Android figures are cute, but they don't actually do anything. Let's change that. Have a look at the video: These are the steps to make an Android that reacts to sound, moves it's head, sends out Morse Code messages and displays some cool light..... Listed under: [Android Projects](#), [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#)

1959. [Numitron clock & thermometer using Microcontroller atmega48](#) I really like nixie and numitron clocks, but I never worked with them before. So I decided to give it a go. I choose numitrons because of 2 reasons: first of all nixies need a higher voltage than numitrons to work. Nixies need around 170V..... Listed under: [AVR ATmega Projects](#), [Temperature Measurement Projects](#)

1960. [Yet Another Daft Punk Coffee Table \(5x5 LED Matrix\)](#) Yes, I know this has been done before, but I wanted to build my own, using as few parts as possible. I built this as a table top or wall mount model, but it can be scaled up to make a coffee table. I built..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)

1961. [Build your own Wifi radio using Microcontroller ATmega16](#) The internet hosts lots and lots of online radiostreams, most of them with a certain theme, ranging from old time classics to Tibetan riverdancing. I must admit that I love to listen to them while I'm building stuff, as I can choose the music I..... Listed under: [AVR ATmega Projects](#), [Internet - Ethernet - LAN Projects](#), [Radio Projects](#)

1962. [How to get started with Eclipse and AVR](#) Programming AVR's is fun, but sometimes the manufacturers development environments make code maintenance a chore. If your looking for a free, cross platform, high quality piece of software for programming AVR's Eclipse is a good choice. Moving to an Integrated Development Environment (IDE), such as Eclipse is..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)

1963. [Lampduino – an 8x8 RGB Floor Lamp](#) Lampduino is a computer-controlled free-standing floor lamp, comprised of an 8x8 RGB LED matrix. The lamp stands 45" high and 18" wide. Light emanates from both sides. It has various display modes, as well as an included editor for creating animations. The lamp is controlled..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)

1964. [Rainbow glowing ping pong Using ATtiny 13](#) While I was finalizing e-snowflake project, I imagined that single RGB 5050 LED would create nice rainbow effect if placed inside a ball like ping-pong. You can find plenty of such projects on the net, this one was heading to embed everything within ping-pong, battery..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)

1965. [Charlieplexing 7 segment displays using Microcontroller](#) This instructable describes how to charlieplex a bunch of 7-segment led displays. Charlieplexing of discrete leds has been the topic of a few other instructables. The Charlieplexing LEDs- The theory and the How to drive a lot of LEDs from a few microcontroller pins comes..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)

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1966. [How To Use a Nokia Color LCD using an AVR](#) Nokia manufactures a wide variety of cell phones and many of their cheaper phones contain simple LCD's which may be used in microcontroller projects. There is one particular LCD model that is used in a wide variety of their phones and is often referred to..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#)
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1967. [How to Read Many Switches with One MCU Pin](#) Have you ever been chugging away at a project(s) and the project keeps growing and growing, while you add more things to it (we call that a Feaping Creaturism)? On a recent project, I was building a frequency meter and added a five function signal..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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1968. [Cellphone Operated Robot Using Microcontrollers](#) Component Required: IC1 - MT8870 DTMF decoder IC2 - ATmega16 AVR microcontroller IC3 - L293D motor driver IC4 - 74LS04 NOT gate D1 - 1N4007 rectifier diode R1, R2 - 100-kilo-ohm R3 - 330-kilo-ohm R4-R8 - 10-kilo-ohm C1 - 0.47 μ F ceramic disk C2, C3, C5,..... Listed under: [AVR ATmega Projects](#), [Phone Projects](#), [Robotics - Automation Projects](#)
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1969. [An Absolute Beginner's Guide to 8-Bit AVR Programming-AVR Dragon](#) If you'd like to test the waters of microcontroller programming, the new AVR Dragon by Atmel Corporation is a nifty, low-cost entry-level development tool. Unfortunately, right out of the box, the AVR Dragon is not the definitive answer for the beginner looking for an all-in-one..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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1970. [ATTiny2313 Multi-mode LED Matrix Clock](#) This is a mutli-mode clock project based on attiny2313. it employs a 8x8 led matrix as display. with the limited resolution, this 12 hour clock shows time in 6 different modes. The circuit employs row and column multiplexing to drive the leds, one row at..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#), [LED Projects](#)
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1971. [Temperature Indicator Using attiny2313 micrcontroller](#) Description Features: Measures temperatures from -55°C to +125°C Three LED's to indicate in what range the temperature is. User definable thermostat with high and low settings Output via a relay to control a heater element or a blower fan (or something else) Power supply4.5..... Listed under: [AVR ATmega Projects](#), [Temperature Measurement Projects](#)
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1972. [Stepper motor Driver Using AT2313 microcontroller](#) Description With this circuit you can drive a unipolar stepper motor. It operates in full step mode. You can get a stepper motor from an old 5.25 disk drive. The AVR attiny2313 micro controller controls the pulses for the stepper motor. The pulses are amplified..... Listed under: [AVR ATmega Projects](#), [Motor Projects](#)
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1973. [Relais Board Using AT2313](#) Description This is a peripheral board with 4 relais, rated at 5A/250V each. The board has a ML10 output connector for connection with the AT2313 Project board. It has also 4 LED's for indication which relais is switched on. Hardware The circuit is simple, it..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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1974. [DS1820 Temperature Controller using atmega8515 microcontroller](#) This project displays the temperature on an LCD display with an resolution of 0.06degrees. DS1820 is used for sensing the temperature. It can measure temperature range from -55deg to +125deg. But i take care of only the possitive temperature. There are 3 switches to change..... Listed under: [AVR ATmega Projects](#), [Temperature Measurement Projects](#)

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1975. [Real Time Clock PCF8583 Using AVR microcontroller](#) Description The PCF8583 is a clock/calendar circuit based on a 2048-bit static CMOS RAM organized as 256 words by 8 bits. Addresses and data are transferred serially via the two-line bidirectional I2C-bus. The built-in word address register is incremented automatically after each written or read..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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1976. [8x8 Dotmatrix Scrolling LED display using atmega8515 microcontroller](#) Here's an another project, which makes an Scrolling LED display. Here 64 leds which are connected to an Matrix display. The Anodes are driven through an Driver IC UDN2981 and the cathodes are driven through ULN2803. The Atmega8515 is used in this project to control..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1977. [Bluetooth Based Smart Home using atmega8 microcontroller](#) This project is used to automate the home appliances through Bluetooth enabled PC. You can use the USB Bluetooth at the PC side and an Serail Bluetooth converter is used at the microcontroller side. The sparkfun bluetooth module is used here, but you can use..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)
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1978. [Multipattern Running light using ATtiny2313 microcontroller](#) Here's an another project with LED. It can show different patterns. There are 11 channels of LED. Circuit Diagram For more Detail: Multipattern Running light using ATtiny2313 microcontroller... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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1979. [Real Time Clock ATmega16](#) Description The ATmega16 chip in the M16 has a real-time counter that operates asynchronously when a 32,768hz watch crystal is connected to it, providing a real-time clock. Bascom has built-in support for the RTC, making it very easy to use time functions. The watch crystal..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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1980. [PC Thermometer Using ATTiny2313](#) Description With this project you can show the temperature on you PC. This thermometer plugs in on any free serial port. It gives temperature readings accurate to 0.5°C with no calibration.The project consists of the ATTiny2313 RS232 Project board and the DS1621 Thermometer board and..... Listed under: [AVR ATmega Projects](#), [Temperature Measurement Projects](#)
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1981. [PC Steppermotor Driver Using AT2313 μ-controller](#) Description With this circuit you can control two unipolair stepper motors in full step mode via the RS232 serial port of your PC. A terminal program such as Hyperterminal can be used to control the stepper motors. The stepper motors can be driven one at..... Listed under: [AVR ATmega Projects](#), [Motor Projects](#)
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1982. [LCD Thermometer TCN77 Using AVR Microcontroller](#) Description The TC77 is a digital temperature sensor with a Serial Peripheral Interface. Temperature data is converted from the internal thermal sensing element and made available at anytime as a 13-bit two's compliment digital word. Communication with the TC77 is accomplished via a SPI and..... Listed under: [AVR ATmega Projects](#), [Temperature Measurement Projects](#)
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1983. [LCD Thermometer TCN75 Using ATTiny2313](#) Description This small thermometer board uses the Microchip TCN75 device. It is a cheaper clone of the LM75, it costs about 2,50 Euro. The TCN75 comes in a SO8 packaging. The TCN75 is a serially programmable temperature sensor. It has an output that is programmable..... Listed under: [AVR ATmega Projects](#), [Temperature Measurement Projects](#)

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1984. [LCD Thermometer LM35 Using AT Mega8](#) Description The LM35 of National Semiconductors that is used in this project is a precision centigrade temperature sensor, which has an analog output voltage. It has a range of -55°C to +150°C and a accuracy of $\pm 0.5^\circ\text{C}$. The output voltage is 10mV/°C. The..... Listed under: [AVR ATmega Projects](#), [Temperature Measurement Projects](#)
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1985. [AVR GPS Locator using avr microcontroller](#) In this project i have interfaced an GPS with AVR microcontroller, the ATtiny2313 gets the location from the GPS and display it over the LCD display. This project also have the feature of marking a place with its name. For entering the Name of the..... Listed under: [AVR ATmega Projects](#), [GPS Based Projects](#)
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1986. [MMC card based WAV player using atmega32](#) This projects gives you a simple wav player with help of the MMC card connected to ATmega32. You can use any AVR microcontroller. The MMC card works on 3.3v so a 3.3v regulator is used and the 5v to 3.3v level conversion is done by..... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)
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1987. [LCD Message Display Using AT Mega8 microcontroller](#) Description This LCD message display can show text with large characters on an 20*4 LCD module. The display can show five characters at a time. Each characters is build from twelve characters of the display module. The text on the display can be read from..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#)
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1988. [LCD Interface Board Using ATTiny2313](#) Description This board can directly connected to the STK 500 board or the ATTiny2313 ISP program board with a 10 pole flatcable on the 10 pin header of the STK500 and the 10 pin header of the LCD/Switch board. The display has 16*2 character positions..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#)
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1989. [8 MHz frequency meter using AVR microcontroller](#) This project can measure the clock pulses fed to the Timer input of the AVR microcontroller. The Bascom code counts the clock pulses for 1 second and display it over the LCD display. The frequency is displayed in Hertz and this project can measure a..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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1990. [LCD Display On Glass Interface Using AT2313](#) Description Liquid Crystal Display on Glass is the newest in LCD technology. The display's are very compact, it measures 55x27 mm and the height is only 2mm without LED backlight and 5.8mm with LED backlight. The display's can have different LED background light instead of..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#)
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1991. [Temperature controlled fan using PWM microcontroller](#) This project gives you a simple temperature controlled fan. If the difference between real temperature and the user temperature is high then the fan will run at full speed and if the difference is low then the fan will rotate at slow speed. The speed..... Listed under: [AVR ATmega Projects](#), [PWM Projects](#), [Temperature Measurement Projects](#)
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1992. [SMT160 based Temperature indicator](#) There are lot of temperature sensors both with analog & digital outputs. This project gives you an another temperature indicator which has been done with a digital sensor SMT160. Although it is a digital sensor it does not gives out the temperature directly. The output..... Listed under: [AVR ATmega Projects](#), [Temperature Measurement Projects](#)

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1993. [Digital Melody player using atmega16 microcontroller](#) Here' s an melody player with Atmega16. The command "Sound Speaker" is used to generate sound. This is the inbuilt command in Bascom AVR. For more Detail: Digital Melody player using atmega16 microcontroller... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)
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1994. [Stepper motor Control with Atmega16](#) With this project you can control a unipolar stepper motor. You can control both the speed and the direction of the motor. The speed and direction and can changed with help of the keypad. The data's are displayed over the LCD display. A 4x4 keypad..... Listed under: [AVR ATmega Projects](#), [Motor Projects](#)
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1995. [Graphical LCD with KS108 controller](#) Description The Graphical LCD 128x64 controlled is with the ATmega16, the graphic LCD GLCD HG1286418C-VA with a S6B0107/S6B0108 controller is used. See below for the pinout of the display. The display has 8 data bits and 5 control bits. The databits are hooked to PORTB..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#)
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1996. [Simple calculator using avr microcontroller Atmega16](#) Here's a simple calculator with the Atmega16 microcontroller. It have an LCD display and a 4x4 keypad. You can also download the proteus simulation file on the downloads Bascom Code \$regfile = "m16def.dat" \$crystal = 1000000 Config Kbd = Portd , Debounce = 30 Config..... Listed under: [AVR ATmega Projects](#), [Calculator Projects](#)
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1997. [Transform a cheap RC Transmitter with Custom Firmware using ATMEGA64 Microcontroller](#) The Turnigy 9x is a cheap Chinese radio transmitter widely sold by hobby king and other retailers under a variety of names. This is a computerized radio transmitter and is already a great deal for the price (\$53 currently) and pretty capable if you can..... Listed under: [AVR ATmega Projects](#), [Radio Projects](#)
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1998. [ATTiny2313 Board RS232](#) Description This board is a small controller board on which you can build your projects. It is suited for educational use, experiments or prototyping. The board uses the AT2313 microcontroller with a 10Mhz crystal. The board contains the ISP 10-pin connector for in circuit serial..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c - ISP\) Projects](#)
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1999. [Make an automatic plant light using ATTiny26 Microcontroller](#) This light helps your plants grow. I got the idea from the Garduino, but nothing is taken from it. The schematic and the program are mine. This plant light gives your plants 4 additional hours of light per day. When it gets dark, it turns..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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2000. [LED wind indicator Using atmega8 Microcontroller](#) I have something with the weather. I always like to know how warm or cold it is, how much rain has fallen, how hard the wind blows and from what direction,... and so there are lots of sensors around our house to keep me up..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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2001. [Ghetto Pixels – Building an open source BlinkM Using ATTiny45 Microcontroller](#) Unless you've been living under a digital rock for the last few years, or just simply aren't interested in flashing lights, you'll already know about the awesomeness that is the BlinkM from ThingM. It's a very small PCB featuring a high power LED that responds very easily..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)

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2002. [USB PCB Business Card Using ATtiny85 Microcontroller](#) This is a business card that will type out some text when you plug it into a USB port. It uses a ATtiny85 microcontroller with V-USB based code to emulate a keyboard. The typing is triggered by the CAPS LOCK status LEDs being toggled 3..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Other Projects](#)
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2003. [Using ATmega328 Microcontroller Custom Tron Disc Mod](#) In this Instructable, I cover modding the store-bought Deluxe Identity Disc to an upgraded version with 64 leds, controlled by an AVR MCU. The upgraded version is costume-ready and would be an excellent addition to your Tron costume - it'll also look great on your..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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2004. [DIY TiX Clock using ATMEGA16 AVR microcontroller](#) Here's my instructable for a DIY TiX clock. It is powered by an AVR microcontroller. The display is made up using a piece of reflector grid you find covering office lights, some smoked perspex, a diffuser and a bunch of LED's. The Idea came from..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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2005. [Starry Ceiling for Kids Bedroom Using AT90S8538 microcontroller](#) When my little girl was born I wanted to make her a special night light for in her room. I made her a ceiling light with twinkling stars. It is made up of a piece of custom wood with 100 LEDs mounted in it. An..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#), [Home Automation Projects](#)
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2006. [Using max7219 microcontroller Build an electronic score keeper/storage box](#) The instruction manual for each of the MANY munchkin series of card games always includes a phrase like "you will need a 10 sided die for each player or some other device to keep score." 10 sided dice are not hard to find in my..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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2007. [Using AtTiny2313 microcontroller Build an electronic polyhedral die](#) Dice are fun. Polyhedral dice used in D & D are even more fun, particularly in big handfuls of different sizes. But a handful isn't always practical. Ever since I saw the dragon bone electronic die wand advertised in the back pages of Dragon magazine..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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2008. [Turn a TV-B-Gone into a super camera remote](#) Intro: My Nikon DSLR has an infrared remote function (remote sold separately) that is really handy, but fairly limited in range. A while ago, I bought a TV-B-Gone Kit from it's inventor Mitch Altman, and it can turn TV's off from a great distance. I..... Listed under: [AVR ATmega Projects](#), [Video - Camera - Imaging Projects](#)
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2009. [How to drive a lot of LEDs from a few microcontroller pins.](#) Using the fact that many microcontroller pins have three states (+V, GND, or "high impedance"). You can drive $N*(N-1)$ LEDs from N pins. So the little 8 pin microcontroller like a PIC12Fxxx or an ATtiny11 can drive 20 LEDs on its five available output pins,..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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2010. [Hack a Toaster Oven for Reflow Soldering using ATmega32 microcontroller](#) As I get more serious into my electronics hobby, I need to work with more SMD components. Some component packages are very difficult or impossible to solder with a traditional soldering iron. To solve this problem, I decided to hack a toaster oven to become..... Listed under: [AVR ATmega Projects](#), [CNC - Printing Machines Projects](#)

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2011. [Using the 8Pin ATTINY programming shield with an external clock](#) Instructables author extraordinaire Randofo created a great programming shield to use your Arduino to program 8 pin ATTINY processors. He was even generous enough to give 50 copies of it out to people who authored instructables using AVR processors. It works great on brand new ATTINYs and..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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2012. [Picopter using Microcontroller ATmega128RFA1](#) Update May 4 2012: I am still working very hard on version 3 of Picopter. The new version's hardware is already done. There are new 3D printed motor holders. I've done some measurements with regards to mass and radio spectrum. I've posted stuff to http://www.frank-zhao.com/picopter_forum/index.php including..... Listed under: [AVR ATmega Projects](#), [Robotics - Automation Projects](#)
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2013. [Box with a Music Lock using ATmega328P Microcontroller](#) There are a lot of locks out there. There are locks open with a key, with a combination of digits, with various bodily parts, or with a correct geolocation. I decided to make a lock that I have not seen yet. Since I am learning..... Listed under: [AVR ATmega Projects](#), [Game - Entertainment Projects](#)
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2014. [Measure negative temperature with Lm35](#) LM35 can measure temperatures from -55deg to 150deg and we need negative supply voltage for measuring this negative temperature. This circuit eliminates the negative voltage power supply and this project can measure the negative temperature Download the proteus file to simulate the project on your..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#), [Temperature Measurement Projects](#)
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2015. [DC Motor Speed Control using PWM](#) This project gives a speed control of DC motor through PWM method. The Dc motor is derived by the L298 driver IC. You can also control the direction of the motor. There are three buttons to control the motor. Also a bar graph Led display..... Listed under: [AVR ATmega Projects](#), [Motor Projects](#)
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2016. [ISD4004 based voice recorder](#) So far we have seen various devices that are talking, such as cars, dolls etc. This project is also like one of them. you can use it in various projects such as IVS, robots etc. There are various voice recording IC's. They have different recording time..... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)
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2017. [Thermometer with Clock using ATmega16](#) This project will display the temperature and time over the LCD display. LM35 is used to sense the temperature and the analog out of the LM35 is converted to digital by using the inbuilt ADC on the ATmega16 chip. An software clock is generated and..... Listed under: [AVR ATmega Projects](#), [Temperature Measurement Projects](#)
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2018. [Scientific Calculator using AVR Microcontroller](#) This project gives you a nice and simple scientific calculator using AVR microcontroller. It has 2 keypads as shown in the circuit diagram and the results are shown on the 16x2 LCD display. You can do sin,cos, tan functions using this project. The code is..... Listed under: [AVR ATmega Projects](#), [Calculator Projects](#)
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2019. [Traffic light controller using avr microcontroller](#) Here's a traffic light controller using avr microcontroller. It can be adopted for a four way road. The code is written in Codevision C. You can download the C code and the proteus file from the download. For more Detail: Traffic light controller using avr..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)

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2020. [ATTiny Board For AVR ATTiny microcontrollers](#) Description With this small board you can program most of the AVR ATTiny microcontrollers or you can build your projects to use it in a stand alone application. It can be powered with a 9V battery because it has 5V voltage regulator on it. The..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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2021. [DS1307 based Clock using lcd](#) This project gives you a real time clock with the RTC chip DS1307. This RTC chip has inbuilt oscillator for clock and it has its own registers for full calender. In this project we dont take care about the days and we just use the..... Listed under: [AVR ATmega Projects](#), [Clock Projects](#)
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2022. [Digital dimmer using Microcontroller atmega8](#) This project is used to control the brightness of the lamp or can be used to control the speed of the fan. The system consists of 3 block they are Zero crossing detector Microcontroller (Atmega8) Load Driver (BT136)As the name implies the zero crossing detector..... Listed under: [AVR ATmega Projects](#), [Home Automation Projects](#)
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2023. [Digital Voltmeter using Microcontroller Atmega8](#) This project gives you a digital voltmeter which can measure voltage from 0v to 25V DC. The values are displayed over the 7segment display. Atmega8 is used and the internal ADC is used to measure the DC voltage. The resistor network is used to reduce..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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2024. [Make-Yourself ATmega32 Starter's Kit with LCD, I2C, SPI, RTC, ADC interfaces](#) Here is my home-made kit of ATmega32 microcontroller interfacing. The ATmega32 controller is rich with features like onboard 32kB in-System programmable flash, 1 KB EEPROM, 2KB SRAM, 10bit ADC (8 channel), SPI bus inteface, TWI (compatible with I2C bus) interface, an USART, analog comparator, etc..... Listed under: [AVR ATmega Projects](#), [Development Board - Kits Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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2025. [Capacitance and Inductance meter using Atmega8](#) This project can measure capacitance and inductance using the Atmega8 microcontroller and the code is written in Bascom AVR. The limitations of this project is Inductance Range: 0.1?H to 2H Capacitance Range: 1pF to 2.5?F Electrolytic Capacitor Measurement Range: 0.1?F to 30000?F Circuit Diagram: For..... Listed under: [AVR ATmega Projects](#), [Metering - Instrument Projects](#)
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2026. [SD/SDHC Card Interfacing with ATmega8 /32 \(FAT32 implementation\)](#) Here is my project on interfacing of SD Card (microSD). microSD cards are available very cheap nowadays, a great option for having a huge memory in any embedded system project. It is compatible with SPI bus, so the interfacing is easy. SD card adapters are..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Memory - Storage Projects](#)
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2027. [LPH7319 controlled via I2C](#) I recently obtained a very old mobile phone from a friend. The battery was dead, so I dismantled it and to my surprise found a display with soldered contacts. In other mobile phones the display was connected via a conducting polymerpad, which was extremely difficult..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c - ISP\) Projects](#)
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2028. [microSD FAT32 testing using Visual C++](#) This post presents a way for testing and learning the FAT32 system on microSD/ SDHC cards without building the hardware with microcontroller, thanks to Henry Yiu. This project uses the FAT32 library available in my previous post, but does away with the microcontroller part. So,..... Listed under: [AVR ATmega Projects](#), [Memory - Storage Projects](#)

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2029. [Ultrasonic range finder using ATmega8515](#) This project is used to measure the distance using ultrasonic sensors. The ultrasonic signal passes through the atmosphere to a barrier, which we want to measure the distance. Part of this signal is reflected and travels back to the receiver. The time delay between sending..... Listed under: [AVR ATmega Projects](#), [Other Projects](#), [Sound - Audio Projects](#)
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2030. [4x4 LED Display](#) The 4x4 LED Display was my first project with a two-layer circuitboard layout. The alignment was not 100% optimal, but sufficient. I wanted to make the board as small as possible, so the parts had to be stacked at some places. The square LED's were..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#), [LED Projects](#)
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2031. [microSD ATmega32 Data-Logger](#) Aim of this project is to present a way to store a large quantity of data into microSD card in files with FAT32 format. Here, ATmega32 is used for data collection and microSD interface. The data is received from in-built 8-channel ADC of ATmega32. One..... Listed under: [AVR ATmega Projects](#), [Memory - Storage Projects](#)
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2032. [UV Exposure Unit & Etching](#) Manufacturing circuitboards containing SMD-parts with toner-transfer is nearly impossible. The thin traces almost never get transferred completely to the copper. One solution to this problem is to use photoresist boards and expose them with UV light. The layout is printed onto a transparency, which is..... Listed under: [AVR ATmega Projects](#), [Other Projects](#)
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2033. [8x8 Bicolor LED Matrix using MAX6964](#) For a long time I had a layout for this circuit, but could never build it, because the layout was too small to be made by tonertransfer. So it was the first layout I made with my new exposure unit. It's quite small, so it..... Listed under: [AVR ATmega Projects](#), [LED Projects](#)
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2034. [Thermometer using DS1621 and Nokia 3310 LCD interfaced with ATmega8](#) I am presenting one application with the Nokia 3310 LCD: Designing a thermometer using DS1621 temperature sensor IC. DS1621 is 8-pin sensor from Maxim, with temp range of -55 to +125 degree C, which can be interfaced with microcontroller over two-wire serial i2c bus. It..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [Temperature Measurement Projects](#)
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2035. [EPROM Display using ULN2308A microcontroller](#) Due to university and work it has been a while since the last post. But I just completed a little project that's worth posting. Several old 27C256 EPROMS were lying around unused. So I thought about a purpose for them. As I also had some..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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2036. [CNC Update 2 Using atmega32 microcontroller](#) Another update on the CNC. The interfaceboards are etched, soldered and tested. IO / Control Boards Step- and directionsignals are generated by an ATmega32 which is controlled over RS232. This is only for testing purpose. In the final version a PC will control the movement..... Listed under: [AVR ATmega Projects](#), [CNC - Printing Machines Projects](#)
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2037. [Delta Robot using atmega32 micrcontroller](#) And now for something completely different: A little robotics project for the weekend. The described robot can be build entirely from model making supplies and materials from the hardware store. Also only very few tools are needed. A metal saw, a drill press, a vice..... Listed under: [AVR ATmega Projects](#), [Robotics - Automation Projects](#)

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2038. [Simple PWM DC motor control using MOSFET H-Bridge with AVR ATmega8](#) Here is a very simple project of controlling a small DC-motor (taken from an old personal cassette player) with ATmega8. The ATmega8 is having three PWM channels, out of which two are used here. PWM waveforms are fed to MOSFET (RFD3055) H-bridge. Here, direction is..... Listed under: [AVR ATmega Projects](#), [PWM Projects](#)
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2039. [circuit schematic symbols](#) circuit schematic symbols: Download High Quality circuit schematic symbols images of common electrical and electronics components, for creating any schematic diagram. Basically Electrical components can be divided in two categories Passive components and Active Components. This post will have following schematic symbols. Click on Image..... Listed under: [Blog](#), [Circuits](#)
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2040. [4 bit interfacing of a 16X2 LCD display to PIC16F877A, Atmega16/32 & MSP430](#) 16x2 LCDs are most commonly used display units in microcontroller based projects. I got much information about LCD, LCD commands, LCD initialization etc from the below link and I hope, it will be very much helpful for beginners. For more Detail: 4 bit interfacing of..... Listed under: [AVR ATmega Projects](#), [LCD Projects](#)
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2041. [My own AVR ISP programmer using PIC16f877a and python!](#) Introduction: (don't skip to read the note below) I recently purchased few AVR microcontrollers. I don't know much about AVR since I am using it for first time. Any way, I have some experience on working with PIC and MSP430. To program AVR using USB,..... Listed under: [AVR ATmega Projects](#), [Microcontroller Programmer Projects](#)
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2042. [4x4 Matrix Key-board Interfacing with ATmega32](#) Here is a project for beginners to interface a 16-key (4x4) keypad with ATmega32 using 8-pins i.e. one port of the microcontroller. This is useful particularly where we need more keys but don't want to spend more uC pins for interfacing. The 4x4 keypad is..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#)
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2043. [NOKIA 3310 LCD interfacing with ATmega8](#) Using graphic LCD in a project gives it really a good look and flexibility of displaying different characters and shapes. But, the graphic LCDs are quite costly. The NOKIA 3310 LCD provides a really low-cost solution to add a small graphic display into your project..... Listed under: [AVR ATmega Projects](#), [Interfacing\(USB - RS232 - I2c -ISP\) Projects](#), [LCD Projects](#)
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2044. [DIY AVR Programmers](#) For those who are trying to make AVR kit at home, an AVR programmer which can be simple to make will be really useful, as it'll avoid buying the programmer!! Here I'm giving a few webpage links on how to make a programmers yourself. -..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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2045. [TV remote controller 160KHz High Quality Stereo MMC WAV player using ATMEGA32](#) Introduction: This is my first AVR based hobby project and the most successful one compared to my all previous stuff. I am 100% satisfied with this work. Few months ago, I tried to make a wav player using a PIC16F877A. It worked anyway, but the..... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)
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2046. [Multitasking in AVR \(A demo to run 7 tasks on an atmega32\)](#) Introduction: Switching multiple tasks on a same CPU is the one of the major function of an operating system. What I did now is a time sharing multitasking (time multiplexing) on an AVR. Here an atmega32 is configured to use Round-Robin Multitasking. Round-Robin allows quasi-parallel..... Listed under: [AVR ATmega Projects](#), [RTOS - OS Projects](#)

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2047. [An attempt to show grayscale images on an LED dot matrix display with software PWM using PIC16F877A](#) Introduction: This is just a time pass hobby project, I am trying to display some pictures (JPEG/PNG/BMP etc) on my 8x8 led dotmatrix display. You can see photos of my 8x8 led dotmatrix display showing some grayscale pictures. The main thing which you may notice..... Listed under: [AVR ATmega Projects](#), [PWM Projects](#), [Video - Camera - Imaging Projects](#)
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2048. [AVR based monochrome signal generation for a PAL TV using atmega16 micrcontroller](#) Introduction: I have learned some thing about TV in one of my B.tech semester but I forgot most of them. Now I refreshed a few basics and tried to implement a monochrome PAL TV signal generator using an AVR micrcontroller. I was using PIC earlier..... Listed under: [AVR ATmega Projects](#), [Video - Camera - Imaging Projects](#)
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2049. [Drawing geometric figures on a PAL TV using ATmega32 \(128x64 resolution\)](#) Introduction: I am interested to draw lines, square, rectangle, circle etc on my TV screen. At first I was confused where to start. While thinking about it, a pencil and an eraser came to my mind. If we have a good pencil, eraser and a..... Listed under: [AVR ATmega Projects](#), [Video - Camera - Imaging Projects](#)
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2050. [Running PYTHON \(pymite-09\) on an Arduino MEGA 2560 using atmega16 micrcontroller](#) Now it is the first time I am using an arduino board. Arduino mega 2560 is really a great product. The chip got a flash of 256KB, RAM of 8KB and EEPROM of 4KB. Also, the data sheet of Atmega2560 says that we can extend..... Listed under: [AVR ATmega Projects](#), [How To - DIY - Projects](#)
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2051. [Generating AUDIO ECHO using Atmega32 microcontroller](#) Introduction: But now I can do this very easily by a simple digital signal processing using a microcontroller. It's concept is very simple, ie we need to apply a proper delayed feedback in digital samples with in a circular buffer. I did this using an..... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)
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2052. [Implementing Discrete Fourier Transform in Atmega32 to make an audio spectrum analyzer](#) "All waveforms, no matter what you scribble or observe in the universe, are actually just the sum of simple sinusoids of different frequencies." Hi, I am just refreshing the basics of fourier transform. I am not an expert. Now I did a small audio spectrum..... Listed under: [AVR ATmega Projects](#), [Sound - Audio Projects](#)
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2053. [Arduino Mega 2560](#) What is Arduino Mega 2560: The arduino mega 2560 is a microcontroller board in line with the ATmega2560 (ATmega2560 datasheet). It's having 54 digital input/output hooks (of which 14 can be used PWM results), 16 analogue inputs, 4 UARTs (Universal asynchronous receiver/transmitter) to interface with..... Listed under: [AVR ATmega Projects](#), [Blog](#), [Circuits](#), [How To - DIY - Projects](#)
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2054. [Homage UPS Schematic Circuit Diagram](#) Homage UPS: Homage UPS is one of the top selling brand. Homage UPS/Inverter is based on chopper technology having modified sine wave. It has overload output protection, with batter and output volts measurements displayed on LCD interface. Further specifications are mentioned in undergiven table Homage..... Listed under: [Blog](#), [Circuits](#)
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2055. [PCM UPS Schematic Diagrams](#) PCM Powercom was founded in 1987, a leading provider of power protection products with ISO 9001 certificate. There are over 2,600 employees around the world. Powercom designs, manufactures, markets and services UPS systems. PCM UPS Schematic Diagram for Model ULTIMATE 700/1000/1500VA POWER Features : LED/LCD..... Listed under: [Blog](#), [Circuits](#)

2056. [PowerMan UPS Schematic](#) PowerMan UPS/Inverters Uninterruptible power supplies and voltage regulators Business founded in 1993. Prior to 2000. company engaged in distribution of products of famous brands. In the year 2000. the idea of creating his own brand POWERMAN, and from that period, the company is exclusively OEM..... Listed under: [Blog](#), [Circuits](#)

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2058. [UPS Schematic Circuit Diagram](#) UPS is an abbreviation of Uninterpretable Power Supply. It is an electronic product used to provide backup power for sensitive devices in case their normal power failure or blackout. Given UPS Schematic Circuit Diagram with its component list is a complete guide to build standard..... Listed under: [Blog](#), [Circuits](#), [Featured](#)

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