Electronics-DIY.com

PCM2706 High Fidelity USB Soundcard / USB Headphones

Parts:

1x PCM2706 - 32-PIN TQFP	2x 100uF Capacitor
1x 12 MHz Crystal	2x 47uF Capacitor
1x 1M Resistor	4x 1uF Capacitor
4x 3.3K Resistor	2x 22nF Capacitor
2x 1.5K Resistor	2x 27pF Capacitor
2x 22 Ohm Resistor	
2x 15 Ohm Resistor	

Technical Specifications:

Supply Voltage: 5V
Interface: USB 1.1, USB 2.0
Output Interface: Headphones, S/PDIF
Sampling Rate: 32KHz, 44KHz, 48KHz
SNR: 98dB
THD: 0.006%
Headphone Output Power: 12mW
Power Consumption: 35 - 45mA
OS: Windows 98, ME, 2000, XP, Mac OSX

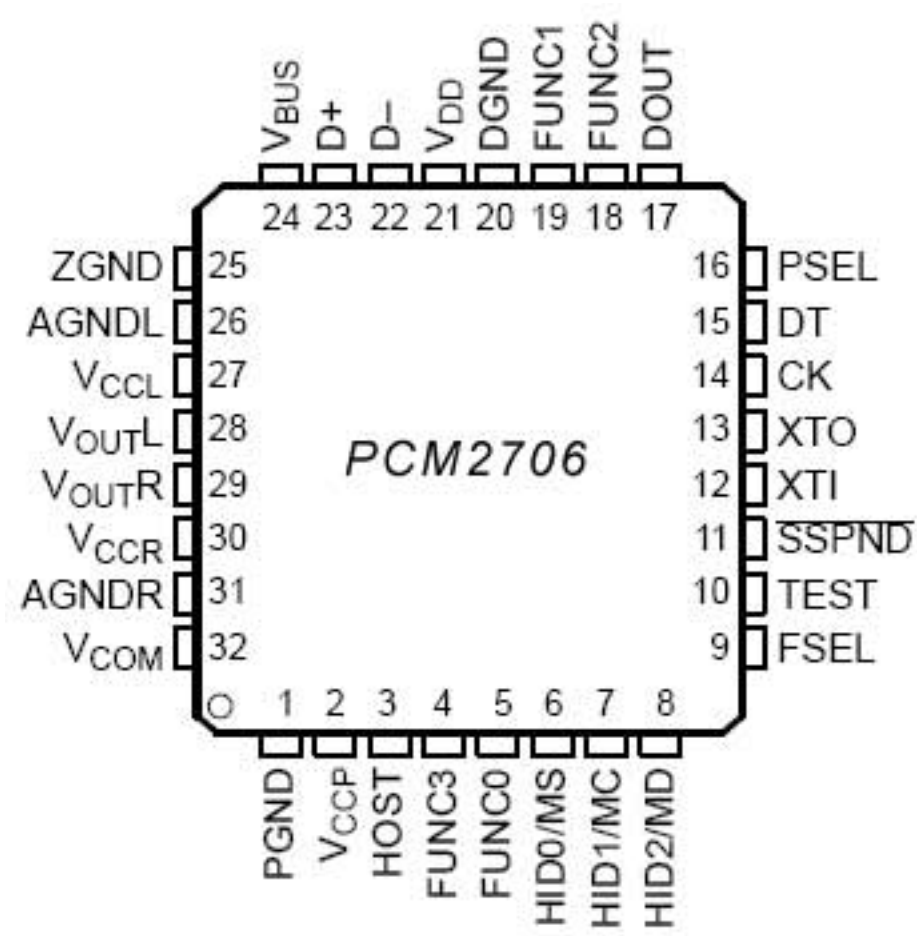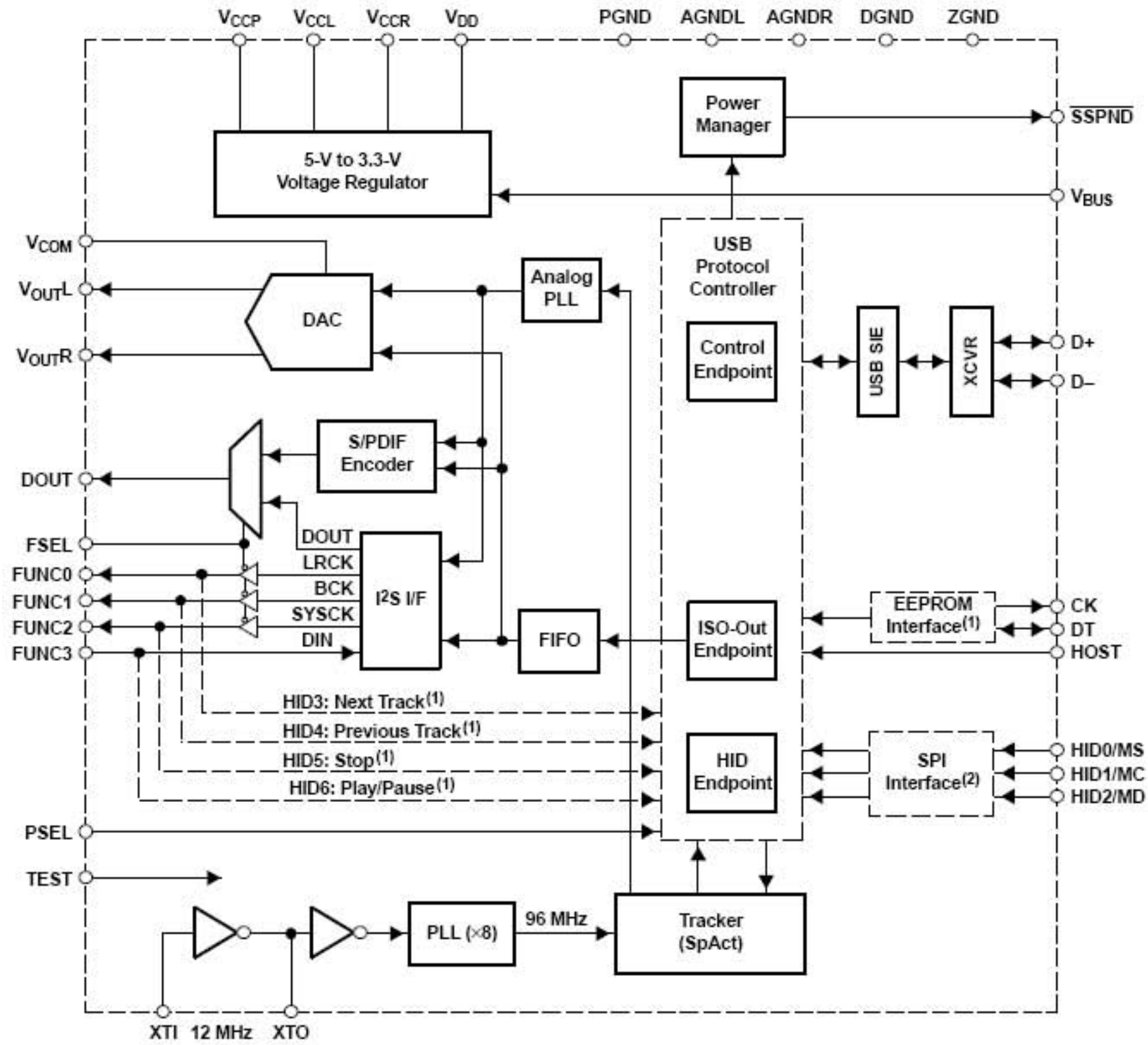## About PCM2706 USB Sound Card / USB Headphones

This is a high fidelity external USB Soundcard / USB Headphones project that can be built for your PC or Mac. It is based on the latest PCM2706 IC which functions as a high quality, crystal clear 16-BIT Stereo DAC. It is a single chip digital-to-analog converter that offers two D/A output stereo channels, digital S/PDIF output and requires very few external components. PCM2706 includes integrated USB 1.0 & USB 2.0 compliant interface controller and it is conveniently powered directly from USB connection. PCM2706 is a USB plug-and-play device and does not require any driver installation under Windows XP and Mac OSX.

PCM2706 chip also provides seven functions that are controlled with tactile switches. It provides volume (up / down), Play, Stop, Previous Track & Next Track controls. These functions do not need any software or driver installation and work instantly after connecting PCM2706 to a computer's USB connector.

This project includes double-sided 65 mm x 43 mm PCB layout in the PDF format which you may use to transfer to your printed circuit board. Once you will have PCB ready, soldering PCM2706 chip is not that difficult as it may seem.
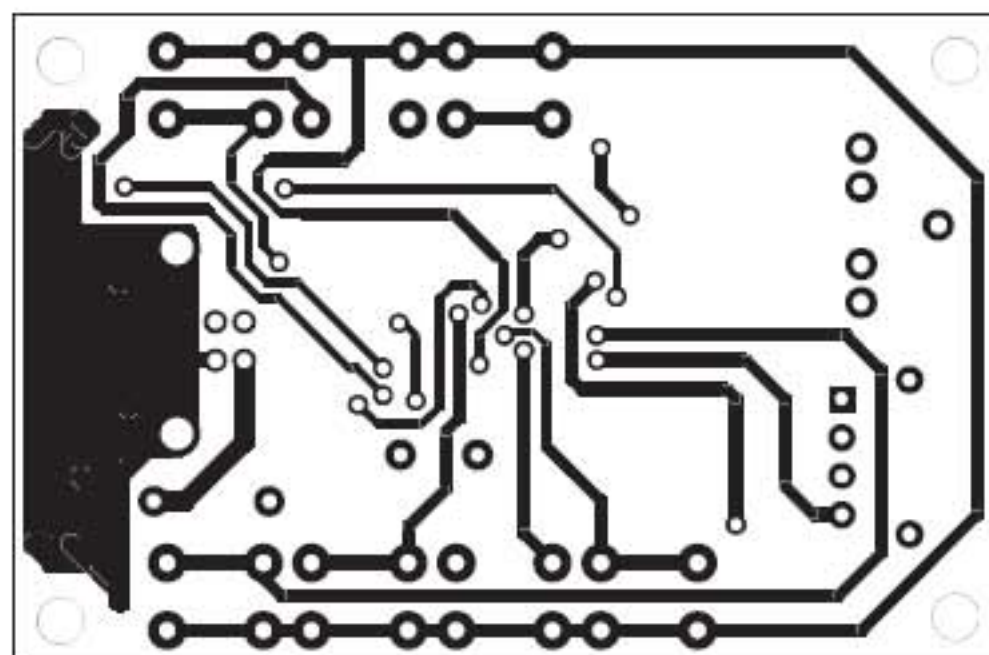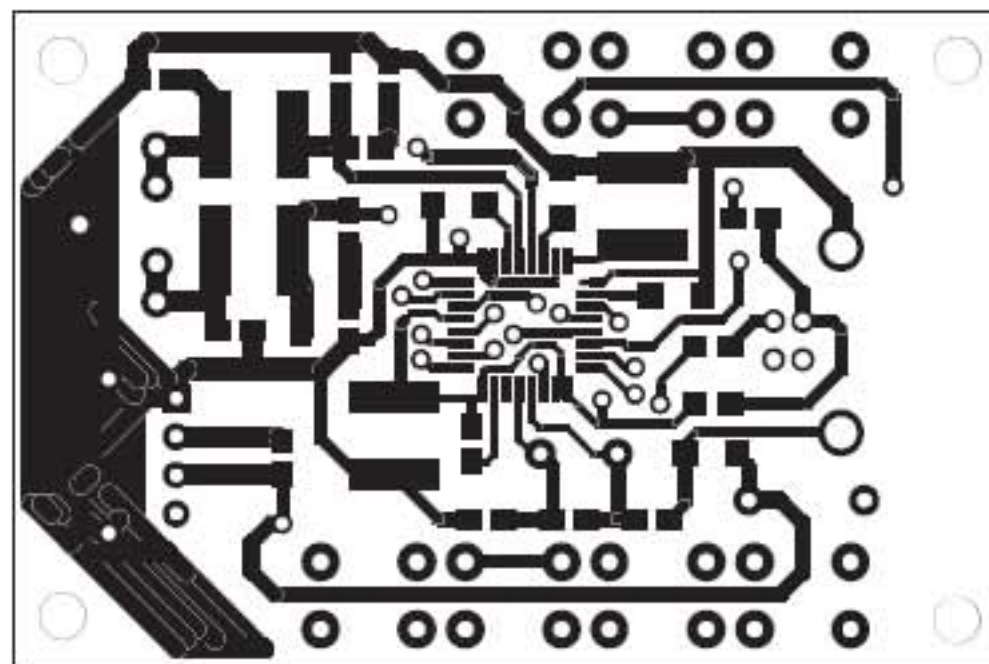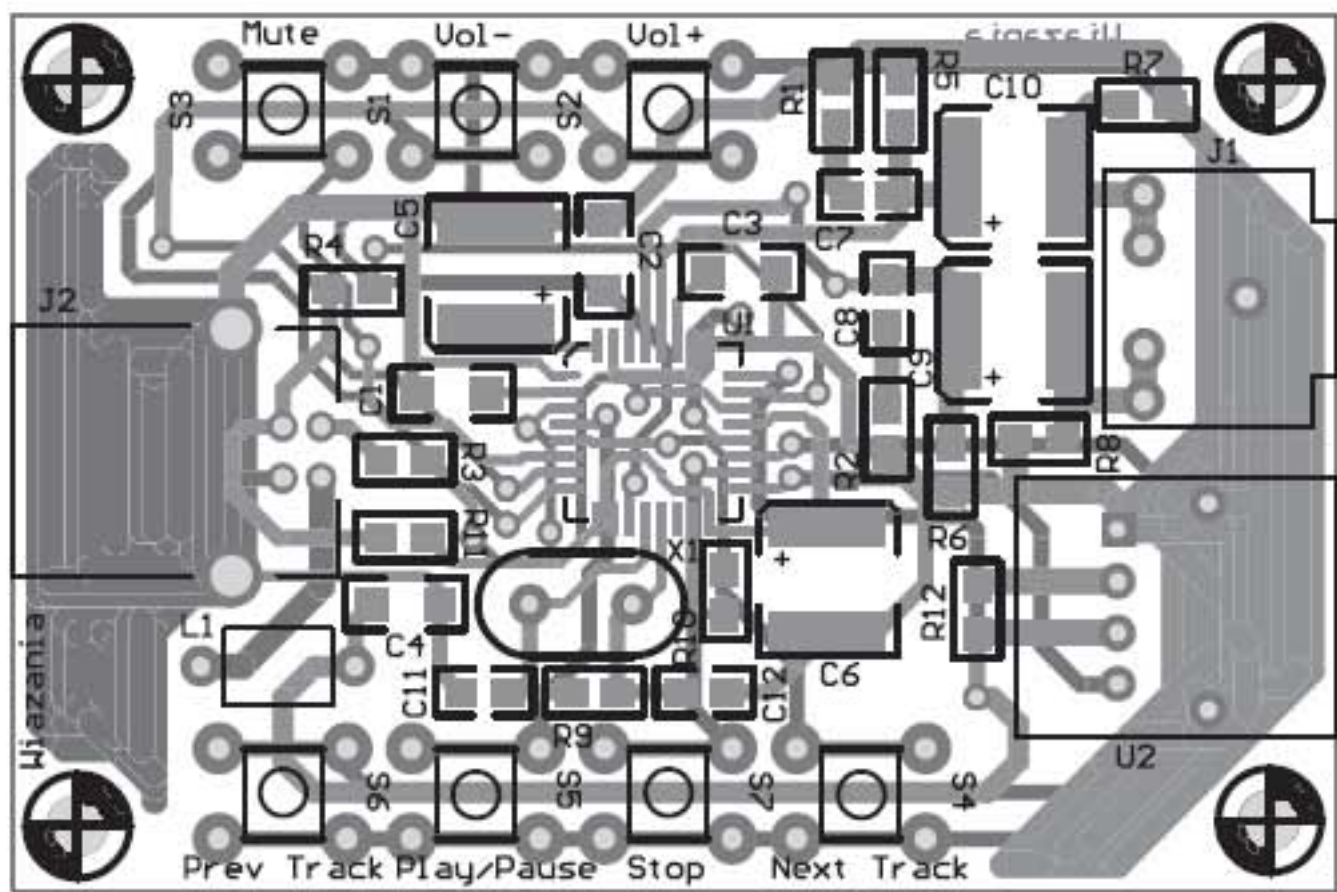
PCM2706 Block Diagram

Printed Circuit Board
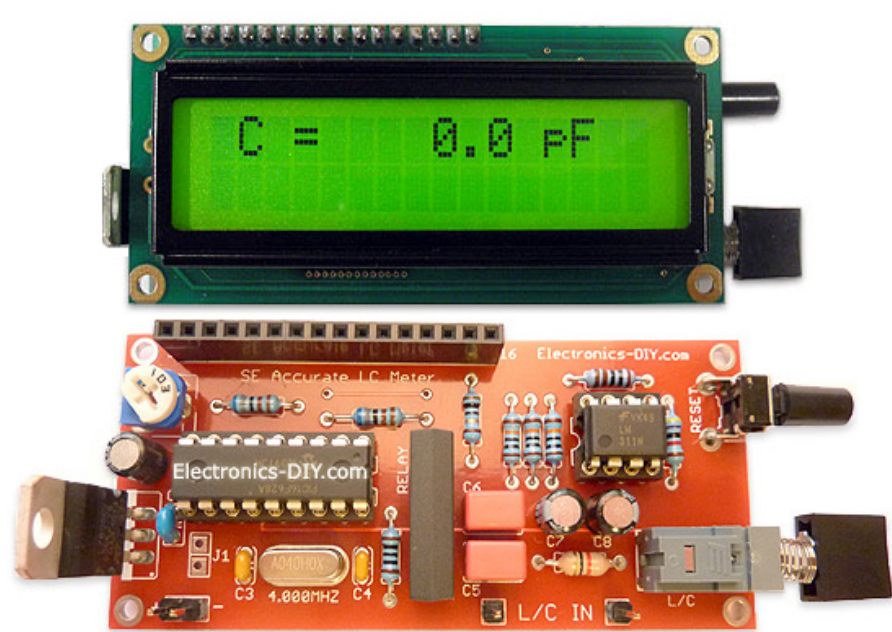
Download PCB Layout (PDF format)

PCB Component Placement

Where to get the Parts

If you are building the above High Fidelity USB Soundcard / USB Headphones and have trouble finding some of the components like PCM2706 and 12 MHz crystals we are distributing these components at **Electronics-DIY store.**


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.


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 backlighted LCD.
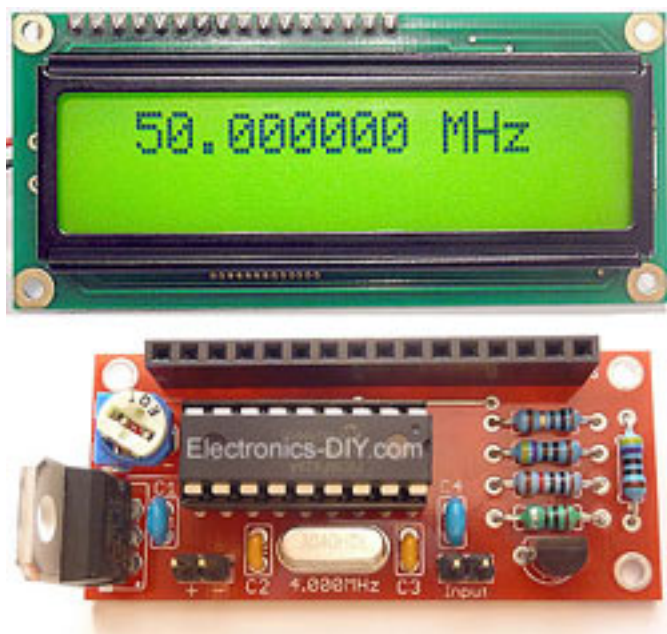
60MHz Frequency Meter / Counter

Frequency Meter / Counter measures frequency from 10Hz to
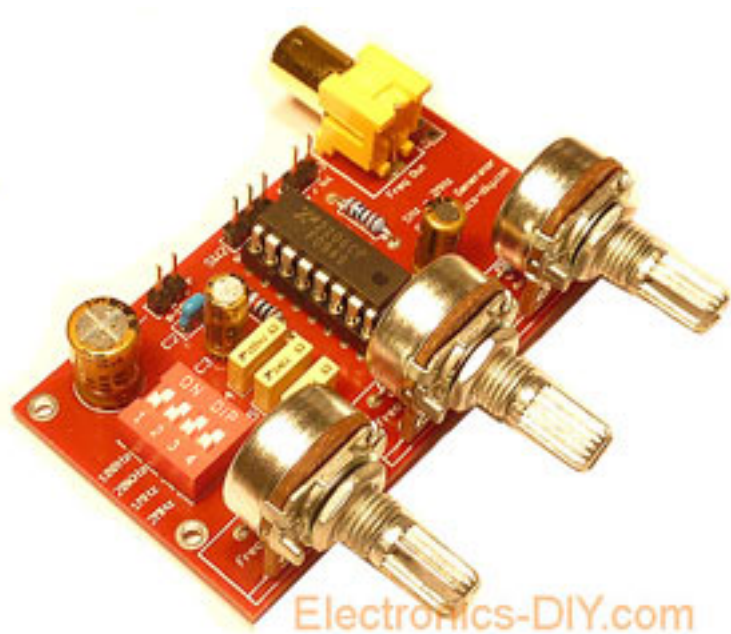
1Hz – 2MHz XR2206 Function Generator

1Hz - 2MHz XR2206 Function Generator produces high quality

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.

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.
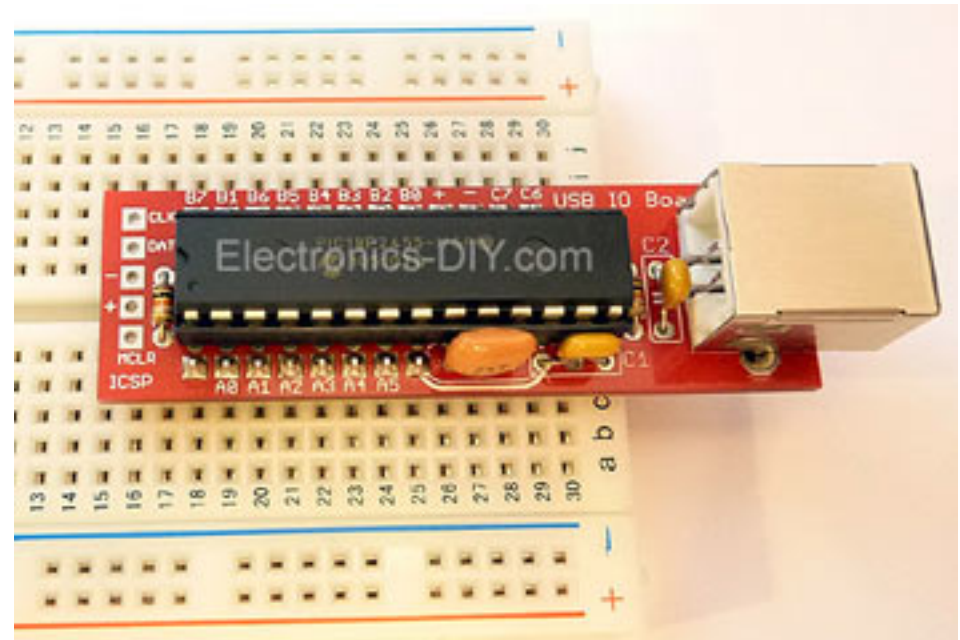

BA1404 HI-FI Stereo FM Transmitter

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 provide up to 500mA for electronic projects. USB IO Board is breadboard compatible.

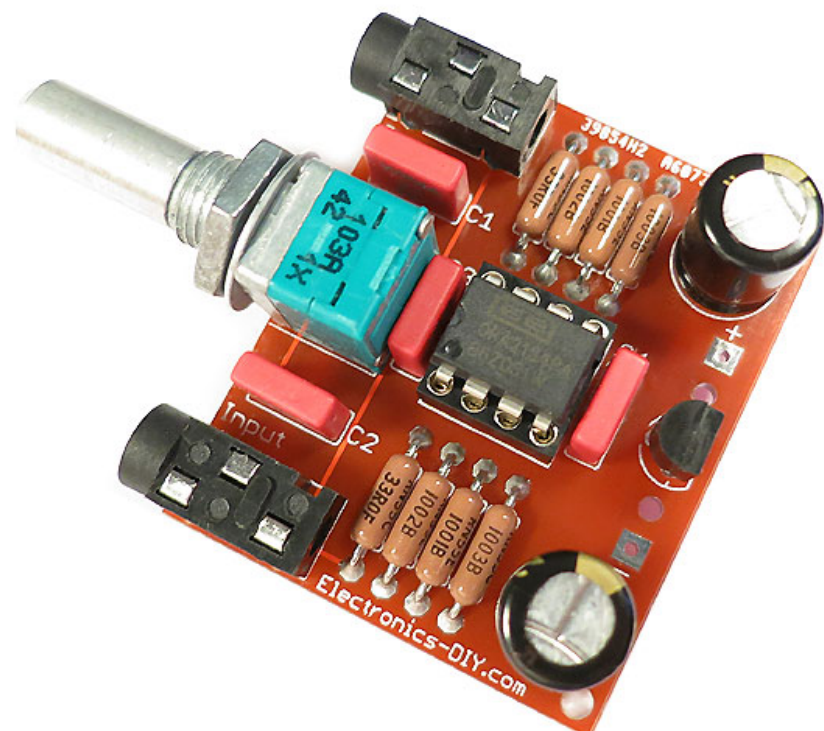### ESR Meter / Capacitance / Inductance / Transistor Tester Kit

ESR Meter kit is an amazing multimeter that measures ESR values, capacitance (100pF - 20,000uF), inductance, resistance (0.1 Ohm - 20 MOhm), tests many different types of transistors such as NPN, PNP, FETs, MOSFETs, Thyristors, SCRs, Triacs and many types of diodes. It also analyzes transistor's characteristics such as voltage and gain. It is an irreplaceable tool for troubleshooting and repairing electronic equipment by determining performance and health of electrolytic capacitors. Unlike other ESR Meters that only measure ESR value this one measures capacitor's ESR value as well as its capacitance all at the same time.


Audiophile Headphone Amplifier Kit

Audiophile headphone amplifier kit includes high quality audio grade components such as Burr Brown OPA2134 opamp, ALPS volume control potentiometer, Ti TLE2426 rail splitter, Ultra-Low ESR 220uF/25V Panasonic FM filtering capacitors, High quality WIMA input and decoupling capacitors and Vishay Dale resistors. 8-DIP machined IC socket allows to swap OPA2134 with many other dual opamp chips such as OPA2132, OPA2227, OPA2228, dual OPA132, OPA627, etc. Headphone amplifier is small enough to fit in Altoids tin box, and thanks to low power consumption may be supplied from a single 9V battery.
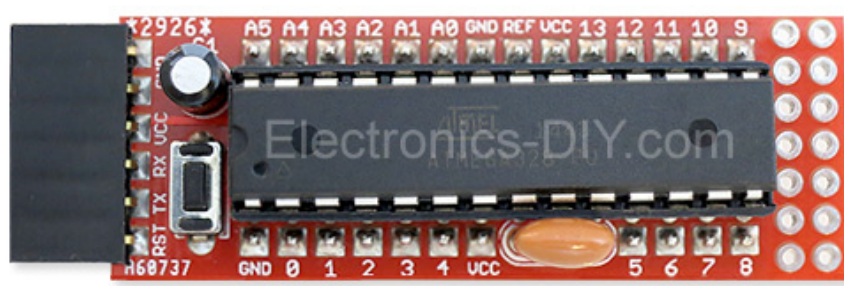
Arduino Prototype Kit

Arduino Prototype is a spectacular development board fully compatible with Arduino Pro. It's breadboard compatible so it can be plugged into a breadboard for quick prototyping, and it has VCC & GND power pins available on both sides of PCB. It's small, power efficient, yet customizable through onboard 2 x 7 perfboard that can be used for connecting various sensors and connectors. Arduino Prototype uses all standard through-hole components for easy construction, two of which are hidden underneath IC socket. Board features 28-PIN DIP IC socket, user replaceable ATmega328 microcontroller flashed with Arduino bootloader, 16MHz crystal resonator and a reset switch. It has 14 digital input/output pins (0-13) of which 6 can be used as PWM outputs and 6 analog inputs (A0-A5). Arduino sketches are uploaded through any USB-Serial adapter connected to 6-PIN ICSP female header. Board is supplied by 2-5V voltage and may be powered by a battery such as Lithium Ion cell, two AA cells, external power supply or USB power adapter.
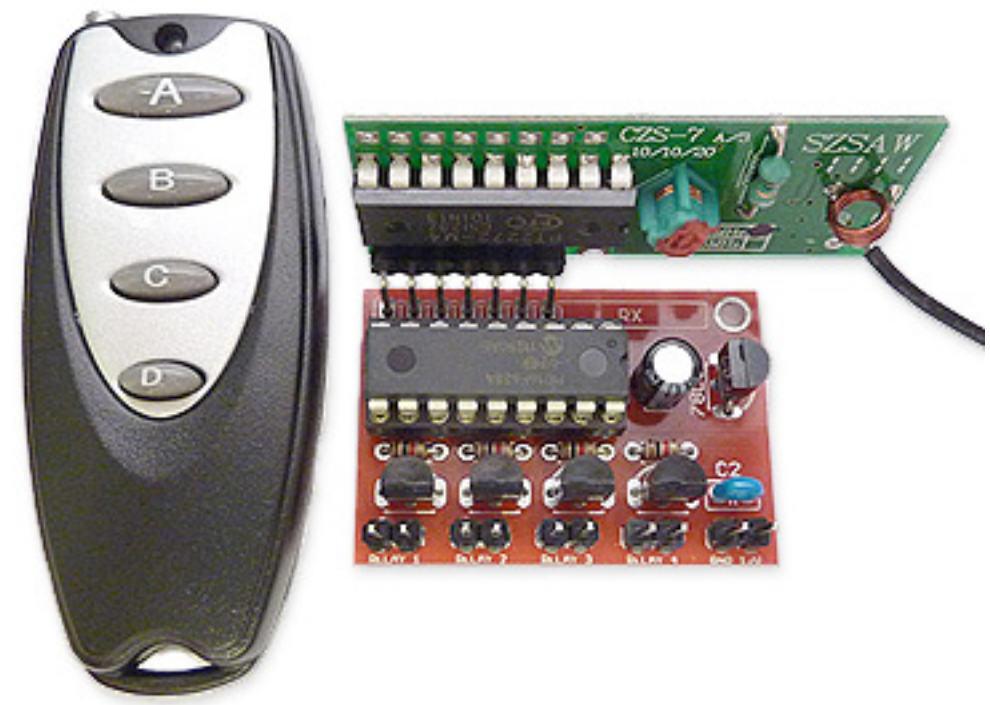
200m 4-Channel 433MHz Wireless RF Remote Control

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.