



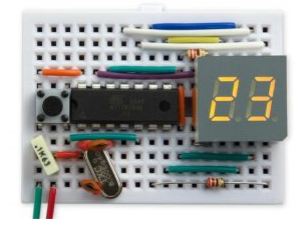
## ATTiny85 ATTiny45 and ATTiny13 based projects list


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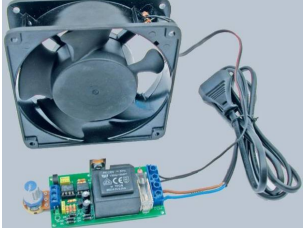


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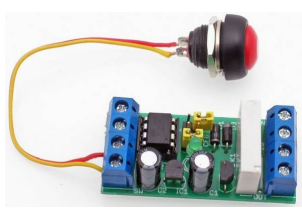
1. BATTERY ALARM CIRCUIT FOR MODEL HELICOPTERS ATTINY13 ATTINY13 Atmel microcontroller installed on the circuit model helicopter is checking the voltage of the battery the battery (or battery) voltage circuit when the level set LEDs, buzzer, giving the...
- 

2. 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...
- 

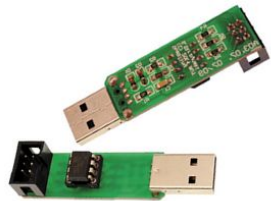
3. Alcohol Unit Counter using ATtiny84 There seems to be a lot of discussion in the news currently about how much alcohol it's safe to drink on a regular basis [1][2]. If you want help in...
- 

4. 1A 10A ADJUSTABLE BATTERY CHARGING CIRCUIT 100AH Atmel ATTINY24 microcontroller based automatic battery charger circuit can charge 12V batteries with different power on (1A...10A current setting range of the charging current with limitation 10Ah, 20Ah, 30Ah, 40Ah,...
- 

5. 230V FAN REGULATOR CIRCUIT MOSFET MC33152 ATTINY25 Brushless asynchronous motors, with compact rotor windings, called short cages, are used to drive different fans. Their advantages are durability and simple construction. The presented layout uses a certain characteristic...
6. 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...



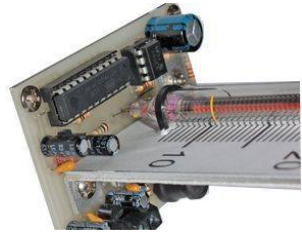
7.



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....

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8.



NIXIE TUBE THERMOMETER CIRCUIT Nixie lamp Thermometer DS18B20 Circuit with ATtiny2313 The first Nixie lamps appeared in the mid-twentieth century. For many years they have been used in a variety of apparatuses but have...

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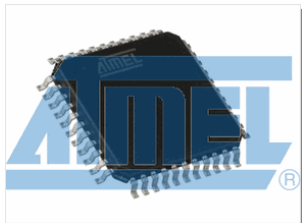
9.



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...

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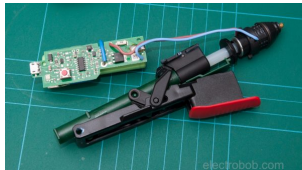
10.



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...

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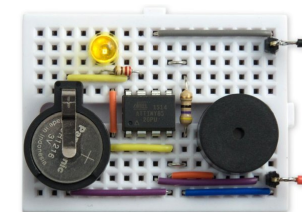
11.



Bosch glue pen teardown Intro My cheap plug in hot glue gun died and looking for a replacement I found this: the Bosch GluePen What does it do? it's a hot glue gun for...

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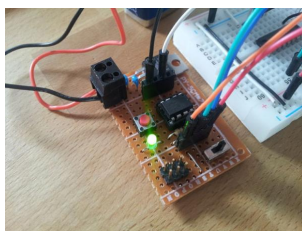
12.



10 or 12-bit DAC from the ATtiny85 This article describes a simple continuity tester, based on an ATtiny85 and a piezo buzzer, designed for checking circuit wiring, or tracing out the tracks on a PCB: It has...


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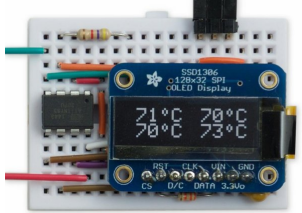
13.




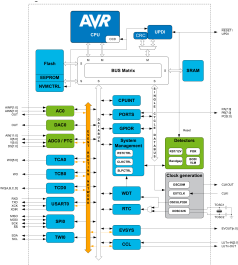
ATtiny Dev Board / Tinyduino This is an ATtiny Dev Board. Designed for the ATtiny line of microcontrollers from atmel. Its made to be small, simple to build and easy to use. This board has...

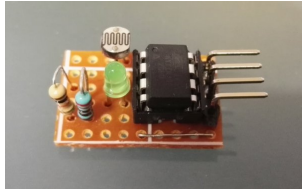
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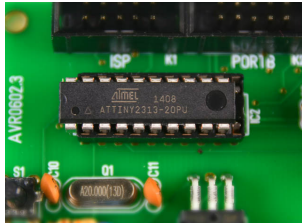
14.  DICE10 – A miniaturized electronic die based on ATtiny10 Making an electronic dice is very popular among hobbyists and there are already lots of ready-made projects on the internet about this topic. Tim at Hackaday.io designed an electronic dice project...


15.  Tiny LED Time Watch This article describes a four-channel thermometer that monitors the temperature at four temperature sensors, and gives a continuous readout on a small 128x32 OLED display: [caption id="attachment\_36554" align="aligncenter" width="600"] Four-Channel...


16.  Temperature alarm for boiling milk Anyone who has ever boiled milk on the stove knows, that it has a nasty habit of overflowing. That is why I created the temperature alarm for boiling milk to...

17.  Atmel ATtiny417/814/816/817 Include Core Independent Peripherals (CIPs) Atmel tinyAVR microcontrollers are optimized for applications that require performance, power efficiency and ease of use in a small package. All tinyAVR devices are based on the same architecture with...

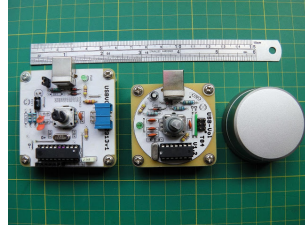
18.  Build Your Own I2C Sensor Since Raspberry Pi doesn't have a built-in ADC (Analog to Digital converter) to read the voltage off from most of sensors, the best solution is to add I2C ADC chips...

19.  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...

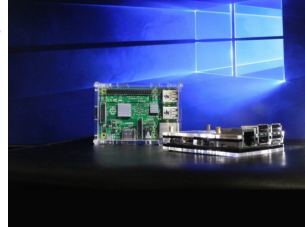
20.  Recover Bricked ATtiny Using Arduino as high voltage programmer Hi! Today I'll explain you how to recover your bricked ATtiny microcontroller using your Arduino board. ATtinys are very popular due to their small form factor yet very powerful. While...

21.  ATtiny85 Light Sensor – I2C slave device I love AVR ATtinyx5 series microcontrollers. They are cheap, easy to use, they can be programmed just like Arduinos and comparing to their size they offer great features. For example,...

22. Attiny2313 & Attiny84 V-USB Media Volume Control My most rewarding projects are the ones which i actually use. I like my audio gear so, this was the perfect companion project! On my desk i have a headphone...



23. 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...



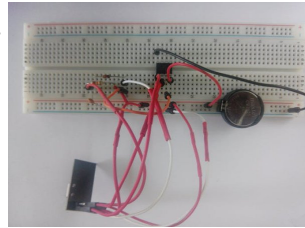
24. ThiDom Home automation Story This project uses Arduino, Raspberry and Attiny, it allows you to control and monitor your home (AC outlet, shutters, heater, light, opening detector, temperature ...). The raspberry is the...



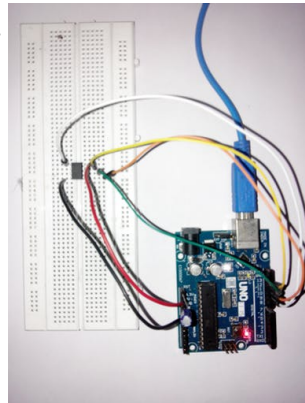
25. Physical computing with ATtiny Story I have a nice "carranca" (or wall mask) from Chile that stands in my corridor. It's a very beautiful decorative mask that I liked from the very first moment...



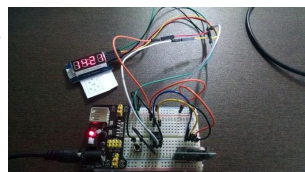
26. nRF24L01+ with ATtiny85 3 Pins Story This would be the continuation of my previous project Programming ATtiny85 with Arduino Uno. Now with cheaper ATtiny85 in place I was looking for cheaper ways to transmit the...


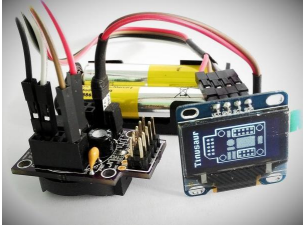

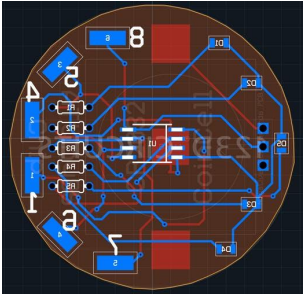

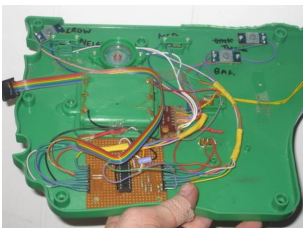



27. Programming ATtiny85 with Arduino Uno Story I am working on a project which requires reading multiple sensor data on different locations. These require only few PWM pins so using multiple Arduino Uno would be expensive...



28. 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...

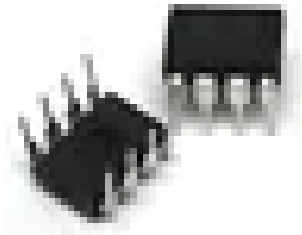


29.  Bootload Your ATtiny85 Story What is a Bootloader? Microcontrollers require a programmer to install firmware on them. A programmer is a device, that when combined with software, loads firmware to the microcontroller. There...
- 
30.  SSD1306xLED Tinusaur ATtiny85 Library for SSD1306 Story SSD1306xLED is a C library for working with the SSD1306 display driver to control dot matrix OLED/PLED 128x64 displays. It is intended to be used with the Tinusaur board...
- 
31.  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...
- 
32.  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...
- 
33.  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...
- 
34.  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...
- 
35.  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...

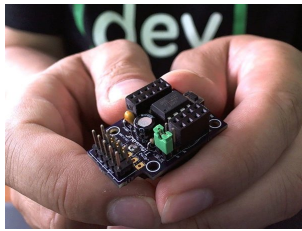
36. ATmega Alarm Clock & Thermometer Humidity meter First, let me introduce you my project. I made an Alarm clock with extended functionality & thermometer and humiditymeter. Everything started when my friend (who used to bring me some...



37. 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...



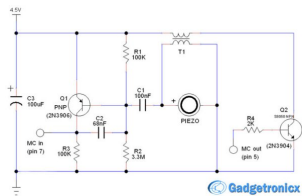
38. The Tinusaur Project About The Tinusaur What is it Briefly, the Tinusaur is a minimal micro-controller hardware configuration based on Atmel AVR ATtiny family of products and more specifically those with DIP-8 case...



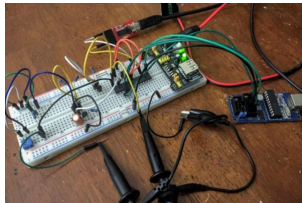
39. WEARABLE DISPLAY ATtiny85 and OLED SSD1306 How to make wearable display - OLED SSD1306 display run by ATtiny85 Step by step tutorial, with no steps to skip. The main goal of this tutorial is to show...



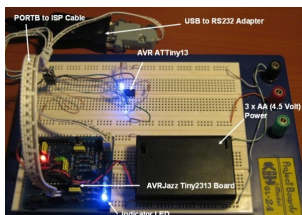
40. Door/Window alarm circuit Door or Window alarm circuit have been used widely in many homes to detect intrusion. A simple search in internet might fetch you lot of alarms for you to buy...



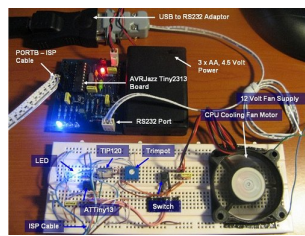
41. Adding ADC to Microcontrollers without ADC I recently had the need to carefully measure a voltage with a microcontroller which lacks an analog-to-digital converter (ADC), and I hacked together a quick and dirty method to do...



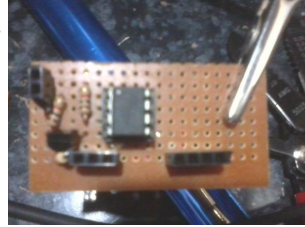
42. Atmel AVR ISP Microcontroller Programmer Project One of the frustrating part in learning AVR microcontroller for the beginners is the AVR microcontroller programmer. The question is how to program my AVR microcontroller; actually if you googling...



43. Controlling DC motor with AVR ATtiny13 PWM and ADC Project It's interesting to explore what we can do with this tiny 8 pins; 8-bit microcontroller. The ATtiny13 is the smallest and cheapest Atmel AVR 8-bit microcontroller families but yet, it's...



44.



Attiny85 As a Step/Dir Stepper Motor Controller Somewhere in Greece, someone did something never done before... Seen those things before? Thing: 1 Thing: 2 Thing: 3 Oh, you have! You bought one of them you say? Oh.....

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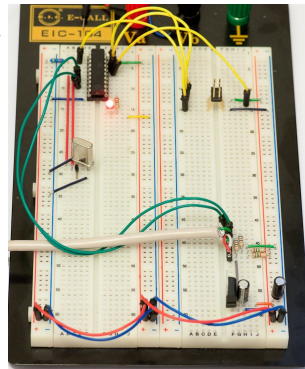
45.



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...

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46.



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....

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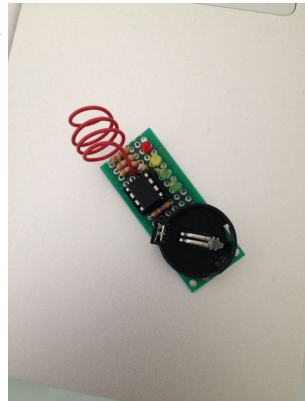
47.



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...

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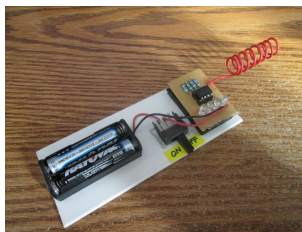
48.



Attiny85 EMF detector This is a simple tutorial to create an EMF detector. You can use Arduino for this job, but is better use a microcontroller called Attiny85. It is possible program it...

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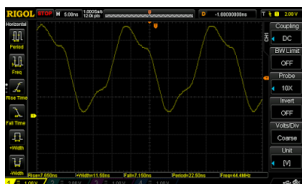
49. Attiny45 EMF Sensor This sensor is very sensitive and can pick up electrical signals from anything that uses power. It displays the amount of interference it picks up by sequentially lighting 4 led's...



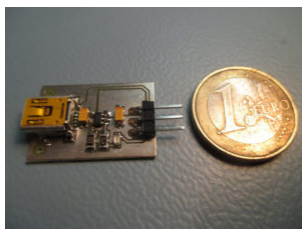
50. DIY Apple Clock The ATtiny24, 44, 84 series only has 1 external interrupt (INT0) [Page 48 of the datasheet]. This is the interrupt that we are most familiar with using on the Arduino....



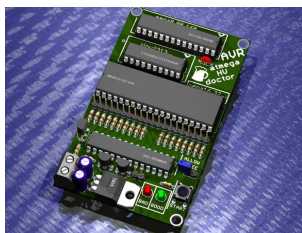
51. Tic-Tac TV Remote Jammer Pretty simple. Have a look at this picture above. The usual TV remote sends a pulsed IR signal which has some instruction encoded in it, like increase or lower the...



52. Externally clocking (and overclocking) AVR MCUs People familiar with AVR boards such as Arduinos likely know most AVR MCUs can be clocked from an external crystal connected to 2 of the pins. When the AVR does...



53. How to make a USB Li-Ion charger Li-ion cells become more and more popular due to their capacity and reasonable prices. In this entry I will show how to build a simple li-ion battery charger based on...



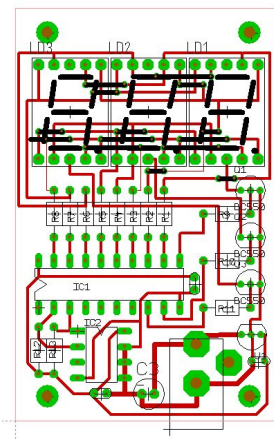
54. How to fix dead atmega and attiny avr chips Atmega fusebit doctor, as name says it, device for repairing dead Atmega and Attiny family AVR's by writing fabric fusebits. Most common mistakes or problems are a wrong clock source...



55. 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...

56. 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...



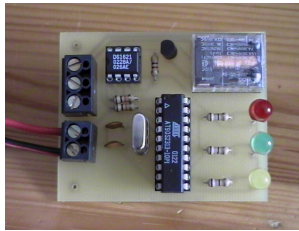


57.



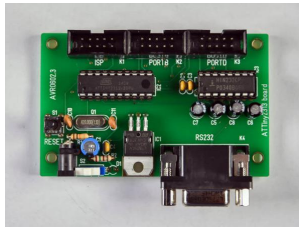
Stepper motor driver With this circuit you can drive a unipolar stepper motor. It operates in full step mode. The AVR attiny2313 micro controller controls the pulses for the stepper motor. The pulses...

58.



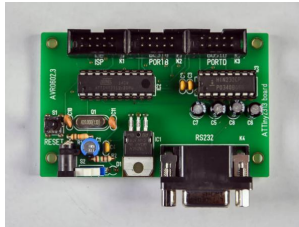
Temperature indicator This project uses a Dallas DS1621 temperature sensor which indicates the temperature of the device. The temperature sensor has an thermal alarm output, which becomes high when the temperature of...

59.



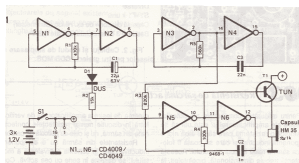
Running LED's using ATTiny2313 This running LED or LED chaser is a good project for beginners in the microcontroller technology. It is easy to build, and the assembler program code can be easily adapted. This...

60.



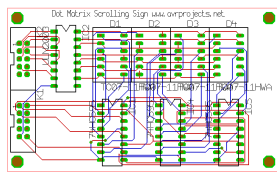
Running LED's This small project let you make running leds. For this project you need a attiny2313 microcontroller and 8 leds and 8 resistors. The leds can be programmed so that they...

61.

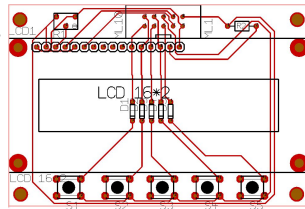


Electronic cricket his electronic cricket is a fun project. A real crickets chirp at night and faster in warmer temperatures. A cricket chirp is composed of a group of three sinus waves of...

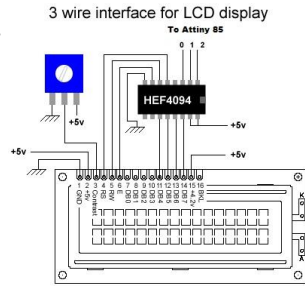
62. Dot matrix display This is a Dot Matrix Scrolling Sign. A Dot Matrix Display has an 5x7 led matrix with 5 columns and 7 rows. The display is controlled by the ATmega328 microcontroller...



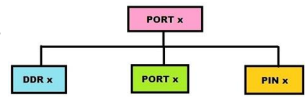
63. LCD/switch interface Page 1 of 2 This board can directly connected to the STK 500 board or the ATTiny2313 ISP program board with a 10 pole flatcable on the 10 pin header...



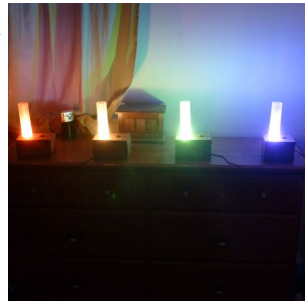
64. 3 wire interface for LCD display To ATTiny 85 Digital Book Cricket with ATTiny 85 The project described here is a digital implementation of "book cricket game" which students normally use to play in their childhood time. The heart of the project is 8 bit...



65. 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...



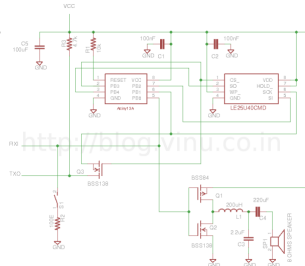
66. Color Changing Mood Lamp Get in the mood with some fairly simple ATTiny85 based DIY color shifting lamps! Step 1: Materials Saw Drill Sheet of wood Wood screws Various hole cutter bits 6" Acrylic...



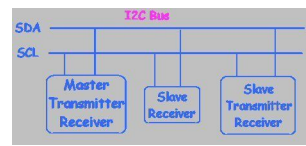
67. Reflow Soldering Controller This is reflow soldering controller for use with a toaster oven as reflow soldering oven. I bought the toaster oven in a local super market for about 40 €. There...



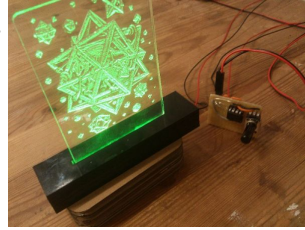
68. Happy Christmas and Happy New Year wishes from Attiny13 While trying to open a chinese camera pen, unfortunately the PCB inside it got damaged. Few of the PCB traces got cut and it became useless. After few days, I...



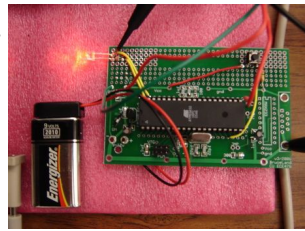
69. I2C Bus for ATTiny and ATmega I love the Atmel AVR microcontrollers! Since building the Ghetto Development System described in this Instructable, I've had no end of fun experimenting with the AVR ATTiny2313 and the ATmega168...



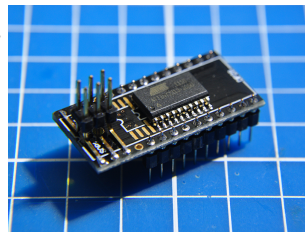
70. LED step-up converter with ATtiny85 Idea Build a cheap and simple full software controlled step-up (boost) converter to drive a LED string of 10 LEDs. LEDs are used as string to light up a acrylic...



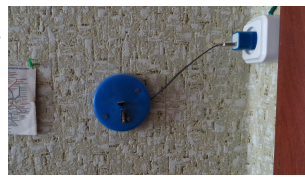
71. SecureLED: Better Access Control Using ATmega32 Introduction Overview SecureLED is an optical access control device which replaces current RFID or Magnetic Strip technologies with a cryptographically secure, contact-less device which communicates over commodity Light Emitting Diodes...



72. Minimalism AVR development board Lacking of proper development board always poses huge resistance for me to jump onto a new MCU. Even with the most prototyping friendly DIP packages, wiring a programming header onto the breadboard...



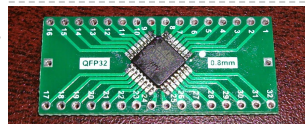
73. Infrared remote controlled light switch with ATTiny2313 Back when I was only starting to dabble in electronics, I needed a project that would meet the following requirements: simple to make; original (i.e. done entirely by myself from...



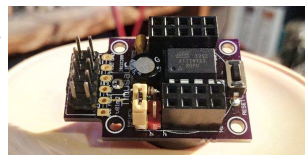
74. ATtiny84 USBtiny AVR ISP Programmer My through hole, home etch friendly version of the surface mount FabISP, which is based around the USBtinyISP AVR ISP Programmer. The new USBtinyISP drivers also has support for Windows 8 This...



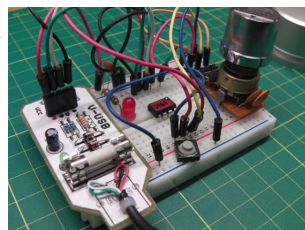
75. Breaking out a QFP Attiny88 AVR Several months ago I noticed the Attiny88. It has several more I/O than the Atmega328, with an extra Port A and PC7. And unlike most of the other Attiny series,...



76. The Tinsaur Project Project Summary: The Tinsaur is a small board with a ATtiny85 micro-controller on it. The board has the minimum required components for the micro-controller to work properly. It also has...



77. USB Media Volume Control My most rewarding projects are the ones which i actually use. I like my audio gear so, this was the perfect companion project! On my desk i have a headphone...

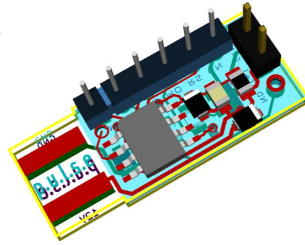


78.



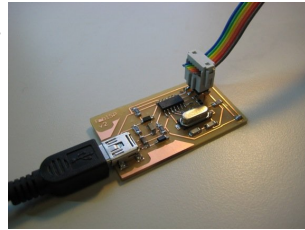
The first time I saw a POV (Persistence Of Vision) display was on a show called FAQ on TV. The POV display consisted of an oscillating shaft with 6 LED's...

79.



p.u.l.s.e. – fader control for Motorcycle parking Lamp My brother is a Mechanical Engineer who loves his KTM Duke 200 bike. He asked me to build this circuit : <http://sunbizhosting.co.uk/~spiral/blog/?p=227> for a 'heartbeat' lamp controller for the parking...

80.



FabISP, a fab-able in-system programmer 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...

81.



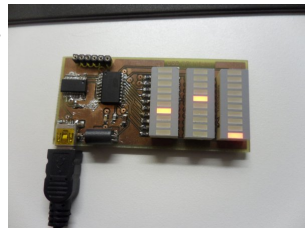
Tic-Tac USBtinyISP Programmer What's with mint boxes and electronics? Beats me, but they are somehow made for each other. I had built ladyada's USBtinyISP v1.0 circuit on a breadboard which I used every other...

82.



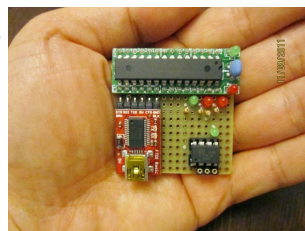
BareDuino Micro For some Arduino projects, you don't actually need that many IO pins. That's exactly the case when I tried to build a simple RGB throwie that would cycle through colours. I...

83.



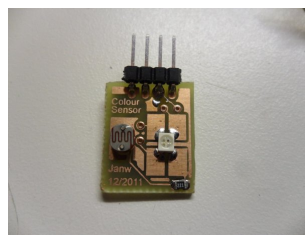
USB CPU and Memory monitor This little device shows you the CPU-load, how much physical and virtual memory is used. It shows this data per 10% on 3 ledbars. To do so it uses a...

84.

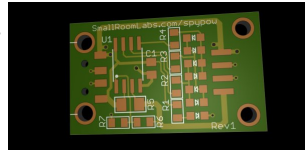


ATtiny programmer using Arduino ISP For relatively small (less number of pins than ATmega328) projects, ATtiny series, ATtiny45 or Attiny85 are good choice in terms of its physical size (8-DIP or 8-SOIC) and low power...

85. Build your own (at)tiny colour sensor. A few months ago, I saw an instructable by fjordcarver on how to build a coloursensor with an RGB led and an LDR. It inspired me to try whether I...



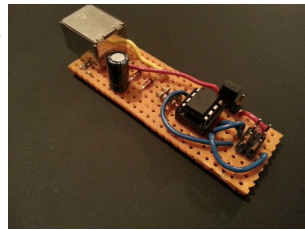
86.



PAW17 – USB Spypow Yesterday I saw the "The Practical Meter" on Kickstarter - a small unit that is placed inline with the USB when charging your phone and shows the actual charging power...

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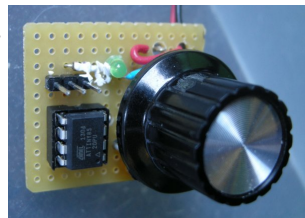
87.



Little Wire AVR-ISP As usual, I've been all sorts of busy, with little time to blog about it. I did recently score a cache of small, nay, tiny AVR chips recently, and my...

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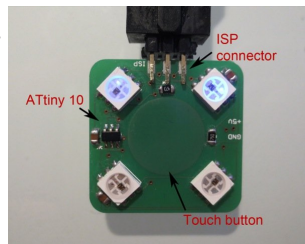
88.



DIY servo tester based on ATtiny85 Here is a really small side project that I developed while working on something else... I had to test a RC speed controller that I wanted to use to control...

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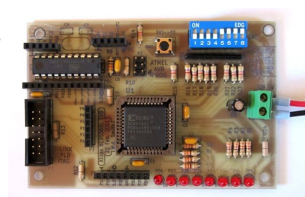
89.



Tiny Touch Button With LEDs that require only one pin, you can do a lot with even just a 6-pin microcontroller! A touch controlled light with 4xWS2812 RGB LEDs and ATtiny10. This...

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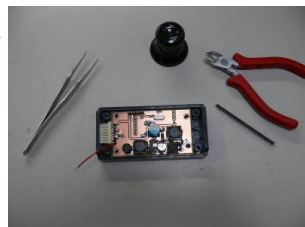
90.



Xilinx CPLD Board Electronic Project Build this single-sided Xilinx CPLD board at home and experiment with CPLDs and hardware description language (HDL). The source files for the project are in open source KiCad format so...

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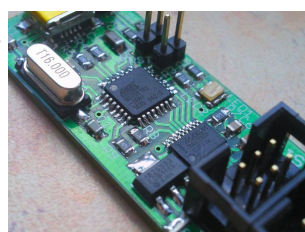
91.



ATTINY2313 Thermometer with DS18S20 –Inhaltsverzeichnis Thermometer with DS18S20 Hardware Software final Download Thermometer with DS18S20 In my new Dacia Duster is missing unfortunately an outside temperature indication. A finished thermometer with LCD did not...

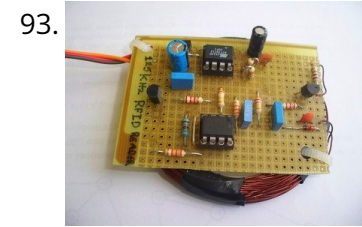
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92.



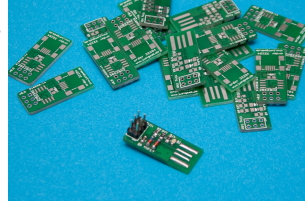
USBtiny-MkII SLIM programmer USBtiny-MkII SLIM programmer (AVRISP-MKII clone) supports all Attiny, Atmega, and Xmega  $\mu$ controllers. It has three programming interfaces: ISP, PDI, and TPI. It works with AvrStudio or AvrDude. Small convenient board,...

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93. 125 kHz RFID reader based on ATtiny13 Introduction This RFID works with 125 kHz tags in credit card size shape cards and with 125 kHz key fobs (picture 1). The EM4100 protocol is used. When you approach an...

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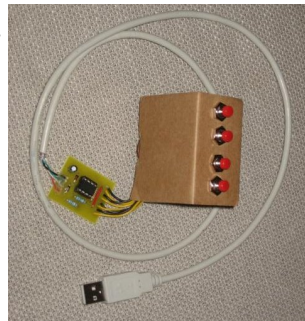
94. Minimalist AVR programmer I always like a challenge, so when I saw [simpleavr]'s vusbtiny programmer, I started to wonder how small I could make an AVR programmer. All in all I'm pretty pleased...

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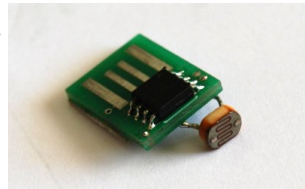
95. AZIZ: LED Microscope Illuminator (2013) AZIZ is an LED microscope illuminator that I designed and built from scratch. It is designed around a Texas Instruments TLC59116 constant-current PWM LED driver chip, and an Atmel ATtiny1634...

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96. 4-key keyboard using ATtiny85 Introduction: A good while back, I made the 1-key-keyboard project. Ever since it has always been in the back of my mind that the ATtiny microcontroller, which I used in...

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97. 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...

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98. 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...

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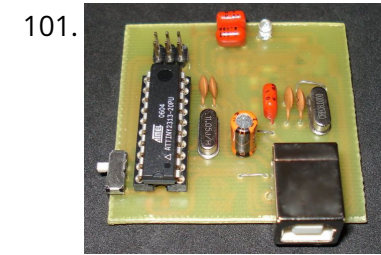
99. AVR frequency meter from 1Hz to 10MHz Frequency meter with some of quite good performance, capable of measuring frequencies from 1Hz to 10MHz (9,999,999 Hz) with a resolution of 1 Hz over the entire range. Ideal for...

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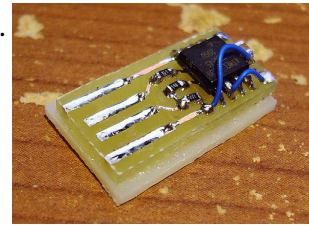
100. Testing Device for DiSEqC-Switches using ATtiny13-20PI This is my first AVR-project on this page. The DiSEqC-Tester allows to test DiSEqC-switches that uses 1.0 or 1.1 protocols. (DiSEqC-Switches with 2.0 and 2.1 protocol have backwards compatibility with...

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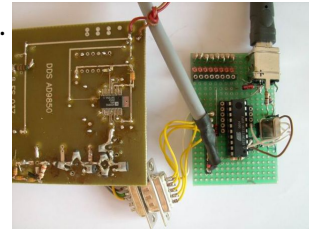
101. USB AVR in-system Programmer using ATtiny2313 Introduction. Nowadays, USB is the most popular connection between PC and peripherals such as AVR programmers, printers, scanners etc. For that reason I had to modify my old serial AVR In-System-Programmer...

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102. Stealth USB CapsLocker using Tiny45 microcontroller This device plugs into a USB port and implements a USB HID keyboard. Instead of doing anything useful, it waits between 30 seconds and 8 minutes and sends the scancode...

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103. 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...

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104. AVR microcontroller based PWM fan controllers So this is a bit of a continuation on my 555 timer based PWM controllers, but now using microcontrollers and MOSFETs instead of 555 ICs and transistors. I made 2...

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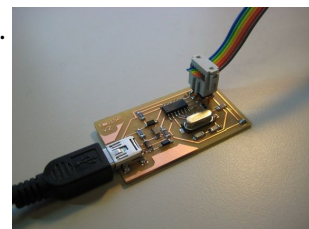
105. The Game of Life using ATtiny2313 microcontroller The reason for making this project is that I was always fascinated by Conways Game of Life. It's a great demonstration of the fact that simple things with a very...

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106. 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...

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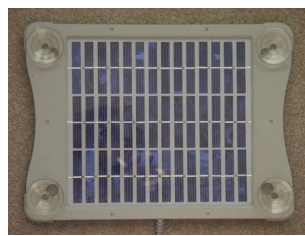


107. FabISP, a fab-able in-system programmer using ATtiny44 The FabISP is an in-system programmer for AVR microcontrollers, designed for production within a FabLab. That is, it allows you to program the microcontrollers on other boards you make, using...

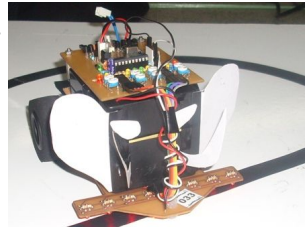
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108. Batwatch using ATtiny13V microcontroller Overview Batwatch is a simple monitor for a solar panel battery charger, using an Atmel ATtiny13V. It periodically measures the charge current and battery voltage, and shows them by blinking...

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109.



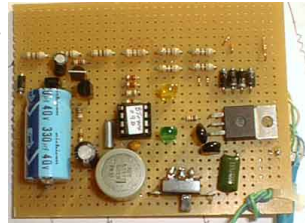
Project Development Board using ATTiny2313 microcontroller This is my first time using the AVR. I like to learn using the ATTiny 2313, because it is faster than MCS-51, cheap and the circuit is very simple. The...

110.



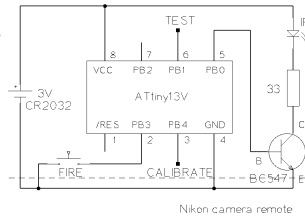
AVR Programmer using ATTINY2313 microcontroller INTRODUCTION AVR910 is a very useful programmer. It can program almost complete range of AVR chips. The original version made by Klaus is here, <http://www.mikrocontroller-projekte.de/Mikrocontroller/AVR-Prog/AVR-Programmer.html>. The programmer uses ISP capability...

111.



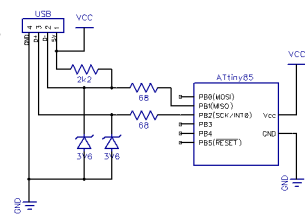
Door Chime Privacy Sentry using Attiny12 An ATTiny12 controller as a timer and some switching circuitry turns the doorbell off for 10 hours at the same time each day. The string of resistors across the top...

112.



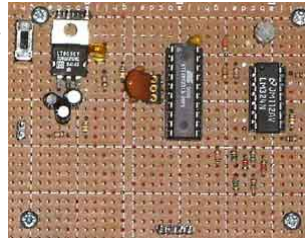
Nikon Camera Remote Control using ATtiny13 Microcontroller This is an IR remote control for Nikon cameras. It is compatible with the Nikon ML-L3 remote control. Supported cameras include: D40, D40X, D50, D60, D70, D70s, D80, Coolpix 8400...

113.



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...

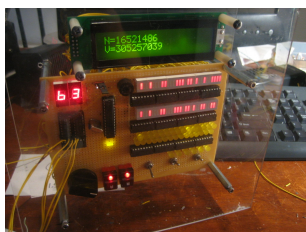
114.



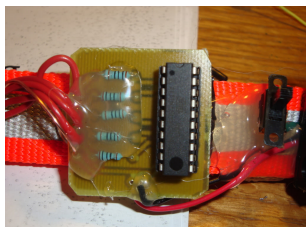
Barker Code-Locked Loop Synchronous Demodulator using ATtiny2313 microcontroller A simple, low component count phase locked loop that locks onto and detects the amplitude of an incoming baseband 7 bit Barker code using a switched resistor demodulator that is...

115. 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...

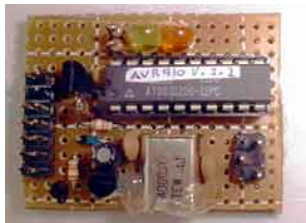




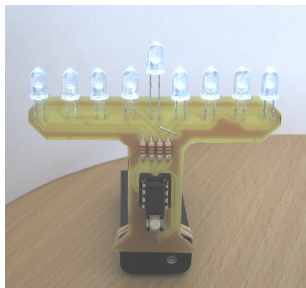
116. LED Dog Collar using ATTINY2313 Microcontroller LED Dog Collar So this is a pretty simple project, but I thought it was a clever idea. I have 2 dogs, a lab and a lab mix. The lab...



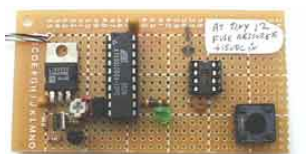
117. BUILD A SIMPLE SERIAL PROGRAMMER FOR AVR DEVICES using ATtiny2313 Microcontroller Atmel described a simple programmer based on the AT90S1200 (NOT the AT90S1200A) controller in their application note, AVR910 (a modification to use the AT90S2313 is also given below).The circuit is...



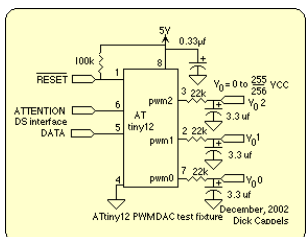
118. LED Menorah using ATtiny13 microcontroller Last week on hack-a-day I saw their post on an LED Menorah that was powered by a 9v battery with the lights controlled by dip switches. I thought to myself,...



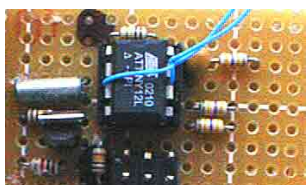
119. ATtiny12 fuse restorer using microcontroller This restores the fuses in an ATtiny12 via High Voltage Serial Programming. Plug an ATtiny12 into the 8 pin socket and hold down "GO!" button. The LED will come on...



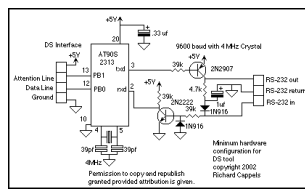
120. 3 channel, 8 bit EEPROM DAC with DS interface using ATtiny12 microcontroller •Low power •EEPROM memory for autonomous operation, 16 bytes available for general purpose use. •Low cost This device provides three channels of 8 bit pulse-width modulation. Output pulse duty cycle...




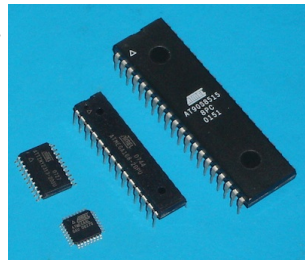
121. Real Time Clock/Calendar/Alarm with Interpreter for battery backed-up and battery powered operation with DS interface using ATtiny12 Based on the Atmel ATtiny12L-4PI microcontroller -A real Time Clock/Calendar for less than US\$1.50 in moderate quantity. This is the timekeeping test circuit. It includes a one-transistor circuit to...




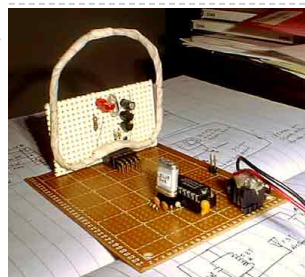
122. DS interface test tool using ATtiny2313 microcontroller The DS protocol was designed to provide firmware-based bidirectional host-to-slave inter processor communications for situations in which no hardware solution is available and the host and/or the slave is incapable...

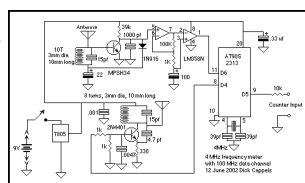


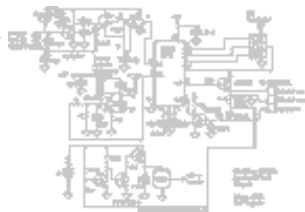
123.  Longboard Wheel Display using AVR microcontroller If you're a resident of Seattle, I highly recommend you check out the Bubble events group. One of their regular events over the summer is something called "Nocturnal Push" where...

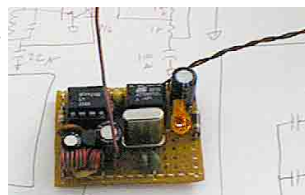
124.  AttoBasic HOME using Atmega168 microcontroller This is the central location for resource for all versions of AttoBasic for Atmel AVR controllers and Adurino computers Devices directly supported include ATMEGA328, ATMEGA168, ATMEGA88M, ATMEGA32U4, ATMEGA32, ATMEGA163, ATMEGA8515,...

125.  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...

126.  1750 Meter Lower 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...

127.  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...

128.  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...

129.  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...

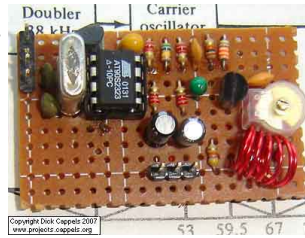
130. Minimum Mass Wireless LCD Display using ATtiny2313 microcontroller A 2 line X 16 character LCD display that is battery operated and works without an external connection. The basic Minimum Mass Wireless Coupler technology is described and...



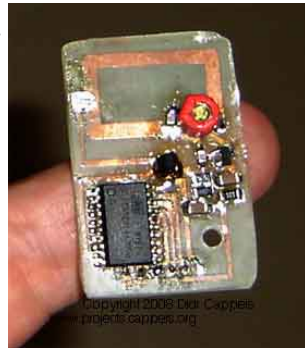
131. A Low Power PLL FM Transmitter using LMX1601 and ATtiny2313 microcontroller An LMX1601 Phase locked loop, a discreet FET VCO, and an AVR micro controller combine to make a stable, easy to use monophonic FM transmitter that includes a an audio...



132. 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,...



133. 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....



134. 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...



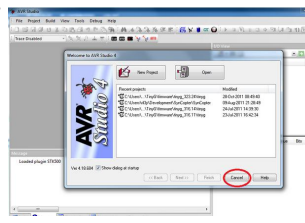
135. A serial interface for the Truly MTC-C162DPLY-2N using ATmega8515 The 10k potentiometer, just above the ISP connector near the lower middle of the board, is used to adjust the display contrast according to your vertical viewing angle. DOWNLOADS ATTINY2313/AT90S2313 AVRStudio...



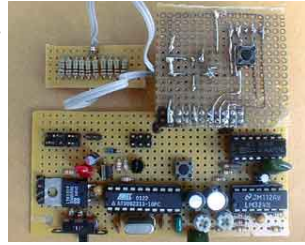
136. Remote Controlled (R/C) Airplane LED Flasher using ATTINY12 microcontroller Downloads Download the AVRStudio assembly source for the program: T12astrobe081028A Download the AVRStudio assembly source for the include file: T12astrobe081028A.hex Find updates at [www.projects.cappelz.org](http://www.projects.cappelz.org) Overview This was designed to flash...



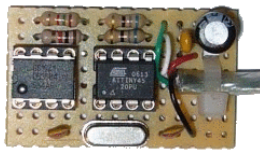
137. avr studio 4 download Atmel AVR Studio 4: AVR Studio 4 is an IDE, launched by atmel for providing better programming environment. It can be used to program all the famous series of atmel...



138. 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...



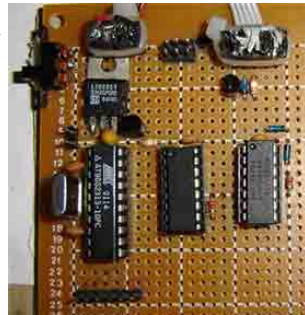
139. I2C Tiny USB using ATtiny45 microcontroller Attach any I2C client chip (thermo sensors, AD converter, displays, relais driver, ...) to your PC via USB ... quick, easy and cheap! Drivers for Linux, Windows and MacOS available....



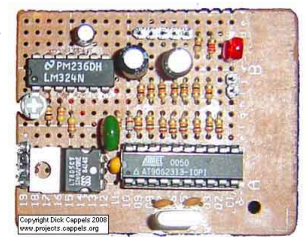
140. RS-232 Freq. Meter/Pulse Generator Based on Atmel ATtiny2313 using microcontroller Simplicity in circuitry was the design direction. Zero mass (firmware only with no physical components) would be the ultimate achievement. This instrument doesn't have any front panel controls because the user...



141. 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...



142. 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...



143. 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...



144. 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...



145.



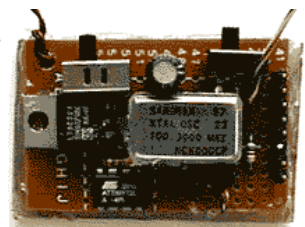
An Even Better LC Meter Based on the AVR ATTINY861 An improvement over "A Pretty Good LC Meter." Enhanced capacitance self calibration, accurate operation without precision components, and only one micro controller. Downloads Download or view the WINAVR main source...

146.



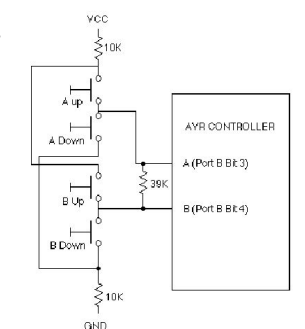
Serial interface with 2X16 LCD display using ATmega8515 microcontroller The 10k potentiometer, just above the ISP connector near the lower middle of the board, is used to adjust the display contrast according to your vertical viewing angle. DOWNLOADS ATTINY2313/AT90S2313 AVRStudio...

147.



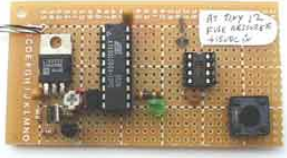

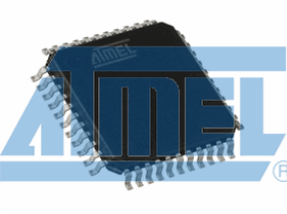


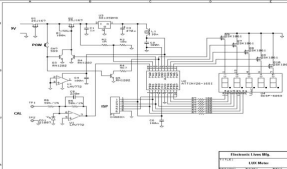
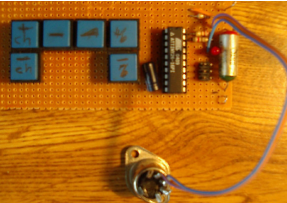
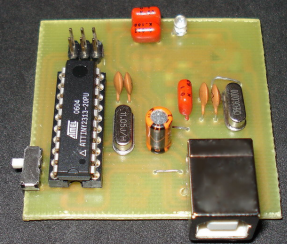
100 MHz RF oscillator using ATtiny12 microcontroller I needed a frequency reference for tuning up the RS-232 to 100 MHz RF desktop channel adapter elsewhere on this site, when I found this Saronix crystal oscillator in my...

148.

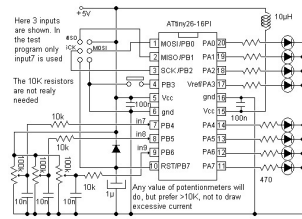


Decoding 4 buttons with two I/O's on AVR using ATtiny12 microcontroller Just the solution for AVR applications in which I/O is tight, such as the ATtiny12. This should work well on other kinds of controllers that have independently controlled I/O direction...

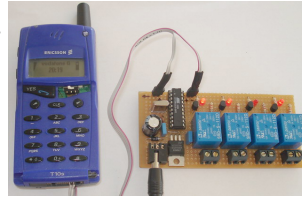
149. EEPROM Driver for AVR with RAM using ATtiny15 microcontroller Download the test program with driver: i2cm030710F.asmI had been putting off writing a driver for some 24LC64 and 24LC256 EEPROMS I was thinking about using, when I came across a...

150.  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...
- 
151.  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..."...
- 
152.  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...
- 
153.  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...
- 
154.  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,...
- 
155.  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,...
- 
156.  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...
- 
157.  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...

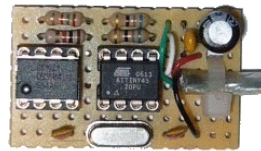
158. 10 Bit analog to digital converter using ATtiny26 microcontroller Study the Analog to Digital capabilities of Atmel ATtiny26. This tiny but mighty IC is really a miracle. One special thing is the internal 10-inputs multiplexed ADC circuit which can...



159. 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...



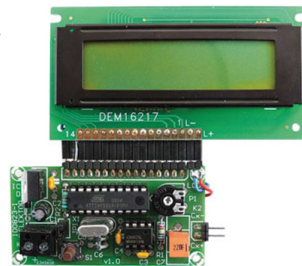
160. i2c interface to USB interface using attiny45 microcontroller Attach any I2C client chip (thermo sensors, AD converter, displays, relais driver, ...) to your PC via USB ... quick, easy and cheap! Drivers for Linux, Windows and MacOS available....



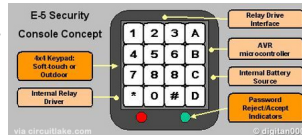
161. DC Servomotor Controller System Meter using ATtiny2313 microcontroller The ATtiny2313-based project is an experiment on the closed loop DC servomotor control system (SMC) by Elm Chan. It can be used for practical use with/without some modifications. The closed...



162. 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: <math>< 1 \text{ pF}</math>...



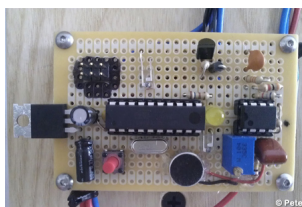
163. AVR Security Keypad Lock using ATtiny2313 microcontroller The Security Keypad Lock Project is a basic access control system based on ATtiny2313. It can be modified to protect just about anything. The "Code Lock" ability will allow the...



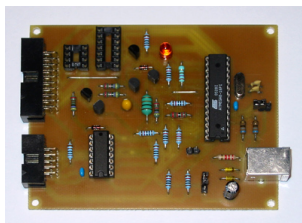
164. AVR LED Candle using ATtiny85 microcontroller This LED candle is built to mimic the look of a traditional candle without the dangers associated with an open flame. It uses high brightness LED and is controlled by...



165. 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...

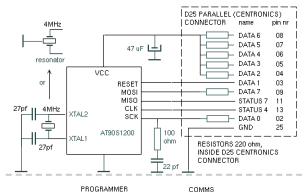


166.



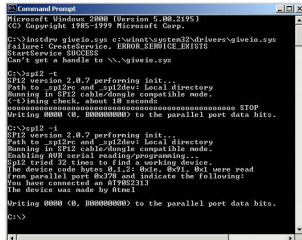
STK500 Compatible ISP using AVR microcontroller AVR-Doper is an STK500 compatible In System Programmer (ISP) and High Voltage Serial Programmer (HVSP). It comes with a built-in USB to Serial adaptor to connect to modern host computers...

167.



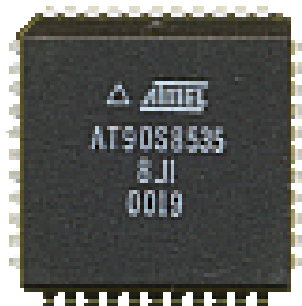
Low-cost AVR programmer Before using this programmer.... Be carefull with using this programmer, because it has no insulation circuitry! Especially when using high voltages e.g. 110/230 Vac on your project. One mistake and...

168.



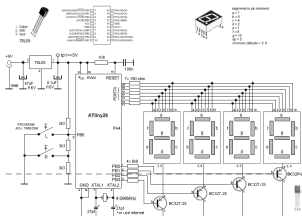
SP12 serial programmer software SP12 supports the following devices: AT90S1200, AT90S2313, AT90S8515, AT90S4414, AT90S2323, AT90S4434, AT90S8535, AT90S2343, ATtiny22, AT90S2333, AT90S4433, ATtiny12, ATtiny13, ATtiny15L, ATtiny26, ATtiny25, ATtiny45, ATtiny85, ATtiny2313, ATtiny861, ATmega103, ATmega603, ATmega161, ATmega162, ATmega163,...

169.



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...

170.

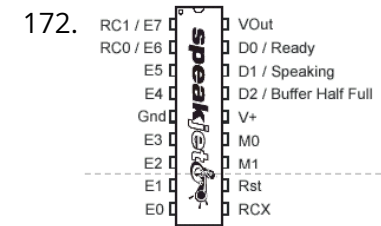
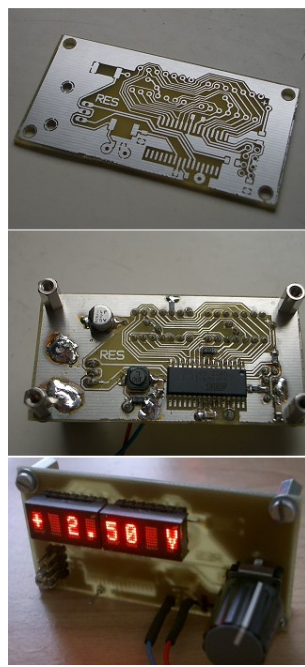


White 7-segments clock ATtiny26 Part list 1x ATtiny26 1x xtal 4.096MHz 2x 27pf ceramic 4x 7-segment white CC 2x pushbutton 1x 78L05 1x 47uF/16V electrolytic 1x 0.1uF/16V tantalium 1x 10k 1x 100n multilayer 8x...

171.

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...



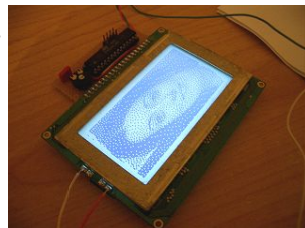


Controlling SpeakJet with an AVR microcontroller using ATmega88 microcontroller Core Features: · Programmable, 5 channel synthesizer. · Natural phonetic speech synthesis. · DTMF and other sound effects. · Programmable control of pitch, rate, bend and volume. · Programmable power-up...

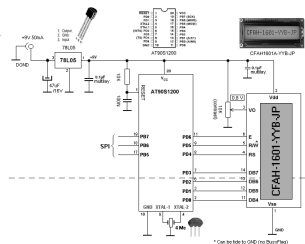
173. Switching between Red, Green and Blue (or Blue1 or/and Blue2 for an RGBB type) using AVR microcontroller Switching between Red, Green and Blue (or Blue1 or/and Blue2 for an RGBB type): An RGB LED is a LED which has three (or four for an RGBB type) semi-conductor...



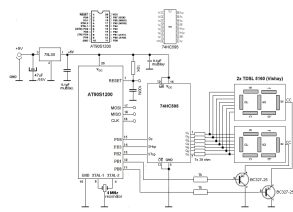
174. A GLCD connected to an AVR microcontroller using ATmega8 microcontroller A GLCD connected to an AVR microcontroller The PVG120602EGE is a 128x64 pixel graphic (grey) LCD with lightblue EL backlight and two KS0108 controller chips and one KS0107 line (columns)...



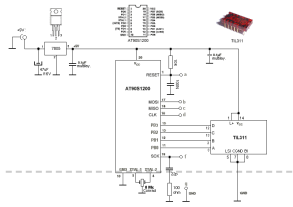
175. Pinning LCD display 1601 using microcontroller Pinning LCD display 1601A: Pin no. Symbol Function 1 Vss GND 2 Vdd + 5V 3 Vo Contrast Adjustment 4 RS H/L Register select signal 5 RW H/L Read/write signal...



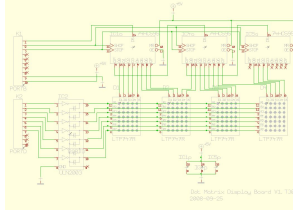
176. Controlling 7-segments LED displays using AVR microcontroller The many possibilities....Non Multiplexed: 1. One or two displays directly to the i/o's 2. One display with a 74LS247 3. Two displays with a 74HC595 and two 74LS247 Multiplexed: 1....



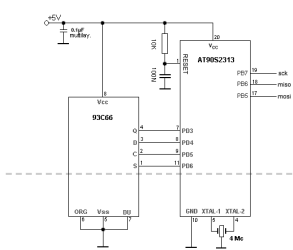
177. TIL311 / INL0397-1 Hexadecimal Display using AVR microcontroller Pin numbers: PIN 1 LED SUPPLY VOLTAGE PIN 2 LATCH DATA INPUT B PIN 3 LATCH DATA INPUT A PIN 4 LEFT DECIMAL POINT CATHODE PIN 5 LATCH STROBE INPUT...



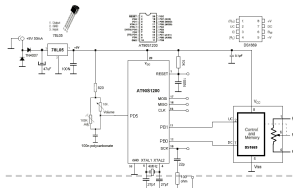
178. Dot Matrix Scrolling Message using AVR microcontroller Description This is a Dot Matrix Scrolling Sign. A Dot Matrix Display has an 5x7 led matrix with 5 columns and 7 rows. The display is controlled by the AVR...



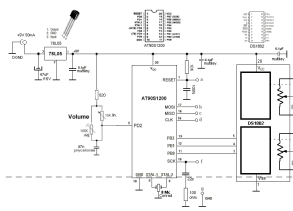
179. 93C66 EEPROM chip with an AVR microcontroller How to program a 93C66 EEPROM chip with an AVR microcontroller? The 93C66 is a serially (MICROWIRE) Electrically Erasable Programmable ROM (EEPROM) chip with 4 kbit (4096 bit, can be...



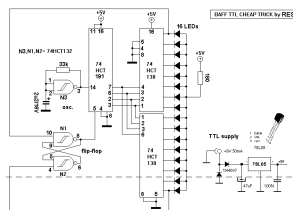
180. DS1669 Digital Potmeter UP/DOWN using microcontroller Part list: 1x AT90S1200-12PI 1x DS1669 (Dallas) 1x 78L05 2x 1N4007 1x 4MHz X-tal 2x 27pf 1x 22pF 1x 47uF/16V 1x 100n polycarbonate 3x 100n multilayer 1x 100 ohm 1x 10k...



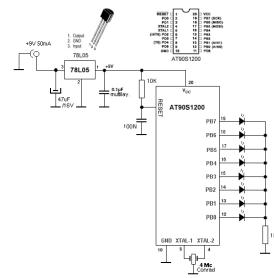
181. DS1802 Digital Volume Control using microcontroller Part list: 1x AT90S1200 1x DS1802 (Dallas) 1x 78L05 1x 8MHz ceramic resonator 1x 22pF 1x 47uF/16V 1x 47n polycarbonate 4x 100n multilayer 1x 100 ohm 1x 10k ohm 1x...



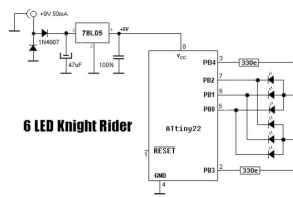
182. 16 LED Knight Rider using 74HCT138 microcontroller Part list: 8x LED (red) 1x 180 ohm 1x 10k ohm 1x 33k ohm 1x 2u2/16V 1x 74HCT191 1x 74HCT132 2x 74HCT138 1x 78L05 1x 47uF/16V 1x 100n 2x 1N4007...



183. 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...

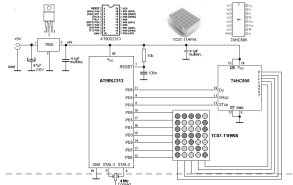


184.



6 LED Knight Rider using ATtiny22 microcontroller Part list: 6x high eff. LED 2x 330 ohm 1x ATtiny22\* 2x 1N4007 1x 100n 1x 47uF/16V 1x 78L05 \* The ATtiny22 is obsolete, replace with one of the following...

185.



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...

186.



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....

187.



Kitchen Timer using ATTiny2313 microcontroller At the moment I do not have a kitchen timer. Not because I do not want one, (they're cheap enough to buy) but because it seems impossible to buy a...

188.

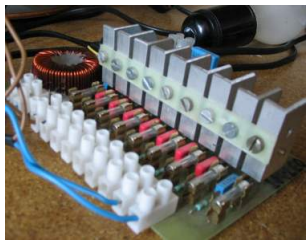


Beamer Control using attiny2313 microcontroller Beamer Control: Schematic Source code I made this project for Henk. He has a beamer for watching movies and a motor controlled screen. The purpose of this project is very...

189. Door Opener using ATTiny2313 microcontroller Door Opener: Schematic Source code I made this little project for Hans, yet another brother of mine. (I have 5 brothers.) He had a garage door to control and bought...



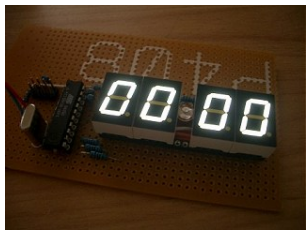
190.



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...

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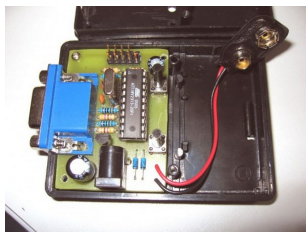
191.



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...

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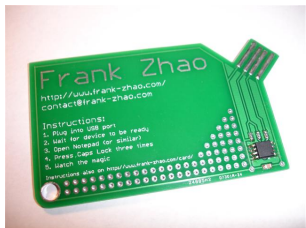
192.



VGA monitor tester using ATtiny2313 microcontroller If you are a computer technician and want to avoid the need of a PC on your desk to generate test rasters, this is something you need to build. This...

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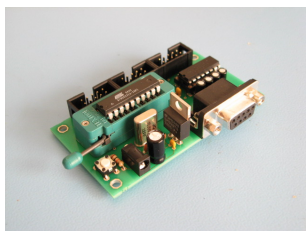
193.



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...

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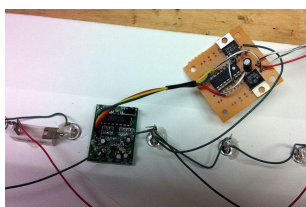
194.



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...

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195.



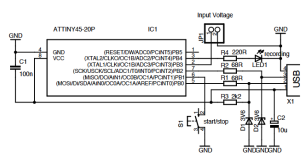
Automate lights in your kitchen area using ATtiny84 microcontroller This project describes an automatic light system for kitchen sink where you need sufficient light to properly clean your dishes and vegetables. It uses an ATtiny84 microcontroller with a PIR...

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196. 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...

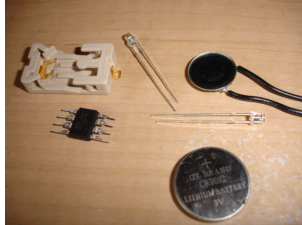


197.



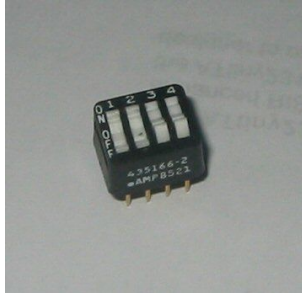
Easy Data Logger with Virtual USB using ATtiny45 microcontroller "V-USB is a software-only implementation of a low-speed USB device for Atmel's AVR® microcontrollers, making it possible to build USB hardware with almost any AVR® microcontroller, not requiring any additional...

198.



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...

199.



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...

200.



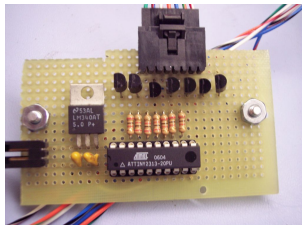
Halloween Robot using Attiny microcontrollers Halloween Robot controlled by an old wingman joystick. I don't recommend this for beginners with electronics only because some things like joysticks and power adapters are not all the same...

201.

| Name | Graphic Symbol | Algebraic Function                | Truth Table   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|------|----------------|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AND  |                | $F = A \cdot B$<br>or<br>$F = AB$ | <table border="1"> <tr><td>A</td><td>B</td><td>F</td></tr> <tr><td>0</td><td>0</td><td>0</td></tr> <tr><td>0</td><td>1</td><td>0</td></tr> <tr><td>1</td><td>0</td><td>0</td></tr> <tr><td>1</td><td>1</td><td>1</td></tr> </table> | A | B | F | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 |
| A    | B              | F                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 0    | 0              | 0                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 0    | 1              | 0                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1    | 0              | 0                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1    | 1              | 1                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| OR   |                | $F = A + B$                       | <table border="1"> <tr><td>A</td><td>B</td><td>F</td></tr> <tr><td>0</td><td>0</td><td>0</td></tr> <tr><td>0</td><td>1</td><td>1</td></tr> <tr><td>1</td><td>0</td><td>1</td></tr> <tr><td>1</td><td>1</td><td>1</td></tr> </table> | A | B | F | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| A    | B              | F                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 0    | 0              | 0                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 0    | 1              | 1                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1    | 0              | 1                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1    | 1              | 1                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| NOT  |                | $F = \bar{A}$<br>or<br>$F = A'$   | <table border="1"> <tr><td>A</td><td>F</td></tr> <tr><td>0</td><td>1</td></tr> <tr><td>1</td><td>0</td></tr> </table>   | A | F | 0 | 1 | 1 | 0 |   |   |   |   |   |   |   |   |   |
| A    | F              |                                   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 0    | 1              |                                   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1    | 0              |                                   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| NAND |                | $F = \overline{AB}$               | <table border="1"> <tr><td>A</td><td>B</td><td>F</td></tr> <tr><td>0</td><td>0</td><td>1</td></tr> <tr><td>0</td><td>1</td><td>1</td></tr> <tr><td>1</td><td>0</td><td>1</td></tr> <tr><td>1</td><td>1</td><td>0</td></tr> </table> | A | B | F | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 |
| A    | B              | F                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 0    | 0              | 1                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 0    | 1              | 1                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1    | 0              | 1                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1    | 1              | 0                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| NOR  |                | $F = \overline{A+B}$              | <table border="1"> <tr><td>A</td><td>B</td><td>F</td></tr> <tr><td>0</td><td>0</td><td>1</td></tr> <tr><td>0</td><td>1</td><td>0</td></tr> <tr><td>1</td><td>0</td><td>0</td></tr> <tr><td>1</td><td>1</td><td>0</td></tr> </table> | A | B | F | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 |
| A    | B              | F                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 0    | 0              | 1                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 0    | 1              | 0                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1    | 0              | 0                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1    | 1              | 0                                 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

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...

202.

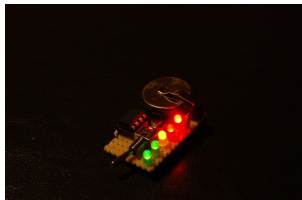


Control Anything with one AVR pin using Attiny2313 microcontroller This instructable shows how to control a group of led's with one microprocessor output. The micro I will be using is an Atmel Attiny2313. Step: 1 Parts and Tools Parts:...

203. Ambient Light Gift Badge using ATTiny13 microcontroller After Christmas I was in the situation that my nephew's birthday celebration came near. I asked him if he had a special on his wish list and he told me...



204.



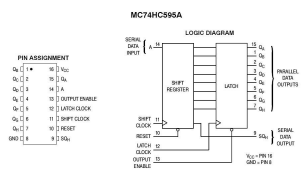
3 Easy Holiday Gifts using ATTiny microcontroller Every year the holiday season rolls around and I get stuck on what to give for my friends and family. People always say that it's better to make the gift...

205.



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...

206.



How to use a 74HC595 Shift Register with a using AVR ATtiny13 microcontroller If you have been playing with microcontrollers and electronics then you have likely seen LED dot matrix displays and other projects that use shift registers like 7-segment displays and more....

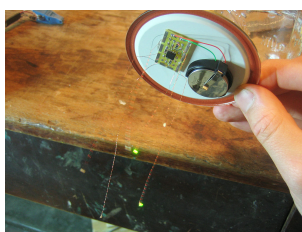
207.



(C) HWTech, 2008

\$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...

208.



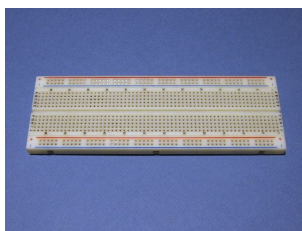
Jar of Fireflies using AVR ATTiny45 microcontroller This project uses green surface-mount LED's along with an AVR ATTiny45 microcontroller to simulate the behavior of fireflies in a jar. (note: the firefly behavior in this video has been...

209.

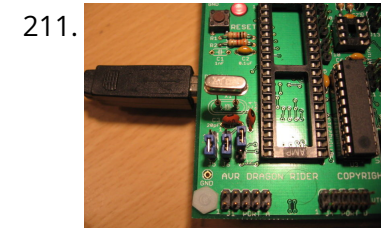


Door Activated LED Lighting using Hall Effect Sensors using Attiny85 microcontroller I've been meaning to make something cool for my dorm room this coming semester and decided that some custom closet lights would look great. In this Instructable, I'll show you...

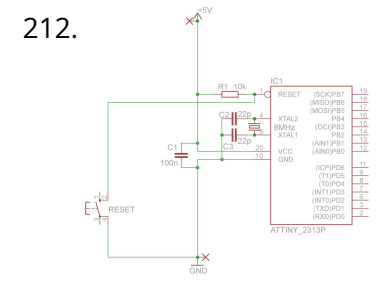
210.



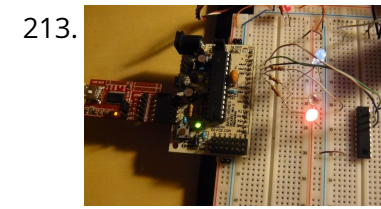
Getting Started with Atmel AVR and BASCOM using attiny26 microcontroller I have seen plenty of Instructables showing how to work with microprocessors, but they all assume that you have worked with them before and know what you are doing. I...



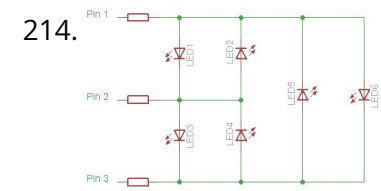
211. How to use the Dragon Rider 500 with your AVR Dragon using ATtiny2313 microcontroller This instructable is a crash course in how to use some of the features of the Dragon Rider 500 from Ecros Technologies. Please be aware that there is a very...



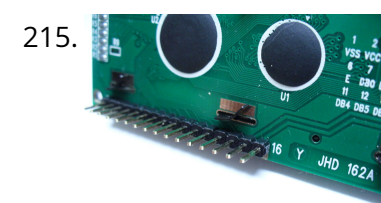
212. Make a breadboard adapter for your AVR microcontroller using attiny2313 If you like to play around with micro controllers you know this hustle: You want to test a part of a program and first you need to completely wire up...



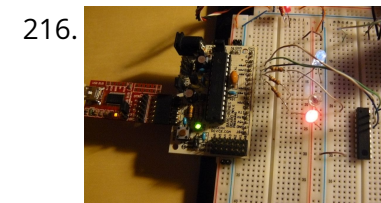
213. How to program a AVR (arduino) with another arduino using attiny2313 microcontroller \* you've got your arduino with atmega168 and you bought an atmega328 at you local electronics store. It doesn't have an arduino bootloader \* you want to make a project...



214. 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...



215. How to control a 16x2 LCD using an AVR ATtiny2313 If you are just getting into microcontrollers there's alot to know as you have likely found out. There's alot of good online tutorials for the Atmel AVR's and chances are...

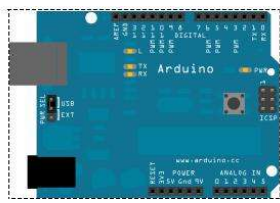


216. How to program a AVR (arduino) with another arduino using atmega168 microcontroller This instructables is usefull if: \* you've got your arduino with atmega168 and you bought an atmega328 at you local electronics store. It doesn't have an arduino bootloader \* you...



217. 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...

218. Turn Your Arduino Into an ISP Learn how to turn your Arduino into an AVR In System Programmer. This will allow you to burn bootloaders onto new chips or program AVR's without a bootloader. Step 1:...



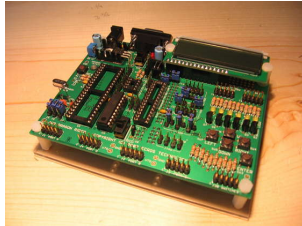
219.



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...

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220.



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...

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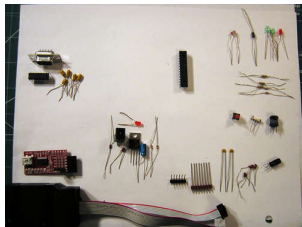
221.



Slaveflash with Attiny24 ver. 2.0 You might have noticed the Slaveflash I built with an Attiny 24, the instructable can be found here: [Slaveflash-trigger-for-digital-with-Attiny24](#) After building the first prototype I collected all my old flashes...

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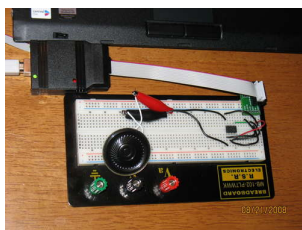
222.



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...

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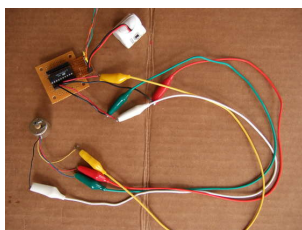
223.



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...

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224.



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

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225.

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...



226.

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...



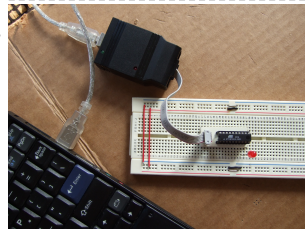
227.

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 -...



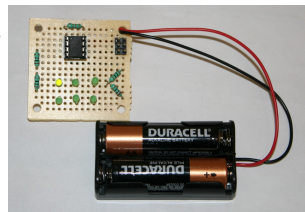
228.

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,...



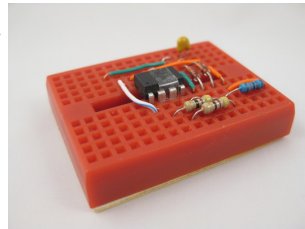
229.

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...



230.

VUSBTiny AVR SPI Programmer Using ATtiny85 after making a usbtiny isp programmer and using it for 6 months, i was looking at making another one for carrying around. i like the simplicity of the usbtiny isp...

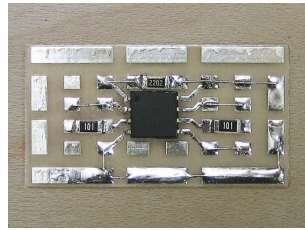


231.

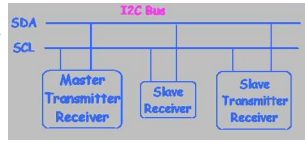
Programmable LED using Atmel ATtiny13v Microcontroller Inspired by various LED Throwies, blinking LEDs and similar instructables I wanted to do my version of an LED controlled by a microcontroller. The idea is to make the LED...



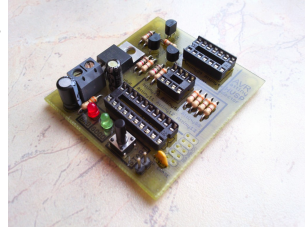
232. Jar of Fireflies using AVR ATTiny45 Microcontroller This project uses green surface-mount LED's along with an AVR ATTiny45 microcontroller to simulate the behavior of fireflies in a jar. (note: the firefly behavior in this video has been...



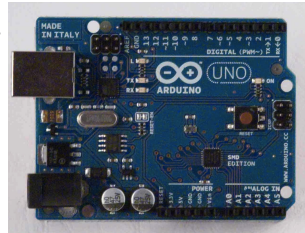
233. I2C Bus for ATtiny and ATmega168 I love the Atmel AVR microcontrollers! Since building the Ghetto Development System described in this Instructable, I've had no end of fun experimenting with the AVR ATTiny2313 and the ATmega168...



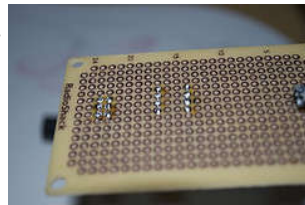
234. Repair dead AVR's – Attiny fusebit doctor (HVSP) Did you make a mistake while programming fusebits, or purposely disabled reset pin (RSTDISBL) or ISP programming (SPIEN)? No need to buy or make inconvenient HV programmer only for unlock...



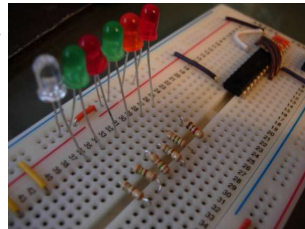
235. ATtiny programming with Arduino After this Instructable you should be able to program an ATtiny85/45 with an arduino. It may sound complex but it really isn't. After doing some research I could not find...



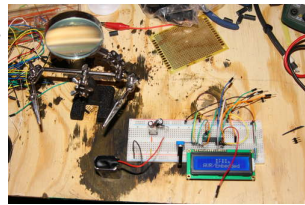
236. ISP 6 pin to 8 Pin Socket Using ATTiny45 The reason i mainly built this project was to program the ATTiny45, which has a 8 pin connection, while my USBtinyISP (from Ladyada) only has a 10 pin and 6...



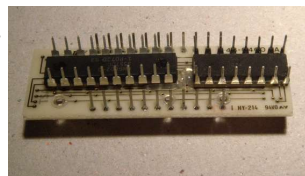
237. Micro controller programming: Making a set of traffic lights using Microcontroller ATTiny2313 So you wana learn how to programme a micro controller? This tutorial has been designed as a next step, following the fantastic tutorial 'Ghetto Programming: Getting started with AVR microprocessor...

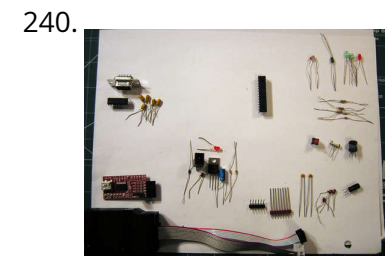


238. AVR LCD Namebadge Using ATTiny2313 So, you're going to a conference/meetup/nerdfest and you want to do something that sets you apart from normal people. An LCD namebadge powered by an ATTiny2313 is a great way...



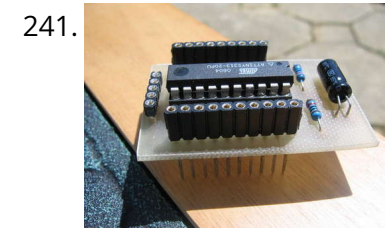
239. LoveBox – The box of love using ATTiny2313 Microcontroller As most guys I don't tell my wife that "I love you" as often as I should, but this little gadget will at least improve that situation as bit. So...





240. 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...

---



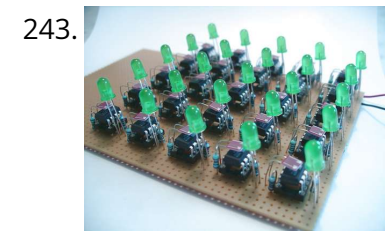
241. AVR mini board with additional boards using attiny2313 microcontroller Somewhat similar to PIC 12f675 mini protoboard, but extended and with additional boards. Using attiny2313. Step 1 Scheme Let us first start with a scheme. The scheme is pretty obvious...

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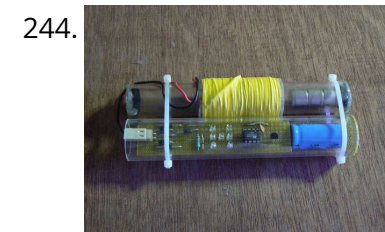
242. Led dimmer 2 channels using Attiny13 microcontroller This is Attiny13 2 channels dimmer with 5 program modes and speed control: 1. Dim between 2 channels 2. Dim 2 channels together 3. Blink mode 1 4. Blink mode...

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243. 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...

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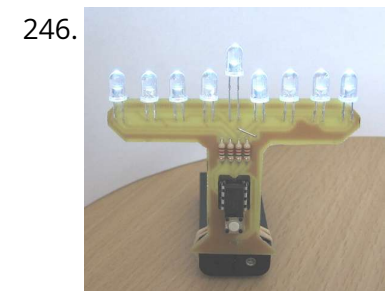
244. Faraday For Fun: An Electronic Batteryless Dice using Microcontroller ATTiny13 There has been a lot of interest in muscle powered electronic devices, due in large part to the success of Perpetual Torch Perpetual Torch, also known as battery-less LED torch....

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245. 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...

---



246. 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....

---

247. 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...



248. 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 an LED that blinks in a pattern using a microcontroller. The blink pattern is an...

249. 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...

250. LED Scrolling Dot Matrix Font & Graphics Generator 5x8 5x7 8x8 using the AVR ATtiny2313 and AVRStudio If you are into geeking it out with projects of the electrical kind, then you have likely wanted to create a dot matrix display or a POV. To do this...

|    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|
| 0  | 1  | 1  | 1  | 0  | 0  | 0  | 0  |
| 1  | 0  | 0  | 0  | 1  | 0  | 0  | 0  |
| 1  | 0  | 0  | 0  | 1  | 0  | 0  | 0  |
| 1  | 0  | 0  | 0  | 1  | 0  | 0  | 0  |
| 1  | 1  | 1  | 1  | 1  | 0  | 0  | 0  |
| 1  | 0  | 0  | 0  | 1  | 0  | 0  | 0  |
| 1  | 0  | 0  | 0  | 1  | 0  | 0  | 0  |
| 1  | 0  | 0  | 0  | 1  | 0  | 0  | 0  |
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 7F | 88 | 88 | 88 | 7F | 00 | 00 | 00 |

251. LED Binary Calculator using Microcontroller ATtiny2313 You can't calculate binary values "as is" on most handheld calculators and using the windows one is just a pain, so i decided to make my very own (binary only) calculator....

252. 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 -...

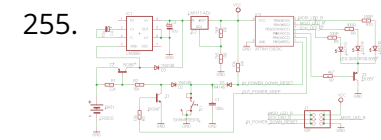


253. Power your Arduino/AVR with a Hand-Cranked Battery If you've ever wanted to power your Arduino or AVR from a battery for development testing (batteries have different power delivery qualities than, say, transformed AC or even a regulated...

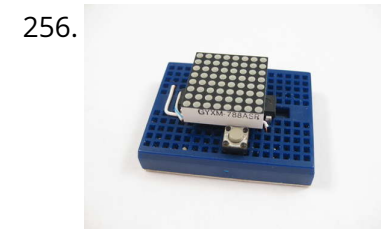


254. Mechanized Android Figure using Microcontroller ATtiny44A These Android figures are cute, but they don't actually do anything. Let's change that. Have a look at the video: These are the steps to make an Android that reacts...





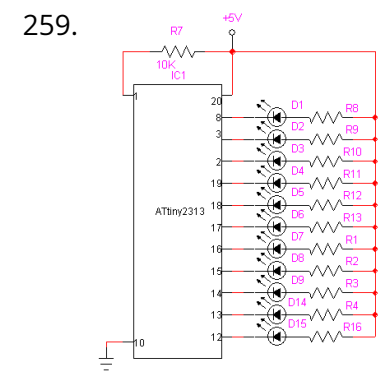
255. Rainbow glowing ping pong Using ATtiny 13 While I was finalizing e-snowflake project, I imagined that single RGB 5050 LED would create nice rainbow effect if placed inside a ball like ping-pong. You can find plenty of...



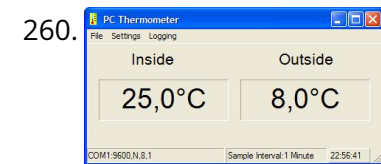
256. ATtiny2313 Multi-mode LED Matrix Clock This is a mutli-mode clock project based on attiny2313. it employs a 8x8 led matrix as display. with the limited resolution, this 12 hour clock shows time in 6 different...

257. Temperature Indicator Using attiny2313 microcontroller Description Features: Measures temperatures from -55°C to +125°C Three LED's to indicate in what range the temperature is. User definable thermostat with high and low settings Output via a relay...

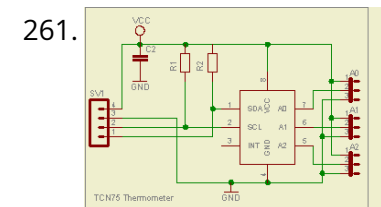
258. Stepper motor Driver Using AT2313 microcontroller Description With this circuit you can drive a unipolar stepper motor. It operates in full step mode. You can get a stepper motor from an old 5.25 disk drive. The...



259. 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



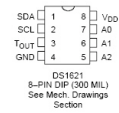
260. PC Thermometer Using ATTiny2313 Description With this project you can show the temperature on you PC. This thermometer plugs in on any free serial port. It gives temperature readings accurate to 0.5°C with no...



261. 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....

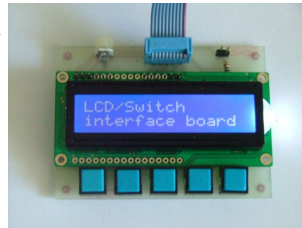
262. AVR GPS Locator using avr microcontroller In this project i have interfaced an GPS with AVR microcontroller, the ATtiny2313 gets the location from the GPS and display it over the LCD display. This project also have...

263. LCD Thermometer DS1621 Using AVR 2313 Description This small thermometer board can be connected directly to PORTD of the AVR 2313 Project board. It uses the Dallas DS1621 Digital Thermometer and Thermostat chip. The DS1621 measures...



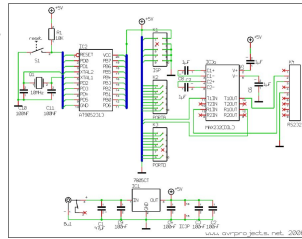
**PIN DESCRIPTION**  
SDA - 2-Wire Serial Data Input/Output  
SCL - 2-Wire Serial Clock  
GND - Ground  
TOUT - Thermostat Output Signal  
A0 - Chip Address Input  
A1 - Chip Address Input  
A2 - Chip Address Input  
VDD - Power Supply Voltage

264.



LCD Interface Board Using ATTiny2313 Description This board can directly connected to the STK 500 board or the ATTiny2313 ISP program board with a 10 pole flatcable on the 10 pin header of the STK500...

265.



ATTiny2313 Board RS232 Description This board is a small controller board on which you can build your projects. It is suited for educational use, experiments or prototyping. The board uses the AT2313 microcontroller...

266.



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...

267.



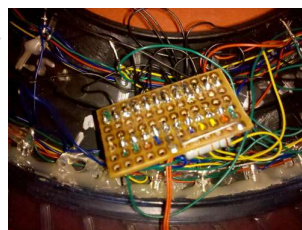
Ghetto Pixels - Building an open source BlinkM Using ATTiny45 Microcontroller Unless you've been living under a digital rock for the last few years, or just simply aren't interested in flashing lights, you'll already know about the awesomeness that is the BlinkM from...

268.



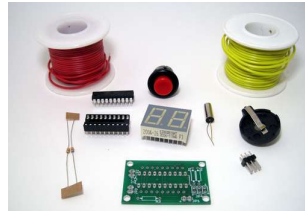
USB PCB Business Card Using ATtiny85 Microcontroller This is a business card that will type out some text when you plug it into a USB port. It uses a ATtiny85 microcontroller with V-USB based code to emulate...

269.

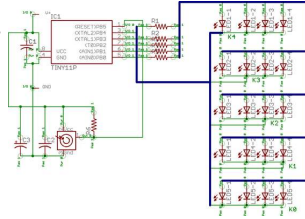


Using ATmega328 Microcontroller Custom Tron Disc Mod In this Instructable, I cover modding the store-bought Deluxe Identity Disc to an upgraded version with 64 leds, controlled by an AVR MCU. The upgraded version is costume-ready and would...

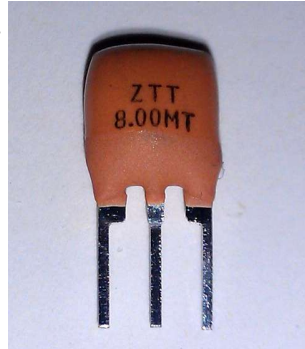
270. Using AtTiny2313 microcontroller Build an electronic polyhedral die Dice are fun. Polyhedral dice used in D & D are even more fun, particularly in big handfuls of different sizes. But a handful isn't always practical. Ever since I...



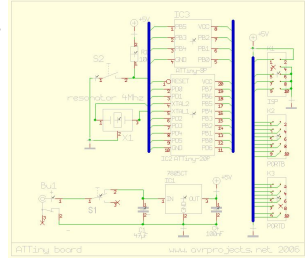
271. How to drive a lot of LEDs from a few microcontroller pins. Using the fact that many microcontroller pins have three states (+V, GND, or "high impedance", you can drive  $N*(N-1)$  LEDs from N pins. So the little 8 pin microcontroller like...



272. 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...



273. 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...



274. How Do You Make Your AVR Programmer Four Times Faster? (PRWEB) August 24, 2005 Up to now AVR microcontrollers have been programmed in a ZIF socket using parallel programming, or have been programmed in circuit using the In System Programming...

275. ZBasic Compiler Now Targets Atmel AVR Devices Generic ZBasic Compiler Elba Corporation announced today the availability of a new release of its ZBasic compiler, v4.0, that supports generic AVR devices. Previous versions of the compiler were capable...

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