# List of Projects using atmega with advance view:

1. 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 als pretty small pocket on the internet a lot jammer circuit ,... Electronics Projects, Portable RF Jammer Circuit ATmega48 "avr project, microcontroller projects, "   S far...... Listed under: Sensor - Transducer - Detector Projects

2. 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 Remot Circuit Bluetooth AT90USB1287 Nokia LCD LMX9838 "avr project, microcontroller projects, "...... Listed under: Other Projects

3. 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 alam. ATTINY13 PB2, PB1,... Electronics Projects, Battery Alarm Circuit for Model Helicopters ATtiny13 "avr project, microcontroller projects, simple...... Listed under: Battery Projects, Circuits, Clock Projects

4. 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

5. 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

6. 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

7. DIGITAL CLASS D AMPLIFIER PROJECT TAS5613 TDA9859 ATMEGA128 TDA9859 The main part of the preamplifier is an integrated circuit TDA9859, this integrate 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
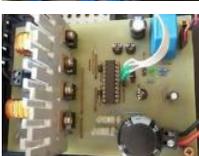
8. DIGITAL CLASS D AMPLIFIER CIRCUIT TAS5706A PCM1850A ATMEGA128 TAS5706A Class D Amplifier was itself the signal processor. From this parts depend all the other elements. Has an impact on the type of power supply, the control method of the type converter. That... Electronics Projects, Digital Class D Amplifier Circuit TAS5706A PCM1850A ATmega128 "audio amplifier circuits, avr...... Listed under: PWM Projects

9. 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

10. 240W ELECTRONIC BALLAST CIRCUIT IR2104 ATMEGA48 CONTROLLED IR2104 240W Fluorescent tube Ballast Circuit. Work was designed an electronic ballast f 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

11. 1A 10A ADJUSTABLE BATTERY CHARGING CIRCUIT 100AH Atmel ATTINY24 microcontroller based automatic battery charger circuit can charge 12V batteries wit 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

12. 230V FAN REGULATOR CIRCUIT MOSFET MC33152 ATTINY25 Brushless asynchronous motors, with compact rotor windings, called short cages, are used to driv 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

13. THERMOMETER HYGROMETER CIRCUIT USB DHT22 ATMEGA8 The presented layout is a snap on a computer for measuring DHT22 temperature and humidity. 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

14. 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
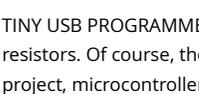
15. TINY USB PROGRAMMER AVR MICROCONTROLLERS AVRDUDE USB programmer There are few components – the ATtiny45 microcontroller, two Zener diodes, a capacitor and several resistors. Of course, there are still connectors – USB plug and IDC-6 plug. Resistor R1 informs host... Electronics Projects, Tiny USB programmer AVR microcontrollers AVRDUDE "avr project, microcontroller projects, programmer circuit, "...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects

16. ATMEGA48 TIMER TRIGGERED BY CURRENT FLOW ASM-010 ATMEGA48 Many devices may be in standby mode during downtime. They do not perform any wor... 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
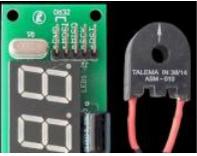
17. Ultrasonic Radar Model Using Microcontroller ATmega128 The circuit described here demonstrates the working of a radar system. It uses ultrasonic waves to detect an object and measure its distance and angular position, and displays the same on a 20x4 LCD screen. -- Ashutosh M. Bhatt is an M. Tech in embedded...... Listed under: Sensor - Transducer - Detector Projects

18. 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
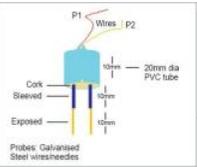
19. NIXIE TUBE THERMOMETER CIRCUIT Nixie lamp Thermometer DS18B20 Circuit with ATtiny2313 The first Nixie lamps appeared in the mid-twentieth century. F... many years they have been used in a variety of apparatuses but have been supplanted by newer... Electronics Projects, Nixie Tube Thermometer Circuit "avr project, microcontroller projects, " Nixie lamp Thermometer DS18B20 Circuit...... Listed under: Metering - Instrument Projects
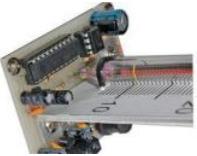
20. ATMEGA8 FT232R USB ESR METER CIRCUIT USB ESR Meter Circuit The main part of the meter is a ATmega8 microcontroller that controls the entire device. Its main the task is to process measured data and perform calculations so that the... Electronics Projects, ATmega8 FT232R USB ESR Meter Circuit "atmega8 projects, avr project, microcontroller projects, "...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects

21. 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

22. 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 the...... Listed under: Phone Projects

23. 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

24. 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

25. 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

26. 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 ca... be...... Listed under: LCD Projects
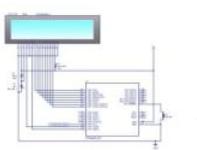
27. How to Work With 32K crystal and AVR Microcontroller This article teaches you how to add 32K external crystal source to AVR micro controller (Atmega8) with circuit diagram & C program. Introduction Timing-is one of the basic function, performed by the micro controllers. Every microcontroller has at least one timer/counter module in its...... Listed under: AVR ATmega Projects
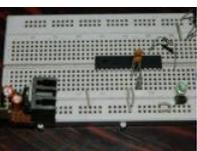
28. How to work with the ADC unit of an AVR Micro-controller Introduction The first step to digital signal processing is to convert a signal into digital data, and here the Analog to Digital Converter devices comes into action. Some of the AVR micro controllers include ADC unit in their features. This is a very useful unit...... Listed under: Security - Safety Projects

29. Simple LED Projects Using AVR Microcontroller This article is another step forward in learning more about AVR microcontrollers. We have demonstrated 3 simple LED based projects using ATmega328 microcontroller, which will help you to learn its basic concepts. ATmega328 is an eight bit AVR (Advanced Virtual RISC) based microcontroller. It is...... Listed under: LED Projects

30. 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

31. 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
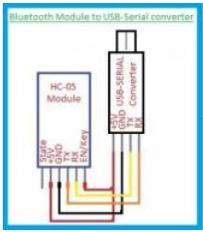
32. Keypad Door Lock using AVR Microcontroller – Atmega16 Password Based Keypad Door Lock In this article, a digitally secured lock based on password verification is explained. The system uses a seven segment display array to show the password, a matrix keypad to enter the numbers/password and operates a relay (to activate the solenoid...... Listed under: Security - Safety Projects

33. 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

34. 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 proje microcontroller projects,...... Listed under: Clock Projects

35. 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 breadboa before making...... Listed under: AVR ATmega Projects

36. 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

37. 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
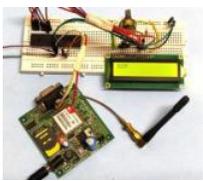
38. Interfacing GSM Module with AVR Microcontroller: Send and Receive Messages GSM modules are interesting to use especially when our project requires remo access. These modules could make all actions that our normal mobile phone could do, like making/receiving a call, sending/receiving a SMS, connecting to internet using GPRS etc. You can also connect a normal microphone...... Listed under: Phone Projects

39. 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

40. 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

41. 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
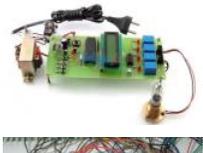
42. Auto No Break Power Supply Control The major aim of this no break power supply project is to supply continuous energy supply to a load, by picking the supp from any spring out of the four like – generator, mains, inverter and solar robotically in the lack of any of the...... Listed under: LCD Projects
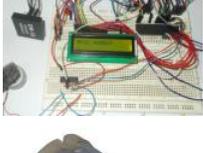
43. RFID Based Toll Collection System We know in offices, shopping malls and in many other places where only the person with authorization card is allowed to enter the room. These systems use RFID communication system. RFID is used in shopping malls to stop theft as the products are tagged with RFID chip...... Listed under: LED Projects

44. DC motor interfacing with AVR ATmega16/ATmega32 DC motor converts electrical energy in the form of Direct Current into mechanical energy. In case of moto 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

45. 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

46. 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

47. An NRF24L01+ and FTDI Ready Atmega 328P-PU (3.3V, 500 MA) Microcontroller With Dual Power Capability, Undervoltage, Hysteresis, and Thyristor-Crowbar Overvoltage Protection The 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

48. 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

49. 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

50. 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

51. 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

52. 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

53. 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

54. 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

55. 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

56. 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

57. 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

58. 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

59. 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

60. 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 my 12Volt...... Listed under: AVR ATmega Tutorial, Microcontroller Programmer Projects
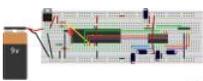
61. Micro-controller Programming on a Bread Board In playing around with DIY electronics, Pugs has developed enough confidence to share his knowledge with his juniors. So, in one such occasion, he decided to give a try to program a micro-controller, as part of the electronics hobby club. There have been many hobbyist...... Listed under: Battery Projects
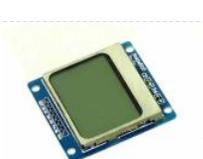
62. Nokia5110 graphical display interfacing with AVR ATmega16/ATmega32 Introduction Nokia5110 is a graphical display that can display text, images and various patterns. It has a resolution of 48x84 and comes with a backlight. It uses SPI communication to communicate with a microcontroller. Data and commands can be sent through microcontroller to the display...... Listed under: Phone Projects

63. 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 the 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
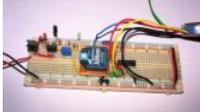
64. The simplest digital voltmeter with AVR This is probably the simplest possible digital voltmeter with Atmel AVR microcontroller. The circuit is controlled by a microprocessor IO1 - Atmel AVR ATmega8 (ATmega8, ATmega8L), a program to download and configuration bits setting is below. (ATmega8 may seem too "big" but was chosen because...... Listed under: AVR ATmega Tutorial, Clock Projects, Electronics News Updates, LED Projects
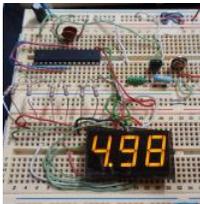
65. Input Devices Measure something: add a sensor to a microcontroller board that you have designed and read it. This week I decided to make ATMEGA 328 board. ATMEGA 328 Some of the Features of ATMEGA 328 are 1.8-5.5V operating range Up to 20MHz 32kB Flash program memory...... Listed under: AVR ATmega Tutorial, Microcontroller Programmer Projects, Sensor - Transducer - Detector Projects

66. 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
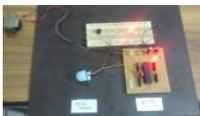
67. Analogue to Digital Conversion on an ATmega168 Many AVR microcontrollers are capable of doing Analogue to Digital Conversion. The ATmega168 has 6 ports (8 ports on the SMD packages) that can be used for analogue input. This tutorial shows you how. The circuit The Breadboard layout is based on the Atmega8 breadboard...... Listed under: Android Projects, AVR ATmega Tutorial, Microcontroller Programmer Projects

68. 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
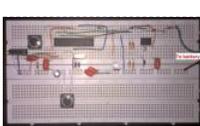
69. How to drive 595 shift registers with AVR hardware SPI Driving a shift register using an AVR chip's built-in hardware is really quite easy. Most of their offerings have an SPI module, or Serial Peripheral Interface. A shift register is exactly that, a peripheral device that communicates via a serial line. All we need to...... Listed under: AVR ATmega Tutorial, Clock Projects
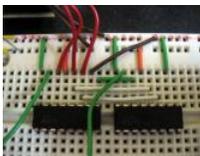
70. Make your own AVR JTAG debugger Tired of putting LEDs every time you want to check some value in the microcontroller? Well, its time to build yourself a debugger. A debugger is a device which helps you run through your code in the microcontroller step by step and also gives you...... Listed under: LED Projects, Robotics - Automation Projects

71. 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

72. 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
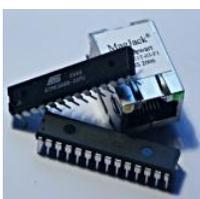
73. Fastest Finger First Quiz Project using ATmega16 Most of you must have watched quiz games in TV shows or at your schools where few contestants are required to press a switch if they know the answer to the question. An electronic system is required to find out exactly which one of then...... Listed under: LED Projects
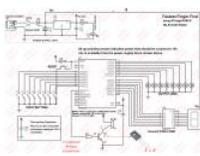
74. Making a LED Message Display with Keyboard Interface LED signage has become the choice in modern days to convey message to visitors of a venue. Be it corporate office, shops, restaurants or any kind of social functions like marriages. Some big and complicated display needs dedicated control PCs and designer to build contents...... Listed under: LED Projects

75. 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

76. 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

77. 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

78. 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

79. 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

80. **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 Project

81. **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

82. **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
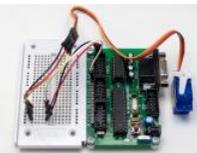
83. **servo motor controller** In ths project you can learn how to build a servo controleer motor with the ATMEGA328 board. The position of the servo motor is controlled by the software (sweep back and forth) or by a potentiometer. The position of the servo motor is set by...... Listed under: Motor Projects
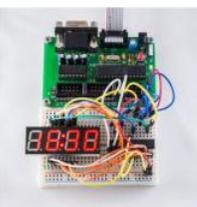
84. **LED Driver MAX7219 – clock** Below is the schematic that shows how the IC is wired to the ATMEGA328 microcontroller and the 4 digit 7-segment display with comon cathode.   Besides the MAX7219 you need only three other external components: two capacitors and one resistor. The capacitors are here to...... Listed under: LED Projects

85. **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
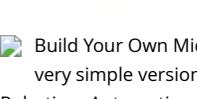
86. **Build Your Own Microcontroller Based PID Control Line Follower Robot (LFR) – Second Part** One of the interesting parts in building the Line Follower Robot is; you could start it with very simple version by using just two transistors with the LED and LDR for sensor (Build Your Own Transistor Based Mobile Line Follower Robot – First Part)...... Listed under: Robotics - Automation Projects
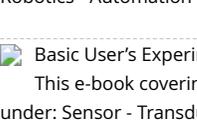
87. **Basic User's Experiment Notes** The "Basic User's Experiment Note" is based on the popular 8-bit Atmel AVR ATmega328P microcontroller using AVRJazz 28PIN development board. This e-book covering most of the Atmel AVR ATmega328P microcontroller important features. With almost 140 pages, this e-book is organized similar to many of the...... Listed under: Sensor - Transducer - Detector Projects
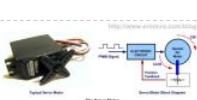
88. **Basic Servo Motor Controlling with Microchip PIC Microcontroller** The servo motor is widely used in model hobbyist such as airplane R/C model for moving the rudder, ailerons, elevators and acceleration control or in the car R/C model for steering and acceleration control. In this tutorial we will learn how to control th servo...... Listed under: Motor Projects

89. **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

90. **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

91. **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

92. **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
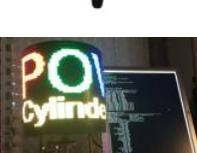
93. **POV Cylinder with Arduino Due Story** Introduction This is my first Arduino project. My work was inspired by several maker projects that created Persistence of Vision Displays [2,3,4]. Persistence of vision (POV) refers to the optical illusion whereby multiple discrete images blend into a single image in the human mind and believed to...... Listed under: LED Projects

94. **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

95. **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: Clo Projects, Home Automation Projects
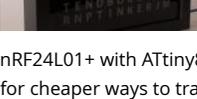
96. **nRF24L01+ with ATtiny85 3 Pins Story** This would be the continuation of my previous project Programming ATtiny85 with Arduino Uno. Now with cheaper ATtiny85 in place I was lookin for cheaper ways to transmit the sensor data. Which brought me to nRF24L01+ a cheap, low power RF transceiver. This seemed...... Listed under: Other Projects
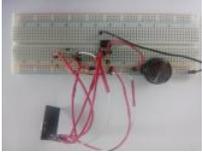
97. Programming ATtiny85 with Arduino Uno Story I am working on a project which requires reading multiple sensor data on different locations. These require on few PWM pins so using multiple Arduino Uno would be expensive and unnecessary. So I decided to use ATtiny85 microcontroller in place of Arduino Uno development...... Listed under: PWM Projects
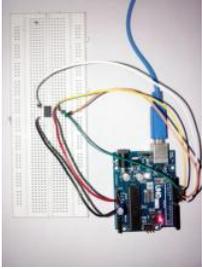
98. Franzino is a low cost Arduino standalone board Hardware components: Atmel ATmega328P × 1 16 MHz Crystal × 1 Capacitor 22 pF × 2 Capacitor 100 nF × 5 LE (generic) × 2 Linear Regulator (7805) × 1 Capacitor 10 µF × 2 1N4007 – High Voltage, High Current Rated Diode × 1...... Listed under: Development Board - Kits Projects

99. 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
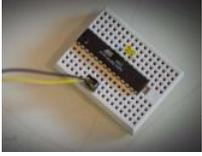
100. Reducing Arduino Power Consumption Story When it comes to portable electronics, one of the most important features is how to maximize the battery life. Th ATmega328P, used on popular boards like the SparkFun RedBoard, Arduino Uno, and Pro Mini are actually quite power hungry. The RedBoard and Arduino Un ...... Listed under: Other Projects
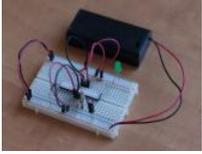
101. Gimmick on Barebones Arduino 16MHz Story Did you see this 8MHz no-crystal Arduino? Arduino on Internal Oscillator Crystal as Clock Source by Naman Chauhan is a great project if you can live with 8MHz using the internal RC oscillator of the Atmega328P chip. I really like Naman's project; I did...... Listed under Other Projects
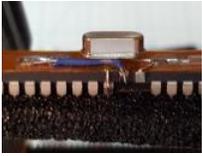
102. Tri-Mode Digital Clock with ATtiny85 and RTC Story Hello everybody, This is my first project using ATtiny85 microcontroller and also including a Real Time Clock (RTC) working with it. The use of ATtiny85 is a very interesting way to shrink your Arduino projects in a final tiny version. The Three-Modes Digital Clock...... Listed under: Clock Projects

103. 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...... Liste under: LED Projects

104. 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 128×64 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

105. 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

106. 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
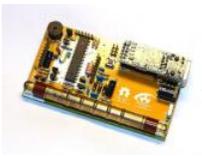
107. Light-Up Poker Chip Spice up your poker games with these cool blinking chips. They can be programmed on the fly to have a certain number of the LEDs illuminated to indicate value, or you can have the lights blink in a cool pattern. They make great playing chips...... Listed under: Game - Entertainment Projects
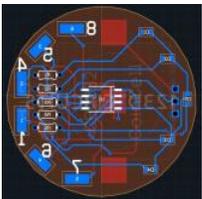
108. Scrumtato: Make Daily Stand-Ups Agile Again Story The following was originally published in my blog. At Delphi in Gothenburg, where I am currently employed we create all kinds of cool products for the automotive industry. To organize our development process, we use SCRUM and abide by the Agile principles. Every morning,...... Listed under: Other Projects

109. 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

110. 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
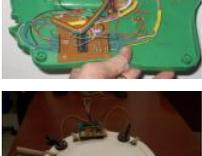
111. Taiko Trainer High level Design Overview/Rationale This idea was inspired by team member Gabriel Soares who is part of Cornell's Taiko Drum Club (Yamatai). Through his practicing and performing with others, he recognized the opportunity to design a drum trainer that can help students better learn to.... Listed under: LED Projects

112. 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

113. 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
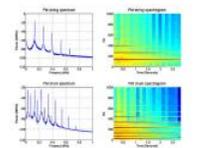
114. Markov Music Box markov summary Traditional music boxes play one or two tunes very well, but are not very interactive. Put differently, they have a high quality of synthesis, but a fixed-pattern note sequencer and fixed tonal quality. I wanted to build a device which would play an...... Listed under: PWM Projects, Sound - Audio Projects

115. 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

116. 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

117. The Tinusaur Project About The Tinusaur What is it Briefly, the Tinusaur is a minimal micro-controller hardware configuration based on Atmel AVR ATtiny family of products and more specifically those with DIP-8 case such as ATtiny25/ATtiny45/ATtiny85, ATtiny13 as well as their variations. The goal of the Tinusaur project...... Listed under: Other Projects

118. 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
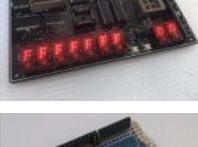
119. Goldilocks Analogue Synthesizer For the past year, I've been prototyping an Arduino clone, the Goldilocks Analogue, which incorporates advanced analogue output capabilities into the design of the original Goldilocks with ATmega1284p AVR MCU and uSD card cage. Recently the design scope crept up to include two SPI memory...... Listed under: Other Projects

120. 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

121. 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

122. 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

123. 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

124. 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 Schemeit PCBWeb Story Bionic devices/organs has a limited lifetime where its...... Listed under: Other Projects

125. 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

126. 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

127. **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

128. **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

129. **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

130. **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

131. **LCD Interface with Atmega32 AVR microcontoller for beginners** LCD's are quite familiar module when comes interfacing with microcontrollers. We can find the 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

132. **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

133. **Volt-Amp meter using AVR microcontroller** Voltage and current are two most important parameters of electricity. This project teaches you to build a simple vol 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

134. **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 yc 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

135. **Automatic plant watering system using AVR(Atmega16) Microcontroller** Plant watering system evolved through various stages where primitive irrigation syster 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

136. **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

137. **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

138. **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: Temperature Measurement Projects

139. **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

140. **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

141. **Password based door locking system** Password based door locking system, uses Matrix keypad to enter the password, This project is extended to operate on I 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

| 142. | 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 |

| 143. | 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 |

| 144. | 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 |

| 145. | 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 |

| 146. | 16×2 LCD interface with microcontroller Interfacing with Hitatchi 44780 The purpose of this page is to give a brief tutorial on how to interface with Hitatchi 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 |

| 147. | 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 |

| 148. | 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 |

| 149. | 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 |

| 150. | 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 |

| 151. | 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 mircrocontroller; actually if you googling on the internet and search for AVR ISP Programmer there are plenty information; start from...... Listed under: Microcontroller Programmer Projects |

| 152. | 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 |

| 153. | 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 |

| 154. | 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 ATtiny1 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 |

| 155. | 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 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 |

| 156. | 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 perfect...... Listed under: Other Projects |

| 157. | 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 |

| 158. | 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 to the 8-Digit seven segment numeric LED display. Thanks...... Listed under: Clock Projects |

| 159. | 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 Projec |

| 160. | 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 |
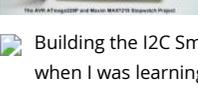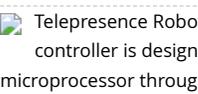
161. The LED Chasing Effect Project using Atmel AVR Microcontroller One of the interesting projects for most of the embedded beginners enthusiasts or hobbyists effect. In this project we are going to use both the Arduino IDE and Atmel AVR Studio to program the AVR ATMega168 microcontroller, therefore you...... Listed under: LED Projects
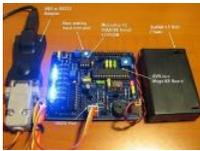
162. How to use I2C-bus on the Atmel AVR Microcontroller I2C (read as I Squared C) bus first introduced by Philips in 1980, because of its simplicity and flexibility th I2C bus has become one of the most important microcontroller bus system used for interfacing various IC-devices with the microcontroller. The I2C bus use only...... Listed under: Other Projects
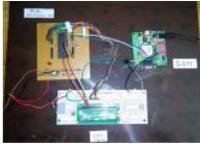
163. Interfacing GSM Module with Atmega32 AVR microcontroller GSM (Global System for Mobile Communication) technology lets user to communicate with other across mobile networks hence it offers a vast area of coverage. Interfacing GSM technology with microcontroller will enable us to extend the communication t cover large area. This tutorial will teach you...... Listed under: Other Projects

164. 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 cou be integrated into our house or known as the intelligent house. For...... Listed under: Internet - Ethernet - LAN Projects

165. 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
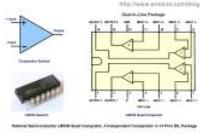
166. Working with the Comparator Circuit Sometimes in the embedded system world we need to process the analog world and sending the signal to the microcontroller when the analog signal exceed some predetermine limit we've set. Some example of this situation is to send the interrupt signal to the microcontroller operation...... Listed under: Development Board - Kits Projects
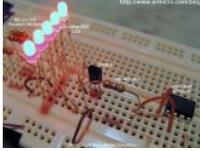
167. Using Transistor as a Switch Most of microcontrollers work within 5 volt environment and the I/O port can only handle current up to 20mA; therefore if we wan to attach the microcontroller's I/O port to different voltage level circuit or to drive devices with more than 20mA; we need to...... Listed under: Other Projects

168. 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 essentia 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
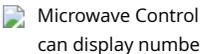
169. Microwave Controller using ATmega8 – AVR Project The user interface has the following parts. Output Device: A 16×2 alphanumeric LCD Module is used as the main output device. can display numbers, alphabets and few symbols. It can show two line and each line can have 16 characters. The backlight enables the...... Listed under: LCD Projects

170. Stepper motor control with an ATmega8 microcontroller This note provides basic implementation details and procedural information to design and assemble 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

171. 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

172. 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

173. 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. 16×2 character LCD module is a very basic module which is commonly used by electronic hobbyists and is used in...... Listed under: LCD Projects

174. 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

175. 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
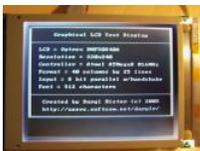
176. Graphical LCD Text Display The Graphical LCD Text Display is complete!   I've used the same Atmel ATMega8 controller that I used in the Composite Video Display.   The interface is the same as well; an 8 bit parallel port with a strobe input and a busy output.   ...... Listed under: LCD Projects
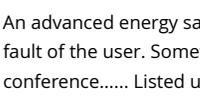
177. An advanced energy saver project with DTMF capabilities to use electricity efficiently by reducing the unwanted uses. INTRODUCTION: A lot of electricity is wasted due to ignorance or fault of the user. Sometimes a person in the room turns on all the electric equipments which is of no use to them. As an example, supposedly a person enters in the hall or conference...... Listed under: Other Projects
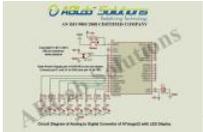
178. Analog to Digital Converter of ATmega32 with LED Display Microcontrollers are capable of detecting binary signals: is the button pressed or not? These are digital signals. When a microcontroller is powered from five volt, it understands zero volts (0V) as a binary 0 and five volts (5V) as a binary 1. But the real...... Listed under: LED Projects
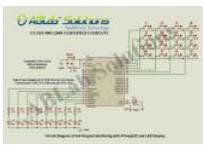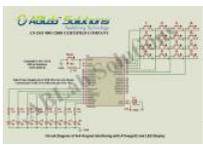
179. 4X4 Keypad Interfacing with ATmega32 and LED Display Keypads are parts of HMI or Human Machine Interface and play really important role in a small embedded system where human interaction or human input is needed. Matrix keypads are well known for their simple architecture and ease of interfacing. In this project, we will...... Listed under: LED Projects

180. 4X4 Keypad based Password with ATmega16 and LED 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: LED Projects

181. 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

182. 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

183. 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

184. 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
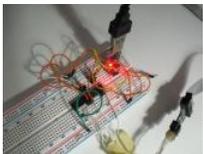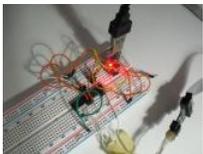
185. AVR uartConfig – an atmega and arduino eeprom config library Update to version 2014-06-13 AVR uartConfig is a small footprint library you can use to config your micro eeprom through uart communication. AVR uartConfig is a set of tools running on Windows, Linux and Mac, made up or: a avrgcc firmware library a commandline utility...... Listed under: AVR ATmega Projects

186. 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
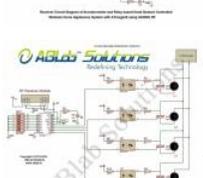
187. Password Protected BT136 Triac based Keypad Controlled Wireless Home Automation System with ATmega32 using 433MHz RF-I In this project, we will learn How to design a Password Protected BT136 Triac based Keypad Controlled Wireless Home Appliances System with AVR ATmega32 microcontroller using 433MHz RF Part-I. Here, we will use the 4X4 keypad as the input device to enter the password and...... Listed under: Home Automation Projects

188. 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

189. 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

190. 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
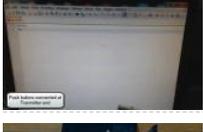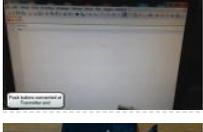
191. Atmega 32u4 Based Wireless USB Mouse How a generic mouse is made was explained in the Atmega 32u4 Based Generic USB Mouse Project. In this project a wireless mouse will be designed. For making a wireless mouse, there will be two circuits involved in the project - a transmitter circuit which...... Listed under: Other Projects

192. 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

193. 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

194. 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

| 195.	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
196.	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
197.	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
198.	Attiny85 As a Step/Dir Stepper Motor Controller Somewhere in Greece, someone did something never done before... Seen those things before? Thing: 1 Thing: 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
199.	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
200.	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
201.	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
202.	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
203.	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
204.	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
205.	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
206.	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
207.	Autocross/Track day Data Logger for BMW E36 M3 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
208.	Touchpad Figure Recognition 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: LCD Projects
209.	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
210.	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 - I -ISP) Projects
211.	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
212.	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
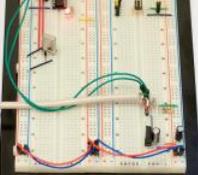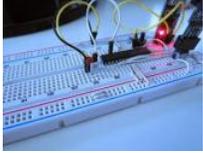
213. An AVR Atmega LCD Menu builder library lcdmenu1 is a simple and small lcd menu builder for AVR Atmega. It works with only 4 buttons (up, down, right, left), additional buttons can be added. It can also store values to eeprom User can use button up and down to list menu categories, right...... Listed under: LCD Projects

214. 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

215. AVR Atmega dehumidifier controller board, update This project is an update to the previous dehumidifier based you can here: http://davidegironi.blogspot.it/2013/04/avr-atmega-dehumidifier-controller.html This update adds some usefull functions. The main issue that i've fixed the microcontroller crash, that happens sometimes. I've noticed that sometimes the controller stop running, crash or doesn't works as...... Listed under: Senso - Transducer - Detector Projects

216. 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
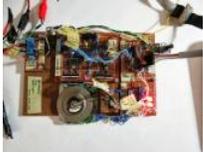
217. An AVR Atmega based PID magnetic levitator This is a magnetic levitator implemented using Atmega8 microcontroller. Magnetic levitation is a method by which an object is suspended with no support other than magnetic fields. To make a magnet levitate, an hall sensor is attached to a coil. The coil acts as an...... Listed under: Sensor - Transducer - Detector Projects

218. 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, i conjunction with his stands, make it good looking.t has 4 8x8 led matrix, 2 for the mouth, and 2 for eyes. When the user...... Listed under: LED Projects

219. 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

220. 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
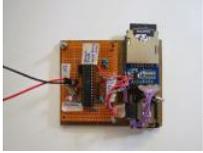
221. A Pickup Winding machine built on an ATmega8 The core of this project is an ATmega8. It features: wind counter slow startup automatic stop configurable motor speed configurable winds 2 directions If you are looking for a CNC version: you can find it here: http://davidegironi.blogspot.it/2016/06/a-cnc-pickup-winding-machine-built-on.html This winder has an LCD display that will show...... Listed under: Motor Projects

222. 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

223. 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

224. Veronica – VRAM I considered subtitling 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

225. 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

226. 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

227. 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 ha 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

228. 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 LCD. Seemed doable. People of the internet have been excited about the ESP8266 lately. Here is a snapshot of google...... Listed under: LCD Projects
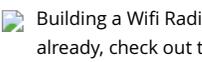
229. Building a Wifi Radio – Part 7, Building an LCD Display This is the seventh part of an ongoing series about building a low cost, open source streaming internet radio. If you haven't already, check out the previous parts (see the links at the end of this article) for some background about the project. In part...... Listed under: LCD Projects

230. 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

231. 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

232. 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

233. 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
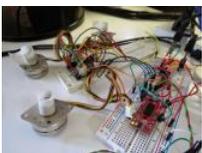
234. Drive a stepper motor with acceleration and deceleration using an Allegro driver on ATmega8 The stepper motor is an electromagnetic device that converts digital pulses into mechanical shaft rotation.Most common types of stepper motor can be bipolar or unipolar, depending on the winding. To make a stepper motor move, motor windings must be loaded in the correct order. A...... Listed under: Motor Projects

235. 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 or machines, though it can be the first step to build a faster one. The goal of a...... Listed under: Robotics - Automation Projects

236. 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

237. 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

238. 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
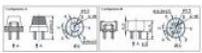
239. Cheap CO2 meter using the MQ135 sensor with AVR ATmega MQ135 is an Air Quality Sensor suitable for detecting of NH3, Alcohol, Benzene and other gases. The description below, is what i derive from the poor datasheet of this sensor, it may be uncorrect, so if you have suggestions please leave me a feedback. The...... Listed under: Sensor - Transducer - Detector Projects

240. 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

241. 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

242. Atmel AVR ATMega16 Interfacing WIth 16×2 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

243. 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

244.
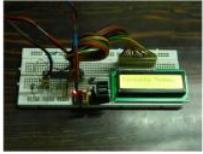
LCD Interfacing with AVR Interfacing LCD Display in 8bit Mode I've already discussed about the LCD display in a note here in this website. You can read the Note on character LCD Display here. Now let us come to the interfacing side of LCD. Let us see the 8bit...... Listed under: LCD Projects

245.

How to Establish A PC-Micro controller USART communication Introduction USART is one of the primitive inter-device communication protocols. It is not used 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 COM port...... Listed under: AVR ATmega Projects

246.

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 a external EEPROM...... Listed under: Sensor - Transducer - Detector Projects
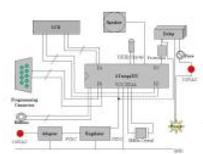
247.

Worry-Free Automatic Timed Plant Feeder Description Do you often forget to irrigate your plants? Do you have to ask your neighbors to take care of them whe your whole families are out for a vacation? Don't worry any more! Here is a solution. This embedded system, worry-free automatic timed plant...... Listed unde LCD Projects

248.

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 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

249.

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
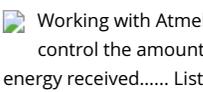
250.
 Working with Atmel AVR Microcontroller Basic Pulse Width Modulation (PWM) Peripheral Pulse Width Modulation (PWM) is a technique widely used in modern switching circuit to control the amount of power given to the electrical device. This method simply switches ON and OFF the power supplied to the electrical device rapidly. The average amount of energy received...... Listed under: PWM Projects

251.

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 RF with AVR microcontroller....... Listed under: AVR ATmega Projects
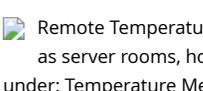
252.
 Remote Temperature Monitoring using GSM – AVR Project Temperature monitoring have wide application in daily life. In modern day keeping an eye on temperature of places such as server rooms, hospital rooms, warehouses and green houses can help solve many problems. But with the use of normal temperature sensors, someone needs to go...... Listed under: Temperature Measurement Projects
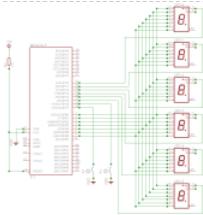
253.

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 cloc AVR project it is...... Listed under: Clock Projects

254.

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

255.

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
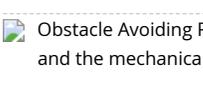
256.
 Obstacle Avoiding Robot using AVR ATmega32 – Part II Hello and Welcome back to the second part of Obstacle Avoiding Robot Tutorial. In the last part we studied the drive system and the mechanical construction of our robot. In this part we will make the sensor part. The sensors will help our robot detect...... Listed under: Robotics - Automation Projects

257.

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
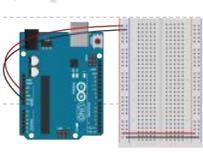
258.

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

259.

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
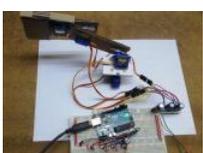
260.

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
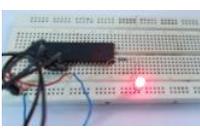
261. LED Blinking with ATmega32 Microcontroller Blinking LED is the first step you would like to take to get started with electronics. In this tutorial we are going to c ATmega32, which is an AVR series microcontroller. We are going to blink the LED at half a second rate....... Listed under: LED Projects
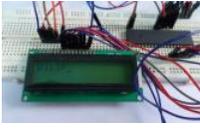
262. Interfacing LCD with ATmega32 Microcontroller To establish a good communication between human world and machine world, display units play an importan role. And so they are an important part of embedded systems. Display units - big or small, work on the same basic principle. Besides complex display units like graphic displays...... Listed under: LED Projects
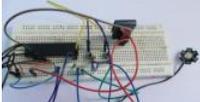
263. Power LED Dimmer using ATmega32 Microcontroller In this project we are going to use one of the features of ATmega32A to adjust the brightness of 1Watt LE The method that is used to adjust the speed of LED is PWM (Pulse Width Modulation). The method of PWM is explained here. Consider...... Listed under: LED Projects, PWM Projects
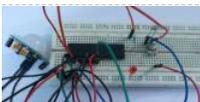
264. Automatic Staircase Light We all know that one of the places where power wastage happens most in homes and offices is at staircases. We usually turn on ligh at stairs and leave it in a hurry. In this project we are going to design a stair case lamp which...... Listed under: Home Automation Projects

265. 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
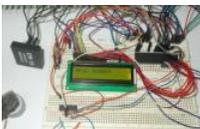
266. RFID Based Toll Plaza System We know in offices, shopping malls and in many other places where only the person with authorization card is allowed to enter the room. These systems use RFID communication system. RFID is used in shopping malls to stop theft as the products are tagged with RFID chip...... Listed under: AVR ATmega Projects

267. 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
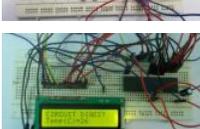
268. Temperature Measurement using LM35 and AVR Microcontroller In this project we are going to design a circuit for measuring temperature. This circuit is developed using "LM35", a linear voltage sensor. Temperature is usually measured in "Centigrade" or "Faraheite". "LM35" sensor provides output based on sca of centigrade. LM35 is three pin transistor...... Listed under: Temperature Measurement Projects

269. 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
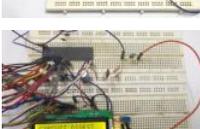
270. 0-25V Digital Voltmeter using AVR Microcontroller In this project we are going to design a 25V range digital voltmeter by using ATMEGA32A microcontroller. In ATMEGA, we are going to use 10bit ADC (Analog to Digital Converter) to build a digital voltmeter. Now the ADC in ATMEGA can not take a input...... Listed under Metering - Instrument Projects
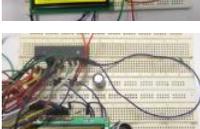
271. Distance Measurement using HC-SR04 and AVR Microcontroller In this tutorial we are going to discuss and design a circuit for measuring distance. This circuit developed by interfacing ultrasonic sensor"HC-SR04" with AVR microcontroller. This sensor uses a technique called "ECHO" which is something you get when sound reflects back after striking with...... Listed under: Calculator Projects
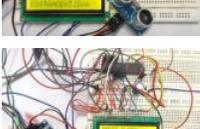
272. Touch Keypad Interfacing with ATmega32 Microcontroller In this tutorial we are going to interface a 4x2 (8 key) touch keypad with ATMEGA32A microcontroller We all know keypad is one of the most important input devices used in electronics engineering. This module does not have actual keys, but have specially designed capacitive metal pads,...... Listed under: LED Projects
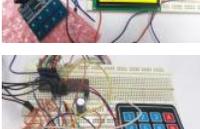
273. 4×4 Keypad Interfacing with ATmega32 Microcontroller In this tutorial we are going to interface a 4x4 (16 key) keypad with ATMEGA32A microcontroller. We know that keypad is one of the most important input devices used in electronics projects. Keypad is one of the easiest ways to give commands or instructions an electronic...... Listed under: AVR ATmega Projects

274. Flex Sensor Interfacing with AVR Microcontroller In this tutorial we are going to interface FLEX sensor with ATMEGA8 microcontroller. In ATMEGA8, we are goin 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

275. 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
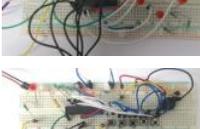
276. Anti-Theft Alert System using ATmega8 Microcontroller In this project we are going to make a vibration alert system with ATMEGA8 microcontroller. This can al be used as a theft alert system, for that we are going to interface tilt sensor with ATMEGA8. A tilt sensor is shown in below figure. [caption id="attachment_34853" align="aligncenter"...... Listed under: Sensor - Transducer - Detector Projects
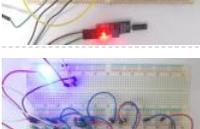
277. 100mA Ammeter using AVR Microcontroller In this project we are going to make a low range ammeter using ATMEGA8 microcontroller. In ATMEGA8, we are going use 10bit ADC (Analog to Digital Conversion) feature to do this. Although we have few other ways to get the current parameter from a circuit, we...... List under: AVR ATmega Projects
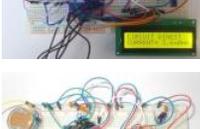
278. Light Intensity Measurement using LDR and AVR Microcontroller In this project we are going to interface LDR with ATMEGA8 microcontroller, and with this we can measure LIGHT INTENSITY in the area. In ATMEGA8, we are going to use 10bit ADC (Analog to Digital Conversion) feature to measure the light intensity. An LDR is a transducer...... Listed under: AVR ATmega Projects
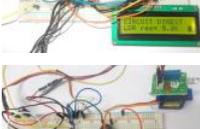
279. Fire Alarm System using AVR Microcontroller In this project, we are going to make a Fire Alert System using ATMEGA8 microcontroller and fire sensor. Fire sensor can be of any type, however we are using IR (Infrared) based Fire Sensor. Although IR based Fire Sensors have some disadvantages mostly of inaccurac it...... Listed under: Security - Safety Projects
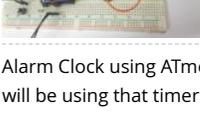
280. Alarm Clock using ATmega32 Microcontroller In this project we are going to design a simple Alarm clock using ATMEGA32 timers. ATmega32A microcontroller has a 16 bit timer, and we will be using that timer to count the seconds and develop a digital clock. [caption id="attachment_34830" align="aligncenter" width="650"] AVR Microcontroller Based Digital Alarm......
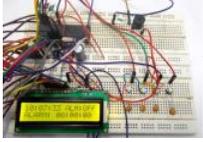
Listed under: Clock Projects
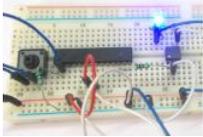
281. Introduction to Octocoupler and Interfacing with ATmega8 In this tutorial we are going to interface an Optocoupler with ATMEGA8 microcontroller. Octocouplers are fascinating devices used to isolate the electronic and electrical circuits. This simple device isolates the sensitive electronics from robust electronics like motors, yet keeping the load in control over the source. [caption...... Listed under: AVR ATmega Projects
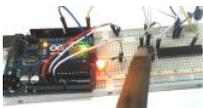
282. How to establish UART communication between ATmega8 and Arduino Uno? Here we are going to establish a communication between an ATmega8 microcontroller and Arduino Uno. The communication established here is UART (Universal Asynchronous Receiver Transmitter) type. It's serial communication. By this serial communication data can be shared between two controllers, which is a required in various embedded system...... Listed under: Android Projects
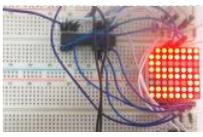
283. 8×8 LED Matrix Interfacing with AVR Microcontroller In this session we are going to design an 8x8 LED display with 8x8 LED matrix and ATmega8 microcontroller which can show alphabets or names. [caption id="attachment_34818" align="alignnone" width="650"] LED Matrix Interfacing with AVR Microcontroller[/caption] A 8x8 LED matrix contains 64 LED (Light Emitting Diodes) which...... Listed under: LED Projects

284. 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
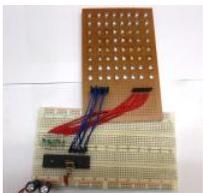
285. Scrolling Text Display on 8×8 LED Matrix using AVR Microcontroller In this tutorial we are going to design an 8x8 LED Matrix Scrolling Display using ATMEGA32, which will show scrolling alphabets. 8x8 LED Matrix contains 64 LEDs (Light Emitting Diodes) which are arranged in the form of a matrix, hence the name is LED matrix. We are...... Listed under: LED Projects
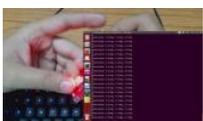
286. Atmega 32u4 Based USB Data Logger (Part 23/25) In this project, a device will be designed that will read analog data from any analog sensor and will send the digitized form of that data to a personal computer on USB interface. On PC, a desktop application will store the data in an excel...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects

287. 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

288. 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
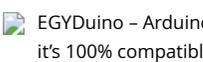
289. EGYDuino – Arduino compatible board EGYDuino is a DIY Arduino clone made on a single sided PCB board. It's simple and cheap to build using home PCB fabrication methods and it's 100% compatible with Arduino. Description ATmega8 takes care of the USB to serial communication and should be burned with...... Listed under: Android Projects

290. 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
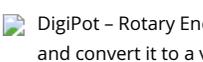
291. DigiPot – Rotary Encoder Digital Potentiometer Description The "potentiometer" is actually a rotary encoder (TW-700198) connected to a microcontroller that reads the signal from and convert it to a value that is displayed on 7-segment displays. The value also is sent via i2c/spi/serial/usb to the host. Also 3 LED and...... Listed under: AVR ATmega Projects
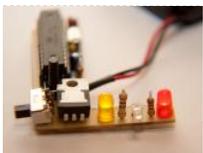
292. Atmega168 TV-B-Gone Yes, I know what you are thinking: "oh no, please not another TVBGone..." Anyway, this instructable is for the newbies as me which are still experimenting with Arduino, and prefer to program an Atmega168 in Arduino than an AtTyny85 with other methods. This circuit is...... Listed under: Home Automation Projects
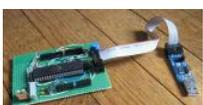
293. Arduino atmega644/1284 clone This project is about to DIY an Arduino board wth an ATMEGA644P or 1284P to have more INPUTS/OUTPUTS than on the atmega328P. You can buy an arduino mega but it's more expensive. The microcontrollers will be bootloaded with Sanguino and the project seems to be...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects

294. 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

295. Flames effect with a 8×8 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

296. 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

297. 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

298. 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

299. 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
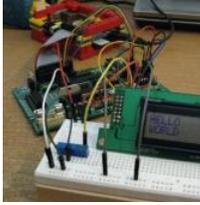
300. How to fix dead atmega and attiny avr chips Atmega fusebit doctor, as name says it, device for repairing dead Atmega and Attiny family AVRs by writing fabric fusebits. Most common mistakes or problems are a wrong clock source (CKSEL fusebits), disabled SPI programming (SPIEN fuse) or disabled reset pin (RSTDISBL fuse). This simple...... Listed under: How To - DIY - Projects

301. 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
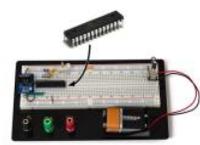
302. ATmega DIP40 Minimal Board After I wrote several articles about using ATmega microcontrollers (DIP40) in Arduino environment I had some feedback that I was asked how to be effectively put into operation this project. As I came into the Arduino world from classical microcontrollers development world, I have not...... Listed under: Development Board - Kits Projects

303. 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
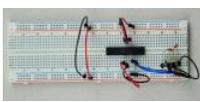
304. Alarm clock Using Atmega-328 and RTC Hi everyone! This is my first instructable! After reading hundreds of instructables, I decided to make one myself. Clock is one of the most essential house hold things. There are various types of clocks like good old Pendulum clocks, Analog clocks and the now trending...... Listed under: Clock Projects

305. Atmega Alarmclock & Thermohumidity meter First, let me introduce you my project. I made an Alarm clock with extended functionality & thermometer and humiditymeter. Everything started when my friend (who used to bring me some old electronic rubbish and I used to check if there's not something useful) brought me...... Listed under: Clock Projects, Metering - Instrument Projects

306. 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

307. 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
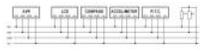
308. Boolean Algebra Calculator Power Supply: It can be defined as a device that supplies electrical energy to one or more electric loads. The term is most commonly applied to devices that convert one form of electrical energy to another, though it may also refer to devices that convert...... Listed under: Calculator Projects
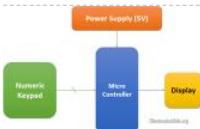
309. Automatic Railway Gate Controller with High Speed Alerting System The main aim of this project is to operate and control the unmanned railway gate in the proper manner in order to avoid the accidents in the unmanned railway crossing. In a country like ours where there are many unmanned railway crossings, accidents are increasing...... Listed under: Security - Safety Projects
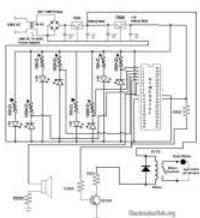
310. Interfacing 16X2 LCD to AVR Microcontroller Well this is not different from the way interfacing the LCD to 8051 or PIC microcontroller. The crystal oscillator will provide the clock to the microcontroller. The capacitors connected to the crystal will act as filters and help the crystal to resonate and oscillates...... Listed under: LCD Projects

311. 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
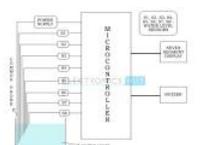
312. DTMF Controlled Home Automation System Circuit Generally, appliances used in our home are controlled with the help of switches. These days, you can see automation of these appliances using many technologies. This article presents the controlling of home appliances using DTMF technology. DTMF is acronym for Dual Tone Multi Frequency. So, just...... Listed under: Blog, Home Automation Projects
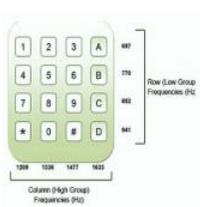
313. 2 Digit Up/Down Counter Circuit Generally, one can see the digital displays which display the score when buttons are pressed on score boards. The main heart of this score board is 2 digits up/down counter circuit. The 2 digits are displayed on two 7 segment displays. This article describes 2...... Listed under: Calculator Projects
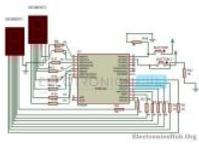
314. Digital Temperature Sensor Circuit Temperature sensors are widely used in electronic equipments to display the temperature. You can see the digital clock displaying the room temperature value. It is due to the temperature sensor embedded in it. Generally, temperature value is analog. It is converted to digital value and...... Listed under: Temperature Measurement Projects
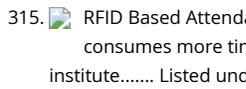
315. RFID Based Attendance System – Circuit, Working, Source Code Attendance in colleges is generally paper based which may sometimes cause errors. Taking attendance manually consumes more time. So the proposed attendance system uses RFID technology to take attendance. In this system, each student is issued an RFID tag. Controlling unit is in the institute....... Listed under: Sensor - Transducer - Detector Projects
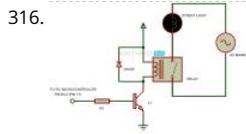
316. Auto Intensity Control of Street Lights treet lights are controlled manually in olden days. These days automation of street lights has emerged. But one can observe that there is no need of high intensity in peak hours i.e. when there is no traffic and even in early mornings. By reducing the...... Listed under: Sensor - Transducer - Detector Projects
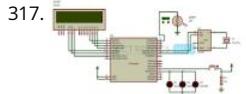
317. Street Lights that Glow on Detecting Vehicle Movement Street lights are switched on depending on the intensity of the Sun light on LDR. If the intensity of Sunlight on light dependent resistor is low, its resistance value is high. This value increases and becomes high when it is completely in dark. This resistance...... Listed under: Sensor - Transducer - Detector Projects
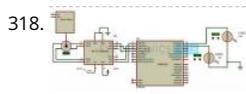
318. Sun Tracking Solar Panel As the non renewable energy resources are decreasing, use of renewable resources for producing electricity is increasing. Solar pane are becoming more popular day by day. We have already read a post about how to install solar panel for home. Solar panel absorbs the energy...... Listed under: Sensor - Transducer - Detector Projects
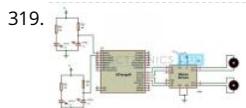
319. Line Follower Robot using Microcontroller When robot is placed on the fixed path, it follows the path by detecting the line. The robot direction of motion depends on the two sensors outputs. When the two sensors are on the line of path, robot moves forward. If the left sensor moves...... Listed under: Robotics - Automation Projects
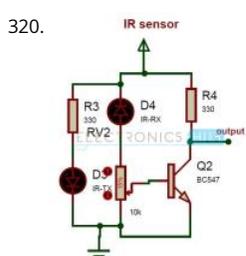
320. Density Based Traffic Signal System using Microcontroller Nowadays, controlling the traffic becomes major issue because of rapid increase in automobiles and also because of large time delays between traffic lights. So, in order to rectify this problem, we will go for density based traffic lights system. This article explain you how to...... Listed under: Car Projects
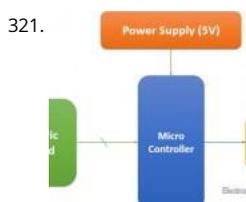
321. PWM Based DC Motor Speed Control using Microcontroller In many applications, it is important to control the speed of DC motor where precision and protection are essence. Here we will use a technique called PWM (pulse width modulation) to control the speed of DC motor. We can achieve speed control of DC motor...... Listed under: PWM Projects

322. 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
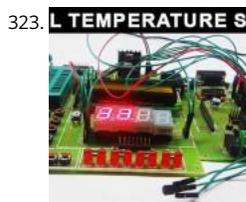
323. Temperature Controlled DC Fan using Microcontroller Generally, electronic devices produce more heat. So this heat should be reduced in order to protect the device. There are many ways to reduce this heat. One way is to switch on the fan spontaneously. This article describes a circuit that automatically, switches the fan...... Listed under: Temperature Measurement Projects

324. 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

325. 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
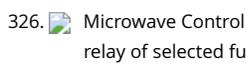
326. Microwave Controller using ATmega8 – AVR Project Pause Function You can press STOP/Clear button during countdown phase to pause the timer and to switch of the associated relay of selected function (microwave or grill). This will enable you to open the door of oven and have a look at the food being...... Listed under: Home Automation Projects

327. 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
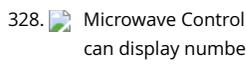
328. Microwave Controller using ATmega8 – AVR Project The user interface has the following parts. Output Device: A 16×2 alphanumeric LCD Module is used as the main output device. can display numbers, alphabets and few symbols. It can show two line and each line can have 16 characters. The backlight enables the...... Listed under: Home Automation Projects

329. 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 matr 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

330.

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

331.
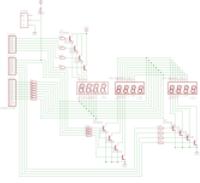
Clock/temperature LED display This project is based on the timer/counter 0 example. It shows time, date and temparature on 7 segment displays. Instead of the LCD display the time is shown on a four digit 7 segment display with common cathode. The date and temparature is shown on...... Listed under: Clock Projects, LED Projects, Temperature Measurement Projects

332.
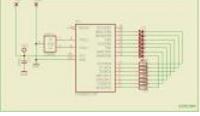
Running LED bicolor This is a good project for beginners. It is easy to build.This running LED light uses seven bicolor led's red and yellow, they light up in a pattern that can be made within the program code.The program code is written in assembler. ATMELs AVR STUDIO...... Listed under: LED Projects

333.
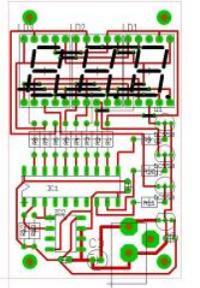
LED thermometer his project shows the temperature on a three digit 7-segment display, it measures the temperature from -9.5 to 99 degrees Celcius in 0.5 C steps, or from 0 to 210 degrees Fahrenheit in 1.0 degrees steps. Because of the LED display the temperature is also...... Listed under: LED Projects, Temperature Measurement Projects

334.
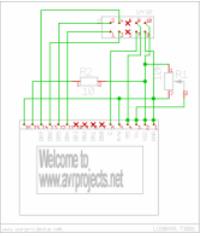
LCD interface This example is based on a LCD module with the Hitachi HD44780 LCD-controller.You can get these displays in various kinds, from 1 to 4 lines and from 8 to 40 characters per line. A display with 16 characters per line and 2 lines is used in...... Listed under: LCD Projects

335.
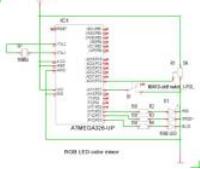
RGB LED color mixer Page 1 of 4 An RGB LED is a LED which has three LED's integrated in one packaging. These LED's have the colors Red, Green, and Blue. The RGB LED used here is a hyperflux LED with common cathode, which can draw 20mA current. Such a...... Listed under: LED Projects

336.

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

337.
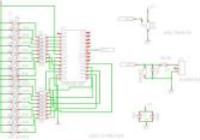
LED VU meter Schematic and build Below is the schematic of the LED VU meter. The circuit is builds with the ATMega328 board an two LED boards connected to it. You can also build it on a breadboard. For more detail: LED VU meter... Listed under: LED Projects

338.

Temperature indicator This project uses a Dallas DS1621 temperature sensor which indicates the temparature 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

339.

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

340.

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 differrent patterns. Hardware The leds are connected to PORTB of the microcontroller via the...... Listed under: LED Projects

341.

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

342.
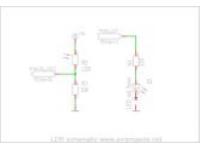
Photocell or LDR A photocell or photo resistor is a Light Dependent Resistors (LDR). LDR's are sensors that detect light. They are small, inexpensive, low-power, easy to use and don't wear out. Overview A photocell or photo resistor is a Light Dependent Resistors (LDR). LDR's are sensors that...... Listed under: Sensor - Transducer - Detector Projects

343.
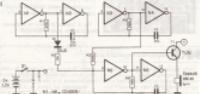
Electronic cricket his electronic cricket is a fun project. A real crickets chirp at night and faster in warmer temperatures. A cricket chirp is composed of a group three sinus waves of a single frequence of about 5kHz. occurring in rapid succession. Introduction This electronic cricket is...... Listed under: Game - Entertainment Projects

344.
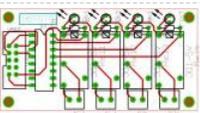
Relais Driver Board This is a peripheral board with 4 relais, rated at 5A/250V each. The board has a ML10 output connector for connection with the AT2313 Project board. It has also 4 LED's for indication which relais is switched on. Hardware The circuit is simple, it consists...... Listed under: Development Board - Kits Projects

345. 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
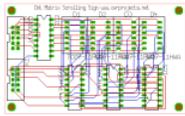
346. Clock/temperature LED display This project is based on the timer/counter 0 example. It shows time, date and temparature on 7 segment displays. Instead of the LCD display the time is shown on a four digit 7 segment display with common cathode. The date and temparature is shown on...... Listed under: Clock Projects
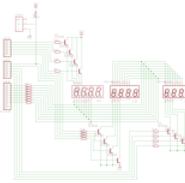
347. LCD/switch interface Page 1 of 2 This board can directly connected to the STK 500 board or the ATTiny2313 ISP program board with a 10 pole flatcable on the 10 pin header of the STK500 and the 10 pin header of the LCD/Switch board. The display has...... Listed under: LCD Projects
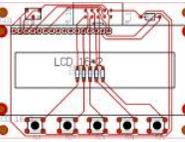
348. Digital Book Cricket with ATtiny 85 The project described here is a digital implementation of "book cricket game" which students normally use to play in their childhood time. The heart of the project is 8 bit MCU from AVR family called ATtiny85. ATtiny85 are small and cheap microcontrollers which are convenient...... Listed under: Game - Entertainment Projects
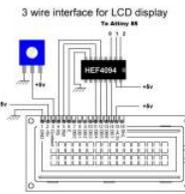
349. Attendance System using AVR and RFID This project aims to automate the process of taking attendance on pen and paper and prevent any fraudulent entry. It uses RFID tags to record attendance. Each student is assigned a unique tag, which he/she is required to swipe over the reader to give his/her...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects
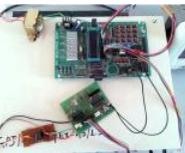
350. Interfacing Serial Bluetooth Modem with Computer using ATmega16 This article would give you a general idea about how to setup and interface any Bluetooth modem with your computer. There are many types of Bluetooth modems available in market, which vary in quality, cost, range, etc. Some of the well known Serial Bluetooth modems...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects

351. 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
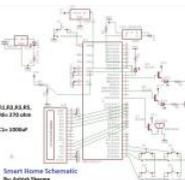
352. Interfacing 4-wire Resistive Touchscreen with ATMega16 Microcontroller Touch screens are two dimensional input devices. Nowadays most of the electronic gadgets use them. Laptops, smart phones, tablets and even some home appliances like washing machines & microwave ovens also use a touch screen nowadays. Why Touch screens? Touch screens are preferred over keypads...... Listed under: LCD Projects
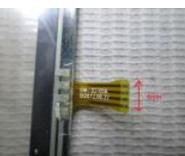
353. How to Interface a GSM (SIM 300) Modem with ATmega32 to Send and Receive SMS What is a GSM Modem? GSM stands for Global System for Mobile Communications.It is a standard set developed by the EuropeanTelecommunications Standards Institute (ETSI) to describe protocols for second generation (2G) digital cellular networks used by mobilephones. A Modem is a device which modulates and...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects

354. 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

355. 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
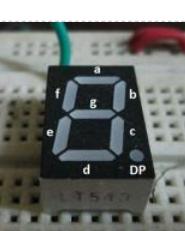
356. DIY: Retro Style Analog Volt Meter using Servo Motor Digital equipments have rapidly replaced Analog equipments in the long run. Well that is because the former has lot of advantages over the latter. But do you miss those retro style analog measuring instruments? Those pointy indicators and graduated scales? Well I do and so...... Listed under: Metering - Instrument Projects

357. 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

358. Latitude & Longitude Display System Using GPS & AVR Microcontroller This project is a reference to budding engineers or a helping hand to those who willing 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
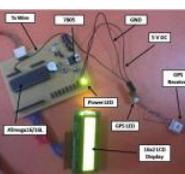
359. Controlling RGB LED colour using Atmega16 This tutorial will give you a brief introduction to the concept of colors and how different colors can be produced using RGB LED. The color would be controlled using an ATMega16 microcontroller. RGB LEDs are basically the combination of the 3 LEDs (Red, Green and...... Listed under: LED Projects
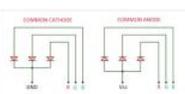
360. Speed and Direction Control of Stepper Motor using AVR Microcontroller Stepper motor can be termed as digital motor because it operates on pulses. Unlike AC or DC motor that rotates continuously, stepper motor rotates in steps. It rotates in number of steps as per applied number of pulses. Stepper motor is use in many applications...... Listed under: Motor Projects
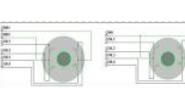
361. Accelerometer Based Hand Gesture Controlled Robot In many application of controlling robotic gadget it becomes quite hard and complicated when there co... it with remote or many different switches. Mostly in military application, industrial robotics, construction vehicles in civil side, medical application for surgery. I this field...... Listed under: Robotics - Automation Projects
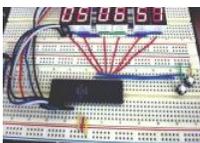
362. Digital Clock using Seven Segment Display and ATMega16 In this ATMega16 AVR project we will be designing and implementing a digital clock with the aid of a atmel AVR ATMega16 microcontroller and seven segment display. Before going through this digital clock AVR project it is recommended to complete the tutorial on Interfacing a Seven Segment Display with...... Listed under: Clock Projects

363. 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
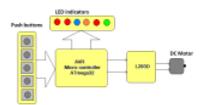
364. Speed and Direction Control of DC Motor using AVR Microcontroller Controlling direction and speed of DC motor is very essential in many applications like · Robotic application – to change direction and speed of moving robot · Industrial application – to change direction and speed of rotating machinery · Domestic application – to vary speed...... Listed under: Motor Projects
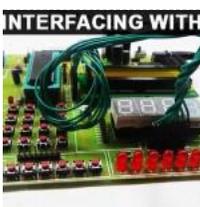
365. Interfacing 16X2 LCD to AVR Microcontroller Well this is not different from the way interfacing the LCD to 8051 or PIC microcontroller. The crystal oscillator will provide the clock to the microcontroller. The capacitors connected to the crystal will act as filters and help the crystal to resonate and oscillates to...... Listed under: Home Automation Projects

366. 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 slat 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

367. 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 the 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

368. 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

369. 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
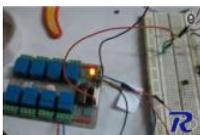
370. GSM Based AC Appliance Control This project would show you how to control an AC appliance remotely from anywhere using your mobile phone. This kind of project is useful in various applications. Say for example a farmer can switch ON or OFF the motor pump present near his field remotely....... Listed under: Phone Projects

371. 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

372. 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
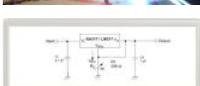
373. Variable Power Supply with LCD Are you an electronic hobbyist? Then an adjustable power supply is a must for your various needs. This project explains how t make a LM317 based adjustable power supply unit with a digital display. Components Required 1.   LM317 IC 2.   Resistor – 240 Ohms 3.   ...... Listed under: LCD Projects

374. Interfacing Triple-Axis Accelerometer with AtMega16 Requirements AtMega 16 IC/development board 3-Axis accelerometer LCD screen 16X2 (for displaying X, 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
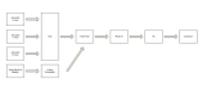
375. Atmega32 avr based Drone Quadricopter atmega32 avr based Drone Quadricopter: Introduction Our project is a novel hand held controller in which we use a accelerometer to wirelessly control the motion of a Parrot AR Drone Quadricopter. Rationale: The main idea of our project was building a cool glove controller for...... Listed under: Drones
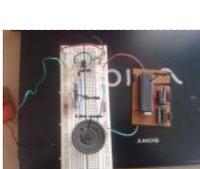
376. Audio Tone Generator using AVR Microcontroller The circuit presented here demonstrates how to generate Audible Frequency from an AVR Microcontroller. The output of Microcontroller is always digital so to generate audible sound at the outset first it needs to be converted into Analog. A DAC (Digital to Analog Converter) is used...... Listed under: Sound - Audio Projects
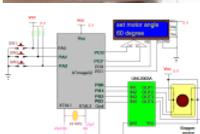
377. Stepper Motor Angle Control using AVR Microcontroller There are many applications in which it is required to set the position of an object at a desire angle. Some of the examples are 1.   Satellite Dish Antenna positioning The Satellite Dish Antenna should be in straight alignment with Satellite in Space to receive...... Listed under: Motor Projects

378. 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

379. 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

380. 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 wheth 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
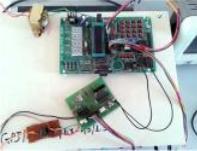
381. DIY – Waveform Generator using AVR Microcontroller To interface 8-bit DAC with AVR microcontroller ATMega32 and generate different waveforms like Square Wave, Sine Wave, Triangular Wave, Staircase Wave and Saw-tooth Wave. Instruments ·   AVR Development Board ·   ADC – DAC card ·   Digital Storage Oscilloscope (DSO) ·   Power Supply Apparatus ·   Connecting...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects

382. 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

383. 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

384. 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 embedde 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

385. 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 password and numbers, that are needed to be remembered, biometric techniques...... Listed under: LCD Projects
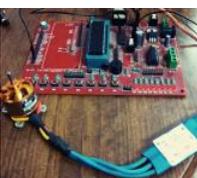
386. Controlling a BLDC Motor with an ESC REQUIREMENTS: Microcontroller (AtMega 16) A Brushless DC motor (BLDC) An Electronic Speed Controller (ESC) Power source to drive the motor (LiPo battery)   DESCRIPTION: Brushless motors have much more satisfying results as compared to brushed motors. The basic difference between them is that in a...... Listed under: Motor Projects
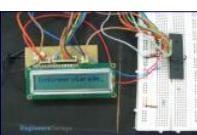
387. How to display text on 16×2 LCD using AVR microcontroller (ATmega16) This article is in continuation to the article Single character LCD display using AVR. The aforesaid article shows how to display a single letter on LCD. Moving forward towards learning to work with LCD, this article explains how to display a string on LCD. Displaying...... Listed under: LCD Projects
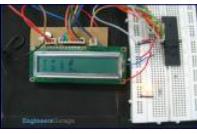
388. Display custom characters on LCD using AVR Microcontroller (ATmega16) This is the most interesting article to play with LCD. After going through the article, yo can create any character/symbol which cannot be created using the ASCII values for example smiley. You can even create small games. Conventionally 16X2 LC is use to display text...... Listed under: LCD Projects
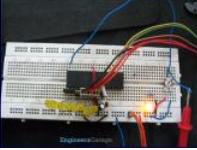
389. How to use inbuilt ADC of AVR microcontroller (ATmega16) Microcontroller understands only digital language. However, the inputs available from the environment to the microcontroller are mostly analog in nature, i.e., they vary continuously with time. In order to understand the inputs by the digital processor, a device called Analog to Digital Converter (ADC) is...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects

390. Serial communication (Data receive) using AVR Microcontroller (ATmega16) USART Communication between two entities is important for the information flow 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
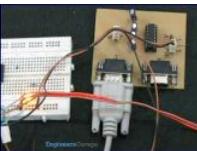
391. How to interface AVR microcontroller with PC using USART (RS232 protocol) This article covers data transmission using 8 bit USART. The readers should have a basic understanding of serial communication and how to receive the serial data output. More details on these topics are available on Serial communication using AVR Microcontroller USART. The registers of USART...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects
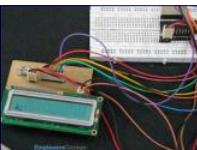
392. Serial communication with AVR microcontroller using interrupts In our previous articles on serial data transmission using AVR microcontroller we have demonstrated serial communication using the polling method. In Polling, the microcontroller waits for the RXC flag (in the case of serial receiver) to go high an then moves to the next instruction....... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects

393. 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 famili 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
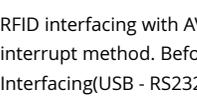
394. RFID interfacing with AVR microcontroller (ATmega16) using interrupts This article covers how to extract and display the twelve byte unique tag ID received by RFID module on LCD usin interrupt method. Before proceeding to this article readers must have knowledge of serial interrupt and LCD. In the previous article of RFID, polling method...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects
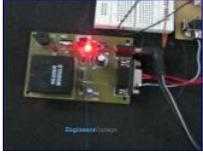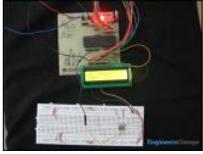
395.
How to use internal ADC of AVR microcontroller using interrupts This article is in continuation to AVR interrupts. There are two types of interrupts external and internal in AVR microcontroller. The aforesaid article covers external interrupts. AVR microcontrollers have seventeen internal interrupts. These internal interrupts are generated by the internal peripherals of Microcontroller like Timer,...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects
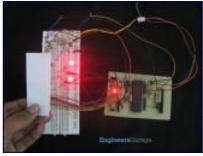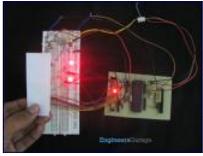
396.
How to use inbuilt analog comparator of AVR microcontroller Analog comparator is a device which compares two input voltages and generates output accordingly. The article on IR sensor explains the use of comparator in sensor designing. Comparators form an integral part of circuit designing in majority of the applications. AVR microcontrollers have in-built analog...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects

397.
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
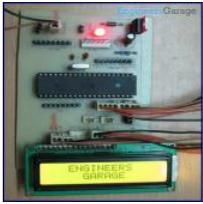
398.
How to interface LCD in 4 bit mode with AVR microcontroller This article explains interfacing of LCD with ATmega16 using 4-bit mode. In this mode only four pins are used for sending data and command instructions. This mode has the advantage over the 8-bit mode as it uses less number of pins. The remaining pins of...... Listed under: LCD Projects
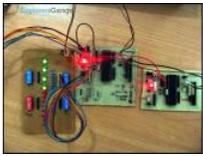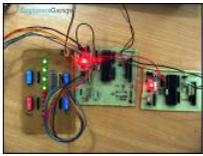
399.
SPI (serial peripheral interface) using AVR microcontroller (ATmega16) There are different protocols for serial communication between two deceives like, USART, SPI, I2C etc. Before selecting any communication protocol, data transfer rate is an important parameter. SPI transfers data at high speed data. AVR microcontroller contains on chip SPI interface. This article will explore...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects

400.
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

401.
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

402.
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
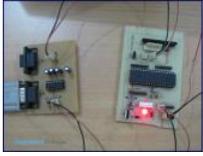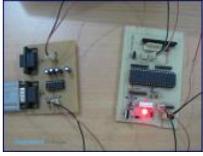
403.
Serial communication (USART) with different frame size using AVR microcontroller The previous article explains serial communication using 8-bit data transfer AVR microcontroller also supports serial data transfer with frame size of 5, 6, 7 and 9 data bits. The size of data frame can be adjusted according to application. For example, consider a system that...... Listed under: LCD Projects
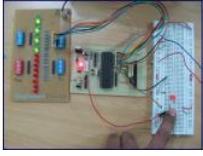
404.
How to use External (Hardware) Interrupts of AVR Microcontroller (ATmega16) This article introduces the concept of interrupts and the different types of interrupts in AVR Microcontroller (ATmega16). Interrupt as the name suggests, interrupts the current routine of the microcontroller. Microcontroller executes instructions in a sequence as per the programs. Sometimes there may be a need...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects

405.
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 cofigured 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

406.
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

407.
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
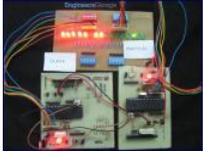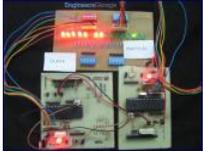
408.
How to use I2C / TWI (Two Wire Interface) in AVR ATmega32 This article explores the TWI interfacing between two ATmega32 controllers. Readers are advised to go through TWI Communication and TWI registers of ATmega32 before going further. TWI works in four modes: 1.   MASTER as a transmitter. 2.   MASTER as a receiver. 3.   SLAVE as a...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects
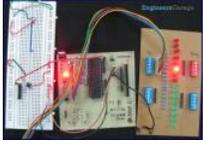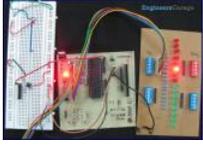
409.
How to take input from a particular pin of ATmega16 For understanding the human needs a system must be able to take input from user. The devices which can be used to take input for a system are keypad, touch screen, etc. In the article LED blinking, the microcontroller drives the LED or in embedded language...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects

410. 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

411. 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
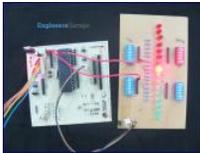
412. How to interface GPS with AVR microcontroller (ATmega16) GPS modem is a device which receives signals from satellite and provides information about latitude, longitude, altitude, time etc. The GPS navigator is more famous in mobiles to track the road maps. The GPS modem has an antenna which receives the satellite signals and transfers...... Listed under: GPS Based Projects

413. 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
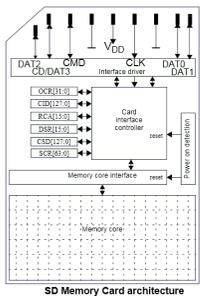
414. How to Program in Boot Loader Section In the AVR microcontroller the flash memory is divided into two parts, namely Application Section and Boot Loader Section. A code can be programmed into either the Application Section or the Boot loader Section (BLS). The code programmed into the Application section runs normally and...... Listed under: LCD Projects
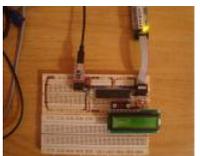
415. How to Initialize Peripherals from Boot Loader Section In almost all the microcontroller codes the peripheral initialization functions like uart initialization, spi initialization are written along with the different application codes. These initialization functions are actually repetitions of the original initialization functions. The same is the case with the external hardware initialization like...... Listed under: LCD Projects
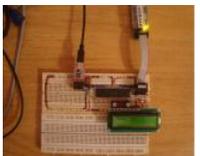
416. How to Use SPM for Flash to Flash Programming The Self Programming Mode (SPM) is a feature which enables a microcontroller to program its own flash memory. Using the SPM a microcontroller can program itself with an SPM code. The SPM is commonly used with the microcontroller Boot-Loader codes which help to program the...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects
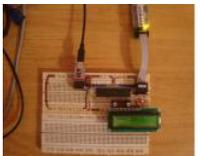
417. How To Use SPM To load Application from EEPROM In any microcontroller the Boot-Loader is the first code which executes before the application code does. The major function of the Boot-Loader is to load the application code into the flash memory of the microcontroller and execute it. In AVR microcontroller the Self Programming Mode...... Listed under: LCD Projects, Memory - Storage Projects
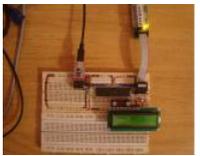
418. How To Write a Simple Bootloader For AVR In C language The BootLoader is a code which executes when a microcontroller is powered ON or reset. It basically sets an environment for the application code to execute. It is the Boot-Loader that sets the hardware and loads the application code from any storage medium or received...... Listed under: LCD Projects
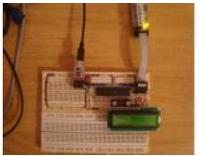
419. LCD Scrolling Display Module A microcontroller is a device which has an inbuilt processor surrounded by few dedicated hardware modules. Once the microcontroller initializes them they start operating on their own. In case of an ADC it will do the sampling and digital to analog conversion all by itself...... Listed under: LCD Projects

420. 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

421. 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

422. 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

423. 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

424. 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

425. 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

Microcontroller Programmer Projects
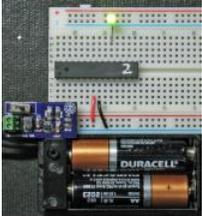
426. Burn Arduino Bootloader on Atmega-328 TQFP and DIP chips on Breadboard Parts required (Hardware) Arduino Uno Board (1) TQFP 32 to DIP 28 Adapter (1) Link Atmega TQFP 32 pin chip (1) Atmega DIP 28 pin chip (1) 10K resistor (1) 16MHz crystal (1) 18pf - 22pf capacitor (2) Tact Switch (1) Jumper wires (few) LED.... Listed under: Other Projects
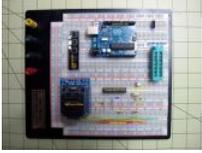
427. Burn BootLoader into Atmega328P using Arduino Diecimila I have an old Arduino Diecimila and some new Atmega328P-PU chips. Shouldn't have but I brought some without bootloader to save some dollars. What next? search instructables to see if I can burn bootloader to ths chips. Unluckily not working. An error message "avrdude: stk500_getsync():...... Listed under: Other Projects
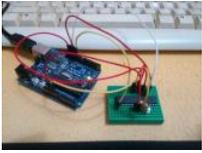
428. Create yourself ATMEGA128 a simple tone generator Hello guys, In this project I want to share my experiment on ATMEGA128 generating a simple tone, I have created 8 tones (1 octave) Let's get started!! Step 1: Prepare the components Let's prepare the components, We need : 1. Speaker, just buy...... Listed under: Sound - Audio Projects

429. 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

430. 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 image 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

431. 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 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

432. 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

433. 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 routine...... Listed under: PWM Projects
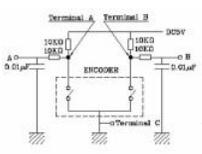
434. Make yourself a speaking ATMEGA128 Guys, In previous weekend, I made myself a speaking ATMEGA128. I used ATMEGA128 and LM386 as an amplifier, Let's get started Step 1: The part I need for this project These parts are needed for this project : 1. LM386 2.ATMEGA128 3.USBISP 4.AVRStudio 5. Small...... Listed under: Sound - Audio Projects

435. 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
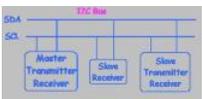
436. Interfacing GY 26 with atmega640 Hello friend once again with new instructable in this I will show you how to interface GY 26 with UART when I started working on this very less resource where availble over internet .Thus i thought to share my piece of work .GY 26 is...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects

437. 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

438. 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
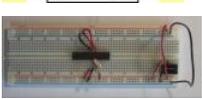
439. Burning atmega328-pu and atmega328p-pu bootloader Burning the boot loader in an atmega328 could be somewhat tricky but if u follow these steps correct youll be able to bootload any type of atmega328 micro controller .. Step 1: "setting up the hardware" -List of stuff you'll need: - An Arduino board...... Listed under: Other Projects

440.
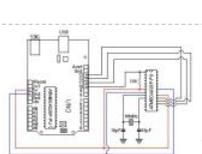
Homemade singing ATMEGA128 Hello guys, After experimenting with 8 octave tone generator, Now, I'm continuing on creating a singing ATMEGA128 Let's get started, no more delay.... Step 1: Prepare all the parts needed... Let's prepare the part we need, 1. ATMEGA128 2. The board itself, I created my...... Listed under: Home Automation Projects

441.
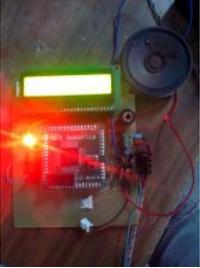
Speech Synthesis on Atmega128 I had this one project where the device was supposed to speak out the output. And I was too Lazy to actually go and build a P based application and not that lazy to make it on a micro controller. So here is some of...... Listed under: Other Projects, Sound - Audio Projects

442.
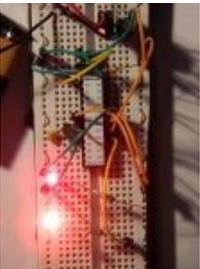
Standalone Atmega328 We all have a deep fondness to our Arduino with its familiar shades of blue/green, but the time has come to explore other project options. One that involve fewer pieces, fewer parts, and fewer dollars. Building a standalone Atmega328 is far simpler than you might...... Listed under: Other Projects

443.

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 he path. The...... Listed under: Sensor - Transducer - Detector Projects

444.

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

445.

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

446.

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. A 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

447.

Acoustic Impulse Marker Using Atmega1284 Introduction "A device that tracks sound impluses with a three microphone array" We designed and build a 2-dimentional Acoustic Impulse Marker system which is capable of detecting a sharp sound anywhere in its vicinity and precisely marking its source vector with servo based pointer....... Listed under: Sensor - Transducer - Detector Projects

448.

Rock-Paper-Scissors-Spock-Lizard Game Using Atmega1284 Introduction This project implements rock-paper-scissors game that displays on the TV screen usir camera to capture human gesture and doing image processing. Rock-paper-scissors-spock-lizard game is very popular among teenagers. Our idea comes fron a very popular American comedy: Big Bang! In this TV show we...... Listed under: Game - Entertainment Projects

449.

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 th 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

450.

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 inexepensive, easy-to-use theremin. The theremin is a musical instrument which is controlled by the electromagnetic field your body body produces naturally. One...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects

451.

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
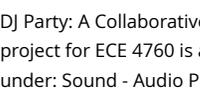
452. DJ Party: A Collaborative Music Teacher using Atmega1284 Introduction "This device allows friends to learn songs, create their own songs, and collaboratively merge them." Our final project for ECE 4760 is a fully customizable button keyboard that has a variety of features to allow for collaborative music-making between friends. Each keyboard has eight...... Listed under: Sound - Audio Projects
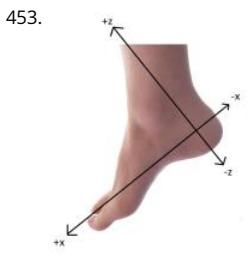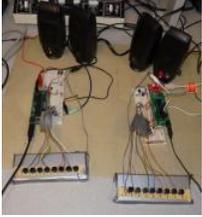
453.

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

454.

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

455.

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

456.

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

457.

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

458.

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

459.

Servo-Controlled Fire Extinguisher Using Atmega1284 Introduction We have created an autonomous, servo-controlled fire extinguisher that is capable of aimin 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

460.

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

461.

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

462.

A Touchscreen Chinese Chess App Using Atmega1284 With the increasing popularity of smartphones and tablet computers, touchscreen has become one of t 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

463.

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, an with...... Listed under: GPS Based Projects
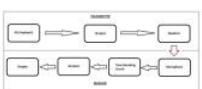
464.

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

465. 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
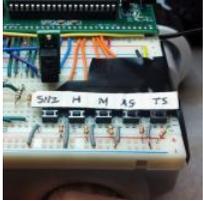
466.

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

467.

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
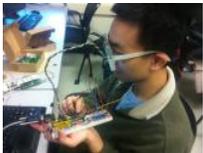
468.

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

469.

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

470.

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

471.

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

472.

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

473.

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

474.

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

475.

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
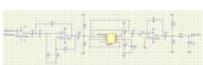
476.

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

477.

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

478.

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

479.

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

480.

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

481. 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
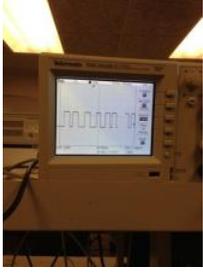
482. Muscle music control Using Atmega1284p Introduction For our ECE 4760 Final Project, we use an infrared LED and phototransistor armband to detect muscle inflections in arm and wrist movement which are used to manipulate the volume and speed of pre recorded songs. By pumping your fist, you will change the...... Listed under: Sound - Audio Projects

483. 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

484. 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
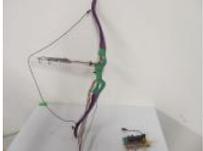
485. Virtual Archery Using Atmega644 Introduction We decided to create a virtual archery game for our ECE 4760 final project. This game consists of an ATmega1284P microcontroller, a TV for display, and multiple pieces of hardware. All of these devices communicate together to simulate a three-round game of archery with...... Listed under: Game - Entertainment Projects

486. 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

487. 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

488. GPS and compass guided car Using Atmega644 For our final project, we built a self-driving car that takes in inputs for a final destination and drives itself from its initial location to the final destination. The idea for this final project requires an LCD to display the location that the car is...... Listed under: Car Projects

489. Persistance 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

490. 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

491. 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
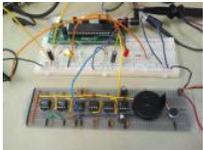
492. Ultrasound Gesture Detection Using Atmega644 Introduction In this project, ultrasound around 24kHz was used to detect movement near an object. Waving a hand or other solid object near the source of the ultrasound (speaker) causes a shift in the frequency of the sound, which is then detected by a microphone.... Listed under: Sensor - Transducer - Detector Projects

493. 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

494. 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 designed using an infrared and...... Listed under: Medical - Health based Projects

495. 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

496. 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

497. OBD-II Autocross/Track Data Logger for BMW E36 M3 Using Atmega644 Customer's Voice   top "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...... Listed under: Car Projects

498. 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
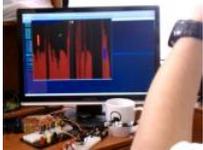
499. Digital Saxophone Using Atmega644 Abstract My final project was the design of a digital saxophone which can reproduce the sound of an actual saxophone through digitally synthesized electrical waveforms. The digital saxophone consists of a microphone to sense the user blowing into a mouthpiece, push-buttons to control the note...... Listed under: Phone Projects

500. Virtual Saxophone Using Atmega644 Our ECE 4760 final project was to create a virtual saxophone that uses Direct Digitial 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

501. 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

502. 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
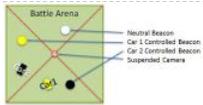
503. Touchpad Figure Recognition Using Atmega644 Our project implements a touchpad input system which takes user input and converts it to a printed character. Currently, the device only recognizes the 26 letters of the alphabet, but our training system could be easily generalized to include any figure of completely arbitrary shape,...... Listed under: Development Board - Kits Projects, LED Projects, Sensor - Transducer - Detector Projects
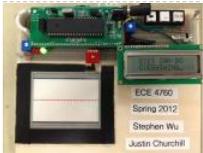
504. Battle video game Using Atmega644 Introduction Our project is a simple game where two players control tanks in a stage with the ultimate goal of destroying each other. User input is achieved through the use of keypads, which are used to both control the tanks and fire missiles at one...... Listed under: Game - Entertainment Projects

505. 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
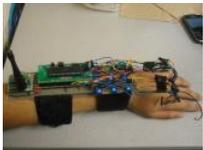
506. Evolutionary Altitude Control for a Helicopter Using Atmega644 Overview For our ECE 4760 project, we developed a self learning 1 degree of freedom (DOF) helicopter using a neural network learning algorithm and infrared (IR) distance measurement. The primary goal is to increase the helicopter height to a desired level in the quickest amount...... Listed under: Game - Entertainment Projects

507. 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

508. 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

509. 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

510. 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

511. 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

512. 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

513. 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
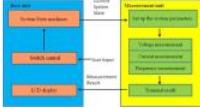
514. Remote Controlled DMM With Minimum Mass Wireless Coupler Using Atmega644 Introduction In this project, we built a digital multi-meter utilizing near-field communication concept. The system established a bidirectional wireless communication between the measurement unit and the base unit. The measurement unit is in charge of measurement and transmitting the result to the base, while the...... Listed under: Sensor - Transducer - Detector Projects

515. 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

516. 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

517. 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

518. 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
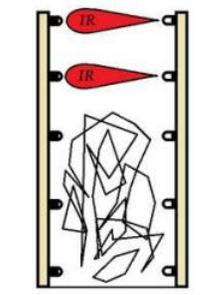
519. Smart Trash system Using Atmega644 Introduction top For our final project, we have designed and built a 'proof of concept' prototype for Project Green Stations, an externally funded student group with the following mission statement: Project Green Stations is all about changing the way people see the environment. Imagine the...... Listed under: Other Projects

520. 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

521. Autonomous Board Erasing Robot Using Atmega644 Abstract -A Roomba for boards For our ECE 4760 final project we created a board climbing robot capable 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
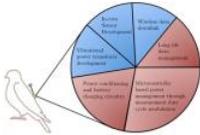
522. Self-Reliant Power and Data Management System Using Atmega644 Introduction The tags used to monitor wildlife can either be passive or active. Passive tags simply identify an individual, whereas active tags may send out a radio beacon or even collect data. These active tags, more commonly referred to as "bio-loggers", are typically battery powered,...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects
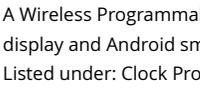
523. A Wireless Programmable Pace Clock Using Atmega644 For our ECE 4760 final project, we designed and built a wirelessly programmable digital pace clock with a large format LED display and Android smartphone control and programming. This original design achieves the functionality of commercailly available pace clocks but with an intuitive user interface...... Listed under: Clock Projects

524. 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

525. 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

526. 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

527. 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

528. 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 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

529. 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

530. 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

531. 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
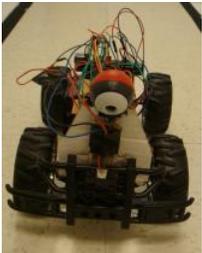
532. Step Sequencer Drum Machine Using Atmega644 Overview [top] As avid audiophiles, we wanted to apply our newly acquired knowledge of microcontrollers to build a fun consumer electronic device. Our project is a step sequencer drum machine. The user is able to program a 16-step percussion pattern using one of wide...... Listed under: Other Projects

533. 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
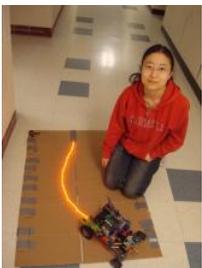
534. Rock-Paper-Scissors Sensor Gloves Using atmega644 For our ECE4760 final design project, we designed and built a two player game system for rock-paper-scissors. Our implementation involved the use of two sensor gloves (one for each player) that tracked bends in the user's fingers, to determine the symbol put out by each...... Listed under: Game - Entertainment Projects

535. 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
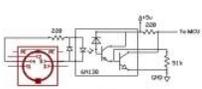
536. TI Calculator Wireless Chat Using Atmega644 INTRODUCTION: Our project is a wireless communication link which interfaces to the serial ports on the TI-83 and TI-84 calculators. SUMMARY: Our group created a wireless communication system for the widely popular TI 83/84 calculators. The system interfaces to each calculator through their 2.5mm serial...... Listed under: Calculator Projects

537. 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

538. 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

539. Ultrasonic Spheroid Levitation Device Using Atmega16 Introduction The goal of this project was to design and build a gaming device capable of levitating a pin 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: Game - Entertainment Projects

540. 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

541. 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

542. 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

543. Invisible band Using atmega644 Introduction The goal of this project is designing microcontroller operated drum set and guitar which are only consist of drum 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

544. 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

545. 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

546. 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

547. 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

548. 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
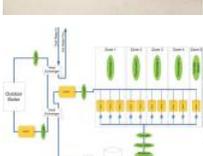
549. XBee RF Smart Energy Compliant Power Meter Using Atmega644 Motivation >A breaker-level power metering device for measuring energy on 4 different circuit lines and wirelessly outputting that energy data onto Google PowerMeter. Useful Links Google PowerMeter Smart Energy Alliance DOE - SmartGrid Energy Efficient Products Similar Projects Zigbee Wirele Relay Control & Power Monitoring...... Listed under: Metering - Instrument Projects

550. 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. A three modules...... Listed under: Home Automation Projects
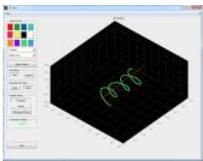
551. Hand controller for Parrot AR Drone Quadricopter Using Atmega644 Introduction Our project is a novel hand held controller in which we use an accelerometer to wirelessly control the motion of a Parrot AR Drone Quadricopter. Rationale: The main idea of our project was building a cool glove controller for a flying platform, a quadrotor...... Listed under: Robotics - Automation Projects, Sensor - Transducer - Detector Projects

552. 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

553. 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

554. 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

555. 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
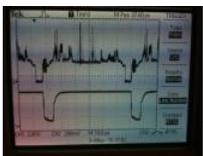
556. Automated Pavlovian Classical Conditioning of Insects Using Atmega644 Introduction Several studies have shown that various insects possess learning and memory abilities. One approach researchers use to demonstrate such abilities is to "teach" the insect to exhibit a specific behavior in response to a stimulus. This "teaching" process is called Pavlovian conditioning. Such studies...... Listed under: Sensor - Transducer - Detector Projects
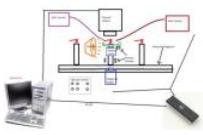
557. CMOS Camera Rock Paper Scissors Game System Using Atmega644 Introduction We created a rock paper scissors game that utilizes a CMOS camera to determine what hand the human player plays. The player is required to wear a glove that has black tape taped on each finger. When the player plays the hand the camera...... Listed under: Game - Entertainment Projects

558. RFID sales checkout system Using Atmega644 Introduction 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...... Listed under: RFID - NFC Projects

559. 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

560. 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

561. 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

562. 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

563. 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

564. 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

565. 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

566. 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

567. 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

568. 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

569. 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

570. 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

571. 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

572. 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

573. 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

574. 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

575. 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

576. 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

577. 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

578. 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

579. 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

580. 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

581. 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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582. 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

583. 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

584. 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
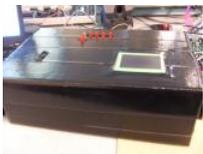
585. Touchpad/Infrared Music Synthesizer Using Atmega644 Touchpad/Infrared Music Synthesizer "Generate music with your laptop touchpad!" Wei-jiunn (Vic) Jang Kalina Jordanova The Touchpad Infrared Music Synthesizer uses a laptop touchpad and an infrared distance sensor to control tone, volume and decay length of musical notes. Operating in one of six modes, this...... Listed under: Sound - Audio Projects

586. 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

587. 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
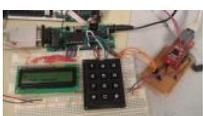
588. Digital Receipts System Using Atmega644 Introduction Our final project is a conceptual prototype of a digital receipt system. The basic idea is when making a purchase with a credit or ATM card, the transaction information is automatically packaged and sent to a webserver where it can be logged in a...... Listed under: Other Projects

589. ODB-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

590. 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

591. 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

592. 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
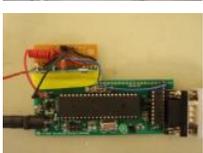
593. Dual-Channel Mobile Surface Electromyograph Using Atmega644 Introduction For our final project, we built a surface electromyograph to collect and analyze data on muscle activity, which supports two channels, implements wireless transmission, and can be worn as mobile unit. Surface electromyography (EMG) is noninvasive technique to record the activation signals of...... Listed under: Phone Projects

594. 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
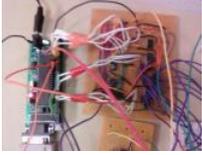
595. GPS Data Logger with Wireless Trigger Using Atmega644 Introduction The goal of this project was to create a portable GPS logger that could be wireless triggered by an external device, such as a camera. Our device that we have designed operates in two modes. The first works as a basic GPS logger, which...... Listed under: GPS Based Projects

596. 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

597. 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

598. 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 driv 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

599. 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

600. BalanceBot Using Atmega644 Introduction The Balance Bot 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...... Listed under: Motor Projects

601. 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

602. Wireless Persistence of Vision Device with Realtime Control Using Atmega644 Introduction We set out to make an easy to interact with, highly custimizable PO 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

603. 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

604. 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

605. 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

606. ESD Foam Touch Controlled Brick Blaster Using Atmega32 Introduction As technological devices become more advanced and a bigger part of our daily lives, th 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

607. 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

608. 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

609. 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
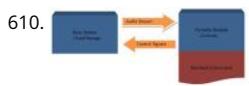
610. Wireless Music Player Using Atmega32 Our wireless music player allows the user to listen to uncompressed digital audio streamed over a wireless link. The music player reads uncompressed audio data from an SD card in an immobile "base station." A pair of Xbee transceiver modules are used to stream data...... Listed under: Radio Projects

611. 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

612. 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

613. 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
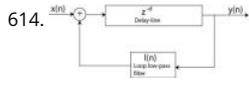
614. Musical Blocks Using Atmel ATmega 644 ntroduction The purpose of this project is to create musical blocks that output music without requiring some sort of musical talent. Musical Blocks tracks the position of the blocks on a flat surface in a range seen by the Wiimote. The path of the blocks...... Listed under: Sound - Audio Projects

615. 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
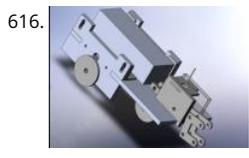
616. Robot Plotter Using Atmega32 Motivation Deciding a direction of the final project in ECE 4760 can be very difficult. With small Micro Controller Unit, we can build anything and everything. We felt compelled to find something very creative and ingenious and had looked around our surrounding and have found...... Listed under: Robotics - Automation Projects

617. 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
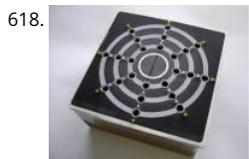
618. Rhythm Ring: Interactive Rhythm Sequencer Using Atmega32 I. Introduction The Rhythm Ring interactive rhythm sequencer is an engaging musical device that enables the user to create a plethora of rhythms and beat patterns with the touch of their own fingers. Besides being fun to play with, the Rhythm Ring provides a tangible...... Listed under: Sound - Audio Projects

619. 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

620. 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

621. 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

622. 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
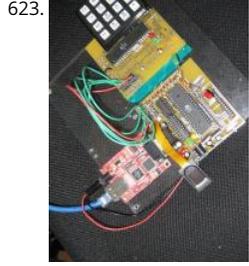
623. Networked Biometric Authentication Using Atmega32 Introduction: Due to the increasing need for securing data and places, the biometric authentication industry is seeing large market growth. We decided to build a scalable, small, and efficient device that can be used to secure doorways throughout a complex. We use a FingerPrint Cards...... Listed under: Calculator Projects, Interfacing(USB - RS232 - I2c -ISP) Projects

624. 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: Development Board - Kits Projects
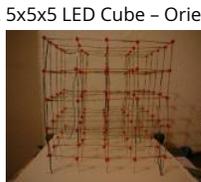
625. 5x5x5 LED Cube – Orientation Independent 3D Display Using Atmega32 Introduction Our project, in one sentence, is an orientation independent 3D LED display. We were inspired by various videos on youtube of similar cubes but also by the idea of creating an interactive 3-dimensional display. We built a 5x5x5 LED cube display and controller board...... Listed under: LED Projects

626. 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

627. 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

628. 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
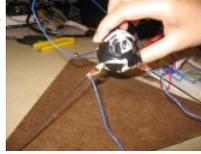
629. 3D Video Game Control Using Atmega32 Introduction Our project is a 3-dimensional game control for a video game displayed on a black and white television set. Motivation and Overview In the recent push in technology, many new computer and game interfaces have been created, many of which include wireless control. Our...... Listed under: Game - Entertainment Projects

630. 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 EXTREEEEEEEEEEEEME!!!!!!! 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
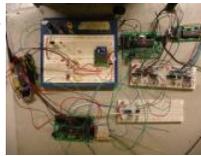
631. Data Acquisition System With Controller Area Network and SD Card Using Atmega32 Introduction This project implements a high speed data acquisition system using Mega32 microcontrollers and a Controller Area Network (CAN). Recording data is essential to testing and developing a racecar. Recording what each sensor is doing can tell an engineering how the car is performing, and...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects

632. 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
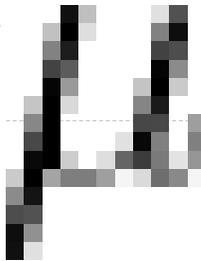
633. Adaptive 60 Hz Noise Cancellation Using Atmega32 An active noise canceler to eliminate the 60 Hz noise found in electrical signals due to AC power-line contamination. 60 Hz noise is frustrating for anyone trying to make sensitive measurements of low voltage processes (eg. Electrocardiogram measurements), record audio from electrical instruments (eg. guitar...... Listed under: Sound - Audio Projects

634. 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
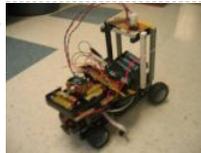
635. Accelerometer Controlled R/C Vehicle Using Atmega32 INTRODUCTION In our final design project for ECE 476: Microcontrollers, we decided to build a vehicle controlled, using accelerometers, by a remote control that wirelessly transmits, using RF technology, data to the vehicle to move in any direction. The accelerometers will be mounted on a...... Listed under: Car Projects
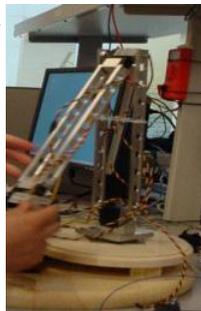
636. ROBOT ARM Using Atmega32 Introduction Our project is a twenty four and half inch aluminum frame robotic arm with four degrees of freedom. In our project we made the arm the second player in the classic game of Tic-Tac-Toe to demonstrate its programmable repeatable motion. The arm consists of...... Listed under: Robotics - Automation Projects

637. 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

638. 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
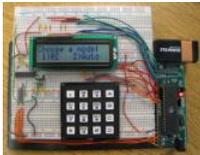
639.	**TriWheeler robot Using Atmega32** Introduction The TriWheeler is a radio-controlled robot with three wheels. The lack of the fourth wheel is far from the only t distinctively different from typical radio-controlled units. In addition to the capability of being freely controlled with a remote control, The...... Listed under: Robotics - Automation Projects
640.	**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
641.	**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. Th 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
642.	**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
643.	**Ghost Writing Robot Using Atmega32** Summary We used two stepper motors to drive a steel ball scavenged from a ball-bearing. These motors were controlle 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
644.	**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 Atm ATmega32 microcontroller. A set of...... Listed under: Sensor - Transducer - Detector Projects
645.	**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
646.	**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
647.	**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
648.	**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
649.	**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 issu that came up while...... Listed under: Game - Entertainment Projects
650.	**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 ar 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
651.	**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
652.	**Radio Frequency Beacon Finder Using Atmel Mega32** This project is a radio frequency receiver that will help the user the 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
653.	**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
654.	**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 ou there. Its level of difficulty...... Listed under: Game - Entertainment Projects
655.	**Laser Pong Using Atmega32** 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: Game - Entertainment Projects, LED Projects
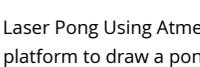
656. Movement to Music: A Wearable Wireless Motion Sensor system Using Atmega32 Introduction In this digital age, new interfaces for musical expression provide much broader musical possibilities than have ever existed before. There is a constant quest to be in harmony with one's instrument so that music can flow freely from the imagination and take form effortlessly....... Listed under: Sensor - Transducer - Detector Projects, Sound - Audio Projects

657. 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

658. 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

659. 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
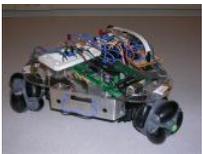
660. Model retina: color tracker Using Atmega32 Objective and Background <> Objective: The gift of sight is precious; that is why we tried to model an artificial retina with the properties of color detection, saccades, and pursuit tracking. Structure of a Retina: A retina lies in the back of the eye and...... Listed under: Sensor - Transducer - Detector Projects

661. 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
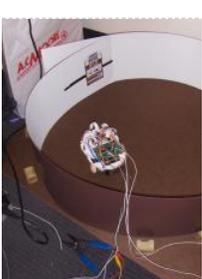
662. MCU MIDI synthesizer using Atmega32 Introduction Our final project is a music synthesizer that is capable of producing a variety of musical sounds, by modifying the attack, decay, sustain, release times, and applying special effects such as a low pass filter or a halftone shifter. Our original interest for this...... Listed under Sound - Audio Projects

663. 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

664. 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
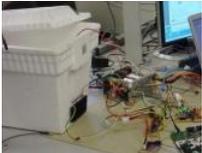
665. Morse code interpreter, with speech synthesis Using Atmega32 Introduction This project implements a system that translates Morse Code to text and speech and translates text to Morse Code. With our limited experience with Morse Code, our first task was to do some research on the components of Morse Code and the standards associated...... Listed under: Sensor - Transducer - Detector Projects
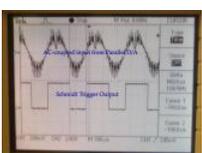
666. $|Z| = \sqrt{R^2 + X^2}$ Complex impedance analyzer Using Atmega32 Introduction Our device is an impedance analyzer that determines the complex impedance of any R-C circuit within an impedance range. Our original plan for creating this device was to develop a body fat measurer, a portable device that could allow users to monitor their health...... Listed under: Other Projects

667. 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

668. USB Magnetic Mouse/Touchpad Using Atmega32 Introduction This project implements Hall effect sensors and a magnet to mimic the function of a typical USB mouse (similar to a tablet pens function). Many digital artists draw with mice on computer or use tablets. However, tablets are often very expensive. Using the mouse...... Listed under: Sensor - Transducer - Detector Projects

669. 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

670. 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 Mercedez S-class into your small garage? Fear no more! Our ultrasonic ParKontroller can sense how far you... Listed under: Car Projects
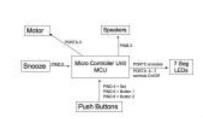
671. Retractable Alarm Clock (RAC) Using Atmel Mega32 1.1 Motivation: Alarm clocks are essential in almost everyones daily life. For most of us, we start our day t the sweet noise of our alarms. While some people wake up instantaneously to the first chirp of an alarm, some struggle everyday to get out...... Listed under: Clock Projects

672. 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 burdensom and...... Listed under: Home Automation Projects

673. 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

674. 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
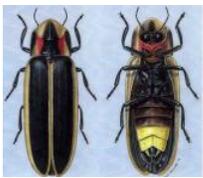
675. Firefly synchronization Using Atmega32 Introduction This project implements a 2D matrix of bidirectional LEDs to simulate how fireflies in a population synchronize their flashing. Fireflies are an extraordinary species of bioluminescent animals which are able to synchronize the timing of their light emission within a flashing population. In places...... Listed under: Development Board - Kits Projects

676. Graphing calculator Using Atmel Mega32 Introduction A perfect tool for high school students that will pursue a career in engineering, the graphing and statisti 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

677. 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

678. 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

679. 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
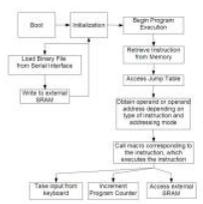
680. AppleII emulator Using Atmel Mega32 The goal of this project was to develop a system capable of emulating an Apple II personal computer. This project attempted to reconstruct a functional Apple II emulated on Atmel ATmega32 processors. Due to time constraints, a fully functional Apple II was not produced; however,...... Listed under: Microcontroller Programmer Projects

681. 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
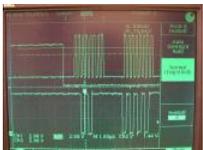
682. CUAUV Voltage Sniffer Using Atmel Mega32 Introduction The Cornell University Autonomous Underwater Vehicle team (CUAUV) is an undergraduate engineering team that designs and builds a fully autonomous, robotic submarine. Over the past year, the team – of which both Manoj Lamba and Ian Wang ar members – has had a stringent...... Listed under: Metering - Instrument Projects, Sensor - Transducer - Detector Projects

683. CUsat diagnostic board using Atmel mega32 1 Introduction Our final project is the CUSat Diagnostic Board (CUDB). This board will be used for monitoring CUS 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

684. 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
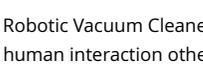
685. Robotic Vacuum Cleaner Using Atmel Mega32 Introduction As our final project, we decided to design and build a robot capable of vacuuming the floor of a room or area without any human interaction other than just starting the unit. We realized the need for a cheap and convenient product that can...... Listed under: Robotics - Automation Projects

686. 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

687. 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
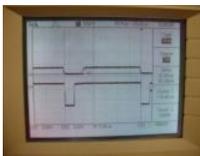
688. Musical Water Fountain Using Atmega32 Introduction: Our final project is a musical water fountain loosely based on the fountain in front of the famed Bellagio hotel and casino. The basic idea of the project is to take an input from an iPod (or any sound source), sample the sound and...... Listed under: Sound - Audio Projects

689. 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

690. 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 single pole...... Listed under: Car Projects, Game - Entertainment Projects, Sensor - Transducer - Detector Projects

691. 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

692. Self-powered solar data logger Using Atmel Mega32 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: Battery Projects

693. 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

694. 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

695. 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

696. 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
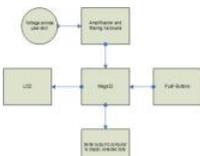
697. RFID Security System Using Atmel Mega32 Introduction and Motivations: For our final project, we designed and built (and exhaustively tested) an RFID-based proximity security system for use with Cornell Identification cards, which have been RFID-embedded since fall of 2003. The idea for this project was sort of spawned from our general...... Listed under: RFID - NFC Projects, Security - Safety Projects

698. 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

699. 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 The project started with one central premise: current physical access control systems...... Listed under: LED Projects

700. 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 Project

701. 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

702. Sign language coach Using Atmega32L Introduction Objective The goal of this project is to design a useful and fully functional real-world product that efficient 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
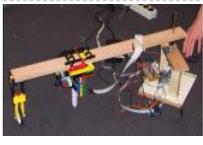
703. Radial Chalker Using Atmel Atmega32 Introduction We developed a new way for student groups to chalk advertisements for events. This project is a radial printing device for drawing with chalk/markers on flat surfaces. High-Level Design dea Rationale and Sources Anyone who has done any sidewalk chalking knows that it is...... Listed under: Motor Projects

704. 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

705. 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

706. 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

707. 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

708. Digital Stethoscope Using Atmega32 Introduction Our project is a digital stethoscope that displays your heartbeat on any television. It also calculates beats pe 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
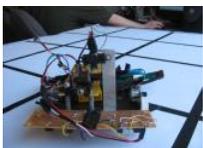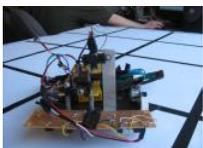
709. TRISHUL -Autonomous navigating robot Using Atmel Mega32 Introduction We decided to do this project due to our keen interest in the robotics. We were also looking for a project that involved a perfect mix of hardware and software complexity. This project enabled us to use new hardware such as sensors, stepper motors...... Listed under: Robotics - Automation Projects

710. 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 payir attention in calculus...... Listed under: Game - Entertainment Projects
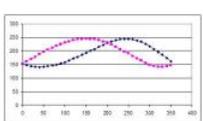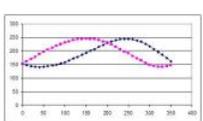
711. Digital Compass Using Mega 32 I. Introduction The goal of this project is to build a digital compass that displays both the direction and cardinal points on a television. Other functionalities were added to complement the sensor interface, such as, temperature display, magnetic declination input and disability optio At the...... Listed under: Sensor - Transducer - Detector Projects, Temperature Measurement Projects

712. 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

713. 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 mous 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

714. Pong2 Using Atmel Mega32 Our final project is a portable, dedicated PONG2 video game unit for use with a home television. 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...... Listed under: Game - Entertainment Projects, LCD Projects

715. 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

716. 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

717. The Ultimate MP3 Radio Using ATMega32 Introduction Perusing through the impressive list of past projects, we decided to make our final project a combination 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

718. 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

719. 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

720. 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

721. 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

722. 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

723. 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

724. 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
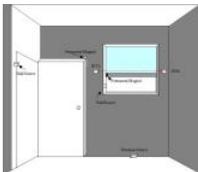
725. Eye in the Sky Security System Using Atmel Mega32 Introduction We have used the Atmel Mega32 AVR microcontroller to construct an affordable, high end security system designed to protect valuables in a single room of a house or property. According to national surveys conducted by the department of Justice, property crimes are ten times...... Listed under: Security - Safety Projects

726. Xylophone Using Mega32 Introduction Our final project is a programmable, self-playing xylophone with random melody generation and a pitch detection base interface. From early mechanical devices to todays 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

727. 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
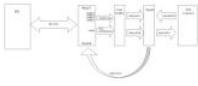
728. Wonderswan Development Cartridge Using Atmel Mega32 Introduction Short Summary This project allows a Wonderswan developer to upload 64 kB of code/data and execute it on real Wonderswan handheld gaming hardware. Long Summary We started by opening up one of our Wonderswan cartridges and identifying the various chips and circuitry found inside....... Listed under: Game - Entertainment Projects

729. 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

730. 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

731. 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 Ataris 1981 version. After looking at some of the past ece476 final projects, I noticed no one had tried to...... Listed under: Game - Entertainment Projects
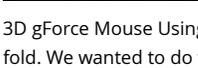
732. 3D gForce Mouse Using Mega32 Introduction "Our 3D gForce Mouse will enable use to move the curser in the air freely with the capacity of scrolling" The rationale for this design is two fold. We wanted to do this design because we wanted to make a zero-impact pointing device for...... Listed under: Sensor - Transducer - Detector Projects
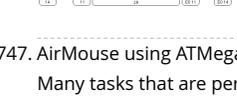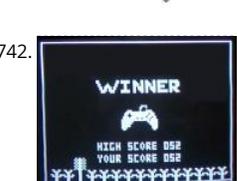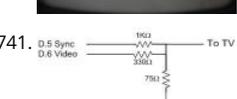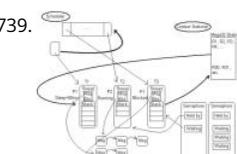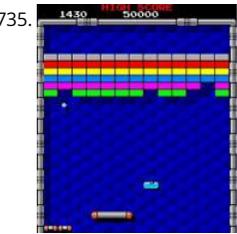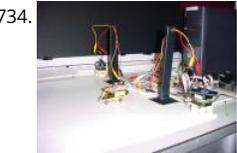
733. Stationary Helicopter Using Atmel Mega32 Intro Summary Thinking about what a CDE (culminating design experience) should be, we devised a project that combines the microcontroller programming principles learned in ECE 476: Microcontroller Design with the control theory concepts learned in ECE 472: Feedback Control Systems to create an academically viable...... Listed under: Motor Projects, Sensor - Transducer - Detector Projects

734. 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

735. 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

736. 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

737. 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

738. 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

739. 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

740. 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

741. 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

742. 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

743. The Contender video game using Atmel Mega32 Introduction The pitch "The Contender" is an interacting boxing game in which the player actively participate 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

744. 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 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

745. 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

746. 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

747. AirMouse using ATMega32 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: Sensor - Transducer - Detector Projects

748. 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
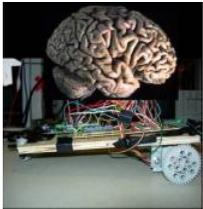
749. Wireless Electromyograph using ATmega32 Introduction This project implements a wireless surface electromyograph that displays the signal using a television as an oscilloscope. Electromyography detects the electrical signals that the human body generates to contract muscles. Detecting very low voltages in the milliVolt range on the skin surface is not...... Listed under: Internet - Ethernet - LAN Projects, LCD Projects

750. 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
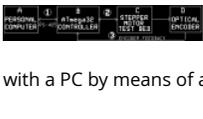
751. A Microcontroller Based Turbidity Meter using AtmelMega32 Introduction Low-Cost Turbidity Meter for Underdeveloped Countries Our project is a collaboration with an independent research project being conducted by senior civil and environmental engineering student James Berg. The goal of this project is to create a low cost turbidity meter for use in under...... Listed under: Metering - Instrument Projects, Temperature Measurement Projects

752. 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

753. 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

754. 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

755. 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

756. Missle 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"] Missle Command video...... Listed under: Game - Entertainment Projects
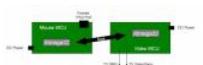
757. BlindBot usisng Atmel Mega32 MCU Introduction   Our project is an autonomous toy car that tracks a high pitched audio signal. Using two microphones, a microcontroller, and two DC motors on an existing remote controlled car and, we implemented our own control logic to detect high pitched 3.5kHz audio signals...... Listed under: Game – Entertainment Project Ideas, Robotics - Automation Projects

758. 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

759. 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

760. 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

761. 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

762. 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
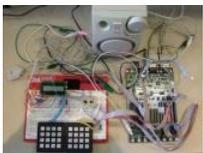
763. Variable Traffic Controller Introduction Our project is a Traffic Controller that is sensible to traffic condition and adjust the traffic lights accordingly. Our project tries to simulate the traffic at an intersection, and with the use of sensors (Hall Effect in our case), we adjust the traffic of...... Listed under: Car Projects

764.
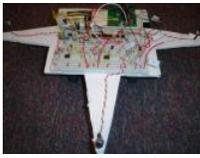
RoboDog using ATMega32 Introduction The project, Robodog?is an autonomous car that follows sound. The car can follow almost any audible sound that hum three onboard microphones. This project was possible because of the fact that the speed of the sound is relatively slow compare...... Listed under: Game - Entertainment Projects, Robotics - Automation Projects

765.

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

766.

MOS 6502 Emulation on an Atmel Mega32 ECE 476 - Spring 2003 Christopher 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...... Listed under: Other Projects

767.

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

768.

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
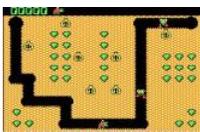
769.

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
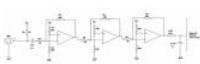
770.

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

771.

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

772.

Voting Machine Using Atmel Mega32 Introduction Our project is an electronic voting system. The system allows for quick and accurate voting electronically. Th 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 t entire...... Listed under: CNC - Printing Machines Projects, Home Automation Projects

773.

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 an decodes the original sensor levels. Introduction The problem of encoding multiple input signals into...... Listed under: Sensor - Transducer - Detector Projects

774.

CubeSat Diagnostics board using Mega128 Introduction Sound Byte This project is a proof of concept diagnostic & testing board for use with the power board 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

775.

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

776.

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
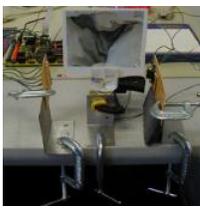
777.

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: LE Projects
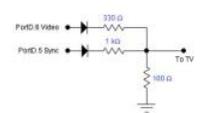
778.

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

779.

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

780.

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
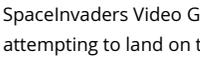
781. SpaceInvaders Video Game Using Mega32 Introduction Our final project is the classic Atari version of space invaders on the MEGA32. The story: A horde of space invaders are attempting to land on the planet's surface. You play a heroic pixilated thing on the ground trying to stop them one bullet...... Listed under: Game - Entertainment Projects
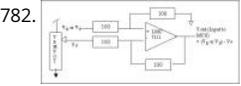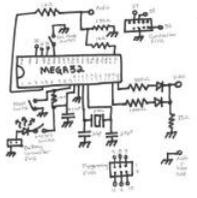
782. Space Fighter Video Game Using ATMega32 Introduction Our project is a fighter game. The user controls a fighter, which moves around the TV screen. The user starts the game with a defined number of lives. It has two kinds of enemies: the asteroids and the monsters. Asteroids drop randomly from the...... Listed under: Game - Entertainment Projects
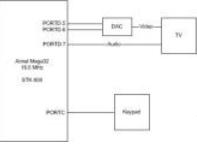
783. Frogger Video Game Using Atmel Mega32 Introduction Sound Bite One word: FROGGER!! Why Frogger? We chose Frogger for several reasons. First, we believe that it is an entertaining game, which is complex enough to implement as a project. Second, Frogger allows us to use knowledge that we have acquired in this...... Listed under: Game - Entertainment Projects

784. 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

785. 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

786. 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

787. 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

788. 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
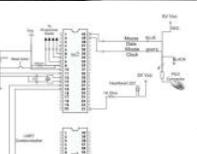
789. TV Minesweeper Using Atmel MEGA 32 Introduction For our final project, we have decided to build a minesweeper game with a microcontroller and a PS/2 mouse to be displayed on the TV. Minesweeper is a famous game that comes with the MS-Windows operating system, and the objective of the game is...... Listed under: Game - Entertainment Projects
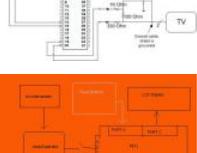
790. Vehicle Performance Meter Using Atmel Mega32 INTRODUCTION The DomMeter is a car performance meter that measures acceleration to compute values important to car enthusiasts. Specifically, the DomMeter calculates the 0-60mph time, 0-30mph time, 0-100mph time, quater mile, eighth mile time and braking time, the max acceleration during that interval, distance travelled...... Listed under: Metering - Instrument Projects, Temperature Measurement Projects

791. 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

792. 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

793. 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 � 96 pixels � 4 bits/pixel = 6,144...... Listed under: Game - Entertainment Projects
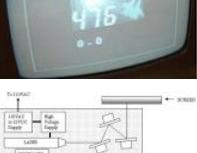
794. Laser Light Show Using Atmega32 Introduction Single sentence summary A programmable laser light show that allows the user to specify the pattern displayed via three motor speeds and the length of time that this pattern is held. Project Summary For this project, we designed a system to guide a laser...... Listed under: Sensor - Transducer - Detector Projects

795. 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

796. 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

797. 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
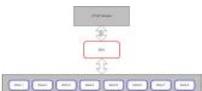
798. Multi-Zone Fire Alarm System Using Mega32 Microprocessor Introduction We designed a multi-zone fire alarm system with a VT100-compatible user interface. The system is microprocessor controlled using the Mega32 microprocessor. The system communicates to the VT100-compatible user interface via a RS232 connection. A fire is detectable by a number of fire detection devices...... Listed under: Security - Safety Projects

799. 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

800. 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

801. 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

802. Autonomous Car Introduction Let us begin with one key observation: cars are cool.   From consumer transportation to manufacturing to childrens' toys, vehicles in their many forms are some of today's most influential machines.   Autonomous vehicles are already in use in many manufacturing facilities, and they are also...... Listed under: Car Projects

803. 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

804. 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

805. 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
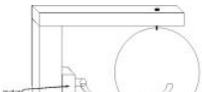
806. The Rotating Globe Using Atmel Mega163 Introduction For years scientists and scholars alike have been plagued by one common obstacle which, until now, has proven to be impossible to overcome. How do you find the country you want on a globe? Sure, the easy answer is to just use the longitude...... Listed under: Motor Projects

807. 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. still retains its...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects

808. 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

809. 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

810. 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

811. 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

812. 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

813. 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
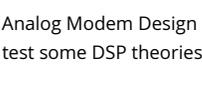
814. Analog Modem Design Project Introduction: We thought it would be interesting to try and construct a simple modem out of the ATMEL 8535. The main motivation for doing this was to test some DSP theories about the effects of transmission power, noise, and modulation technique on the bit error...... Listed under: Phone Projects
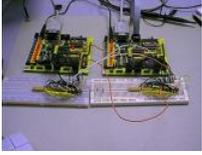
815. Security Entrance System Overview: Our security system is a stand alone device that allows access to registered users identified by their magnetic cards.(For this project, "access" is represented by a lit LED, showing how the system could be used to control an external locking mechanism.)The system includes features.... Listed under: Security - Safety Projects

816. 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 handling...... Listed under: Car Projects

817. 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

818. 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

819. 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
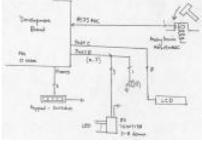
820. Whack-A-Cap: miniature representation of a popular amusement game Introduction: Our final project code calls for the implementation of an amusement game often bannered as "Test-Your-Strength" or less accurately (but more commonly) known as "Whack-a-Mole." Our machine is in essence a miniturized version of what can be found in most theme parks across the...... Listed under: Game - Entertainment Projects
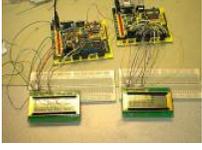
821. CU Organizer Introduction: One of the newest and fastest growing additions to the digital age in the 1990s has been the handheld personal computer. Given a little flash memory and a good LCD, anything is possible and commercial products like the 3Com PalmPilot◆ and IBM Workpad◆ are...... Listed under: LCD Projects
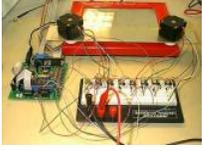
822. Automatic Etch-A-Sketch Controller Introduction For our final project, we set out to write a Controller for the classic toy, the Etch-A-Sketch. What this basically means, is that we use an Atmel micro controller to control two stepper motors connected to the knobs of the Etch-A-Sketch. Thus, an order...... Listed under: Microcontroller Programmer Projects

823. 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

824. 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
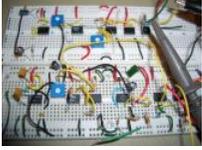
825. Eye Snake Soundbyte If you ever thought you couldn◆t control things with your eyes, think again ◆ here◆s the game Snake that allows 4 modes of multi-level game play with buttons or with your eyes, using electro-ocular potential. Project Summary While brainstorming for a 476 final project...... Listed under: Game - Entertainment Projects
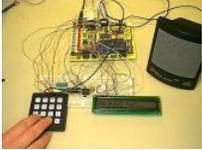
826. Hangman! Introduction For our final project, we used an Atmel AT90S8535 microprocessor to create a hangman game. The letters are displayed on a 16-character LCD, and are input ("guessed") using a 16-button keypad. The 8 LED's on the Atmel development board are used as our "hanging...... Listed under: Game - Entertainment Projects
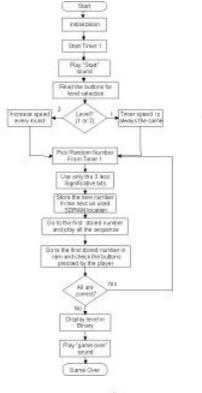
827. Programming the Game Simon Introduction Many of the simpler electronic games of the past decade can be easily programmed on the AVR microcontrollers we are using this semester, using only the lights and switches available on the evaluation boards. For our final project we programmed the game Simon using...... Listed under: Game - Entertainment Projects
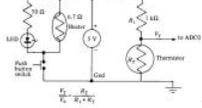
828. A m -Controller Based Thermostat Using Atmel AT90S8535 microcontroller Introduction The goal of our final project was to design a thermostat using an Atmel AT90S8535 microcontroller. The thermostat was to compute the current temperature once per second and then send an on/off signal to a heating device which would then regulate the temperature to...... Listed under: Temperature Measurement Projects

829.
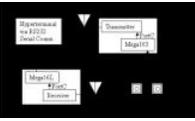
Bar Inventory System: Drinking for Class Instead of Because of Class Introduction Project Summary Our project is an expandable bar inventory system that im communication. The bar inventory system was an interesting project, because it involved both hardware and software together, since we are comprised of on analog designer and one computer programmer, both of...... Listed under: Arduino Programmer Projects

830.
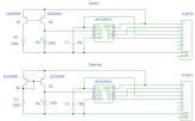
RC Car Controller Using Atmel 4414 chip Overview: We decided to build transmitter and receiver modules for a radio-controlled (RC) car, as well as implement variable-speed motor control and a continuous steering function. The simple speed controls included in most RC kits seldom offer more than three forward speeds and one reverse...... Listed under: Car Projects

831.

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

832.
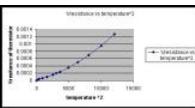
Temperature and Pressure Control using the AT90S8535 Overview: This project involves the implementation of control and monitor for dual processes. The variables monitored are pressure and temperature. The input control is a 16 button keypad and the output is monitored in a 16 character LCD The device can be widely deployed as...... Listed under: Temperature Measurement Projects

833.

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: Hom Automation Projects

834.
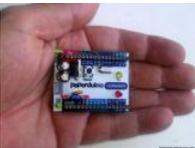
Leonardo Arduino clone a single-sided PCB using ATmega32U4 DESCRIPTION This project is to make a clone of Arduino Leonardo in a simple way.That is why the distribution of the pin does not match the standard Arduino (have to make many jumpers on the motherboard or use both sides). However, most Arduino Leonardo characteristics are...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects

835.

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

836.

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 a 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

837.

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

838.

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

839.
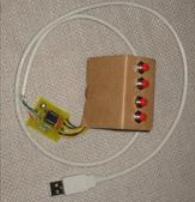
4-key keyboard using ATtiny85 Introduction: A good while back, I made the 1-key-keyboard project. Ever since it has always been in the back of my mind that th ATTiny microcontroller, which I used in this project, had still 3 IO ports which were unused. Only recently I've found the...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects

840.

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

841.

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 o archery with...... Listed under: AVR ATmega Projects, Game - Entertainment Projects

842.

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 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

843.

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 go 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

844.

Homemade VGA Adapter using ATmega644 Introduction Motivation The goal of our project is to create a VGA video adapter. This "homemade video card" should be able to connect to any monitor that subscribes to VGA standards with a standard connector and display the desired material reliably. The challenge involved here...... Listed under: AVR ATmega Projects, How To - DIY - Projects, LCD Projects

845. 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 a 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
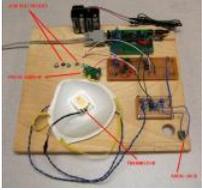
846. USB Sensors with ATtiny Microcontrollers Working with embedded electronics, you will eventually ends up with some sensor between your hands, here I'll show how to make a graph out of it! This project involves a light sensor, a tiny 8-pin AVR USB key with the V-USB stack, a GNU/Linux system...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects, Sensor - Transducer - Detector Projects

847. 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

848. 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

849. 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

850. 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

851. 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

852. 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 a 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
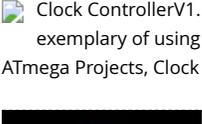
853. Night Light Saver V5.0 using AT89C2051 Introduction The Saver V5.0 runs simple clock emulation program, turns a night light on and off with preset time, say 19:00 to 22:00 everyday. The design features low cost, easy installation, no battery backup and no EMI. The AT89C2051 uses external oscillator generated by schmitt...... Listed under: AVR ATmega Projects, Home Automation Projects

854. Experimenting the 2051 withC Programming using 89C2051 Learn yourself, how to write a simple program using Clanguage for the 89C2051/89C4051. Write a 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

855. 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

856. Easy-DownloaderV1.1 for ATMEL89C2051 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
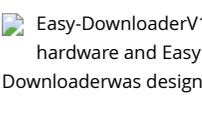
857. Easy-Downloader V1.1 with SDCC using AT89C2051 Complete schematic, orcad pcb layout of Easy-Downloader V1.1 and modified firmware with sdcc. I am very happy to use sdcc for writing firmware of my project. The compiled code is very compact and nice. After I succeeded writing a new firmware of xtimer and Easy downloader...... Listed under: AVR ATmega Projects, Other Projects

858. 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
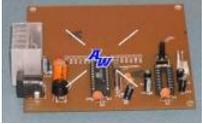
859. xTimer V1.0 using AT89C4051 microcontroller My wife asked me to find another timer for using in the kitchen. She got one already with analog setting, but it needs one AA size battery. Digital setting may not easy for human interface. However I will make it for easy time setting. When...... Listed under: AVR ATmega Projects, Clock Projects

860. 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

861. 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

862. xTimer with 4094 using ATMEL89C2051 microcontroller The original version of xTimer used MAX7219 for driving 7-segment. This new design uses a cheap CM 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

863. 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 Project

864. 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

865. 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

866. 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

867. 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

868. 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

869. 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

870. 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

871. 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
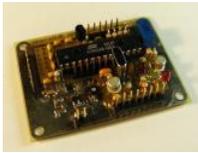
872. The WhereAVR using ATmega8 microcontroller Introduction The WhereAVR is a small, lightweight, low-power, and low-cost APRS tracker with a full compliment of analog and digital I/O, as well as the ability to decode ax.25 packets. This allows for the reception of remote commands without the need for a "real" TNC..... Listed under: AVR ATmega Projects, Sound - Audio Projects
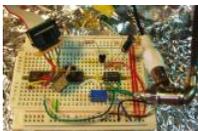
873. Video Overlay using ATmega8 microcontroller A few years ago I set about trying to design a very cheap and simple way to superimpose flight data on live video being transmitted over amateur television. Specifically, the data would include things like Latitude, Longitute, and Altitude, among other text including an identifier...... Listed under: AVR ATmega Projects, Video - Camera - Imaging Projects
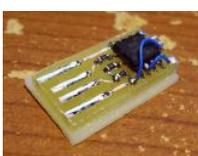
874. Stealth USB CapsLocker using Tiny45 microcontroller This device plugs into a USB port and implements a USB HID keyboard. Instead of doing anything useful, waits between 30 seconds and 8 minutes and sends the scancode for the Caps Lock key. This will toggle the Caps Lock status on or off....... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects

875. 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

876. 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
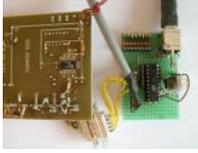
877. Atmel AVR-firmware based universal USB-Interface using ATTiny2313 Scanning the web on microcontroller based USB solutions, I stumbled over Objective Development's freeware USB solution based on Atmel's AVR architecture. I decided to build up their reference design PowerSwitch with an ATTiny2313 MCU. Since I never used AVR chips before, the first challenge was...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects

878. 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
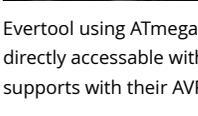
879. Evertool using ATmega16 microcontroller Evertool is an AVRISP/STK500-protocol and JTAGICE compatible Programmer/JTAG debugger. ISP Programmer compatible with Atmel AVRISP, directly accessable with AVRStudio and avrdude JTAG debugger compatible with Atmel JTAGICE, directly accessable with AVRStudio 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

880. 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

881. 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 availabe 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
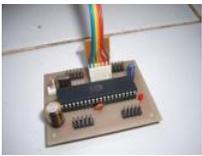
882. Cheap and Simple Learning Board using AT89S51 Build your own a cheap simple Microcontroller learning board S-52. The board is based on ATMEL's new ISP chip AT89S51, AT89S52, or AT89S53. This board can be used by beginners for learning Assembly and C language programming. Single sided PCB file included. Introduction I...... Listed under: AVR ATmega Projects, Development Board - Kits Projects

883. 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

884. 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

885. 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

886. 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

887. 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

888. 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
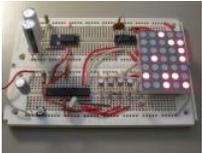
889. Dot Matrix Arduino Clock using ATMega168 The great adventure that is building clocks continues. Points of interest in this build is that it was the first chance I got to play with the dot matrix display I picked up over winter break, and it's the first time I've soldered and used...... Listed under: AVR ATmega Projects, Clock Projects

890. 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

891. 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

892. 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
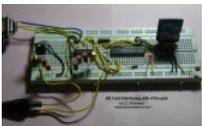
893. SD/SDHC Card Interfacing with ATmega8 /32 (FAT32 implementation) Hi friends, Here is my project on interfacing of SD Card (microSD). microSD cards are available very cheap nowadays, a great option for having a huge memory in any embedded system project. It is compatible with SPI bus, so the interfacing is easy. SD card...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects, Memory - Storage Projects

894. 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
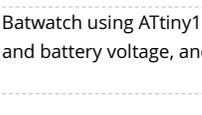
895. Batwatch using ATtiny13V microcontroller Overview Batwatch is a simple monitor for a solar panel battery charger, using an Atmel ATtiny13V. It periodically measures the charge curre and battery voltage, and shows them by blinking two LEDs. I built this circuit into the plug of a VW solar charger panel...... Listed under: AVR ATmega Projects, Battery Projects

896. 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
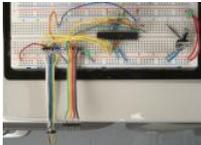
897. AVR DDS signal generator V1.0 using ATmega8 Sometimes when tuning various electronic hardware we need simple signal generator with various waveform and frequency. One of the options is to by a professional with variable gain professional coating and many additional functions. But if you are an amateur you might want to build...... Listed under: AVR ATmega Projects, PWM Projects

898. 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

899. 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
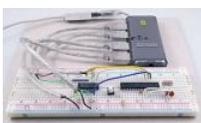
900. Interfacing Atmel AVR with Graphics Liquid Crystal Displays using ATmega32 AVR SED1520 Library This is a C-library for avr-gcc/avr-libc to access SED1520-based graphics-LCDs. The modules used to develop the library only support "write to LCD", read-modify- write on the display RAM is not possible. So this Library uses a "framebuffer" which holds the display-content in...... Listed under: AVR ATmega Projects, LCD Projects

901. AVR Thermometer using AT90S2313 microcontroller Introduction I bought the LED module from BanMor' last week, just 30Baht. The moduleprovide 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

902. 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
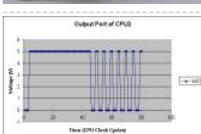
903. Air-Mouse using ATmega32 microcontroller I. Introduction The Cornell University Airmouse Initiative is a motion sensing glove with buttons on it that plugs into your computer to function as a mouse. Many tasks that are performed on the computer require the use of both a keyboard on the mouse, and...... Listed under: AVR ATmega Projects, Home Automation Projects, Sensor - Transducer - Detector Projects

904. 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

905. 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

906. 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

907. 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

908. 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

909. 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

910. 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

911. 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

912. 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
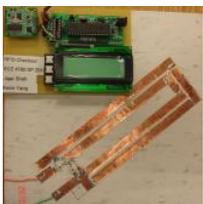
913. RFID Checkout System Design using ATmega644 microcontroller The Elevator Pitch We successfully implemented a prototype RFID checkout system that will enable consumers to instantly pay for their entire purchase upon arrival at the register, increasing customer satisfaction, reducing retailer costs, and ultimately lowering consumer prices. Summary Shopping in the present day usually...... Listed under: AVR ATmega Projects, RFID - NFC Projects

914. 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

915. 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

916. 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

917. 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

918. 4×4 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

919. 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

920. 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

921. Simplified AVR LCD routines using ATmega8 microcontroller Controlling numeric LCD isn't so tricky as it may look like. O 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
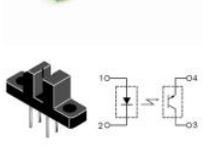
922. Measuring motor speed and display result on LCD using ATmega8 microcontroller For measuring motos speed there can Optical interrupter used like H21A1. This is a device where IR LED and photo-transistor is coupled in to plastic housing. The gap between then allows interrupting signal with opaque 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
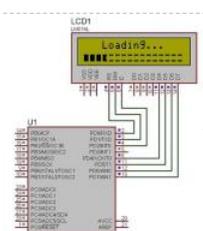
923. AVR-GCC 4 bit and 8 bit LCD library using ATmega8 microcontroller Standard alphanumeric LCD display controlled by 74HC164 LCD controller can accept 8 bit data bytes or 4 bit nibbles. Earlier my 4 bit and 8 bit LCD libraries were split in separate files as they were used in different projects. Now they are merged in.... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects, LCD Projects
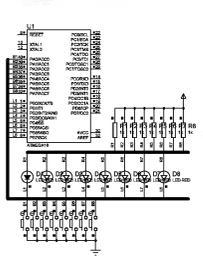
924. Output number when button is pressed using Atmega16 microcontroller This is simple demo program of reading button state, lighting LEDs, sending information via USART. 8 buttons are connected to Atmega16 port A, 8 LEDs to port B via current limiting resistors. While none of buttons arent pressed there running light on LEDs performed,...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects
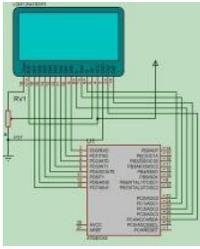
925. Simple signal drawing on graphical LCD routines using Atmega8 microcontroller During spare time I have been playing with graphical LCD. This time I decided that are stored in microcontroller memory. The idea was to read signal values from look-up table and display waveform on Graphical LCD. To make things mor interesting...... Listed under: AVR ATmega Projects, LCD Projects
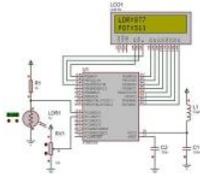
926. Programming AVR ADC module with WinAVR using Atmega8 microcontroller Most of AVR microcontrollers have Analog to Digital Converter (ADC) integrated in to chip. Such solution makes embedded designers life much easier when creating projects and programming them. With no need external ADC PCB takes 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
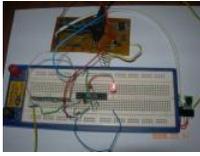
927. Running TX433 and RX433 RF modules with AVR microcontrollers using Atmega8 Sometimes in embedded design you may want to go wireless. Might be you will want to log various readings of remotely placed sensors, or simply build a remote control for robot or car alarm system. Radio communications between two AVR microcontrollers can be easy when...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects, Radio Projects

928. 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: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects
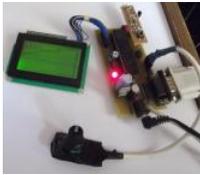
929. Temperature sensor with time and date display on graphical LCD using Atmega32 Some time ago I've build a prototyping board with graphical LCD. It have served for various small projects and prototypes. Had a spare temperature sensor DS18B20 and decided to put simple temperature display project. GLCD board is equipped with Atmega32 microcontroller running at 16MHz. DS18B20...... Listed under: AVR ATmega Projects, LCD Projects, Sensor - Transducer - Detector Projects

930. 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
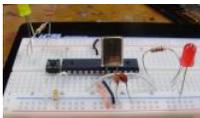
931. Led Blink Code – Hello World Led using atmega16 in C Configuring the microcontroller before running it the first time: Fuse bytes : high and low Program them once before you start using the micro-controller Disable JTAG to free up PORTC for normal use Set the correct clock clock option With the hardware set up, run...... Listed under: LED Projects

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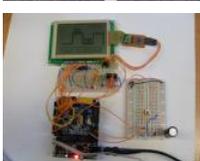
933. On/Off Controller – Interfacing Touch LCD LC7981 using ATMega Microcontroller Concept of Touch LCD LC7981 using ATMega An on-off controller is the simplest form of a temperature control device. The output from the device is either on or off, with no middle state. An on-off controller will switch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

934. Multichannel USB Analog Sensor using ATMega48 Microcontroller Sometimes it's tempting to re-invent the wheel to make a device function exactly the way yo want. I am re-visiting the field of homemade electrophysiology equipment, and although I've already published a home made electocardiograph (ECG), I wish t revisit that project and make it much...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects, Sensor - Transducer - Detector Projects

935. 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
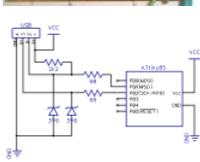
936. DIY USB password generator using ATtiny Microcontroller Having done half a dozen V-USB tutorials I decided it's time to whip up something cool. As USB keyboards were an area untouched, I decided to make a small USB HID keyboard device that types a password stored in EEPROM every time it's attached. A...... Listed under: How To - DIY - Projects
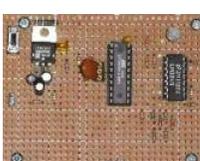
937. Barker Code-Locked Loop Synchronous Demodulator using ATtiny2313 microcontroller A simple, low component count phase locked loop that locks onto and detects the amplitude of an incoming baseband 7 bit Barker code using a switched resistor demodulator that is driven directly by a microcontroller's output pins. • Balanced modulators using resistors and a microcontroller's...... Listed under: Other Projects

938. 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

939. 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

940. 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

941. 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, was able to put two of them together without using...... Listed under: Microcontroller Programmer Projects

942. 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

943. 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

944. 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

945. 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

946. MP3 Player using ATMega128 microcontroller History I decided to do this project for several reasons: first 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

947. 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 serial line. All we need to...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects

948. 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

949. 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 8×8 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

950. 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

951. 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

952. 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...... Listed under: Battery Projects, Clock Projects

953. 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

954. 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

955. 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

956. 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

957. 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

958. 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...... Listed under: Home Automation Projects

959. A Superhet/Direct Conversion AM receiver for 181.818 kHz using Attiny2313 Downloads Download the AVRStudio assembly source vlflo13041105A.asm (html format) Download the AVRStudio Hex file vlflo13041105A.hex (html format) Photo of completed receiver. Its pocket sized, but not intended to be used that wa because the antenna is a highly directional ferrite loopstick. Its only a matter...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects, Sound - Audio Projec
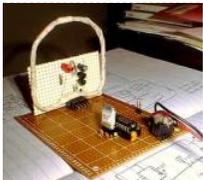
960. 1750 Meter Lowfer Band amplitude modulated RF source using ATtiny2313 microcontroller Download the firmware: mor040220BBeacon.asm [caption id="attachment_8672" align="aligncenter" width="389"] The oscillator board is not much more than the 74HC4060 oscillator/divider. The crystal is in a socket. made by cutting down an IC socket.[/caption] This is a low power signal source I put together one evening to...... Listed under: Metering - Instrument Projects
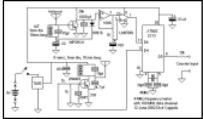
961. Frequency Meter with 100 MHz RF desktop channel using ATtiny2313 microcontroller This basically the frequency meter section of the frequency meter/pulse generator based on the AT90S2313 described elsewhere on this site, combined with the 100 MHz RF interface described in the page about the RS-232 to 100 MHz RF desktop channel adapter. Built and align this...... Listed under: Metering - Instrument Projects
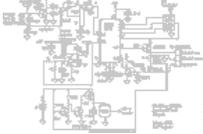
962. RS-232 to 100 MHz RF desktop channel adapter using ATtiny2313 microcontroller Downloads AVR Studio assembler source code 2jun2002version.asm AVR Studio hex file 232lin.hex This is an adapter that allows a terminal to communicate via a 100 MHz data channel with peripherals on the same desk top. Keystrokes from the terminal are are received through the RS-232...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects
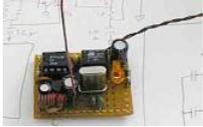
963. Low cost RF for simple data link and remote control using ATtiny12 microcontroller Wireless data links don't have to be difficult to build or adjust They can be built quickly using inexpensive and readily available parts. Overview This is a simple, low cost RF data link that can send data reliably over a distance of one to two...... Listed under: Interfacing(USB - RS232 - I2c -ISP) Projects

964. 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

965. 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

966. 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
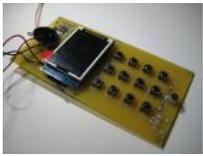
967. DIY mobile phone – Create your own mobile phone This DIY cell phone created at MIT manages to have something for just about every major contemporary subculture or hipster subset I can think of. Nerds and tinkerers? Check. Wooden case for the steampunk set? Check. Huge antenna for the retro, skinny-jeans-wearing set? Check. Big...... Listed under: How To - DIY - Projects, Phone Projects

968. 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

969. 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

970. 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

971. 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

972. 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

973. 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, 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
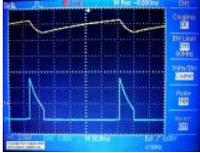
974. Simplest LED Flasher Circuit As simple as it gets and still works This LED flasher occurred to me while reading about negative resistance in transistors. It was reported that Leona Esaki, who was at Sony at the time, had been surprised to see a negative resistance region while investigating...... Listed under: AVR ATmega Projects, LED Projects

975. 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 a 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

976. 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

977. 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
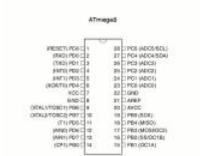
978. Atmega8 Pinout Diagram ATmega8 is an atmel's low-power 8-bit AVR RISC-based microcontroller combines 8KB of programmable flash memory, 1KB of SRAM, 512K EEPROM, and a 6 or 8 channel 10-bit A/D converter. The device supports throughput of 16 MIPS at 16 MHz and operates between 2.7-5.5 volts. [caption id="attachment_7971"...... Listed under: Blog, Circuits
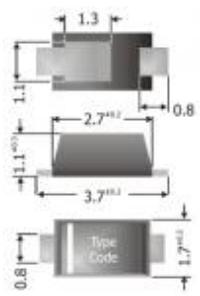
979. SKL14 -1A Schottky diode will fit everywhere SKL14 can be used in switch-mode power supplies or as protection diodes and thanks their really miniature dimensions, they are also suitable at the lack of PCB space. SMT Technologies enable a substantial increase of current density thanks to a very good heat transfer from...... Listed under: Blog, Circuits, News

980. 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

981. 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
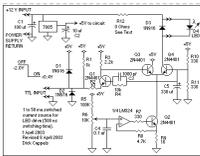
982. FAST PRECISION LED DRIVER What it is The circuit allows a precision regulated drive current to be set to drive an LED, and in response to a TTL level signal, the LED is switched on and off with rise and fall times of less than 500 nanoseconds and less...... Listed under: AVR ATmega Projects, LED Projects

983. 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

984. 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

985. 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
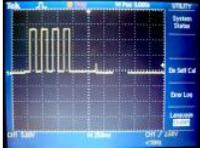
986. Attention-Getting Auxiliary Warning Light Flasher/Driver Overview The circuit shown in Figure 1 is capable of driving an LED array requiring up to several amps with a burst of flashes before coming on until power is removed. It is intended to be used as an auxiliary warning light driver. The initial...... Listed under: AVR ATmega Projects, LED Projects, Security - Safety Projects
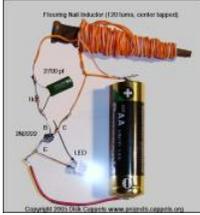
987. White LED Drive Circuit using Tiny microcontroller Be Careful About Peak Current A note of caution: These LEDs are comparatively expensive, so I suggest putting a small resistor (1 to 10 Ohms) in series with the cathode of the LED and measuring the peak current as inferred from the IR drop using...... Listed under AVR ATmega Projects, LED Projects

988. 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

989. 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

990. 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

991. Simple LM335 Thermometer using microcontroller Not too many parts. When a voltmeter is connected across the outside terminals of the output connector, 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

992. 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....... Listed under: AVR ATmega Projects, Metering - Instrument Projects

993. 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

994. 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

995. 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

996. 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

997. 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

998. PHduino pH Meter Using Arduino About This project describes an open software open hardware pH meter using an Arduino/Freeduino 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

999. A Microcontroller Based Digital Lock-In Milliohmmeter using ATtiny2313 microcontroller Download: assembler source mhm031002A.asm 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,...... Listed under: AVR ATmega Projects, Metering - Instrument Projects

1000. 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...... Listed under: AVR ATmega Projects, Clock Projects

1001. 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

1002. 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: ±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

1003. 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

1004. 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

1005. 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 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

1006. 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

1007. Preamp and 330 + MHz Prescaler for A Little More Serious Frequency Meter using microcontroller A preamp that drives the CMOS counter input and a divide by 10 prescaler to extend the range of A Little More Serious Frequency Meter(elsehwhere on www.projects.cappels.org). (Above) Enclosed in a 16 cm x 16.5 cm plastic box, the preamp has a 60 cm cable...... Listed under: AVR ATmega Projects, Metering - Instrument Projects

1008. 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
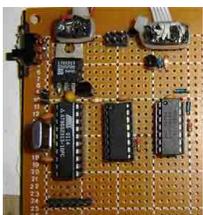
1009. HF/VHF/UHF TEST OSCILLATOR using microcontroller Its built into a plastic project box with an aluminum cover (on the bottom). The controls are as follows: Large golden knob is coarse tuning, small black knob with a blue index stripe is fine tuning, the green LED is the power on indicator, the...... Listed under: AVR ATmega Projects, Metering - Instrument Projects

1010. 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

1011. 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: lgm031227I.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
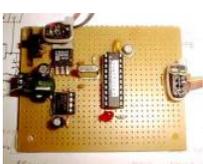
1012. Battery Checker Circuits using microcontroller The "Battery Good" checker. When the button is pressed, the green LED will glow if the battery voltage is above the preset threshold. This version has a higher parts count than the "Battery Low" version, but a bonus is that it can drive an LED...... Listed under: AVR ATmega Projects, Battery Projects

1013. 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...... Listed under: AVR ATmega Projects, PWM Projects
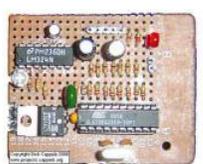
1014. A Noise Generator per IEC 268-1, IEC 268-5, and IEC 268-7 A related article on this site: True RMS-To-DC Adaptor for DVM Introduction This project came about when I needed to perform some reliability tests on some headphones according to IEC 268-7. The test requires operating the headphones at their rated input power for a number...... Listed under: AVR ATmega Projects, Sound - Audio Projects

1015. 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 you don't want to use a micro controller. Here...... Listed under: AVR ATmega Projects, PWM Projects

1016. 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

1017. 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
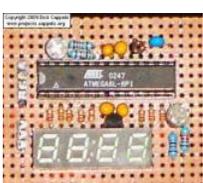
1018. Photocell Amplifier using microcontroller This is a low frequency amplifier with an adjustable transimpedance that is intended to be used to take relative measurements of a wide range of photo currents. Not having many parts, this amplifier can be put together in a short amount of time. Find updates...... Listed under: AVR ATmega Projects, Solar energy projects
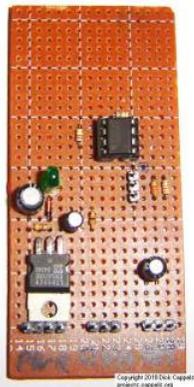
1019. A SIMPLE MANUAL CURVE TRACER using microcontroller Measure current vs voltage or voltage vs current over limited range with good accuracy   This was built on a phenolic board which was mounted on a plastic box. The box serves two purposes: It holds the circuit off the workbench, and it makes a...... Listed under: AVR ATmega Projects, Metering - Instrument Projects

1020. 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

1021. 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

1022. 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. mm jack (just the standard...... Listed under: AVR ATmega Projects, GPS Based Projects

1023. 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

1024. 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

1025. Ponyprog Circuit for ATMEL'S AVR using microcontroller The ATMEL AVR programmer works with the Windows program "Ponyprog" which works under 95, 98, XP, ... and can be found at http://www.lancos.com/prog.html On board the AVRs that can be programmed are those in the schematic. For other members of AVR family or the rest...... Listed under: AVR ATmega Projects
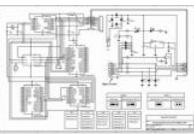
1026. EPROM adapter for ATMEL 89 Series Flash Microcontroller Programmer Devices The EEprom programmer software supports the following devices. 28C16 28C256 28C17 29C256 28C64 Hardware Diode D1 and resistor R1 provide the VDD isolation when programming the 24 pin devices. The jumper J3 must be shorted for 24 pin devices, and open circuit for 28...... Listed under: AVR ATmega Projects
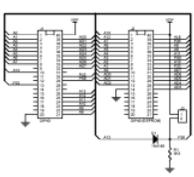
1027. PCB Exposure Box with Countdown timer using ATMEGA8 microcontroller Tired of spending hours and hours in wire soldering? Do your circuits look ugly and you are looking for a way to produce professional-like PCBs? Then you had better try photoetching. And the first step to do that is to have the right equipment that...... Listed under: AVR ATmega Projects, Other Projects

1028. 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

1029. 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 Masss 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

1030. 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

1031. 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
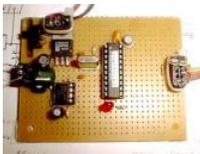
1032. LC Resonant Frequency Meter using AVR microcontroller A well known L/C measurement circuit is pressed into service to make a bare bones measurement circuit. Download the AVRStudio assembly source: lgm031227I.asm Download the AVRStudio hex file: lgm031227.hex Left-to-right: The 5 volt regulator, the LM393 oscillator (a 0.047 uf capacitor is mounted on the...... Listed under: AVR ATmega Projects

1033. 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

1034. 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

1035. 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 microcontroll using the I2C serial communication protocol, this value will more basıyor.Biraz If the LCD tomicrocontroller interprets...... Listed under: AVR ATmega Projects, Sensor - Transducer - Detector Projects, Temperature Measurement Projects

1036. 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

1037. 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
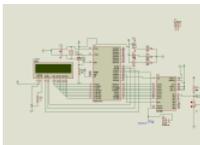
1038. Color Sensor Circuit with AT89S52 ADC0808 This color of the surface color to red when you bring to the surface, a sensor to read the LDR, yellow, blue.Red, yellow and blue lights in different surface finishes as a different yansıtmalarını works by taking a foothold. Will be reflected from the surface to...... Listed under AVR ATmega Projects, Sensor - Transducer - Detector Projects

1039. 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 THE...... Listed unde AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects
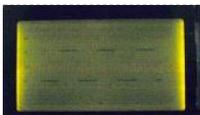
1040. G1216B1N000 dot graphics display using AT90S2313 microcontroller Download Assembler source code I was looking for an LCD display that I could use to display waveforms on the workbench. The selection criteria for the display module itself was straight forward: 1. Dot graphic with sufficient resolution to displ a simple waveform, 2. Available...... Listed under: AVR ATmega Projects
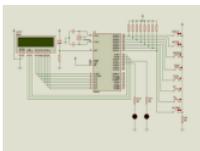
1041. LCD Date Time Application using AT89S52 microcontroller This application can be installed at the same time an alarm indicating the date and time produced b Atmel with 8051 -based microcontroller AT89S52 tasarlanmıştır.Uygulamamızın using the Keil compiler using the C programming language using codes writter in different types of intervention. Proteus simulation of the application program, Isis has...... Listed under: AVR ATmega Projects

1042. 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
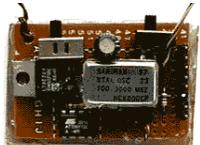
1043. 100 MHz RF oscillator using ATtiny12 microcontroller I needed a frequency reference for tuning up the RS-232 to 100 MHz RF desktop channel adapter elsewhere on this site, when I found this Saronix crystal oscillator in my junk box. A few minutes with AVRStudio produced an ATtiny12 to make a tone -...... Listed under: AVR ATmega Projects

1044. 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 logic outputs...... Listed under: AVR ATmega Projects

1045. Computer connected Flower Water Circuit using ATmega8 microcontroller Interestingly, I understand a project is determined by the required hours of irrigatio 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
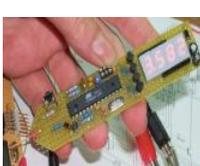
1046. Multimeter with Atmel using Atmega8-16pu microcontroller Atmega8 Multimeter "Multimeter" was the only title to einfiel to me first. Voltmeter (only positive DC) 0.00 - 9.99 volts and 10.0 - 30.0 volts with automatic range switching. Frequency counter 0 .. 7999 MHz (Theoretische) with automatic Switching time Basis Logic tester L - prohibited area...... Listed under: AVR ATmega Projects
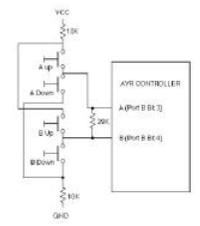
1047. Decoding 4 buttons with two I/O's on AVR using ATtiny12 microcontroller Just the solution for AVR applications in which I/O is tight, such as the ATtiny12. This should work well on other kids of controllers that have independently controlled I/O direction registers, such as PIC and 6805 controllers. This is a solution wa devised for those...... Listed under: AVR ATmega Projects

1048. EEPROM Driver for AVR with RAM using ATtiny15 microcontroller Download the test program with driver: i2cm030710F.asmI had been putting off writing a driver for some 24LC64 an 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

1049. ATtiny12 fuse restorer using microcontroller 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 fuses are now restored to their factory default states. This picture was...... Listed under: AVR ATmega Projects, Other Projects
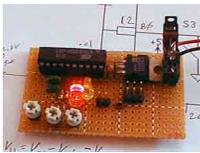
1050. Analog Multiplexer using AVR microcontroller This technique uses digital I/O pins to multiplex analog voltages into an analog input on the microcontroller. The method is most suitable for signals that do not need to be sampled frequently and it may be extended to accommodate a large number of inputs, though...... Listed under: AVR ATmega Projects
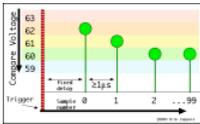
1051. PWM Waveform Capture using AVR microcontroller Described are the waveform capture method, example firmware and hardware designs. This material formed the basis of an article that was first published in the October, 2003 issue of Circuit Cellar magazine. The only components added to the operating Atme AT90S2313 circuit (one capacitor and two...... Listed under: AVR ATmega Projects, PWM Projects

1052. 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 then...... Listed under: AVR ATmega Projects

1053. 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

1054. 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
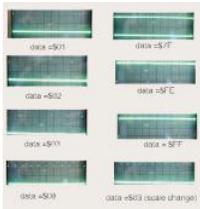
1055. 8 Channel PWM using AVR microcontroller The assembly code given here was written to see what it would take to make an AT90S1200 generate 8 channels of proper PWM. In this case, by proper, I mean with the maximum high frequency content consistent with the needed duty cycle and give clock....... Listed under: AVR ATmega Projects, PWM Projects

1056. AVR Programmer with ATMega8-16 About AVR Programmer   This simple AVR Programmer will allow you to painlessly transfer hex programs to most ATMEL AV 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

1057. 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 b 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
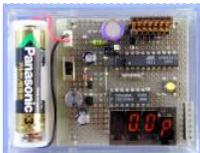
1058. Capacitance Meter using AVR microcontroller Digital Capacitance Meter This is a simple capacitance meter which can measure capacitance value easy. There a some measurement methods for capacitance, at one time the capacitance was measured with a impedance bridge or a dip meter. Recently typical capacitanc meters can measure capacitance and...... Listed under: AVR ATmega Projects

1059. 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

1060. 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 measureing temperature and logging its data with a PC. The circuit diagram is very simple and no adjustmen is required, everybody will able to build...... Listed under: AVR ATmega Projects, Sensor - Transducer - Detector Projects, Temperature Measurement Projects

1061. Computer controlled marquee at90s2313 74hc595 With all the details on a circuit different from that to which the shared a marquee computer control progra 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

1062. 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

1063. 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

1064. 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 AT90S2313 with a few extra bells and whistles. I had picked up a couple of MXCOM MX-614s at the TAPR display (I...... Listed under: AVR ATmega Projects, Radio Projects
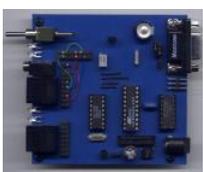
1065. Nixie Clock with AVR using ATmega48 microcontroller Introduction: This is the hardware and source code for an Atmel ATmega48 based four digit Nixie Tube Clock. Description: This was my second Nixie clock project. I wanted something a little smaller / cheaper / simpler then my rather large B-7971 clock. I will post...... Listed under: AVR ATmega Projects, Clock Projects

1066. Atmel AT89C2051 hardware keylogers circuit with using AT89C2051 microcontroller Atmel On the PC keyboard PS 2 AT89C2051 keylogers 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 KeeLo has decided to release an early version of...... Listed under: AVR ATmega Projects
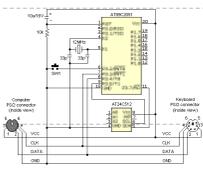
1067. AVR terminal for serial port using TSOP1738 microcontroller description (hardware) Above and below you can see the terminal. The LCD display is represented by the connector X1. It has a HD44780 compatible LCD controller and I'm using the 4-bit interface to send data to the LCD controller. The LED's are multiplexed I've seen...... Listed under: AVR ATmega Projects

1068. 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 keypad using ATMega...... Listed under: AVR ATmega Projects
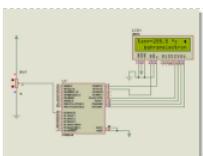
1069. Atmel Bascom avr 8051 project, the circuit archive using AT89S8252 microcontroller Atmel series (AT89C2052, AT90S2313, AT89S8252, etc.). wide range of PIC microcontrollers with an archive of high-quality circuit atmel version you can find a lot of. Usb, alarm, lcd, nokia 3310, nokia 6100, display, LED, sms, telephone and so on. schema files to Protel PCB circuit has a lot of...... Listed under: AVR ATmega Projects, Other Projects

1070.   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

1071. 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

1072. 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
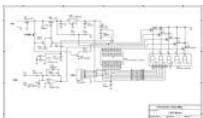
1073. Atmel avr usb programmer using ATMEGA8 microcontroller A lot of programmers are growing for a USB programmer for Microchip PIC controllers are 🙂 Atm avr usb programmer circuit atmelcilerde not idle in addition to the USB communication does not require a material ATmega8 ATMEGA48 can be done with either the source code of software...... Listed under: AVR ATmega Projects

1074. 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

1075. AVR LCD Microcontrolled Oscilloscope using ATmega32 microcontroller Features Frequency measurementVoltage 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

1076. VGA Monitor adaptor using AVR microcontroller Background of the project.   Several months ago I tried to connect a microcontroller system to a VGA monitor 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...... Listed under: AVR ATmega Projects, Video - Camera - Imaging Projects

1077. 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

1078. USB 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
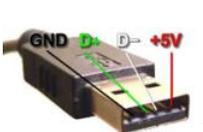
1079. USB AVR programmer using ATtiny2313 microcontroller Introduction. Nowadays, USB is the most popular connection between PC and peripherals such as AVR programmers, printers, scanners etc. For that reason I had to modify my old serial AVR In-System-Programmer (ISP) to work with USB connection. You can say, "use a USB to Serial adaptor to...... Listed under: AVR ATmega Projects

1080. 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
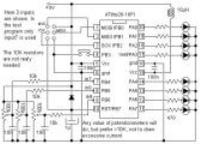
1081. SMS control 4 way remote control relays using ATtiny2313 microcontroller Introduction   With this circuit we can control up to 8 devices (4 devices in our example project), by sending a specific SMS message with any mobile phone. It's very useful in the case that, at the place we have the devices, we have not a... Listed under: AVR ATmega Projects, Phone Projects
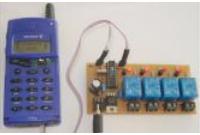
1082. RF 2 channel remote control 418MHz using AVR microcontroller Introduction How many times you needed some remote control to handle some electric devic ? Many times. There are lot of remote controls like infrared, RF, SMS (like my other circuit) and more. The basic small-range remote controls are 2, Infrared and RF (Radio Frequency)....... Listed under: AVR ATmega Projects

1083. 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...... Listed under: AVR ATmega Projects
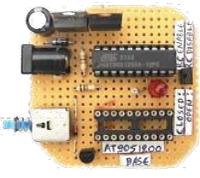
1084. 80×32 LED matrix display using ATmega32 microcontroller The LEDMATRIX interface News: Now with lcd4linux driver I recently purchased 10 SLM1608 (SLM1606) LED matrix display units from Ebay (you might also contact the seller directly at op16@gmx.de). These are 16x16 LED matrix units with a green and red LED per pixel allowing...... Listed under: AVR ATmega Projects, LED Projects

1085. 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

1086. 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

1087. 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

1088.   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: AV ATmega Projects

1089. 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
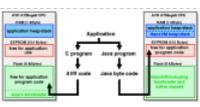
1090. EPROM adapter for ATMEL 89 Series Flash Microcontroller Programmer Ver 2.0 Devices The EEprom programmer software supports the following devices. 28C16 28C256 28C17 29C256 28C64 Hardware Diode D1 and resistor R1 provide the VDD isolation when programming the 24 pin devices. The jumper J3 must be shorted for 24 pin devices, and open circuit for 28...... Listed under: AVR ATmega Projects, Other Projects

Item	Quantity	Reference	Part
1	1	D1	1N4148
2	2	J1,J2	DIP40
3	1	J3	2-pin Jumper
4	1	R1	3K3

1091. Digital Stop Watch with ATmega8 using microcontroller Hello Friends, In this tutorial we will make a "Digital Stop Watch" using an AVR ATmega8 Microcontrolle This will help you learn many concepts like Multiplexed Seven Segment Display Interfacing Using AVR Timers Using Interrupts And many others too. The code written in C...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects

1092. Relay Timer with ATmega8 AVR MCU Timers are widely used in industrial and domestic application for automating tasks. Microcontrollers can be used to desig 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
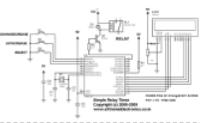
1093. Remote Controlled Fan Regulator using ATmega8 microcontroller This device can be used to remotely control the speed of an AC fan and to switch it on or off. The remote control is a cheap NEC Format remote, usually supplied with small DVD players. Three buttons are used to command the circuit. The...... Listed under: AVR ATmega Projects, Home Automation Projects

1094. ATmega8 based RPM Meter Hello All, Today I will show you 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...... Listed under: AVR ATmega Projects, Metering - Instrument Projects
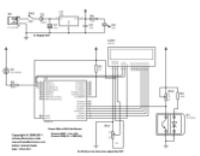
1095. ATmega8 Based Smart Code Lock Here is a project for beginners using Atmel AVR ATmega8. The project uses some techniques that are very useful for designe to learn and utilize. Alphanumeric LCD Module Interfacing. 4x4 Keypad interfacing. PWM Control of LED (Used to dim the back-light of LCD, like in...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects

1096. ATmega8 Based Multi channel IR Remote Hi Friends, Today I will present an easy to build Multi channel IR Remote control system. It can control heavy loads (U to AC 220V 6 Amps or smaller) with a touch of remote control. A total of 5 devices can be controlled from a...... Listed under: AVR ATmega Projects, Other Projects

1097. AVR RGB LED and Sound Show using ATmega168 microcontroller Here is a nice and entertaining project created by http://www.ermicro.com . The author has a teaching, drawing and artistic skills. The tutorial is well planned and executed. I really liked the RGB LED and Sound show given at the end. I will...... Listed under: AVR ATmega Projects, Sound - Audio Projects

1098. 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

1099. 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

1100. 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

1101. 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

1102. 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 back paint. The task of the robot is to run...... Listed under: AVR ATmega Projects, Robotics - Automation Projects

1103. 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
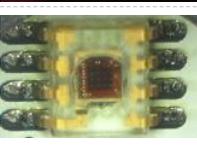
1104. Interfacing TCS3200 Colour Sensor with AVR ATmega32 Detecting colour of an object can be an interesting and useful electronic application. It can be realized using a colour sensor like TCS3200 and a general purpose microcontroller like AVR ATmega32. TCS3200 Colour Light to Frequency Converter Chip TCS3200 chip is designed to detect the...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects

1105. AVR Music Player with Alarm Clock using AT90USB1286 microcontroller This music player project built based on AT90USB1286 microcontroller. It uses VS1033 music decoder which integrates music file decoding and digital-to-analog output. Other main part including 16×2 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

1106. 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=VxI. The voltage and current are each sampled at 9615...... Listed under: AVR ATmega Projects

1107. 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

1108. 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-spreading 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

1109. 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

1110. 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

1111. 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 resu ...... Listed under: AVR ATmega Projects, Metering - Instrument Projects

1112. 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
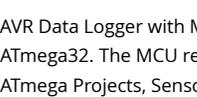
1113. AVR Data Logger with MicroSD using ATmega32 microcontroller This project shows you how to store data into microSD card in files with FAT32 format using microcontroller AVR ATmega32. The MCU receives sensor's data through internal ADC. You can connect up to 8 different sensors to the system. In this project, Dharmani uses one...... Listed under: AVR ATmega Projects, Sensor - Transducer - Detector Projects

1114. 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
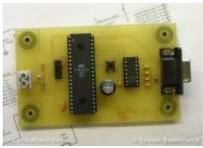
1115. Electric Spinning Wheel using ATmega8 microcontroller The Electric Eel Wheel is a smart electric spinning wheel which helps you spinning the fiber of your choice into yarn easily instead of traditional wheel. This Electric spinner is lighter and smaller, making it easier to take your spinning with you. You can control...... Listed under: AVR ATmega Projects, Motor Projects

1116. 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

1117. 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

1118. 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

1119. 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

1120. 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

1121. 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

1122. 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

1123. 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
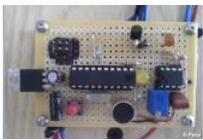
1124. AVR Ultrasonic Spheroid Levitation Device using ATMega16 microcontroller The goal of this project was to design and build a 'gaming' device capable of levitating a ping pong ball at varying heights based on the proximity of the user to the device. The project based on ATMega16 microcontroller. The project incorporates a fairly complex...... Listed under: AVR ATmega Projects, Game - Entertainment Projects

1125. 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

1126. 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

1127. 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

1128. 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

1129. 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

1130. 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

1131. 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

1132. Ultrasonic Security System using Atmega644 microcontroller This portable security system is built based on Atmega644 microcontroller. It can detect intruder 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

1133. 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 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

1134. 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

1135. 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

1136. 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

1137. 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

1138. 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
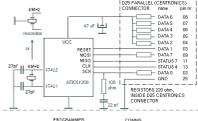
1139. Low-cost AVR programmer Before using this programmer.... Be carefull with using this programmer, because it has no insulation circuitry! Especially when using high voltages e.g. 110/230 Vac on your project. One mistake and your day can be ruined, your expensive PC distroyed! Part list: 7x 220 ohm 1x...... Listed under: AVR ATmega Programmers, AVR ATmega Projects

1140. 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

1141. 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
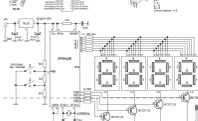
1142. White 7-segments clock ATtiny26 Part list 1x ATtiny26 1x xtal 4.096MHz 2x 27pf ceramic 4x 7-segment white CC 2x pushbutton 1x 78L05 1x 47uF/16V electrolyt 1x 0.1uF/16V tantalium 1x 10k 1x 100n multilayer 8x 150 Ohm 4x 6k8 Ohm 4x BC327-25 PNP Features (BETA) 1. Select Hrs/Min or Min/Sec...... Listed under: AVR ATmega Projects, Clock Projects

1143. 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
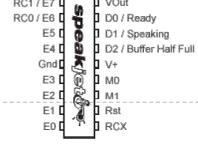
1144. Controlling SpeakJet with an AVR microcontroller using ATmega88 microcontroller Core Features: · Programmable, 5 channel synthesizer. · Natural phonetic speech synthesis. · DTMF and other sound effects. · Programmable control of pitch, rate, bend and volume. · Programmable power-up or reset announcement · Multiple modes of operation. · Simple interface to microcontrollers. · Simple...... Listed under: AVR ATmega Projects, Sound - Audio Projects

1145. 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

1146. 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
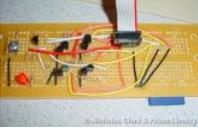
1147. AVR Based Operating System using ATMega32 microcontroller kaOS project is real-time, multithreaded, preemptive operating system for the Atmel Mega32 microcontroller. It can loads and executes programs from a Secure Digital or MMC card. The system waits for a card to be inserted and a reset button to be pressed, at which point...... Listed under: AVR ATmega Programmers, AVR ATmega Projects

1148. 3D Color LED Graphics Display using ATmega32 microcontroller This 3-dimensional graphics display system which named as MaJaTron consists of 125 RGB LED 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

1149. 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 (colums) driver (64 display lines COM1 - COM64) The first KS0108 drives segments 1 to 64...... Listed under: AVR ATmega Projects, Video - Camera - Imaging Projects

1150. 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
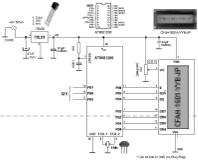
1151. Pinning LCD display 1601 using microcontroller Pinning LCD display 1601A: Pin no. Symbol Function 1 Vss GND 2 Vdd + 5V 3 Vo Contrast Adjustment 4 RS H/L Register select signal 5 RW H/L Read/write signal 6 E H->L Enable signal 7 DB0 H/L Data bus line 8 DB1 H/L Data...... Listed under: AVR ATmega Projects, LCD Projects

1152. Simple USB AVR programmer, USBasp using ATMega8 microcontroller USBasp is low cost USB in-circuit programmer for Atmel AVR micontrollers. 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
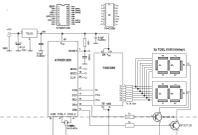
1153. Controlling 7-segments LED displays using AVR microcontroller The many posibilities....Non Multiplexed: 1. One or two displays directly to the i/o's 2. One display with a 74LS247 3. Two displays with a 74HC595 and two 74LS247 Multiplexed: 1. Two displays with a 74LS247 and 2 i/o's 2. Two displays with a 74HC59 and...... Listed under: AVR ATmega Projects, LED Projects

1154. Programming AVR ATxMega using USBasp and ATxmega microcontroller ATxmega programmer has different interface than 8-bit AVRs. 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
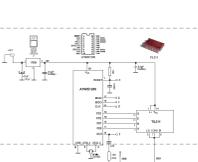
1155. TIL311 / INL0397-1 Hexadecimal Display usning AVR microcontroller Pin numbers: PIN 1 LED SUPPLY VOLTAGE PIN 2 LATCH DATA INPUT B PIN 3 LATCH DATA INPUT A PIN 4 LEFT DECIMAL POINT CATHODE PIN 5 LATCH STROBE INPUT PIN 6 OMITTED PIN 7 COMMON GROUND PIN 8 BLANKING INPUT PIN 9 OMITTED PIN...... Listed under: AVR ATmega Projects, LED Projects

1156. Head-Controlled Keyboard And Mouse For Disabled, using AVR and ATMega32 microcontroller Easy Input is a head-controlled keyboard and mouse input devi 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
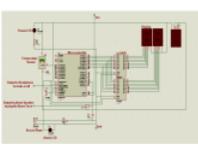
1157. Advance Fire Alarm through Mobile Phone using microcontroller An automatic fire alarm system is designed to detect the unwanted presence of fire by monitoring environmental changes associated with combustion. In general, a fire alarm system is classified as either automatically actuated, manually actuated, or both. Automatic fire alarm systems are intended to notify ...... Listed under: AVR ATmega Projects, Phone Projects
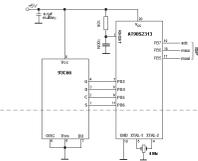
1158. 93C66 EEPROM chip with an AVR microcontroller How to program a 93C66 EEPROM chip with an AVR microcontroller? The 93C66 is a serially (MICROWIRE) Electrically Erasable Programmable ROM (EEPROM) chip with 4 kbit (4096 bit, can be ORganized as 256 x 16bit or 512 x 8bit) memory space. Here a DIL version...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects
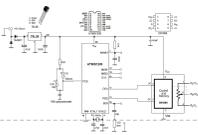
1159. DS1669 Digital Potmeter UP/DOWN using microcontroller Part list:1x AT90S1200-12PI 1x DS1669 (Dallas) 1x 78L05 2x 1N4007 1x 4MHz X-tal 2x 27pf 1x 22pF 1x 47uF/16V 1x 100n polycarbonate 3x 100n multilayer 1x 100 ohm 1x 10k ohm 1x 820 ohm 1x 100k trimpot 1x 10k lin. potmete DS1669 Digital Control: With...... Listed under: AVR ATmega Projects, Metering - Instrument Projects
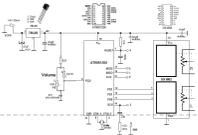
1160. DS1802 Digital Volume Control using microcontroller Part list: 1x AT90S1200 1x DS1802 (Dallas) 1x 78L05 1x 8MHz ceramic resonator 1x 22pF 1x 47uF/16V 1x 47n polycarbonate 4x 100n multilayer 1x 100 ohm 1x 10k ohm 1x 820 ohm 1x 100k trimpot 1x 10k lin. potmeter Digital Controlled Potmeter: (also known as...... Listed under: AVR ATmega Projects, Metering - Instrument Projects
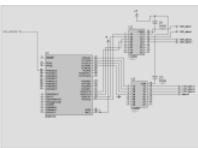
1161. Helianthus: The Solar Tracking System using ATmega16 microcontroller Renewable energy solutions are becoming increasingly popular. Photovoltaic (solar) systems are but one example. Maximizing power output from a solar system is desirable to increase efficiency. In order to maximize power output from the solar panels, one needs to keep the panels aligned with the...... Listed under: AVR ATmega Projects, Other Projects

1162. 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
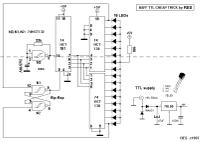
1163. 8 LED Knight Rider using AVR microcontroller Part list: 8x low-current LEDs 1x 1k ohm 1x 10k ohm 1x AT90S1200 2x 1N4007 1x 100n 1x 47uF/16V 1x 78L05 Another version: In this version I took PORTB of the AT90S1200 AVR microcontroller as you can see in the diagram, because this makes it...... Listed under: AVR ATmega Projects, Other Projects
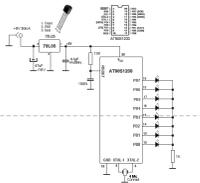
1164. 6 LED Knight Rider using ATtiny22 microcontroller Part list: 6x high eff. LED 2x 330 ohm 1x ATtiny22* 2x 1N4007 1x 100n 1x 47uF/16V 1x 78L05 * The ATtiny22 obsolete, replace with one of the folowing AVRs: AT90S2343 / ATtiny13 / ATtiny45. History of the back and forth flashers.... In the...... Listed under: AVR ATmega Projects, Other Projects
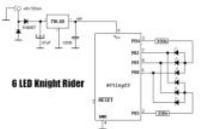
1165. Temperature Sensor Using ATmega8 and display using LCD(16×2) STEP 1: Circuit Diagram LCD other Pin's 1,2,3,15,16 as usual not shown. Temperature Sensor (LM35) Circuit STEP 2: Programming Code Compile Using Codevision AVR View C Code STEP 3: Burn The Hex In ATmega8 View Hex Code (Make Sure grounds a common otherwise it will...... Listed under: AVR ATmega Projects, Sensor - Transducer - Detector Projects

1166. 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 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
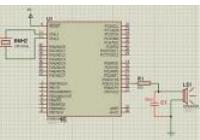
1167. AVR Based CRO using Atmega16 microcontroller STEP 1: Circuit Diagram Components ATmega16 MAX232 0.1uf Capacitor ----- 4pcs DB9 Connector 7805 for 5v power supply STEP 2: Programme Code (Compile using Codevision AVR & Burn in Atmega16) View C Code STEP 3: Here We have used ADC5 of ATmega16 so connect...... Listed under: AVR ATmega Programmers, AVR ATmega Projects
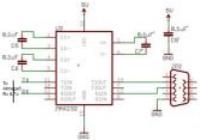
1168. Dotmatrix using ATtiny2313 microcontroller On this page you will find a scrolling LED sign based on the ATtiny2313 AVR microcontroller, which you can build yourself (when finished) Other names for this device can be: Moving message sign, Message crawler, Scrolling message, message display, etc. The idea is to let...... Listed under: AVR ATmega Projects, Other Projects
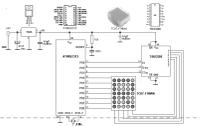
1169. Easy Breadboarding using ATMega microcontroller When I'm fiddling about with electronics I want to be comfortable about it. Therefore I built some things to make by breadboarding life a little simpler. One example is the Network Breadboard Interface. Another one is this little project. These little pcb's can be put.... Listed under: AVR ATmega Projects, Development Board - Kits Projects

1170. 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

1171. 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

1172. 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) b 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
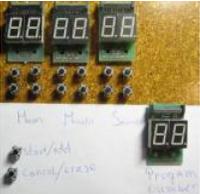
1173. Power usage monitor using Atmel AVR using Atmega168 microcontroller This project uses Atmega168 microcontroller to compute the power usage at home and logs it to an SD card. It has a graphical LCD display too that shows the power usage as a strip chart. Besides, the voltage and current waveforms can also b displayed...... Listed under: AVR ATmega Projects, Temperature Measurement Projects

1174. 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

1175. 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

1176. 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

1177. 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 gara 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

1178. 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

1179. 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

1180. Oscilloscope using AVR microcontroller Designing a professional digital oscilloscope is a pretty complex task wich makes them also pretty expensive. Therefore 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

1181. 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

1182. 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

1183. 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

1184. Cellphone controlled robot vehicle using ATmega16 microcontroller When we talk about wireless robot vehicles, 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

1185. 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
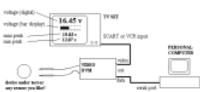
1186. Turn your TV into a Digital Voltmeter using Atmel's AVR 90S1200 microcontroller This is an interesting voltmeter project that display the measured voltage on a TV screen, in giant digits as well as with analog bar. It also records the maximum and minimum values of measurements. The project was built by Alberto Ricci Bitti and was published...... Listed under: AVR ATmega Projects, Metering - Instrument Projects

1187. 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

1188. 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

1189. 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
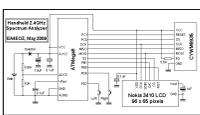
1190. Portable 2.4 GHz Spectrum Analyzer using Atmega8 microcontroller There are plenty of wireless devices available on the market that broadcast in the 2.4 GHz ISM band. Such devices include Bluetooth, WiFi, Zigbee, wireless USB, cordless phones, wireless mice and keyboards, etc. This project describes a wireless spectrum analyzer to examine the surrounding radio...... Listed under: AVR ATmega Projects, Internet - Ethernet - LAN Projects

1191. 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 raster 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

1192. 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

1193. AM radio transmission using AVR using Atmega324 microcontroller When you think about building a radio transmitter circuit, the first thing that comes in min 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 use a plant as...... Listed under: AVR ATmega Projects, Radio Projects

1194. Open source color video game development system based on AVR This project describes an open source color game development platform based on an AVR 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

1195. 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 an USB port of your computer, and find the details about the...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects

1196. 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
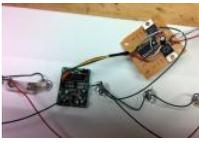
1197. Automate lights in your kitchen area using ATTiny84 microcontroller This project describes an automatic light system for kitchen sink where you need sufficient light to properly clean your dishes and vegetables. It uses an ATTiny84 microcontroller with a PIR motion sensor. When motion is detected, the microcontroller turns on the light. The light source...... Listed under: AVR ATmega Projects, Home Automation Projects

1198. 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

1199. 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

1200. 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 conotrol the...... Listed under: AVR ATmega Projects, Video - Camera - Imaging Projects

1201. 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
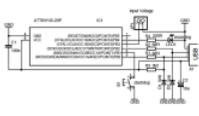
1202. Easy Data Logger with Virtual USB using ATtiny45 microcontroller "V-USB is a software-only implementation of a low-speed USB device for Atmel's AVR® microcontrollers, making it possible to build USB hardware with almost any AVR® microcontroller, not requiring any additional chip." For further details 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

1203. 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
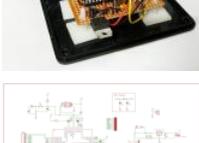
1204. Build an AVR Xmega Prototyping Board using AVR microcontrollers The AVR ATXmega chip is a newer offering in Atmel's AVR line. The Xmega is billed as a hybrid 8/16-bit MCU, which means you can use your normal development environment to program Xmegas (as compared to AVR32 and Atmel's ARM line). Because the Xmega uses...... Listed under: AVR ATmega Projects, How To - DIY - Projects
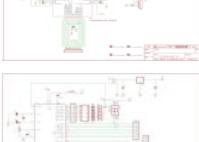
1205. Development Board With LCD using Atmega16 microcontrollers This instructable shows, how to do your own development board for Atmega16 or Atmega32 processors.The Internet is full of home made development boards, but I think that, there is room left for another one. This board have been very useful on my projects and I...... Listed under: AVR ATmega Projects, Development Board - Kits Projects
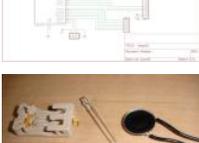
1206. Blinking, Singing, Marioman using Attiny microcontrollers Use an attiny13a, two LEDs and a greeting card speaker to create a blinking Marioman that plays the Super Mario Brothers theme song. This can be an easy low-cost project for anyone who is looking for a fun way to break into AVR programming! The...... Listed under: AVR ATmega Projects, Sound - Audio Projects

1207. 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

1208. Halloween Robot using Attiny microcontrollers Halloween Robot controlled by an old wingman joystick. I don't reccommend 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 or be useful for...... Listed under: AVR ATmega Projects, Robotics - Automation Projects

1209. 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

1210. 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
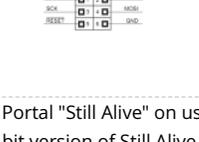
1211. Portal "Still Alive" on using ATMega16 microcontrollers Yet another Portal-related instructable , but Different ! This one shows you how to : 1)Build a very cheap device that plays an 8-bit version of Still Alive from Portal 2)On the same hardware , but with a different chip , play the "radio tune"...... Listed under: AVR ATmega Projects, Radio Projects

1212. 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

1213. A complete starter guide to AVRs 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

1214. 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
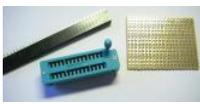
1215. Building a digital light meter with a calibrated LDR using Atmega8 microcontroller Measurement of light intensity is a prime necessity in several occasions. The diversity of such needs make their way to various branches of physics and engineering as well as in media. For instance, in engineering, such kinds of measurements are needed to design optimum lighting...... Listed under: AVR ATmega Projects, Metering - Instrument Projects
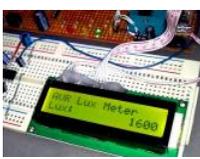
1216. Intelligent temperature monitoring and control system using AVR microcontroller Controlling temperature has been a prime objective in various applications including refrigerators, air conditioners, air coolers, heaters, industrial temperature conditioning and so on. Temperature controllers vary 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

1217. 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, p car-audio, or other device. On this...... Listed under: AVR ATmega Projects, Microcontroller Programmer Projects

1218. 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
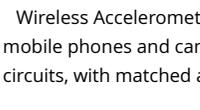
1219. Mini RGB Light Cube using AVR microcontroller This is basically a knockoff of the Hypnocube, instead of being 64 LEDs, thus costing at least $150 to make, I made a smaller version of 8 LEDs for under $30. The result is a 2x2x2 cube where each light is independently controllable. I'm not...... Listed under: AVR ATmega Programmers, AVR ATmega Projects, LED Projects

1220. 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
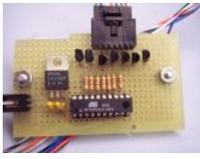
1221. Color Sensor using Atmega16 microcontroller This is a simple color sensor using Atmega16 MCU and can sense Red ,Green and Blue color. How it works: the sensor consist from LD sensor and RGB LED ,so when the object putted on the sensor the light that emitting from RGB LED will reflected from the object to...... Listed under: AVR ATmega Projects, Sensor - Transducer - Detector Projects
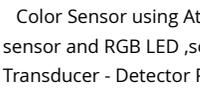
1222. Ambient Light Gift Badge using ATTiny13 microcontroller After Christmas I was in the situation that my nephew's birthday celebration came near. I asked him he had a special on his wish list and he told me that he doesn't have a wish at all, for the moment. He still had not...... Listed under: AVR ATmega Projects, LED Projects

1223. 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

1224. 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
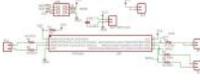
1225. Rechargeable Battery Capacity Tester using ATMega168 microcontroller Do you have a pile of AA rechargeable batteries in your drawer? Some are old, some a new, but which sets would you bring with your camera on your next trip, and which ones are past their useful life? I like using rechargeable batteries, but...... Listed under: AVR ATmega Projects, Battery Projects

1226. 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

1227. 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
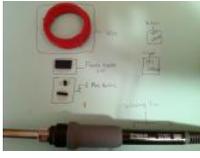
1228. Autonomus Wall Following Obstacle Avoiding Arduino Rescue Bot I'm an Electrical Engineering major and each year my college's branch of IEEE competes in a student hardware competition. Last year's competition was inspired by the natural disasters in Haiti and Chile (the competition was held one week after the earthquake in Japan). This was...... Listed under: AVR ATmega Projects, Robotics - Automation Projects
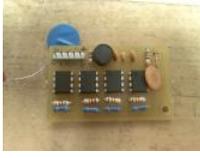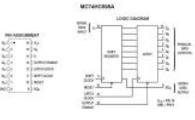
1229. How to use a 74HC595 Shift Register with a using AVR ATtiny13 microcontroller If you have been playing with microcontrollers and electronics then you have li displays and other projects that use shift registers like 7-segment displays and more. This instructable goes over a quick intro to the 74HC595 8-Bit Serail to Parallel Shift...... Listed under: AVR ATmega Projects, How To - DIY - Projects

1230. $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

1231. The $9 Quasi-duino (Almost-duino) using ATmega328 microcontroll 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 operatio on a pico-space breadboard....... Listed under: AVR ATmega Projects, Other Projects

1232. 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 follo 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
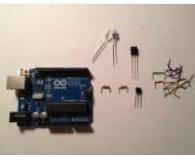
1233. $1.50 Arduino TV Annoyer!! (Turns TVs on when you want them off) using microcontroller Hey Arduino fans! Here is an 'ible for making a device that turns TVs on when you want them off, and off then you want them on! If you hide it in something inconspicuous, it would make a great April Fools joke or gag gift....... Listed under: AVR ATmega Projects, Video - Camera - Imaging Projects

1234. Programming Arduino Bootloader without Programmer using ATmega168 microcontroller OH NO!!! You've screwed up and now the Arduino bootloader on yo '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

1235. 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

1236. Music Playing Alarm Clock using ATmega644 microcontroller This Instructable will be about designing a music player from using various building blocks. You w understand the communication between the microcontroller, memory, computer, LCD display, RTC, IR remote, and the music file decoder. I will try my best to teach you in a...... Listed under: AVR ATmega Projects, Sound - Audio Projects

1237. 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 tu on automatically using a hall...... Listed under: AVR ATmega Projects, Home Automation Projects

1238. Getting Started with Atmel AVR and BASCOM using attiny26 microcontroller I have seen plenty of Instructables showing how to work with microprocessors, bu 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

1239. 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 feature 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 i a interface board...... Listed under: AVR ATmega Projects, Microcontroller Programmer Projects
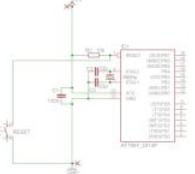
1240. Make a breadboard adapter for your AVR microcontroller using attiny2313 If you like to play around with micro controllers you know this hustle: You want to test a part of a program and first you need to completely wire up the uC on the bread board. Not with these handy parts any more! These are...... Listed under: AVR ATmega Projects, Metering - Instrument Projects
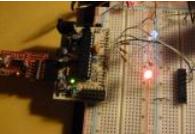
1241. How to program a AVR (arduino) with another arduino using attiny2313 microcontroller * you've got your arduino with atmega168 and you bought an atmega328 at you local electronics store. It doesn't have an arduino bootloader * you want to make a project that doesn't use arduino - just a regular AVR chip (like the USBTinyISP) - you...... Listed under: AVR ATmega Projects, How To - DIY - Projects

1242. 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 chip ...... Listed under: AVR ATmega Projects, LED Projects

1243. How to control a 16×2 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 o 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
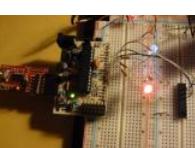
1244. How to program a AVR (arduino) with another arduino using atmega168 microcontroller This instructables is usefull if: * you've got your arduino with atmega168 and you bought an atmega328 at you local electronics store. It doesn't have an arduino bootloader * you want to make a project that doesn't use arduino - just a regular AVR chip...... Listed under: AVR ATmega Projects, How To - DIY - Projects

1245. 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, Sour - Audio Projects

1246. 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 ag 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

1247. 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
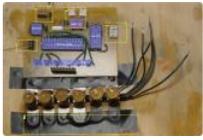
1248. Custom Tron Disc Mod using ATMega328 In this Instructable, I cover modding the store-bought Deluxe Identity Disc to an upgraded version with 64 leds, controlled by an AVR MCU. The upgraded version is costume-ready and would be an excellent addition to your Tron costume - it'll also look great on your...... Listed under: AVR ATmega Projects, Other Projects

1249. 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) t 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

1250. 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

1251. 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

1252. 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

1253. 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 D 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
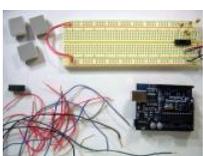
1254. Arduino EMF (Electromagnetic Field) Detector A while back I saw an EMF (Electromagnetic Field) Detector at makezine.com that used a led bargraph. I decided modify it to use a 7-Segment LED Display! Here's my project. Sorry I don't have any pictures of it in use. Hopefully I can post...... Listed under: AVR ATmega Projects, Sensor - Transducer - Detector Projects

1255. 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
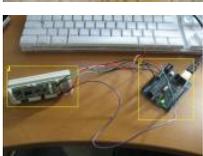
1256. Arduino XMAS hitcounter using AVR microcontroller Christmas is coming closer, so here is my contribution to put you in the right mood. It is a blog hitcounter, that rings a bell. Literally. It puts a smile on your face, every time someone hits your blog. It consists of an Arduino board,...... Listed under: AVR ATmega Project, Game - Entertainment Projects

1257. 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 LE Strips 10ft long (usledsupply.com) - $800 8 RGB 4A/Ch Amps...... Listed under: AVR ATmega Projects, Home Automation Projects, LED Projects
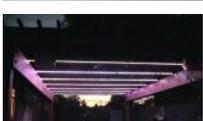
1258. Make a Web Connected Robot (for about $500) (using an Arduino and Netbook) This Instructable will show you how to build your own Web Connected Robot (using an Arduino micro-controller and Asus eee pc). Why would you want a Web Connected Robot? To play with of course. Drive your robot from across the room or across the country,...... Listed under: AVR ATmega Projects, Internet - Ethernet - LAN Projects, Robotics - Automation Projects

1259. 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
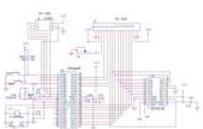
1260. Arduino and Touchpad Tic Tac Toe using microcontroller Or, an exercise in input and output multiplexing, and working with bits. And a submission for the Arduino contest. This is an implementation of a tic tac toe game using a 3x3 array of bicoloured LEDs for a display, a simple resistive touchpad, and an...... Listed under: AVR ATmega Projects, Game - Entertainment Projects
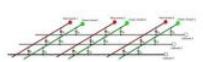
1261. The 4x4x4 LED cube (Arduino) In this instructable I will show you how to make a 4x4x4 LED cube that will be controlled by an Arduino Demulionove. now yes you might say" that Arduino has only 14 I/O pins well also the 6 analog pins can be used as pins...... Listed under: AVR ATmega Projects, LED Projects
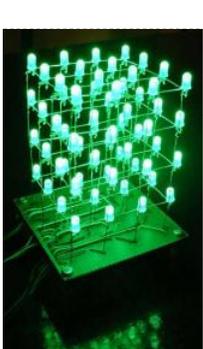
1262. Arduino Laser Tag – Duino Tag Duino tagger- General introduction Duino tag is a laser tag system based around the arduino. Finally a laser tag system that can be tweaked modded an hacked until you have the perfect laser tag system for office ordnance, woodland wars and suburban skirmishes. Laser tag...... Listed under: AVR ATmega Projects, Other Projects

1263.

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

1264.

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

1265.

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

1266.

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

1267.

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

1268.

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

1269.

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

1270.

Arduino Powered Binary Clock using ATmega168 microcontroller This instructable will help you to build an Arduino Binary Clock. The orignial 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

1271.

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

1272.

Digital Window Sticker (Arduino Controlled) using ATMega328 microcontroller A bumper-sticker sized L.E.D. matrix that displays images in sequence from an S 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
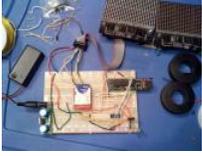
1273.

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

1274.

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

1275.

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 seeedstudio 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

1276.

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
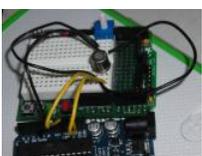
1277.

Temperature Control For Kitchen Appliances In this Instructable, I will step through controlling the temperature of most kitchen appliances. As an example, I w 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

1278. 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

1279. 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

1280. 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

1281. 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

1282. Wi-Fi Enabled Coil Gun with iPhone App We've covered loads of airsoft, nerf, and gun projects, and here's another superb pr0ject 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

1283. 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
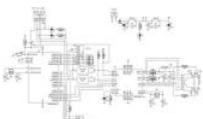
1284. A credit card sized Ethernet Arduino compatable controller board using ATmega168 microcontroller I love the Arduino as a simple and accessible controller platform for many varied projects. A few months ago, a purchased an Ethernet shield for my Arduino controller to work on some projects with a mate of mine - it was a massive hit -...... Listed under: AVR ATmega Projects, Internet - Ethernet - LAN Projects

1285. 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
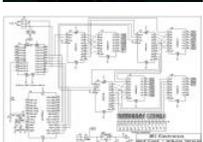
1286. The Word Clock – Arduino version using ATMega168 microcontroller Major updates - A much better enclosure for this clock has been designed - check out http://www.instructables.com/id/The-Wordclock-Grew-Up/ Last month I wanted to build a special gift for my beautiful wife, Megan. She has a teaching background in English, so what better present to make for...... Listed under: AVR ATmega Projects, Clock Projects, LED Projects

1287. 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

1288. 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
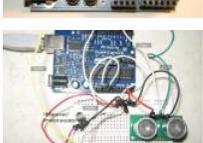
1289. Control Electronics using an Arduino and Infrared LEDs Learn how to use infrared LEDs to send signals to your TV and other electronic devices via an Arduino. First, the Arduino will interpret IR pulses sent out by the TV remote, save them to memory, then "replay" them upon the user's command. You can...... Listed under: AVR ATmega Projects, LED Projects, Other Projects
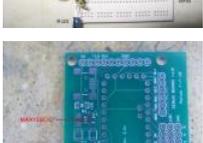
1290. Arduino animatronics- make your awesome costumes more awesome! using ATmega328 microcontroller Here's how to add lights, sound and action to your favorite Halloween project using the open source Arduino microcontroller. Arduino is easy to learn to use and it opens up a whole new world for costume builders and creature creators. If you want to learn...... Listed under: AVR ATmega Projects, Sound - Audio Projects

1291. 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, its 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

1292. 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
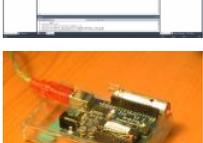
1293. Laser Tripwire takes a Photo, Uploads it to Twitter This instructable will show you how to construct a laser tripwire that can twitter and grab an image from a webcam, as well as execute any command you can put in a bash script. This instructable is actually quite simple and is even suitable as a beginner...... Listed under: AVR ATmega Projects, Video - Camera - Imaging Projects

1294. 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
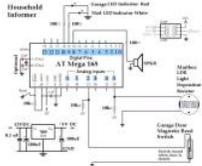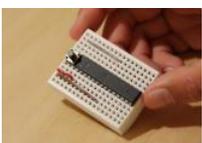
1295. The $9 Quasi-duino (Almost-duino) Do you currently have an Arduino and want to make it smaller for cheap? The Quasi-duino is for you (Italian for almost-duino). This makes a functional "almost" Arduino, in a very small form factor using the narcoleptic library for pico-power operations on a pico-space breadboard....... Listed under: Circuits
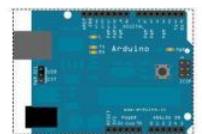
1296. Turn Your Arduino Into an ISP Learn how to turn your Arduino into an AVR In System Programmer. This will allow you to burn bootloaders onto new chips or program AVRs without a bootloader. Step 1: Materials To begin you will need: * Arduino (I will be using the Uno) *...... Listed under: AVR ATmega Projects, Video - Camera - Imaging Projects

1297. 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

1298. 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

1299. 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

1300. 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

1301. 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

1302. 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

1303. 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

1304. 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

1305. 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-digita-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
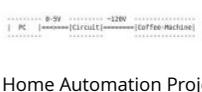
1306. External device control (i.e. coffee machine). Note: Try any or all of these at your own risk. I will not be responsible for any issues. Get a professional to help if you are unsure. The concept is that we take a controlling voltage from the computer or a micro-controller, which drives...... Listed under: AVR ATmega Projects, Home Automation Projects

1307. Build a Complete AVR System and Play Mastermind using ATmega328p microcontroller 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

1308. 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

1309. Programming adapter from 10 pin to 6 pin for AVRs 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

1310. 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

1311. 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
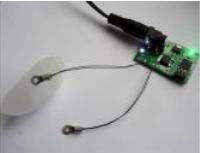
1312. Open Source Temperature Controller- Appliance Heat Exchanger video Open Source Temperature Controller- Appliance Heat Exchanger Here's a heat exchanger demo using the open source temperature controller. Full heat exchanger available here Intelligent controller, schematics, and code available here The open source temperature controller allows you the flexibility to control DC appliances based...... Listed under: AVR ATmega Projects, PWM Projects

1313. 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

1314. 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

1315. 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

1316. 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

1317. 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

1318. 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
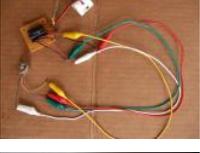
1319. Drive a Stepper Motor with an AVR Microprocessor using ATTiny2313 microcontroller Got some scavenged stepper motors from printers/disk drives/etc lying around? Some probing with an ohmeter, followed by some simple driver code on your microprocessor and you'll be stepping in style. Step 1 Get to 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

1320. 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

1321. 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

1322. 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

1323. 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: AVR ATmega Projects, RTOS - OS Projects
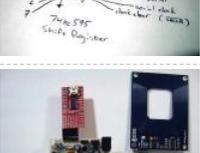
1324. Watch futurama on an 8×8 pixel screen using atmega168 microcontroller here's how to convert otherwise reasonable quality video into pixelated garbage and play it on a 2 color 8x8 led matrix, with no sound and only moderate sync. ingredients: - (1) 8x8 2 color led matrix - (1) atmel avr atmega168 - (2) 74hc595 shift...... Listed under: AVR ATmega Projects, LCD Projects
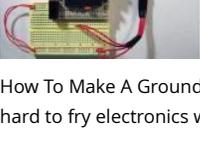
1325. AVR/Arduino RFID Reader with UART Code in C RFID is the craze, found everywhere - from inventory systems to badge ID systems. If you've ever been to a department store and walked through those metal-detector-looking things at the entrace/exit points, then you've seen RFID. There are several places to find good information on...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects, RFID - NFC Projects

1326. 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 i 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

1327. 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

1328. 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 microcrontollers. While the product does come...... Listed under: AVR ATmega Projects, Microcontroller Programmer Projects

1329. 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
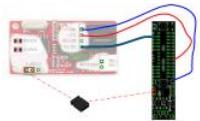
1330. USB RFID Reading Keyboard using USnooBie video USB RFID Reading Keyboard Demo   This is a step by step tutorial on how to build a RFID tag reading USB keyboard using the USnooBie. This tutorial is provided with the project files. The code files are heavily commented with references to relevant...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects, RFID - NFC Projects
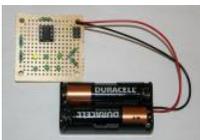
1331. New Jar of Fireflies When I ran across the Jar of Fireflies Instructable sometime this past summer, I knew I had to build it. Full credit to Keso for an excellent set of instructions! I wouldn't have gotten to the point of developing the firefly behavior without such a solid base for...... Listed under: AVR ATmega Projects, Game - Entertainment Projects

1332. 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

1333. 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
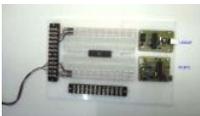
1334. Development system for PIC and AVR microcontrollers After testing many systems development for PIC and AVR microcontrollers, none satisfy me. So I create this system with breadboard that has satisfied me. Step 1: More space free In this development system, I put two protoboards turned 180 degrees from each other. The space...... Listed under: AVR ATmega Projects, Development Board - Kits Projects
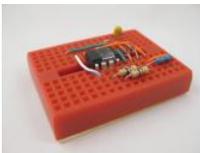
1335. VUSBTiny AVR SPI Programmer Using ATtiny85 after making a usbtiny isp programmer and using it for 6 months, i was looking at making another one for carrying around. i like the simplicy of the usbtiny isp design but would like to make it even smaller and take less parts. one thing...... Listed under: AVR ATmega Projects, Other Projects

1336. 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
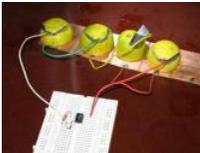
1337. Tiny AVR Microcontroller Runs on a Fruit Battery Some of the fruit and vegetables we eat can be used to make electricity. The electrolytes in many fruit and vegetables, together with electrodes made of various metals can be used to make primary cells. One of the most easily available vegetable, the ubiquitous lemon...... Listed under: AVR ATmega Projects, Battery Projects

1338. 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. 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
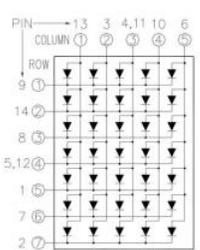
1339. How to use an LED Array Module using AVR With a single LED you can indicate the state of something: on or off. That might be a little boring. With an array of LEDs you can display characters or even some simple blocky graphics. That might add a little pizzaz to a small microcontroller...... Listed under: AVR ATmega Projects, LED Projects

1340. 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

1341. 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

1342. 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
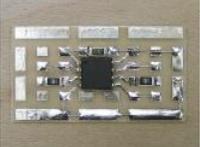
1343. Jar of Fireflies using AVR ATTiny45 Microcontroller This project uses green surface-mount LED's along with an AVR ATTiny45 microcontroller to simulate the behavior of fireflies in a jar. (note: the firefly behavior in this video has been greatly sped up in order to be easier to represent in a short film. The...... Listed under: AVR ATmega Projects, Game - Entertainment Projects
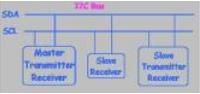
1344. I2C Bus for ATtiny and ATmega168 I love the Atmel AVR microcontrollers! Since building the Ghetto Development System described in this Instructable, I've had no end of fun experimenting with the AVR ATtiny2313 and the ATmega168 in particular. I even went so far as to write an Instructable on using switches...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects

1345. 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

1346. 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

1347. 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

1348. 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 http://www.instructables.com/id/Program-an-ATtiny-with-Arduino/. This Instructable...... Listed under: AVR ATmega Projects, Microcontroller Programmer Projects
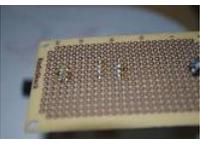
1349. ISP 6 pin to 8 Pin Socket Using ATTiny45 The reason i mainly built this project was to program the ATTiny45, which has a 8 pin connection, while my USBtinyISP (from Ladyada) only has a 10 pin and 6 pin connection. After snooping around the internet for about 3-4 weeks i found nothing what...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects

1350. 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

1351. 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

1352. 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

1353. 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

1354. 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
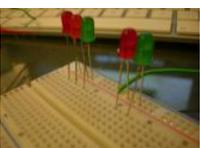
1355. Making a set of traffic lights Using Arduino This tutorial will step you through the process of creating a set of controllable and configurable traffic lights whilst also teaching you the basics of Arduino. Some knowledge is needed and I highly recommend reading and following through on most if not all of the...... Listed under: AVR ATmega Projects, LED Projects

1356. 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
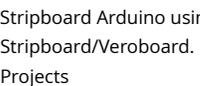
1357. Stripboard Arduino using ATMega168 microcontroller In this, my first Instructable I'm going to show you how to make a stripped down Arduino for a fraction of the price, using Stripboard/Veroboard. Material List: 1x Atmel ATMega168 = �2.65 1x Stipboard = 72p 1x 7805 Voltage regulator = 26p 2x LEDs =...... Listed under: AVR ATmega Projects, How To - DIY - Projects

Top View
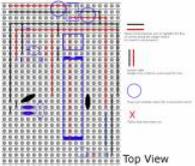
1358. Build a Complete AVR System and Play Mastermind Using Microcontrollers The game Mastermind has been around a long time, and I remember getting a board version with colored pegs when I was a kid. I love this game, as it is solvable simply by pure logic. One player (or a computer/microcontroller) chooses a sequence of...... Listed under: AVR ATmega Projects, Game - Entertainment Projects

1359. 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
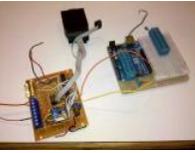
1360. Low speed AVR oscilloscope V2.00 (Is updated on 19 Mar 2011) >> The firmware was updated on 19 Mar 2011 << A few months ago a friend of mine -car mechanical at profession- told me that he had problem with some car sensors. He couldn't check, with a simple multimeter, if a sensor was working properly. ...... Listed under: AVR ATmega Projects, LCD Projects, Metering - Instrument Projects

1361. 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

1362. 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
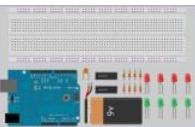
1363. Guia para programar uC AVR – Dark Side Electronics using AVR microcontroller La forma más sencilla y rápida de programar un micro-controlador (uC) de la familia AVR, usando el programador USBasp, es utilizado el programa eXtreme Burner - AVR de Extreme Electronics. En esta guía te detallaremos como programar tu propio uC. Para esto necesitarás lo siguiente:...... Listed under: AVR ATmega Projects, Microcontroller Programmer Projects

1364. 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
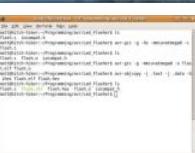
1365. Led dimmer 2 channels using Attiny13 microcontroller This is Attiny13   2 channels dimmer with 5 program modes and speed control: 1. Dim between 2 channels 2. Dim 2 channels together 3. Blink mode 1 4. Blink mode 2 5.Blink mode 3 Step 1 Hardware Dimmer is based ot Attiny13V: - 1k flash...... Listed under: AVR ATmega Projects, LED Projects

1366. 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

1367. 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
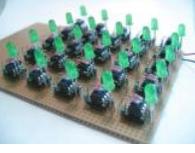
1368. The Arduino LED Cube using LED microcontroller Are you bored? Do you want to make something amazing to impress your friends with? Let's try making an LED cube..... A work of art, that lights up..... Step 1 What in the world is and LED? LED is an acronym for Light Emitting Diode,...... Listed under: AVR ATmega Projects, LED Projects

1369. 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
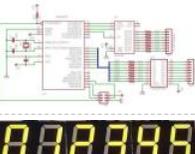
1370. Charlieplexing 7 segment displays using Atmel Tiny26 microcontroller Charlieplexing of discrete leds has been the topic of a few other instructables. The Charlieplexing LEDs- The theory and the How to drive a lot of LEDs from a few microcontroller pins comes to mind. They are both excellent and should be read by anyone...... Listed under: AVR ATmega Projects, LED Projects

1371. 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

1372. 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

1373. 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 Candle 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

1374. 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

1375. 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 Fan Projects
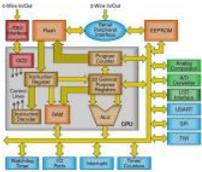
1376. How to choose a MicroController It used to be that the number of different microcontroller chips available to the hobbyist was pretty limited. You got to use whatever you could manage to buy from the mail-order chip dealer, and that narrowed down the choice to a small number of chips....... Listed under: AVR ATmega Projects, How To - DIY - Projects

1377. 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

1378. 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 versio 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

1379. 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
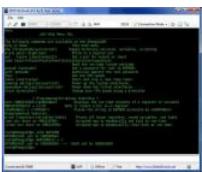
1380. AVRSH: A Command Interpreter Shell for Arduino/AVR. Ever wanted to be "logged in" to your AVR microcontroller? Ever thought it would be cool to "cat" a register to see its contents? Have you always wanted a way to power up and power down individual peripheral sub-systems of your AVR or Arduino in...... Listed under: AVR ATmega Projects, RTOS - OS Projects

1381. 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
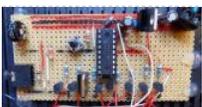
1382. A sunrise and sunset lamp with LEDs You know it, in the winter time it is hard to get up, because it is dark outside and your body just won't wake up in the middle of the night. So you can buy an alarm-clock that wakes you up with light. These devices...... Listed under: AVR ATmega Projects, LED Projects
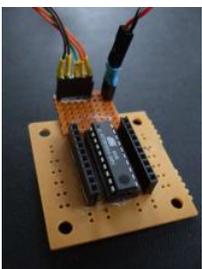
1383. Ghetto Programming: Getting started with AVR microprocessors on the cheap. Microprocessors are so cheap these days. If only there were a way to program them up just as cheaply... *wavy dream-sequence lines* In this instructable, find out how to build up a complete AVR microprocessor toolchain: compiler, programmer software, programmer hardware, and some simple demos...... Listed under: AVR ATmega Projects, How To - DIY - Projects

1384. 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

1385. LED Scolling Dot Matrix Font & Graphics Generator 5×8 5×7 8×8 using the AVR ATtiny2313 and AVRStudio 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

1386. 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. Th 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

1387. 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

1388. 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 Atmega1 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

1389. Infrared Proximity Sensing Coffee Table Module & Color Changing Glowing Faucet using Microcontroller ATMEGA48 This is merely an instructable to explain ho 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

1390. 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

1391. Make a 8×10 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

1392. LED Binary Calculator using Microcontroller ATtiny2313 You can't calculate binary values "as is" on most handheld calculators and using the windows one is jus 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

1393. 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

1394. 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

1395. 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

1396. 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 bes to to teach you in a...... Listed under: AVR ATmega Projects, Clock Projects, Game - Entertainment Projects, Sound - Audio Projects

1397. Rechargeable Battery Capacity Tester using Microcontroller ATMega168 Do you have a pile of AA rechargeable batteries in your drawer? Some are old, some a 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

1398. 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

1399. Numitron clock & thermometer using Microcontroller atmega48 I really like nixie and numitron clocks, but I never worked with them before. So I decided to giv 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: AV ATmega Projects, Temperature Measurement Projects

1400. Yet Another Daft Punk Coffee Table (5×5 LED Matrix) Yes, I know this has been done before, but I wanted to build my own, using as few parts as possible. I bui 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 Projec

1401. 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 Tibetian 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: AV ATmega Projects, Internet - Ethernet - LAN Projects, Radio Projects

1402. How to get started with Eclipse and AVR Programming AVRs 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 AVRs Eclipseis a good choice.Moving to an Integrated Development Environment (IDE), such as Eclipse is...... Listed under: AVR ATmega Projects, How To - DIY - Projects

1403. Lampduino – an 8×8 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
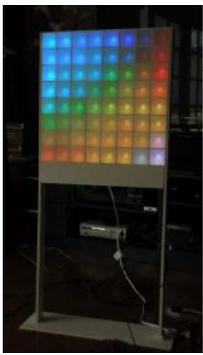
1404. Rainbow glowing ping pong Using ATTing 13 While I was finalizing e-snowflake project, I imagined that single RGB 5050 LED would create nice rainbow effect if placed inside a ball like ping-pong. You can find plenty of such projects on the net, this one was heading to embed everything within ping-pong, battery...... Listed under: AVR ATmega Projects, Game - Entertainment Projects
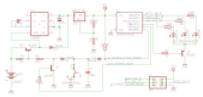
1405. Charlieplexing 7 segment displays using Microcontroller This instructable describes how to charlieplex a bunch of 7-segment led displays. Charlieplexing of discrete leds has been the topic of a few other instructables. The Charlieplexing LEDs- The theory and the How to drive a lot of LEDs from a few microcontroller pins comes...... Listed under: AVR ATmega Projects, LED Projects

1406. 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

1407. 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

1408. 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 - 0.47µF ceramic disk C2, C3, C5,...... Listed under: AVR ATmega Projects, Phone Projects, Robotics - Automation Projects

1409. 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
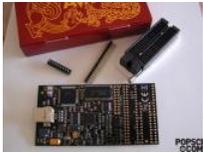
1410. ATTiny2313 Multi-mode LED Matrix Clock This is a mutli-mode clock project based on attiny2313. it employs a 8x8 led matrix as display. with the limited resolution, this 12 hour clock shows time in 6 different modes. The circuit employs row and column multiplexing to drive the leds, one row at...... Listed under: AVR ATmega Projects, Clock Projects, LED Projects
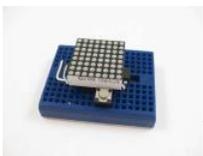
1411. Temperature Indicator Using attiny2313 micrcontroller Description Features: Measures temperatures from -55°C to +125°C Three LED's to indicate in what range the temparature is. User definable thermostat with high and low settings Output via a relay to control a heater element or a blower fan (or something else) Power supply ....4.5...... Listed under: AVR ATmega Projects, Temperature Measurement Projects
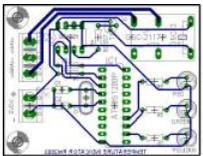
1412. Stepper motor Driver Using AT2313 microcontroller Description With this circuit you can drive a unipolar stepper motor. It operates in full step mode. You can get a stepper motor from an old 5.25 disk drive. The AVR attiny2313 micro controller controls the pulses for the stepper motor. The pulses are amplified...... Listed under: AVR ATmega Projects, Motor Projects
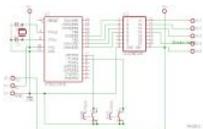
1413. Relais Board Using AT2313 Description This is a peripheral board with 4 relais, rated at 5A/250V each. The board has a ML10 output connector for connection with the AT2313 Project board. It has also 4 LED's for indication which relais is switched on. Hardware The circuit is simple, it...... Listed under: AVR ATmega Projects, How To - DIY - Projects, Interfacing(USB - RS232 - I2c -ISP) Projects
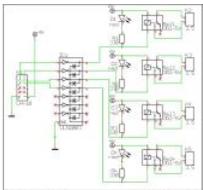
1414. DS1820 Temperature Controller using atmega8515 microcontroller This project displays the temperature on an LCD display with an resolution of 0.06degrees. The DS1820 is used for sensing the temperature. It can measure temperature range from -55deg to +125deg. But i take care of only the possitive temperature. There are 3 switches to change...... Listed under: AVR ATmega Projects, Temperature Measurement Projects
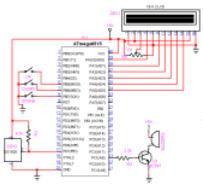
1415. Real Time Clock PCF8583 Using AVR microcontroller Description The PCF8583 is a clock/calendar circuit based on a 2048-bit static CMOS RAM organized as 256 words by 8 bits. Addresses and data are transferred serially via the two-line bidirectional I2C-bus. The built-in word address register is incremented automatically after each written or read...... Listed under: AVR ATmega Projects, Clock Projects

1416. 8×8 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
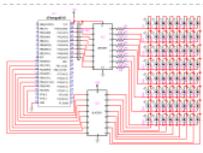
1417. Bluetooth Based Smart Home using atmega8 microcontroller This project is used to automate the home appliances through Bluetooth enabled PC. You can use the USB Bluetooth at the PC side and an Serail Bluetooth converter is used at the microcontroller side. The sparkfun bluetooth module is used here, but you can use...... Listed under: AVR ATmega Projects, Home Automation Projects
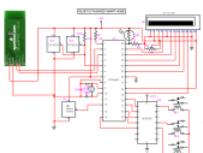
1418. Multipattern Running light using ATtiny2313 microcontroller Here's an another project with LED. It can show different patterns. There are 11 channels of LED. Circuit Diagram For more Detail: Multipattern Running light using ATtiny2313 microcontroller... Listed under: AVR ATmega Projects, LED Projects
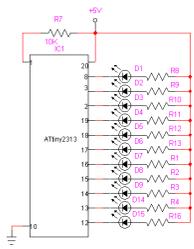
1419.
Real Time Clock ATMega16 Description The ATMega16 chip in the M16 has a real-time counter that operates asynchronously when a 32,768hz watch crystal is connected to it, providing a real-time clock. Bascom has built-in support for the RTC, making it very easy to use time functions. The watch crystal...... Listed under: AVR ATmega Projects, Clock Projects
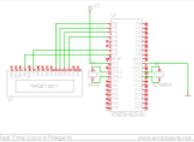
1420.
PC Thermometer Using ATTiny2313 Description With this project you can show the temperature on you PC. This thermometer plugs in on any free serial port. gives temperature readings accurate to 0.5°C with no calibration.The project consists of the ATTiny2313 RS232 Project board and the DS1621 Thermometer board and...... Listed under: AVR ATmega Projects, Temperature Measurement Projects

1421.
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
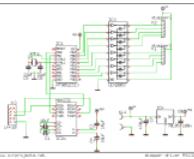
1422.
LCD Thermometer TCN77 Using AVR Microcontroller Description The TC77 is a digital temperature sensor with a Serial Peripheral Interface. Temperature data converted from the internal thermal sensing element and made available at anytime as a 13-bit two's compliment digital word. Communication with the TC77 accomplished via a SPI and...... Listed under: AVR ATmega Projects, Temperature Measurement Projects

1423.
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
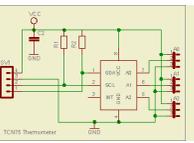
1424.
LCD Thermometer LM35 Using AT Mega8 Description The LM35 of National Semiconductors that is used in this project is a precision centigrade temperature sensor, which has an analog output voltage. It has a range of -55ºC to +150ºC and a accuracy of ±0.5ºC . The output voltage is 10mV/ºC . The...... Listed under: AVR ATmega Projects, Temperature Measurement Projects
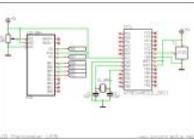
1425.
AVR GPS Locator using avr microcontroller In this project i have interfaced an GPS with AVR microcontroller, the ATtiny2313 gets the location from the GPS and display it over the LCD display. This project also have the feature of marking a place with its name. For entering the Name of the...... Listed under: AVR ATmega Projects, GPS Based Projects
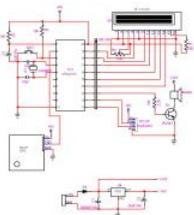
1426.
MMC card based WAV player using atmega32 This projects gives you a simple wav player with help of the MMC card connected to ATmega32. You can use any AVR microcontroller. The MMC card works on 3.3v so a 3.3v regulator is used and the 5v to 3.3v level conversion is done by...... Listed under: AVR ATmega Projects, Sound - Audio Projects

1427.
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
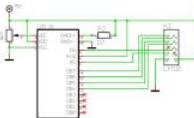
1428.
LCD Interface Board Using ATTiny2313 Description This board can directly connected to the STK 500 board or the ATTiny2313 ISP program board with a 10 pol flatcable on the 10 pin header of the STK500 and the 10 pin header of the LCD/Switch board. The display has 16*2 character positions...... Listed under: AVR ATmega Projects, LCD Projects

1429.
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
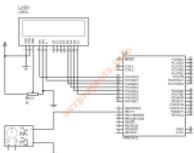
1430.
LCD Display On Glass Interface Using AT2313 Description Liquid Crystal Display on Glass is the newest in LCD technology. The display's are very compact, it measures 55x27 mm and the height is only 2mm without LED backlight and 5.8mm with LED backlight. The display's can have different LED background light instead of...... Listed under: AVR ATmega Projects, LCD Projects
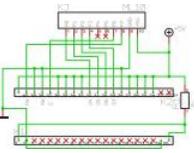
1431.
Temperature controlled fan using PWM microcontroller This project gives you a simple temperature controlled fan. If the difference between real temperature and the user temperature is high then the fan will run at full speed and if the difference is low then the fan will rotate at slow speed. The speed...... Listed under AVR ATmega Projects, PWM Projects, Temperature Measurement Projects
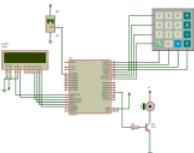
1432.
SMT160 based Temperature indicator There are lot of temperature sensors both with analog & digital outputs. This project gives you an another temperature indicator which has been done with a digital sensor SMT160. Although it is a digital sensor it does not gives out the temperature directly. The output...... Listed under: AVR ATmega Projects, Temperature Measurement Projects
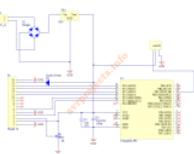
1433.
Digital Melody player using atmega16 microcontroller Here' s an melody player with Atmega16. The command "Sound Speaker" is used to generate sound. Th is the inbuilt command in Bascom AVR. For more Detail: Digital Melody player using atmega16 microcontroller... Listed under: AVR ATmega Projects, Sound - Audio Projects
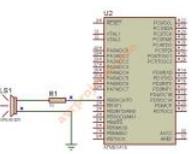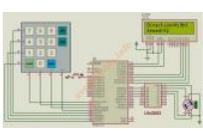
1434. Stepper motor Control with Atmega16 With this project you can control a unipolar stepper motor. You can control both the speed and the direction of the motor. The speed and direction and can changed with help of the keypad. The data's are displayed over the LCD display. A 4x4 keypad...... Listed under: AVR ATmega Projects, Motor Projects
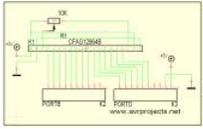
1435. Graphical LCD with KS108 controller Description The Graphical LCD 128x64 controlled is with the ATMega16, the graphic LCD GLCD HG1286418C-VA with a S6B0107/S6B0108 controller is used. See below for the pinout of the display. The display has 8 data bits and 5 control bits. The databits are hooked to PORTB...... Listed under: AVR ATmega Projects, LCD Projects
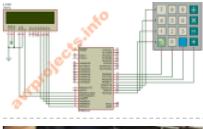
1436. Simple calculator using avr microcontroller Atmega16 Here's a simple calculator with the Atmega16 microcontroller. It have an LCD display and a 4x4 keypad. You can also download the proteus simulation file on the downloads Bascom Code $regfile = "m16def.dat" $crystal = 1000000 Config Kbd = Portd , Debounce = 30...... Listed under: AVR ATmega Projects, Calculator Projects

1437. 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 figure out how to...... Listed under: AVR ATmega Projects, Radio Projects
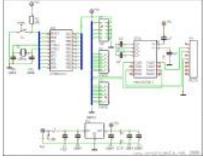
1438. ATTiny2313 Board RS232 Description This board is a small controller board on which you can build your projects. It is suited for educational use, experiments prototyping. The board uses the AT2313 microcontroller with a 10Mhz crystal. The board contains the ISP 10-pin connector for in circuit serial...... Listed under AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects

1439. 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

1440. 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

1441. 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

1442. 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

1443. 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

1444. 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

1445. 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

1446. 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

1447. 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

1448. 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

1449. 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 impedence", 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

1450. 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

1451. 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

1452. 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

1453. 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

1454. 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

1455. 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

1456. ISD4004 based voice recorder So far we have seen various devices that are talking, such us cars, dolls etc.This project is also like one of them. you can use it in various projects such us IVS, robots etc. There are various voice recording IC's. They have different recording time…… Listed under: AVR ATmega Projects, Sound - Audio Projects

1457. 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

1458. 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

1459. 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

1460. 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

1461. 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

1462. 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

1463. 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

1464. 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

1465. 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

1466. 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

1467. 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 extremly difficult...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects

1468. 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
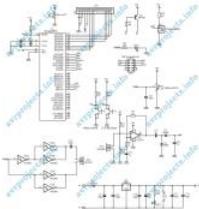
1469. Ultrasonic range finder using ATMega8515 This project is used to measure the distance using ultrasonic sensors. The ultrasonic signal passes through the atmosphere to a barrier, which we want to measure the distance. Part of this signal is reflected and travels back to the receiver. The time delay between sending...... Listed under: AVR ATmega Projects, Other Projects, Sound - Audio Projects
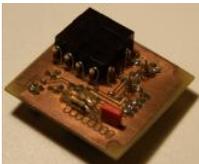
1470. 4×4 LED Display The 4×4 LED Display was my first project with a two-layer circuitboard layout. The alignment was not 100% optimal, but sufficent. I wanted to make the board as small as possible, so the parts had to be stacked at some places. The square LED's were...... Listed under: AVR ATmega Projects, How To - DIY - Projects, LED Projects
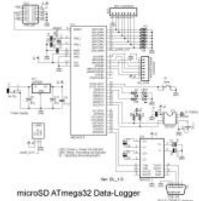
1471. microSD ATmega32 Data-Logger Aim of this project is to present a way to store a large quantity of data into microSD card in files with FAT32 format. Here, ATmega32 is used for data collection and microSD interface. The data is received from in-build 8-channel ADC of ATmega32. One...... Listed under: AVR ATmega Projects, Memory - Storage Projects

1472. 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
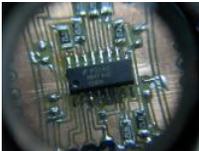
1473. 8×8 Bicolor LED Matrix using MAX6964 For a long time I had a layout for this circuit, but could never build it, because the layout was to small to be made by tonertransfer. So it was the first layout I made with my new exposure unit. It's quite small, so it...... Listed under: AVR ATmega Projects, LED Projects
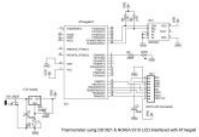
1474. Thermometer using DS1621 and Nokia 3310 LCD interfaced with ATmega8 I am presenting one application with the Nokia 3310 LCD: Designing a thermometer using DS1621 temperature sensor IC. DS1621 is 8-pin sensor from Maxim, with temp range of -55 to +125 degree C, which can be interfaced with microcontroller over two-wire serial i2c bus. It...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects, Temperature Measurement Projects
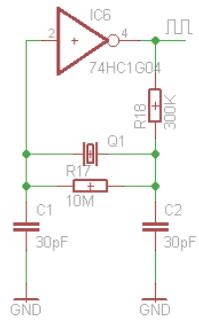
1475. EPROM Display using ULN2308A microcontroller Due to university and work it has been a while since the last post. But I just completed a little project that's worth posting. Several old 27C256 EPROMS were lying around unused. So I thought about a purpose for them. As I also had some...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects

1476. 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
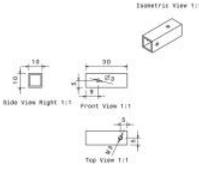
1477. Delta Robot using atmega32 micrcontroller And now for something completely different: A little robotics project for the weekend. The described robot can be build entirely from model making supplies and materials from the hardware store. Also only very few tools are needed. A metal saw, a drill press, a vice...... Listed under: AVR ATmega Projects, Robotics - Automation Projects
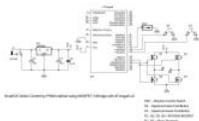
1478. Simple PWM DC motor control using MOSFET H-Bridge with AVR ATmega8 Here is a very simple project of controlling a small DC-motor (taken from an old personal cassette player) with ATmega8. The ATmega8 is having three PWM channels, out of which two are used here. PWM waveforms are fed to MOSFET (RFD3055) H-bridge. Here, direction is...... Listed under: AVR ATmega Projects, PWM Projects
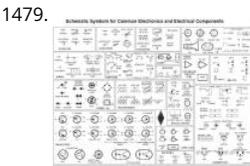
1479. circuit schematic symbols circuit schematic symbols: Download High Quality circuit schematic symbols images of common electrical and electronics component schematic diagram. Basically Electrical components can be divided in two categories Passive components and Active Components. This post will have following schematic symbols. Click on Image...... Listed under: Blog, Circuits

1480. 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
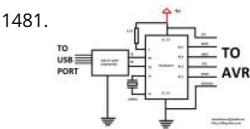
1481. My own AVR ISP programmer using PIC16f877a and python! Introduction: (don't skip to read the note below) I recently purchased few AVR microcontrollers. I don't know much about AVR since I am using it for first time. Any way, I have some experience on working with PIC and MSP430. To program AVR using USB,...... Listed under: AVR ATmega Projects, Microcontroller Programmer Projects
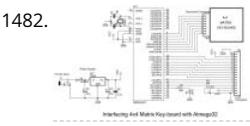
1482. 4×4 Matrix Key-board Interfacing with ATmega32 Here is a project for beginners to interface a 16-key (4x4) keypad with ATmega32 using 8-pins i.e. one port of the microcontroller. This is useful particularly where we need more keys but don't want to spend more uC pins for interfacing. The 4x4 keypad is...... Listed under: AVR ATmega Projects, Interfacing(USB - RS232 - I2c -ISP) Projects

1483. 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

1484. 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
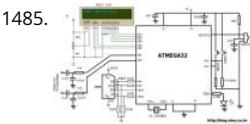
1485. TV remote controller 160KHz High Quality Stereo MMC WAV player using ATMEGA32 Introduction: This is my first AVR based hobby project and the most successful one compared to my all previous stuff. I am 100% satisfied with this work. Few months ago, I tried to make a wav player using a PIC16F877A. It worked anyway, but the...... Listed under: AVR ATmega Projects, Sound - Audio Projects

1486. 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...... Listed under: AVR ATmega Projects, RTOS - OS Projects
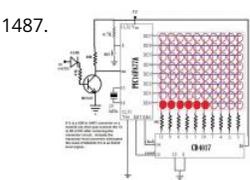
1487. An attempt to show grayscale images on an LED dot matrix display with software PWM using PIC16F877A Introduction: This is just a time pass hobby project, I am trying to display some pictures (JPEG/PNG/BMP etc) on my 8x8 led dotmatrix display. You can see photos of my 8x8 led dotmatrix display showing some grayscale pictures. The main thing which you may notice...... Listed under: AVR ATmega Projects, PWM Projects, Video - Camera - Imaging Projects
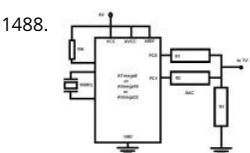
1488. AVR based monochrome signal generation for a PAL TV using atmega16 micrcontroller Introduction: I have learned some thing about TV in one of my B.tech semester but I forgot most of them. Now I refreshed a few basics and tried to implement a monochrome PAL TV signal generator using an AVR micrcontroller. I was using PIC earlier...... Listed under: AVR ATmega Projects, Video - Camera - Imaging Projects
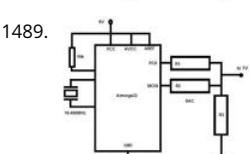
1489. Drawing geometric figures on a PAL TV using ATmega32 (128×64 resolution) Introduction: I am interested to draw lines, square, rectangle, circle etc on my TV screen. At first I was confused where to start. While thinking about it, a pencil and an eraser came to my mind. If we have a good pencil, eraser and a...... Listed under: AVR ATmega Projects, Video - Camera - Imaging Projects

1490. 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
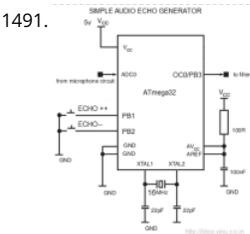
1491. Generating AUDIO ECHO using Atmega32 microcontroller Introduction: But now I can do this very easily by a simple digital signal processing using a microcontroller. It's concept is very simple, ie we need to apply a proper delayed feedback in digital samples with in a circular buffer. I did this using an...... Listed under: AVR ATmega Projects, Sound - Audio Projects
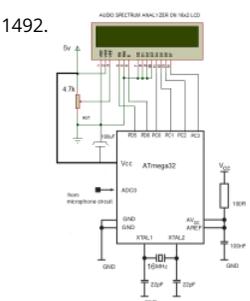
1492. Implementing Discrete Fourier Transform in Atmega32 to make an audio spectrum analyzer "All waveforms, no matter what you scribble or observe in the universe, are actually just the sum of simple sinusoids of different frequencies." Hi, I am just refreshing the basics of fourier transform. I am not an expert. Now I did a small audio spectrum...... Listed under: AVR ATmega Projects, Sound - Audio Projects

1493. 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

1494. 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

HOMAGE UPS SCHEMATIC DIAGRAM
COMING SOON...
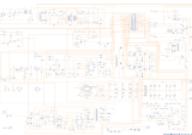
1495. PCM UPS Schematic Diagrams PCM Powercom was founded in 1987, a leading provider of power protection products with ISO 9001 certificate. There are over 2,600 employees around the world. Powercom designs, manufactures, markets and services UPS systems. PCM UPS Schematic Diagram for Model ULTIMATE 700/1000/1500VA POWER Features : LED/LCD...... Listed under: Blog, Circuits

1496. 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

1497. APC UPS Schematic Diagrams APC by Schneider Electric, formerly referred to as American Energy Conversion Corporation, is really a manufacturer of uninterruptible energy supplies, electronics peripheral devices and data center items. In 2007, Schneider Electric acquired APC and combined it with MGE UPS Systems to create Schneider Electric's Critical...... Listed under: Blog, Circuits
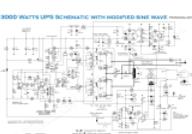
1498. UPS Schematic Circuit Diagram UPS is an abbreviation of Uninterpretable Power Supply. It is an electronic product used to provide backup power for sensitive devices in case their normal power failure or blackout. Given UPS Schematic Circuit Diagram with its component list is a complete guide to build standard...... Listed under: Blog, Circuits, Featured