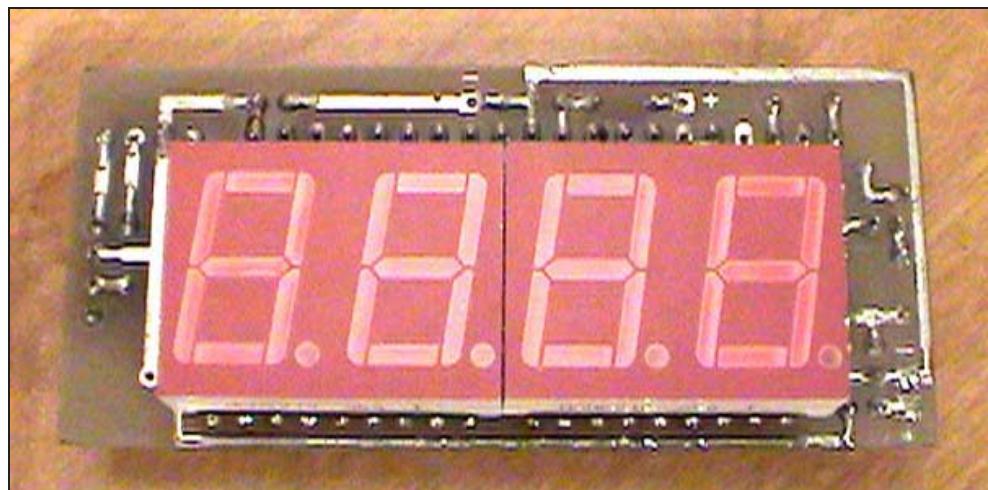


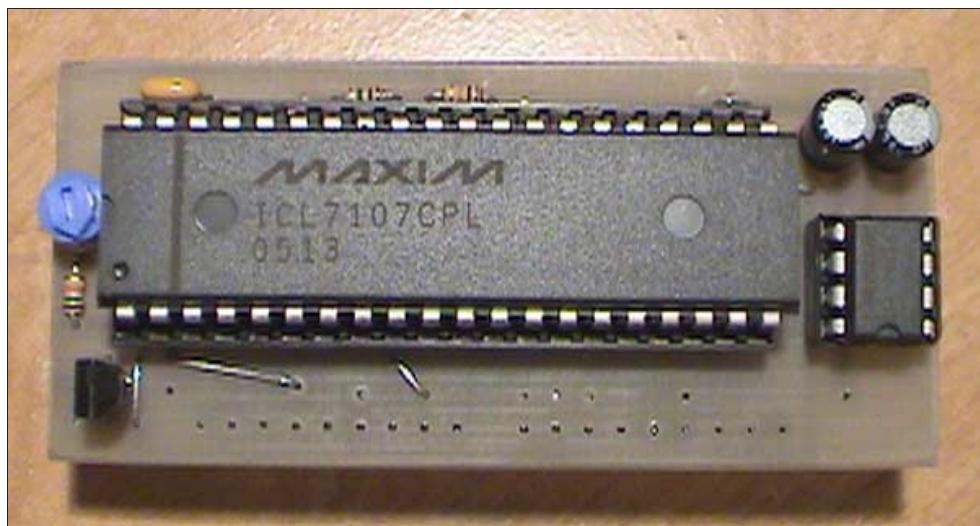
Part's List:		
1x - 220 Ohm Resistor 1x - 10K Resistor 1x - 15K Resistor 1x - 47K Resistor 1x - 100K Resistor 1x - 1M Resistor 1x 10K Pot	1x - 100pF Capacitor 1x - 10n Capacitor 1x - 100n Capacitor 1x - 220n Capacitor 1x - 470n Capacitor 2x - 10μF Capacitor	3x - 1N4148 Diode 1x - ICL7107 IC 1x - 7660 IC 2x - MAN6910 2-digit LED 7-segment Display

Technical Specifications:	
Supply Voltage: 5V Current Consumption: ~ 25mA	Measurement Accuracy: 199.9 V - 100mV Resolution



About this Circuit

This digital voltmeter is ideal to use for measuring the output voltage of your DC power supply. It includes a 3.5-digit LED display with a negative voltage indicator. It measures DC voltages from 0 to 199.9V with a resolution of 0.1V. The voltmeter is based on single ICL7107 chip and may be fitted on a small 3cm x 7cm printed circuit board. The circuit should be supplied with a 5V voltage supply and consumes only around 25mA.



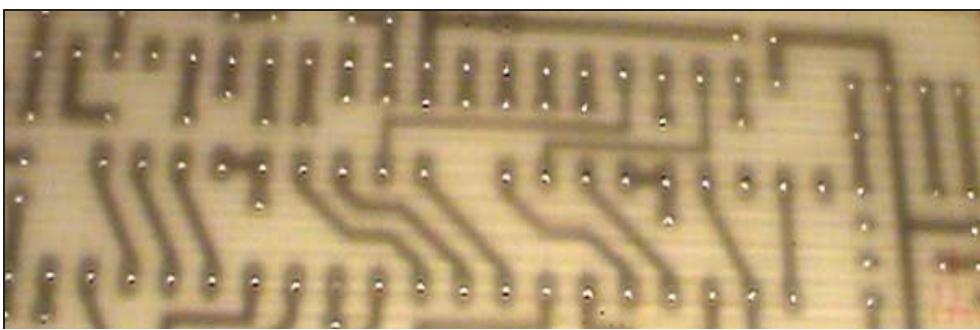
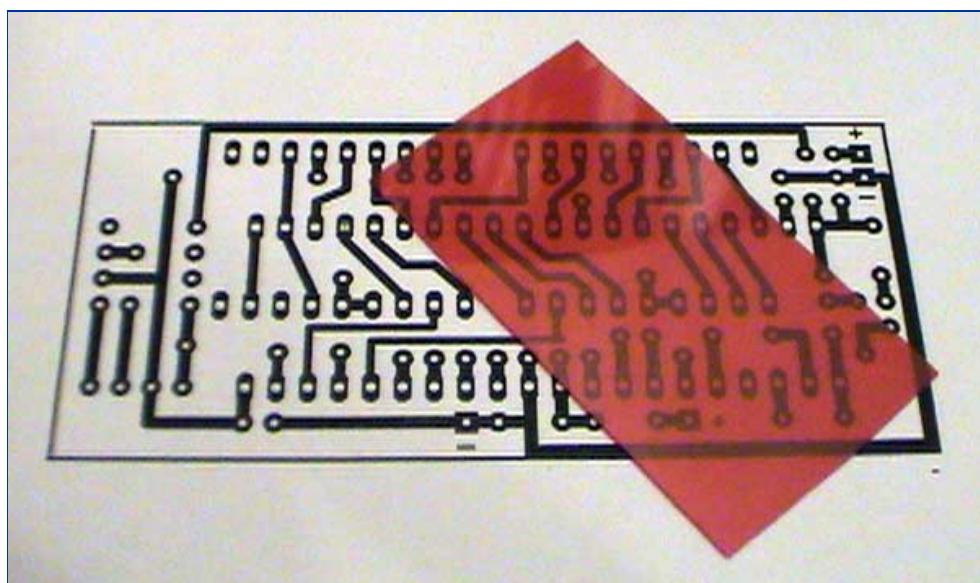
Construction Notes

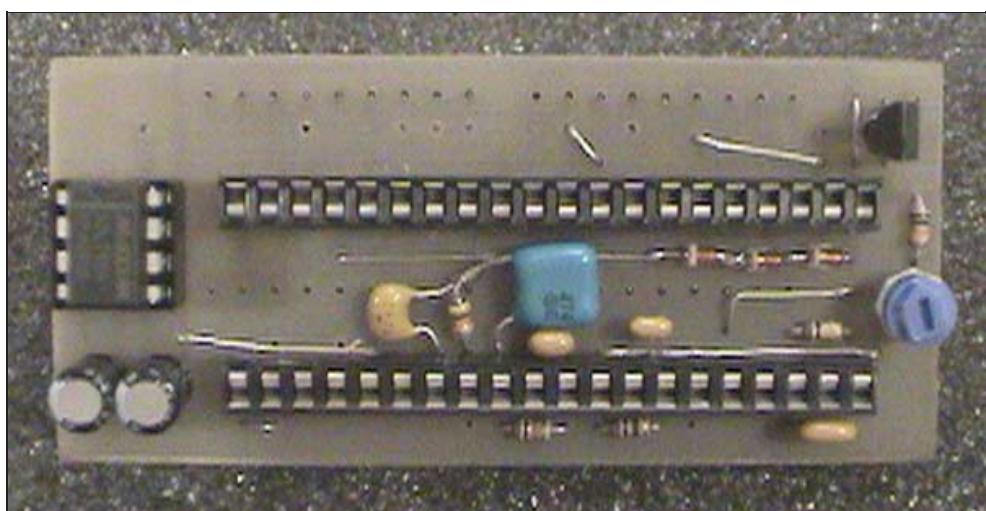
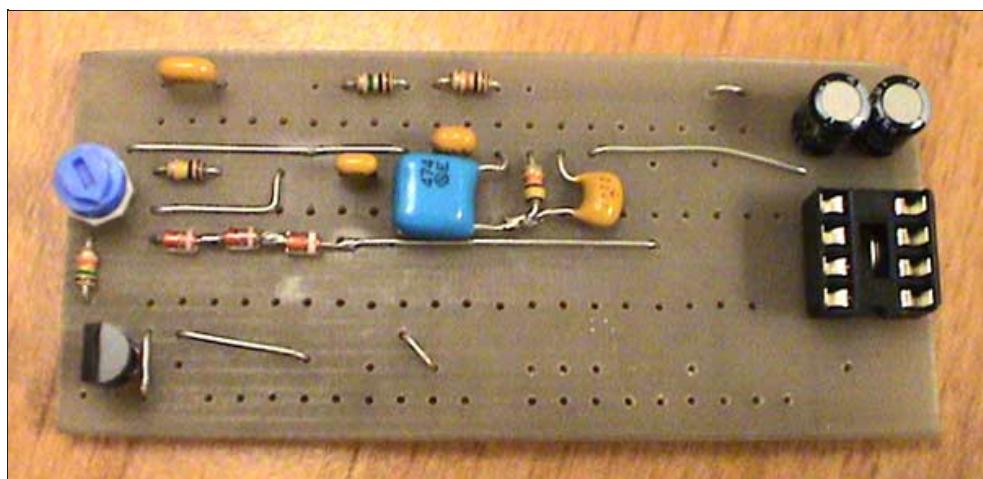
Brightness of the LED display segments can be varied by adding or removing 1N4148 small signal diodes that are connected in series. Use two 1N4148 diodes for higher LED display brightness.

The use of 7805 5V voltage regulator is highly recommended to prevent the damage of ICL7107, 7660 ICs and to extend the operating voltages.

220 Ohm resistor should be connected to the PIN 4 on the first LED display.

The voltmeter can also be configured to measure different voltage ranges and display higher voltage resolution. Replacing 1M with 100K resistor will allow to measure 0 - 19.99V voltages with 0.01V (10mV) accuracy.

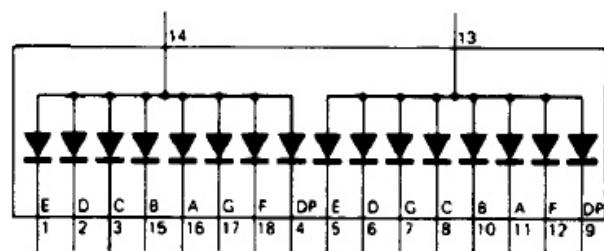




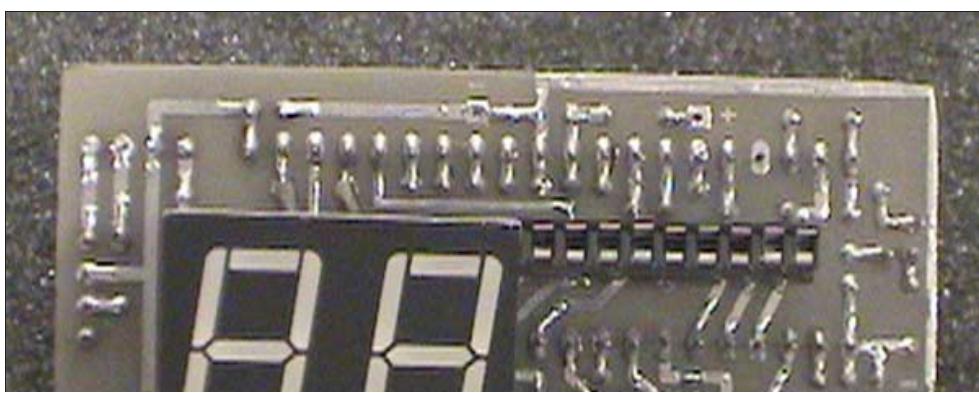
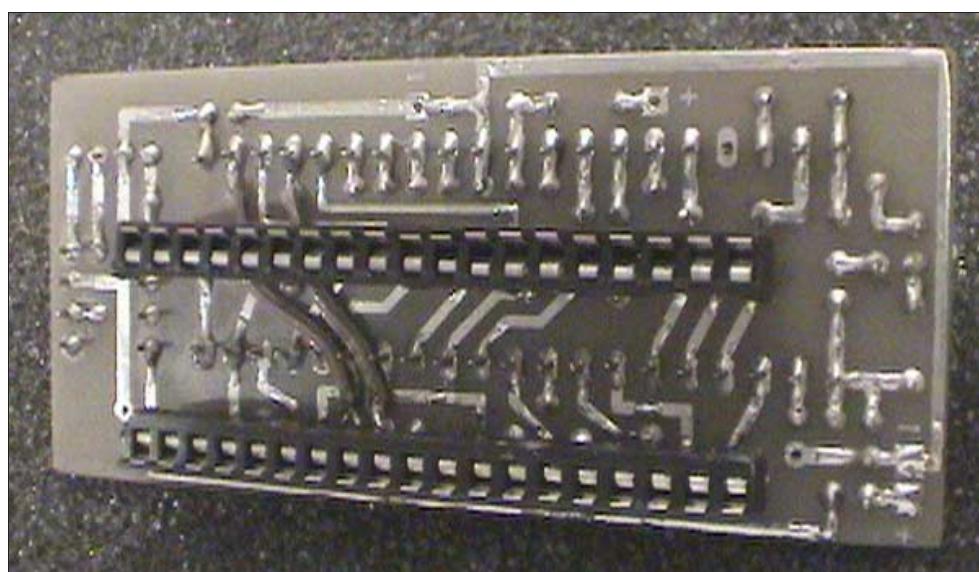
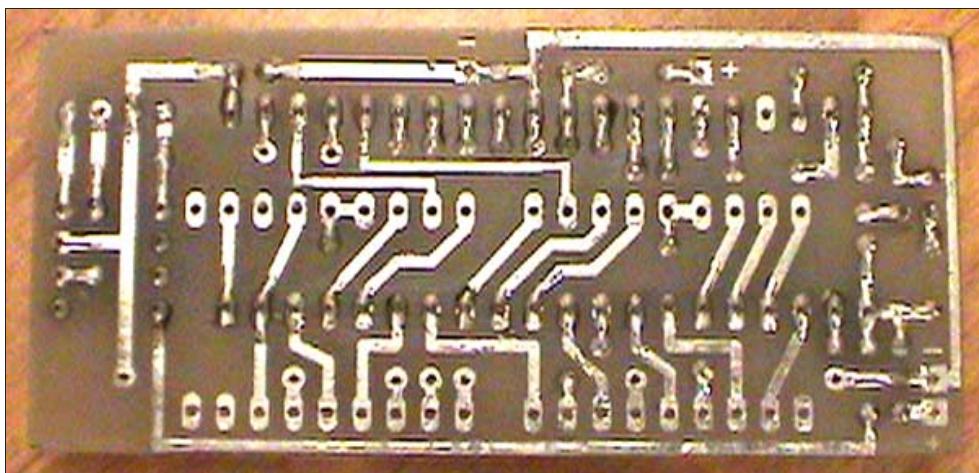
Calibration

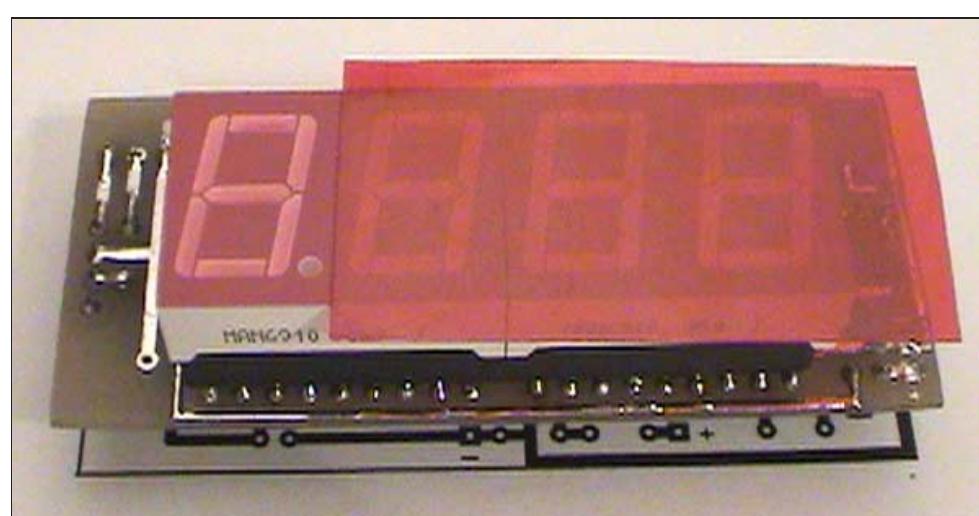
Use 10K potentiometer to set the reference voltage between PIN 35 and PIN 36 of the ICL7107 IC to 1V.

Seven Segment LED Display

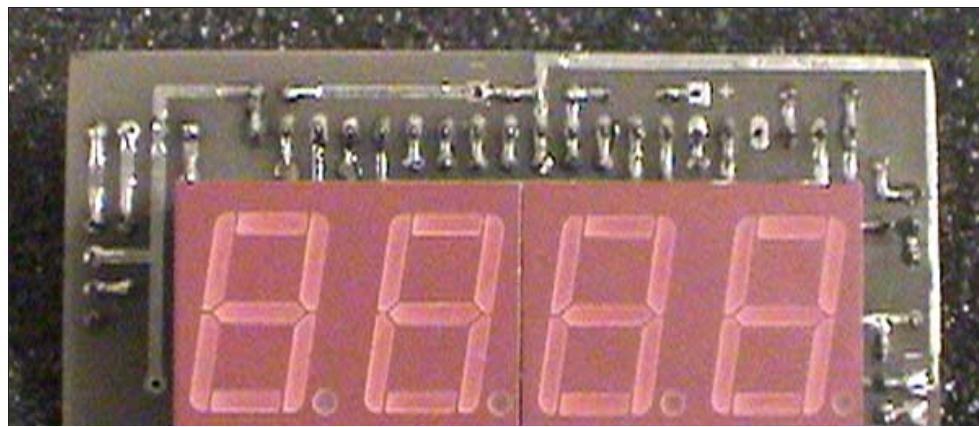
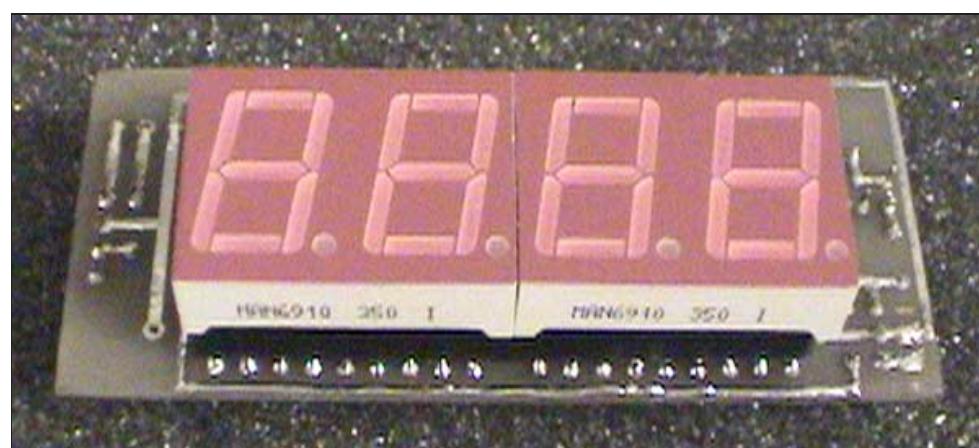


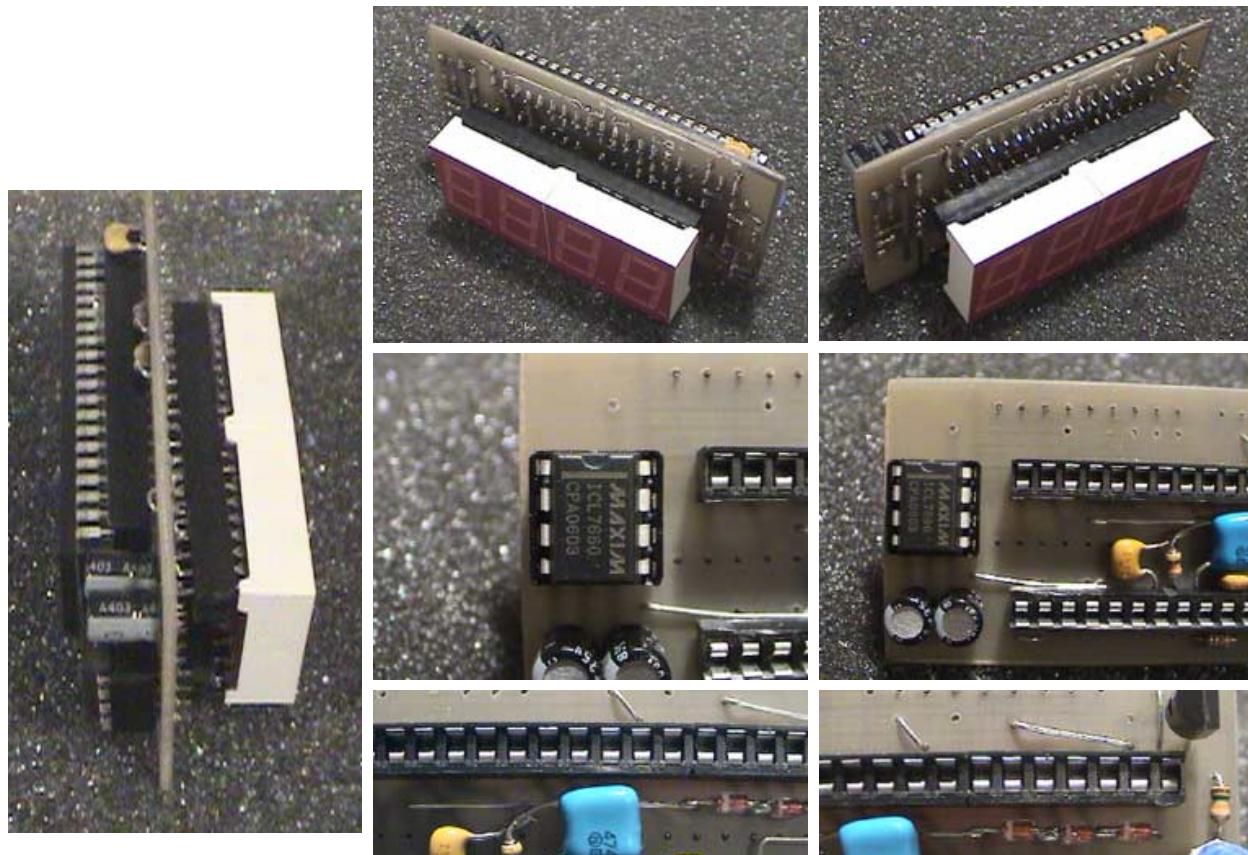
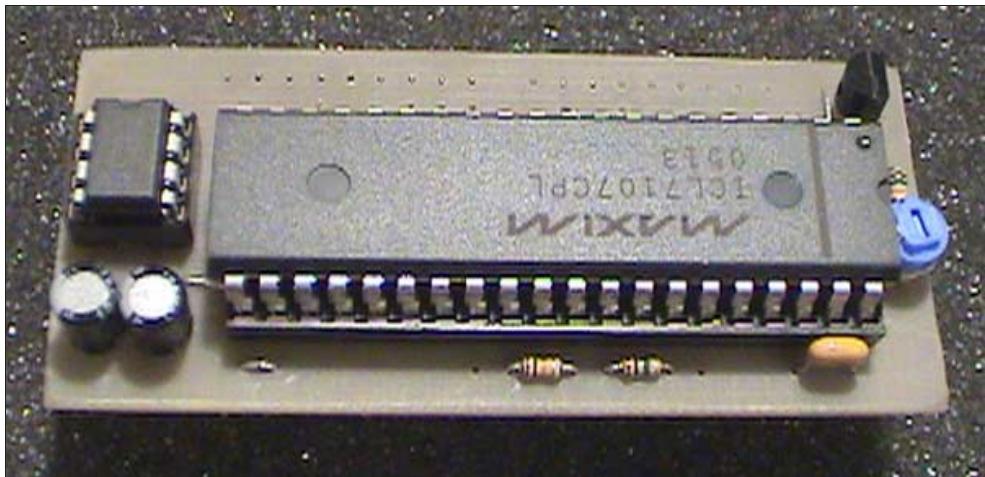
MAN6910 - Common Anode 2-Digit 7-Segment Display





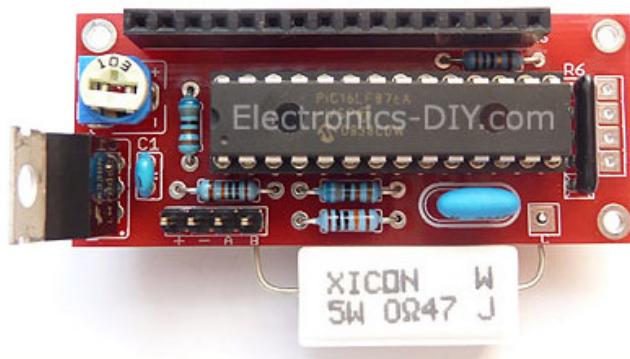
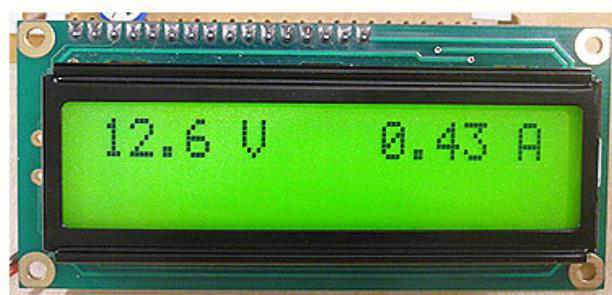
Prototype Images







PIC Volt Ampere Meter Kit



PIC Volt Ampere Meter was designed to measure output voltage of 0-70V or 0-500V with 100mV resolution and 0-10A or more current with 10mA resolution. It is a perfect addition to any DIY laboratory power supply, battery chargers and other electronic projects where voltage and current consumption must be monitored. Thanks to added calibration via SETUP, UP & DOWN buttons it is now possible to calibrate the meter to measure voltage that is higher than 70V and current that is greater than 10A. [More Info ...](#)

Related Links

- Accurate LC Meter
- 60MHz Frequency Meter / Counter
- 1Hz - 2MHz Function Generator
- Voltmeter Ammeter
- ESR Meter / Transistor Tester
- Accurate 0-500MHz RF Power Meter
- DS18S20 Dual Temperature Meter
- BA1404 HI-FI Stereo FM Transmitter
- BH1417 Stereo PLL FM Transmitter
- 500mW FM / VHF Transmitter Amplifier / Booster
- 50mW BH1417 Stereo PLL FM Transmitter
- Phone FM Transmitter
- TV Transmitter with Audio
- 5 Watt FM Amplifier
- TDA7000 FM Receiver / TV Tuner / Aircraft Receiver

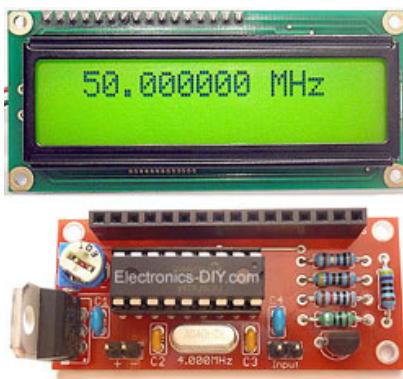
- NJM2035 HI-FI Stereo Encoder / Multiplexer
- USB Voltmeter
- USB IO Board





Accurate LC Meter

Build your own Accurate LC Meter (Capacitance Inductance Meter) and start making your own coils and inductors. This LC Meter allows to measure incredibly small inductances making it perfect tool for making all types of RF coils and inductors. LC Meter can measure inductances starting from 10nH - 1000nH, 1uH - 1000uH, 1mH - 100mH and capacitances from 0.1pF up to 900nF. The circuit includes an auto ranging as well as reset switch and produces very accurate and stable readings.



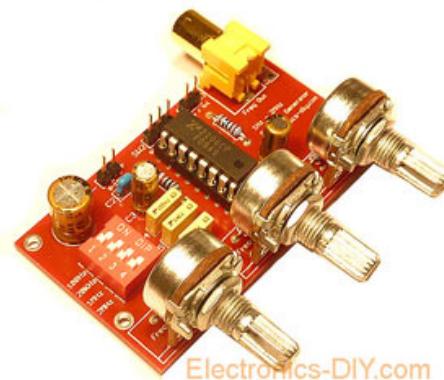
60MHz Frequency Meter / Counter

Frequency Meter / Counter measures frequency from 10Hz to 60MHz with 10Hz resolution. It is a very useful bench test equipment for testing and finding out the frequency of various devices with unknown frequency such as oscillators, radio receivers, transmitters, function generators, crystals, etc.



PIC Volt Ampere Meter

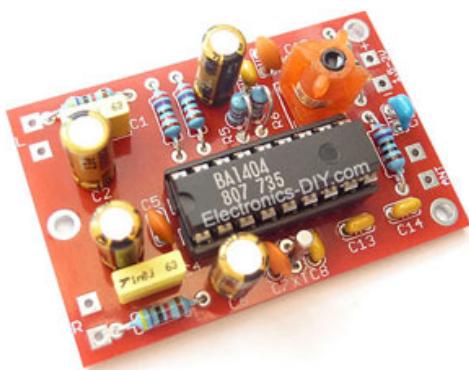
Volt Ampere Meter measures voltage of 0-70V or 0-500V with 100mV resolution and current consumption 0-10A or more with 10mA resolution. The meter is a perfect addition to any power supply, battery chargers and other electronic projects where voltage and current must be monitored. The meter uses PIC16F876A microcontroller with 16x2 backlit LCD.



1Hz - 2MHz XR2206 Function Generator

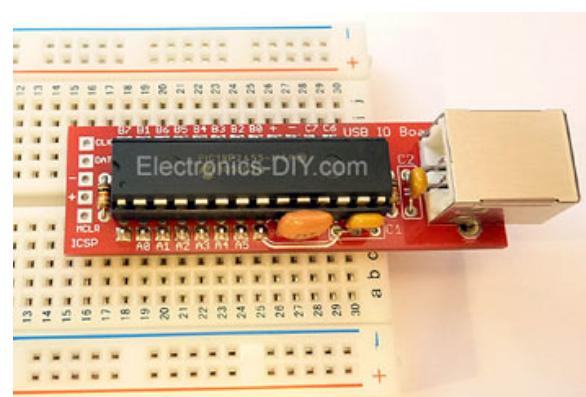
1Hz - 2MHz XR2206 Function Generator produces high quality sine, square and triangle waveforms of high-stability and accuracy. The output waveforms can be both amplitude and frequency modulated. Output of 1Hz - 2MHz XR2206 Function Generator can be connected directly to 60MHz Counter for

setting precise frequency output.



BA1404 HI-FI Stereo FM Transmitter

Be "On Air" with your own radio station! BA1404 HI-FI Stereo FM Transmitter broadcasts high quality stereo signal in 88MHz - 108MHz FM band. It can be connected to any type of stereo audio source such as iPod, Computer, Laptop, CD Player, Walkman, Television, Satellite Receiver, Tape Deck or other stereo system to transmit stereo sound with excellent clarity throughout your home, office, yard or camp ground.



USB IO Board

USB IO Board is a tiny spectacular little development board / parallel port replacement featuring PIC18F2455/PIC18F2550 microcontroller. USB IO Board is compatible with Windows / Mac OSX / Linux computers. When attached to Windows IO board will show up as RS232 COM port. You can control 16 individual microcontroller I/O pins by sending simple serial commands. USB IO Board is self-powered by USB port and can

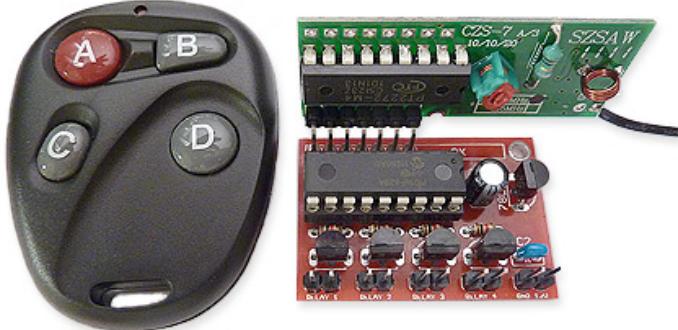
throughout your home, office, yard or camp ground.

commands. USB IO Board is self powered by USB port and can provide up to 500mA for electronic projects. USB IO Board is breadboard compatible.



200m 4-Channel 433MHz Wireless RF Remote Control

Having the ability to control various appliances inside or outside of your house wirelessly is a huge convenience, and can make your life much easier and fun. RF remote control provides long range of up to 200m / 650ft and can find many uses for controlling different devices, and it works even through the walls. You can control lights, fans, AC system, computer, printer, amplifier, robots, garage door, security systems, motor-driven curtains, motorized window blinds, door locks, sprinklers, motorized projection screens and anything else you can think of.



100m 4-Channel 433MHz Wireless RF Remote Control

Four button RF remote is used to turn ON / OFF four different devices independently. Any of the four outputs can be configured to work independently in either toggle or momentary mode. Outputs are buffered by BC549 NPN transistors and can drive low voltage devices directly or be connected to either 5V or 12V relays (or motors) to control appliances that use 110V / 220V mains voltage or any voltage of your choice. Multiple remote systems can be used independently to control more than four appliances in the same location by changing the address code on 433MHz receiver and remote. It is also possible to use several remotes to control the same appliance such as garage door.