

# ramsey



## Digital Voice Messaging System

Record and playback up to 8 separate digitally stored voice messages with the press of a button, a remote command, or BCD control! Great for on demand announcements, product kiosks, emergency broadcasts, museum displays, and a whole lot more! See page 36.

### THE LATEST AND THE GREATEST STUFF!

#### Optically Isolated Interface Module



See page 26

only **\$9.95**

#### Ultimate 555 Timer-Oscillator



See page 24

from **\$24.95**

#### Logic Interface Module



See page 27

only **\$11.95**

#### 16-to-4 Line Encoder



See page 27

only **\$24.95**

#### 4-to-16 Line Encoder



See page 27

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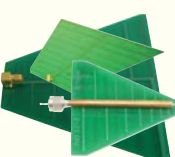
#### Enhanced DTMF Control Interface



See page 25

only **\$62.95**

#### Printed Circuit Plane Antennas



See page 44

from **\$29.95**

#### Retro Nixie Tube Digital Clocks



See page 16

from **\$169.95**

#### Doppler Direction Finder



See page 41

from **\$169.95**

#### FM Stereo Transmitter Kits



See page 4

from **\$44.95**

#### 42W Mini Audio Amp

Delivers 42W of crisp clear stereo power all on a 2 1/2" board! One single SMT device operates at 87% efficiency producing virtually no heat! Selectable gain, built-in pop filter, and a lot more! Runs on 18VDC. (See page 32)

only **\$69.95**

#### Hi-Res Pressure & Elevation Sensor

Monitor and record elevation to a third of an inch! Measure air pressure in 8 different formats and chart them on your PC! The hit with everyone from pilots, surveyors, to hikers! (See page 20)

from **\$239.95**

#### A-B-C Vintage Battery Eliminator

Provides the 3 separate A (filament), B (plate), and C (bias) operating voltages required by battery powered vintage radios! Input is 120/240VAC. (See page 67)

only **\$199.95**

[www.ramseyelectronics.com](http://www.ramseyelectronics.com)

**800-446-2295**

**WIN! Monthly Giveaways!**

Visit [ramseykits.com](http://ramseykits.com)  
See page 57  
No purchase required

#### Passive Aircraft Receiver

Our patented passive receiver picks up all aircraft channels without any tuning! Hear it all right as it happens at air shows, airports, and even on board because there is no local oscillator to cause interference! (See page 38)

from **\$89.95**

#### Tri-Field Meter & Detector

Monitor and "watch" the presence of electrical, magnetic, and RF fields with this great little meter! Walk around your house and see the fields around you. Extremely popular for ghost detection and other paranormal projects. (See page 59)

only **\$74.95**

#### Laser Beam Communicator

Modulates a laser beam at more than 16 kHz for great fidelity, with an optical point-to-point range up to 1/4 mile! Each kit includes a separate transmitter and receiver. It's amazing to "see" your voice on a laser beam! (See page 59)

only **\$54.95**

#### ECG Heart Monitor

Provides visual and audible display of your heart rhythm and outputs to a scope to display traditional realtime CDG/EKG waveforms. Includes reusable sensors. (See page 61)

from **\$44.95**





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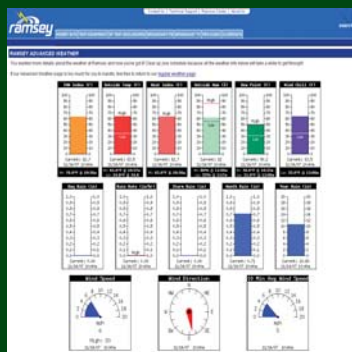
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# www.ramseyelectronics.com



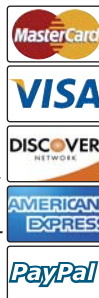
# Welcome to the world of Ramsey Electronics...

## ☆ Friendly Dedicated People!

Our friendly staff is just like you, interested in neat electronic products! From the CSR's that take your order to the shipping personnel who confirm it, they are dedicated to one thing... your satisfaction!

## ☆ Easy Ordering!

Ordering from Ramsey is easy, and you've got plenty of options! Order safely and securely 24/7 online at [www.ramseyelectronics.com](http://www.ramseyelectronics.com), or use our stores on eBay or Amazon. Offline, you can call our friendly CSR's toll free and they will answer any questions you may have and quickly guide you through your order. You will also find a convenient mail-in order form in this catalog. All major credit cards, PayPal, checks and wire transfers are accepted. Open accounts are also extended to suitably rated firms and organizations as well as government, municipal, and educational agencies and institutions.



## ☆ Incredible Tech Support!

We consider our Technical Support Group to be second to none! That's a pretty strong statement, but we have 38 years of satisfied customers to back it up! We feel that buying and building an electronic kit is merely the beginning. We back you up until that final moment when you turn it on and you see the incredible results of your handiwork! Our Tech Support Group handles it all: parts questions, assembly questions, theory questions, schematic questions, troubleshooting problems, plus repair and return procedures. Whether it be a phone call to verify the hookup or an email about a part's value, they are there for you. You will also find a host of resources at [www.ramseyelectronics.com](http://www.ramseyelectronics.com) to assist you with questions. The user forums on our site are another great place to get help and discuss products and applications with fellow Ramsey customers. In addition to our site you can also follow us on the web...



## ☆ Risk Free Return Policy!

Not sure a Ramsey kit or product is exactly what you are looking for? No problem! Order it and examine it (but don't build it if it's a kit!) for up to 10 days. If it's not exactly what you expected, return it for a full refund, no questions asked! Curious about the assembly of a product prior to building it? Got you covered there also; all manuals can be downloaded at [www.ramseyelectronics.com](http://www.ramseyelectronics.com)! (Valid for Ramsey Kit products only)

## Did You Know?

## We're a lot more than just Hobby Kits!

### Professional RF Shielded Test Enclosures

We are one of the largest manufacturers of RF Shielded Test Enclosures for the cellular and wireless LAN industry in the world! Our patented enclosures are used worldwide for isolated testing of 802.11a,b,g,n devices, cellular, PCS, GSM, 3G, 4G, Wi-Fi, Wilbree, ZigBee, Bluetooth, RFID, and a host of other wireless voice and data formats! For additional information visit [www.ramseytest.com](http://www.ramseytest.com) or call us at 800-446-2295.

### Professional FM Broadcast Transmitters & Stations

For years, Ramsey Electronics has been a leading provider of FM and LPFM broadcast transmitters with our PX series. In addition, hundreds of our extremely popular PXB series "Station-In-A-Box" portable FM stations have been deployed around the world. You can check out our PX50 and just a few of our PXB series starting on page 86. For additional information visit [www.ramseyfm.com](http://www.ramseyfm.com) or call us at 800-446-2295.

### Professional Audio Products

Ramsey Electronics is a stocking dealer for the leading manufacturers of professional and home studio audio products. Tascam, Teac, Denon, Marantz, Allen & Heath, Samson, Shure, Zoom, Galaxy Audio, SKB, Gator, and a whole lot more! We have the latest equipment at the greatest prices around. For additional information or to request a full-line Pro Audio catalog, visit [www.ramseyaudio.com](http://www.ramseyaudio.com) or call us at 800-446-2295.

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## What about all the surplus stuff?

What do we do with stock over runs, leftovers, unused parts inventory, model closeouts, unused test equipment, and other random stuff gathered over these years? It's simple... Offer it to you at a huge savings! Check it out!

**[www.ramseysurplus.com](http://www.ramseysurplus.com)**





## Digital Controlled FM Stereo Transmitters

- ✓ PLL synthesized for drift free operation
- ✓ Front panel digital control and display of all settings and parameters!
- ✓ Professional metal case for noise-free operation
- ✓ EMI filtering on audio and power inputs
- ✓ Super audio quality, rivals commercial broadcasts
- ✓ Available in domestic kit or factory assembled export versions

**All The Features You Asked For...  
PLUS A WHOLE LOT MORE!**

### THE LEGACY CONTINUES!

For nearly a decade we have been the leader in hobbyist FM radio transmitters. First we came out with our low cost FM10, the tunable FM transmitter that has set records as the most popular school, scouting, and first time hobbyist kit.

Then we introduced the world famous FM25 series of FM transmitters. We took the basic concept of the tunable FM10, made it synthesized for rock solid and stable operation, and gave it the features and performance that made it THE LEADER in low cost FM stereo transmitters. From there we introduced our FM100 series Super Pro FM Stereo Radio Station which became the "gold standard" for professional installations around the world.

### NOW THE BEST OF BOTH WORLDS!

How could we make history better? First, we listened to thousands of our customers who loved the stability of the PLL synthesized FM25 series but wanted easy to change front panel control of the operating frequency and wanted to know what frequency they were transmitting on. They also wanted the capability of controlling the audio levels at the transmitter rather than changing the input levels.



We thought those were very legitimate requests, and our response was to recommend they use the FM100 series. "But I don't need an audio mixer, I don't need all that fancy stuff built-in, I just need a small transmitter I can afford!" Well here you go, designed from the ground up... the FM30 series!

Our RF engineers took it as a challenge and designed not one, but TWO transmitters! The FM30B is designed using through-hole technology and components and is available only as a do-it-yourself kit, with a 25mW output very similar to our FM25 series.

Then they re-engineered their brand-new design using surface mount technology (SMT) for a very special factory assembled and tested FM35BWT version, with 1W output specifically for our export market! Both are designed around an RF tight vinyl clad metal enclosure for noise and inter-

ference free operation.

All settings can be changed without taking the cover off! Enter the setup mode from the front panel and step through the menu to make all of your adjustments. A two line LCD display shows you all the settings! In addition to the LCD display, a front panel LED indicates PLL lock so you know you are transmitting. Besides frequency selection, front panel control and display gives you 256 steps of audio volume (left and right combined) as well as RF output power. A separate balance setting compensates for left/right differences in audio level. In addition to settings, the LCD display shows you "Quality of Signal" to help you set your levels for optimum sound quality. And of course, all settings are stored in non-volatile memory for future use!

The design includes EMI filters on line level audio and power inputs and a state of the art microstrip PCB inductor to reduce microphonics for the ultimate in alignment free operation. RF output is brought out to a professional, well shielded rear panel BNC connector for a perfect antenna match. Standard RCA connectors are used for left and right line level audio inputs. Both the FM30B and FM35BWT operate on 13.8 to 16VDC and include a 15VDC plug in power supply.

The stylish black metal case measures 5.55"W x 6.45"D x 1.5"H. If you're looking for a super performer but don't need the extra features of our FM100B series transmitters, the FM30B is for you! (Note: The FM30B is a do-it-yourself learning kit that you assemble. The end user is responsible for complying with all FCC rules & regulations within the US, or any regulations of their respective governing body. FM35BWT is for export use and can only be shipped to locations outside the continental US or valid APO/FPO addresses or valid customs brokers for documented end delivery outside the continental US).

**FM30B** Digital Synthesized FM Stereo Transmitter Kit, 0-25mW RF Output  
**FM35BWT** Digital Synthesized FM Stereo Transmitter, 0-1W RF Output, Assembled & Tested, Export Only

**\$199.95**

**\$299.95**

**KIT**

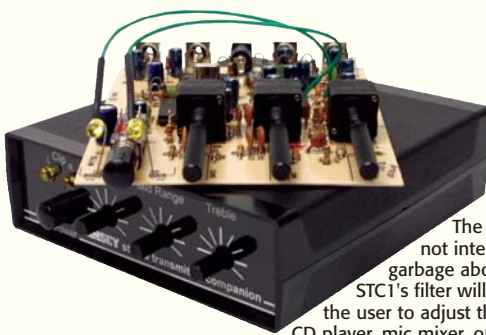
**Wired & Tested  
(Export Only)**

**TOP  
SELLER!**



### SPECIFICATIONS

Frequency Range:	87.9-108.1 MHz
Power Output:	0-25mW, BNC (FM30B) 0-1.0W, BNC (FM35BWT)
Audio Inputs:	Line level left and right RCA connectors
Controls:	Power on/off
Digital Controls:	Frequency, 256 step audio level, 256 step RF output level, 256 step audio balance, mono/stereo
Setup Digital Display:	Setup frequency, setup audio levels, setup audio balance, setup RF output level, setup mono/stereo, save settings
Normal Digital Display:	Frequency, RF power output, quality of signal
VCO Lock Display:	Front panel LED
Power Requirement:	13.8 to 16VDC, 500mA max
Dimensions:	5.55"W x 6.45"D x 1.5" H



**KIT**

**Wired & Tested**

**Sound Just Like  
The Pros!**

## Stereo Transmitter Companion

- ✓ Make your radio station sound like the pros!
- ✓ Limiter/processor for that high density modulation "punch"
- ✓ 3 band audio processor - separate controls for bass, presence, and brilliance
- ✓ Precision active low-pass "brick wall" audio filter!

The STC1 is the ideal companion for the FM10C or the FM25B. The brick wall filter will ensure that high audio frequencies do not interfere with the transmitter's stereo pilot frequency. TV's, cheaper computer audio cards, and older CD players can have audio garbage above the human hearing range. This high frequency audio garbage can cause nasty whistles and wines in received audio. The STC1's filter will remove these frequencies before that can be a problem. The STC1 is also handy with the FM30 and FM100B. It will allow the user to adjust the low, high, and mid band frequencies while verifying the signals are not clipped! The STC1C connects easily between your CD player, mic mixer, or tape deck and your radio transmitter.

The STC1 receives stereo line level audio into the unit via RCA connectors. The first stage allows the user to set the desired low, mid, and high band audio levels. The audio bands can be either enhanced or suppressed by 12 dB. The next part of the circuit is the clip detector. If the signals are clipped the Left or Right Clip LED's will illuminate notifying the producer so action can be taken to reduce the audio levels. The last stage is the 16 kHz 8th order Butterworth filter which is designed to prevent signals from interfering with the transmitters stereo pilot. The audio is passed on the transmitter via RCA connectors. The STC1 Operates on 9 to 15 volts DC. Sound like the pro's with the STC1C! Attractive case measures 5"W x 1 1/2"H x 5 1/4"D.

**STC1C** Stereo Transmitter Companion Kit With Case  
**STC1WT** Factory Assembled and Tested STC1C With Case And Power Supply  
**AC125** 110VAC Power Adapter

**\$84.95**

**\$129.95**

**\$9.95**





KIT

Wired & Tested  
(Export Only)

## Super-Pro Synthesized FM Stereo Radio Station



**The Complete Station...  
Continues To Be The  
Leader Worldwide!**

- ✓ Built-in mixer - 2 line inputs and one microphone input, line level monitor output!
- ✓ Frequency range 88.0 to 108.0, 100 kHz steps
- ✓ Precision active low-pass "brick wall" audio filter!
- ✓ Clean, filtered RF output suitable for RF amplification
- ✓ Dual LED bar graph audio level meters!
- ✓ Automatic adjustable microphone ducking!

The true professional workhorse of our FM Stereo transmitter line, the FM100B has become the transmitter of choice for both amateurs and professionals around the world. From the serious hobbyist to churches, drive-in theaters, colleges and schools, it continues to be the leader. Not just a transmitter, the FM100B is a fully functional radio station and provides everything but the audio input and antenna system. And now we've added additional features and performance improvements to make the best even better!

This professional synthesized transmitter is adjustable directly from the front panel with a large LED digital readout of the operating frequency. Just enter the setup mode and set your frequency. Once selected and locked you are assured of a rock stable carrier with zero drift. The power output is continuously adjustable throughout the power range of the model selected. In addition, a new layer of anti-static protection for the final RF amplifier stage and audio inputs has been added to protect you from sudden static and power surges.

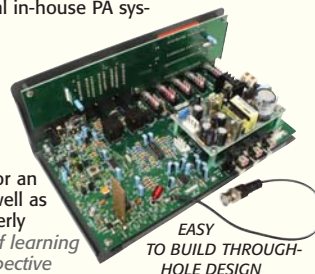


Audio quality is equally impressive. A precision active low-pass brick wall audio filter and peak level limiters give your signal maximum "punch" while preventing overmodulation. Two sets of rear panel stereo line level inputs are provided with front panel level control for both. Standard unbalanced "RCA" line inputs are used to make it simple to connect to the audio output of your computer, MP3 player, cassette deck or any other consumer audio source. Get even more creative and use the Bullshooter-II below for digital storage and playback of announcements and ID's! In addition to the line level inputs, there is a separate front panel microphone input. All three inputs have independent level controls eliminating the need for separate audio mixer! Just pot-up the source control when ready, and cross fade to the 2nd line input or mic! It's that simple! In addition to the dual stereo line inputs, a stereo monitor output is provided. This is perfect to drive studio monitors or local in-house PA systems.

Not enough? How about unattended microphone ducking! When enabled, the presence of mic audio automatically reduces and overrides the line level input! If you have music playing from one of the line inputs, just start talking into the mic and the cross fading is done automatically! Just like the professional units at a fraction of the cost. To provide a perfect match to any microphone you may use we've added a new highly responsive mic AGC circuit along with a front panel mic duck sensitivity control. This allows you to customize line muting to your exact needs!

The FM100B series includes an attractive metal case, whip antenna and built in 110/220VAC power supply. A BNC connector is also provided for an external antenna. Check out our Tru-Match FM antenna kit, for the perfect mate to the FM100B transmitter. We also offer a high power kit as well as an export-only assembled version that provides a variable RF output power up to 1 watt. The 1 watt unit must utilize an external antenna properly matched to the operating frequency to maintain a proper VSWR to protect the transmitter. (Note: The FM100B and FM100BEX are do-it-yourself learning kits that you assemble. The end user is responsible for complying with all FCC rules & regulations within the US or any regulations of their respective governing body. The FM100BWT is for export use and can only be shipped to locations outside the continental US, valid APO/FPO addresses or valid customs brokers for documented end delivery outside the continental US).

FM100B	Super-Pro FM Stereo Radio Station Kit, 5uW to 25 mW Output	\$269.95
FM100BEX	Super-Pro High Power Kit, 5uW to 1Watt Output, Export only	\$349.95
FM100BWT	Factory Assembled & Tested FM100BEX, 5uW to 1 Watt Output, Export Only	\$429.95



EASY  
TO BUILD THROUGH-  
HOLE DESIGN

## The Bullshooter-II Digital Voice Storage

KIT

Wired & Tested

- ✓ Multiple message storage and selection!
- ✓ Built-in mic, external mic and line inputs!
- ✓ Full function controls with 7 segment display!
- ✓ Variable output levels to match your equipment!
- ✓ Great for telephone hold announcements, broadcast announcements, and much more!
- ✓ Single play and programmable repeat modes

**Feature Packed  
Digital Storage!**



Our first generation BS1 Bullshooter digital voice storage recorder provided the proverbial endless tape loop recorder/player without the tape! For the first time ever, the tape, along with the motors, drive belts and dirty and plugged tape heads were replaced with state-of-the-art digital voice storage! The BS1 became extremely popular to replace tape for basic voice announcements. As digital voice technology improved and came within reach of the consumer, it paved the way for the next generation, the BS2C! Requests came pouring in for longer voice storage, separate voice channels of storage, and different time duration channels of storage. The BS2C Bullshooter-II took care of all that, and a whole lot more!

Storage wise, the BS2C provides up to 8 minutes of digital voice storage. But it only starts there! That total storage capacity can be broken down into a maximum of 8 separate stored messages. In addition, the BS2C features four selectable sampling rates depending on the type and quality of audio being stored. A sample rate of 4kHz provides the full 8 minute storage, while 5kHz provides 6.4 minutes, 6kHz provides 5.3 minutes, and the highest sample rate of 8kHz provides 4 minutes. As an added sample rate feature, you can play back a slow sample rate message at a faster sample rate to achieve a "funny-fast" playback! Likewise playing a higher rate message at a lower sample rate to achieve a "slow" playback effect. And unlike tape, your messages are stored in a non-volatile memory for over 100 years without power!

Recording voice with the BS2C is simple with a built-in front panel mounted electret condenser microphone. Just setup to record, push a front panel button and speak! You can also plug in your own external electret condenser microphone for professional studio-sounding recording. In addition, you can record audio from any audio source that has standard line outputs. Just plug it into the line input of the BS2! Line/mic input switching is provided by front panel control. Both external inputs also feature variable level controls to optimize your recordings.

Playback-wise, the BS2C features adjustable line level outputs (two mono outputs for stereo inputs) to properly feed any application or device! This is perfect for telephone system announcements on hold (MOH source), radio broadcasters, transmitters, and audio/visual displays. You can also directly drive a speaker with the built-in amplified speaker output. A built-in headphone jack is also provided to monitor audio levels. The message number is displayed on the 7 segment LED front panel display!

Recording/playing/stopping is similar to a standard recorder, and you can start/stop/pause your message during both record and playback! Playback modes are selectable for single play and continuous repeat with programmable delays of 0sec, .5sec, 5sec, 1min, 10min, 30min, and 60minutes. Once setup you can also lock the unit with a multiple key code. Whatever your application is, the new BS2 has you covered! Runs on 12-15VDC or optional AC power adapter.

BS2C	Bullshooter-II, Multi-Message Digital Voice Recorder Kit With Case Set	\$89.95
BS2WT	Factory Assembled & Tested BS2 with Case Set and Power Supply	\$119.95
AC125	110VAC Power Adapter	\$9.95



**TOP  
SELLER!**

**KIT**

**Includes Pre-Installed  
SMT Components!**

## Synthesized FM Stereo Transmitter

- ✓ Synthesized 88 to 108 MHz for no frequency drift!
- ✓ Simple DIP switch frequency setting!
- ✓ Simple connection to your MP3 player, stereo, or computer!
- ✓ Built-in telescoping whip or external antenna operation

Designed to be the heart of a basic FM transmitting system makes the FM25B a solid performer and very economical to build and operate. Just plug in the audio from your MP3 player, CD player, DVD, computer, tape deck, VCR or even a TV and broadcast it on any frequency in the standard FM broadcast band. The sound quality and stereo separation of this little transmitter will keep the pickiest audiophile happy. This unit has many uses! Broadcast your favorite music around your house and yard. Use it to play DJ for your friends. Farmers, broadcast to your tractors in the fields. Used in conjunction with our BS2 Digital Voice recorder makes the FM25B an ideal event broadcaster. Broadcast school events to parents picking up their children from school. Broadcast important messages to a small community. The applications for this kit are limited only by your imagination!

The FM25B brings stereo line level audio into the unit through a 3.5mm stereo phone jack. A loop out is provided at the input for monitoring. The unit features a PIC microprocessor for easy frequency programming through board mounted DIP switches. The transmit frequency is Phase Locked Loop (PLL) controlled for unparalleled stability making frequency drift a thing of the past, extremely critical for digital tuners. The RF output level is adjustable from 5uW to 25 mW via a potentiometer. Use the built-in whip antenna or use an external antenna with the standard "F" external antenna connector on the rear panel. Just plug it in and you're on the air. The unit requires 12 VDC @ 100mA to operate. Kit comes with: matching case set, whip antenna, 110VAC power adapter, and audio patch cable. Case size 5"W x 1 1/2"H x 5 1/4"D. (Note: The FM25B is a do-it-yourself learning kit that you assemble. Please remember that the end user is responsible for complying with all FCC rules & regulations within the US, or any regulations of their respective governing body in regards to the application and use of the FM25B).

**FM25B Professional Synthesized FM Stereo Transmitter Kit, adjustable 5 uW to 25 mW Output**

**\$139.95**

## Tunable FM Stereo Transmitter

**KIT**

**Learn The  
Basics Of FM  
Transmitters!**

- ✓ Tunable anywhere in standard FM band... 88 to 108 MHz!
- ✓ Operates on 5 to 15 VDC
- ✓ Settable pre-emphasis 50 or 75 µSec for use anywhere in the world!
- ✓ Easy to build, low cost transmitter includes matching case set!

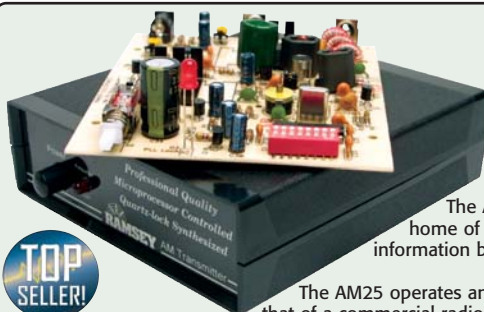
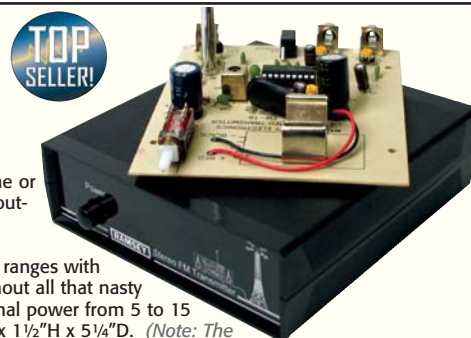
Here is a great entry-level kit that will teach the basics of FM Broadcast transmission while finding many uses around the home or dorm room. The FM10C has plenty of power to cover your home, backyard, or city block. Our manual goes into great detail outlining all the aspects of antennas, transmitting range and FCC rules and regulations.

You'll be amazed at the exceptional audio quality of the FM10C. Tunes through the entire 88-108MHz band in three separate ranges with a tuned LC circuit. Re-broadcast your favorite music commercial-free with the dynamic range the musician intended, and without all that nasty compression the big boys use to make their station sound louder than the competition. Runs on a standard 9V battery, external power from 5 to 15 VDC, or an optional 120 VAC adapter. Includes the matching case & knob set for a professional finished look. Case size 5"W x 1 1/2"H x 5 1/4"D. (Note: The FM10C is a do-it-yourself learning kit that you assemble. Please remember that the end user is responsible for complying with all FCC rules & regulations within the US, or any regulations of their respective governing body in regards to the application and use of the FM10C).

**FM10C FM Stereo Transmitter Kit With Case**  
**AC125 110VAC Power Adapter**

**\$44.95**

**\$9.95**



**KIT**

**Be As Stable  
As A Rock!**

## Professional Synthesized AM Transmitter

- ✓ Fully synthesized, no frequency drift!
- ✓ Ideal for schools
- ✓ Microprocessor controlled!
- ✓ Strappable for higher power output where regulations permit
- ✓ Includes AC power adapter and case set

The AM25 is not your ordinary hobbyist AM transmitter! The AM broadcast band is quite alive and well, and is still considered the home of talk radio. For years the AM band has been a popular place for community broadcasts, in-home broadcasts, and other local information broadcasts. Now you can have a professional synthesized AM transmitter at the cost of a hobby unit!

The AM25 operates anywhere within the standard AM broadcast band, and is easily set to any clear channel in your area. The design is similar to that of a commercial radio transmitter, so while you build it you'll learn how the "big guys" operate. It is widely used by schools - standard output is 100mW with range up to 1/4 mile and is jumper settable for higher output where regulations allow. There is no tuning or tweaking involved with the AM25. The PLL synthesized frequency is easily set with dip-switches and is rock solid without any drift, just like our FM25B. This is critical for any digital radio or tuner. The transmitter accepts line level input from any audio source including CD players, tape decks, computers, etc. Includes matching case & knob set and 110VAC power supply. Case measures 5"W x 1 1/2"H x 5 1/4"D. (Note: The AM25B is a do-it-yourself learning kit that you assemble. Please remember that the end user is responsible for complying with all FCC rules & regulations within the US, or any regulations of their respective governing body in regards to the application and use of the AM25).

**AM25 Professional AM Synthesized AM Transmitter Kit, Case, and AC Power Supply**

**\$99.95**

## Tunable AM Radio Transmitter

**KIT**

**#1 Scouting Project  
For Years**

- ✓ Tunes entire 550 to 1600 KHz AM band
- ✓ Operates on 9 to 12 VDC, includes case set
- ✓ Standard line level input with RCA phono jack
- ✓ 100 mW output. Range up to 1/4 mile under optimum conditions

The AM1 is a great first kit and a fine low power AM broadcaster for the hobbyist on a budget. It's a great way to learn the basics of AM broadcast technology, not to mention basic soldering and component identification (if you're a beginner!). The transmitter can be tuned to broadcast anywhere in the AM band (550 to 1600 kHz).

Setting frequency is simple - tune a nearby AM radio to the desired frequency, then adjust the AM1 coil to match the radio. With 100 mW of output power, range can be up to 1/4 mile. Connect any line level audio source from your CD player, tape deck, or mic mixer to the RCA input on the rear panel of the AM1C and you'll be on the air. It's that simple! The AM1 has been used by Scout camps, churches, schools, and other organizations to provide easy, low cost communications. Includes the matching case and knob set shown. Measures 5"W x 1 1/2"H x 5 1/4"D. (Note: The AM1C is a do-it-yourself learning kit that you assemble. Please remember that the end user is responsible for complying with all FCC rules & regulations within the US, or any regulations of their respective governing body in regards to the application and use of the AM1C).

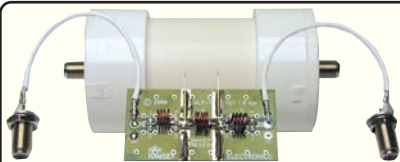
**AM1C AM Radio Transmitter Kit With Case**  
**AC125 110VAC Power Adapter**

**\$34.95**

**\$9.95**







KIT

Wired & Tested

*"Clean Up" Your  
FM Broadcasts!*

## External FM Broadcast Low Pass Filter

- ✓ Clean up the output of a low quality FM exciter
- ✓ Designed around our FCC Certified LPFM transmitters
- ✓ Easy to put in line with your transmitter
- ✓ Includes outdoor PVC housing!

The FM Low Pass Filter kit came about while designing the PX1 and the PX50 Professional FM Transmitter. FCC Ruling 99-25 created a class of radio stations designed to serve local communities by authorizing new classes of non-commercial, low power FM radio services (LPFM). In order to meet the stringent guidelines of the FCC the PX1 and PX50 underwent months of design sessions and many hours of painstaking tests.

One of the secrets to its clean output is the FMLP1. If you own one of those spectrally dirty "import" exciters you'll definitely want to add the FMLP1 to clean up the output and properly match your power amplifier. Maximum input power is 50 watts. The kit utilizes surface mount chip caps, so you'll need ultra fine solder and a magnifying lamp! Includes outdoor PVC housing shown above.

FMLP1

FM Low Pass Filter Kit

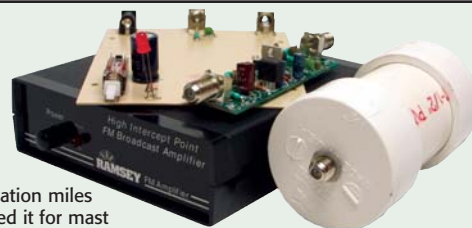
\$29.95

## High Intercept Point FM Broadcast Amplifier

- ✓ Virtually overload proof
- ✓ Mast mount for best performance and signal to noise ratio
- ✓ Put your power at the antenna not in the feedline
- ✓ Very well filtered with 5 sections of low pass filtering
- ✓ Includes outdoor PVC housing!

TOP  
SELLER!

*Amplify BEFORE  
The Line Loss!*



Discover the 1st rule of amplifiers... do it BEFORE the noise! We developed this amplifier to receive a low power college FM station miles away while we had a nearby 50kw AM station. Standard preamps were simply overloaded. We took our LPA1C and redesigned it for mast mounting, sending power up the coax. Wow, did it work!

As an experiment, we tried using it to boost one of our FM transmitters for a customer overseas. We couldn't believe the increase in transmission range, and the lowpass filtering made us feel pretty good about not futzing up anyone else's reception! Naturally, this is a no-no in the USA, but great for the export markets that allow such equipment. Includes the outdoor PVC enclosure and the matching black case & knob set. (Note: The FMBA1C is a do-it-yourself learning kit that you assemble. Please remember that the end user is responsible for complying with all FCC rules & regulations within the US, or any regulations of their respective governing body in regards to the application and use of the FMBA1C).

FMBA1C  
AC125

High Intercept Point FM Amplifier Kit With Case  
110VAC Power Adapter

\$74.95  
\$9.95



KIT

*Our Famous Broadband  
RF Amplifier!*

TOP  
SELLER!

## RF Broadband Power Amplifier

- ✓ Up to one watt RF power output!
- ✓ Broadband range 300KHz to 1000 MHz!
- ✓ Runs on 12-15 VDC

The LPA1 is the ticket for boosting power up to 1 watt over a frequency range of 300 KHz to over 1000 MHz! It is perfect for use as a broadband amplifier for test equipment to amplify low level signal input. It has been one of the most popular lab amplifiers for years! In addition, many users in foreign countries outside the US use the LPA1 to boost their low power FM stereo transmitters to a watt of power capable of providing radio service through an entire town. This application is limited to international areas not under the jurisdiction of the FCC or other similar agencies limiting the power output of your transmitter. Power required is 12 to 15 volts DC at 250 mA via 2.1mm male power jack. Gain of 38 dB at 10 MHz, 10 dB at 1000 MHz. Includes the custom matching case & knob set for a neat, professionally finished look. Case size 5"W x 1 1/2"H x 5 1/4"D. (Note: The LPA1C is a do-it-yourself learning kit that you assemble. Please remember that the end user is responsible for complying with all FCC rules & regulations within the US, or any regulations of their respective governing body in regards to the application and use of the LPA1C).

LPA1C  
AC125

RF Linear Power Amplifier Kit With Case  
110VAC Power Adapter

\$54.95  
\$9.95

## Tru-Match FM Broadcast Antenna

- ✓ Fully weatherproof - rugged PVC construction
- ✓ Matches 50 or 75 ohm systems!
- ✓ Broadband for perfect match!

*Rugged PVC Construction...  
Keeps The Weather Out!*

KIT

Looking for a perfect low cost FM antenna? Our extremely popular TM100 Tru-Mach antenna will fit the bill! Matching your antenna to your transmitter is the single most important link in your transmitter setup. Without a proper match, power is reflected away from the antenna and back into the transmitter! This can cause the final amplifier stage to be damaged, not to mention spurious signals and (no better way to say it!) lousy range.

The unique design features PVC tubes and fittings to make it waterproof and impervious to rain and snow, which make the TM100 one of the most reliable antennas available for the private broadcaster! Unlike other FM transmitter antennas that need to be tuned to a specific frequency, the TM100 is broadband over the entire 88-108MHz band yet still maintains an excellent match! The antenna terminates with a standard "F" connector for easy connection with standard 75 ohm TV coax to your FM10C or FM25B. See our connectors section to adapt the "F" connector to a "BNC" for easy matching of professional 50 ohm coax or 75 ohm TV coax for use with our FM30 or FM100B series transmitters. Maximum power rating of the TM100 is 25 watts. BTW, also makes a GREAT and easy-to-connect omnidirectional receiver antenna!

TM100

FM Broadcast Low Power Antenna Kit (25W Max)

\$69.95



TOP  
SELLER!

*Precision Tune To Your Exact  
Frequency For A Perfect VSWR!*

## 5/8 Wave Colinear Vertical FM Antenna

- ✓ 5/8 wave for excellent gain and maximum range
- ✓ Field adjustable for a perfect match
- ✓ 3.4 dB gain effectively doubles your power!

This is probably the most popular antenna we sell. Why? Let's start with the proven omnidirectional ground plane design, clean rugged construction, and how about easy mounting? The 5/8 wave design keeps your signal low to the horizon and not uselessly radiating up into space - great if your listeners are on the space shuttle, but the pits for the folks out at the edge of town! Imagine a donut shaped pattern of signal radiating from your antenna. For the most range out to the horizon, we need to "squish" that pattern flatter to squeeze more signal out - and that's exactly what this antenna does!

The antenna is easy to assemble and is adjustable to your specific frequency during assembly. Makes a super match and a perfect VSWR to your transmitter! The base of the antenna mounts on any standard antenna mast or pipe (not included). A professional SO-239 connector is provided at the base of the antenna to match a standard PL-259 connector. A perfect match, easy assembly, and a breeze to mount and connect, it really can't get much better than that! Try one and see if you don't agree that it's one heck of an antenna for the money! Height: 7' 7" 200 watt power rating. Visit [www.ramseyelectronics.com](http://www.ramseyelectronics.com) for matching coax cable assemblies to match up to your transmitter.

FMA200

5/8 Wave Colinear Antenna (200W Max)

\$129.95



# Holiday Favorites!

Electronics Is Fun, Especially At The Holidays

## Animated Ghost

- ✓ Automatically greets your visitors!
- ✓ Responds to sudden noises
- ✓ Built-in microphone
- ✓ Adjustable sensitivity

*Moves, Shakes, Blinks!*



Who says ghosts aren't real? Once your friends see this one they'll think differently! The unique circuit board design includes two ominous blinking eyes that change with various conditions, including sudden changes in ambient noise.

A highly sensitive built-in microphone picks up anything from noises to talking and makes the ghost dance with its built-in motor, make eerie sounds with the built-in speaker, and randomly blink.

A white cloth and a hanger are included as shown to make it look even spookier! Runs on 2 AAA batteries. From Velleman.

MK166 Animated Ghost Kit

KIT

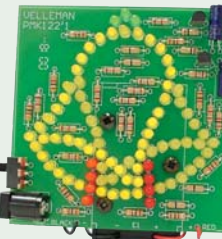
\$21.95

## Animated Holiday Bell

- ✓ 83 LED animated motion!
- ✓ Multiple colors!

*Swings Back And Forth!*

83 LEDs provide a neat looking holiday bell that swings back and forth! Multiple green, red, and yellow LEDs provide you with a festive holiday spirit the moment you see this bell!



A PC board mounted on/off switch and standard power connector are included. Runs on 9-12VDC or a standard 9V battery (not included). Measures 3.2" x 3.5". From Velleman.

MK122 LED Animated Bell Kit  
AC125 110VAC Power Supply

KIT

\$16.95  
\$9.95

## LED Deluxe Christmas Tree

- ✓ 134 random blinking LEDs!
- ✓ Large multi color display!
- ✓ Battery or external power!
- ✓ Built-in on/off switch

*Light Up Your Tree In Style!*

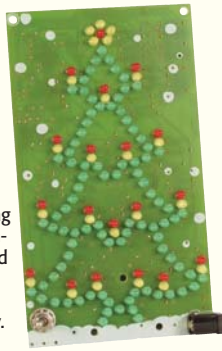
This beautiful electronic Christmas Tree consists of a whopping 134 bright LEDs! Of the 134 LEDs, 18 randomly blinking "candles" give the tree an exciting animated look! Red, green, and yellow LEDs are used to provide a brilliant display.

Runs on an external 9-12VDC supply or a standard 9V battery. Use an external power supply and leave it on continuously! Includes a PC board mounted on/off switch. PC board measures 5.6" x 3.2". From Velleman.

MK117 LED Deluxe Christmas Tree Kit  
AC125 110VAC Power Supply

KIT

\$18.95  
\$9.95



## LED Christmas Tree

- ✓ 16 bright flashing red LEDs!
- ✓ Easy 9V battery operation!
- ✓ Self standing or "hangable"

*Display The Season!*

While a little more basic compared to the others above, this LED Christmas Tree is still a very neat looking self standing attention getter! The green PC board has 16 bright red LEDs mounted in the traditional tree pattern.

A nice 4 transistor circuit is used to make the LEDs blink just like your big tree does! An attached battery pack mounts on the bottom allowing the tree to be self standing or to be hung on your real tree. Runs on a standard 9V battery (not included). Measures 2.4" x 4" x 1". From Velleman.

MK100 LED Christmas Tree Kit

KIT

\$6.95



## LED Halloween Pumpkin

- ✓ 25 bright LEDs!
- ✓ Random flash like a candle!
- ✓ Super bright illumination!

*Spook Them With LEDs!*

You won't be scraping the seeds and guts out of this pumpkin! A six-transistor circuit provides a neat random flash pattern that looks just like a flickering candle, and a super bright LED illuminates the entire pumpkin with a spooky glow!

Runs on a standard 9V battery (not included). Includes an edge mounted on/off slide switch. From Velleman.

MK145 LED Halloween Pumpkin Kit

KIT

\$10.95



## Portable EL Electroluminescence

- ✓ 3.3 feet long!
- ✓ Low power consumption!
- ✓ Highly visible brilliant colors

**Wired & Tested**

*Steady Or Flash!*



Electroluminescent illuminated flexible wire sets can be used for a lot of things but when they're battery powered they're perfect for Halloween and Trick or Treat safety concerns!

Each thin, flexible EL wire set is 3.3' long and runs on two standard AA batteries (not included). Mode settings include steady glow and slow or fast flash! Make it part of a brilliantly lit, custom designed costume or simply add it for illuminated safety while Trick or Treating in the dark. From Velleman. (*Think Tron!*)

NWRR15 EL Illumination Wire Set, Red

\$19.95

NWRG15 EL Illumination Wire Set, Green

\$19.95

NWRB15 EL Illumination Wire Set, Blue

\$19.95



## LED Santa Display

- ✓ 126 LED animated display!
- ✓ Multi-color!

*Here Comes Santa!*

What a way to welcome the holiday season and learn about electronics at the same time!

This animated Santa and reindeer display has 126 dazzling colored LEDs to make a really nice holiday sign. Runs on 9-12VDC so you can use a standard 9V battery or an external power supply so it can be left on continuously. Includes an on/off switch. Measures 3.2" x 5.7". From Velleman.

MK116 Animated Santa Display Kit  
AC125 110VAC Power Supply

KIT

\$16.95  
\$9.95



## 3D LED Christmas Tree

- ✓ Free standing 3D design!
- ✓ 16 flashing LEDs!
- ✓ Customize with extra LEDs!
- ✓ Can be hung on the tree!

*Dazzle Your Friends!*

This Christmas Tree is not your average PC board display! It has 4 "branch" sections giving it a 3D depth look!

Its unique design holds a standard 9V battery at its base as its "trunk" and will stand up on a table or desk with or without the battery. 16 flashing red LEDs are placed on the branches. Extra green and yellow LEDs are included to allow you to customize your tree any way you choose!

Runs on 9-12VDC or the 9V battery (not included) in its base. Measures 3.5" x 4.0". From Velleman.

MK130 3D LED Christmas Tree Kit  
AC125 110VAC Power Supply

KIT

\$7.95  
\$9.95





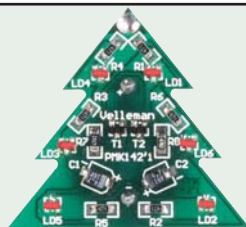


## SMT LED Christmas Tree

- ✓ Alternating flashing 6 SMT LEDs!
- ✓ Great attention grabber!
- ✓ Learn SMT over the Holidays!

### Wear A Flashing Tree!

Build this subminiature Christmas Tree and watch it alternately flash red surface mount LEDs! Small enough to wear as a badge or pendant, or to hang on the tree.



Six high intensity SMT LEDs brilliantly light up this tree. People will be amazed seeing the actual components on the tree while it flashes. Plus, you can tell them you built it! SMT components are used throughout the kit to give you a great start in surface mount. We know they are smaller than small, so as always we include extra parts in case you lose or damage any.

Runs on one standard CR2025 or CR2032 Li-Ion button cell. Measures 1.75" x .3". From Velleman.

MK142 SMT LED Christmas Tree Kit

**KIT** \$10.95

## LED Flashing Holiday Star

- ✓ 35 brilliant red or yellow LEDs!
- ✓ Flashing or steady display!
- ✓ Freestanding or hanging!

### Brilliant LED Star!

A great seasonal gadget or gift for the holiday season!

A classic star shaped PC board contains 35 brilliant red or yellow LEDs. The circuit allows you to select either a flashing or steady display of the LEDs.

The built-in battery holder also acts as a freestanding base for table or desktop use, or you can hang it from the tree or ceiling. Runs on a standard 9V battery (not included). Measures 3.54" x 3.54". Makes a great addition to any holiday decoration. From Velleman.

MK169R Flashing Red LED Star Kit

MK169Y Flashing Yellow LED Star Kit

**KIT** \$12.95  
**KIT** \$12.95

## LED Sound Actuated Star

- ✓ Acts like a LED Vu Meter!
- ✓ Built-in microphone!
- ✓ Adjustable sensitivity!

### Is It A Star Or A Meter?

This is one of the neatest holiday displays that will light up any party! 60 multi-colored LEDs form an attractive star on a dark background PC board.

But it's not just a display... it responds to room audio! That's right, the built-in microphone picks up music and room audio and the LEDs respond just like a professional LED Vu meter!

Adjustable sensitivity allows you to balance the display to any audio level. Great for parties and events. Runs on 9-12VDC. Measures 4.2" x 4.4" x 1.4". From Velleman.

MK172 LED Sound Actuated Star Kit

AC125 110VAC Power Supply

**KIT** \$19.95  
**KIT** \$9.95

## Flashing LED Sweetheart

- ✓ 28 brilliant red LEDs!
- ✓ Unique dual heart design!
- ✓ Freestanding mount!

### The Perfect Valentine!

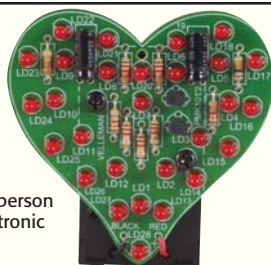
What a way to display your feelings to that very special person in your life! Dazzle her with this unique dual heart electronic display.

28 brilliant red LEDs are formed into two separate heart designs on the heart shaped PC board creating a great flashing display.

Built-in battery holder base makes the heart freestanding and perfect for a desk or table. Runs on a standard 9V battery (not included). Measures 2.4" x 2.4" x 1.2". From Velleman.

MK101 Flashing LED Sweetheart Kit

**KIT** \$6.95



## Flickering Electronic Candle

- ✓ Yellow high intensity LED!
- ✓ 3 different "flame modes!"
- ✓ Power saver timer!

### Can't Blow This One Out!

What a great and safe way to display the traditional flickering candle at the holidays!

In reality, this "candle" is a high intensity Yellow LED, and that means its safe for the kids, pets, and your fingers! The electronic circuit simulates three different modes: realistic flickering flame, steady flame, and slow fade in/fade out. All this without any heat, smoke, or mess! Plus the circuit features an automatic 5 hour power saver timer!

The unique round PC board is designed to drop into a standard 38mm plastic or glass cup. Use a frosted cup for the best display results! Runs on a standard CR2032 button cell (not included). Measures 1.5" x .98". From Velleman.

MK167 Flickering Electronic Candle Kit

**KIT** \$8.95



## LED Animated Effects Star

- ✓ 60 brilliant animated LEDs!
- ✓ Microprocessor controlled!
- ✓ 24 different effects with sequencing!
- ✓ Create your own multi-colored display!

### Dazzling Animated Holiday Display!

This large star features a whopping 60 LEDs and a microprocessor to provide 24 separate animated effects!

Besides the red LEDs, additional yellow LEDs are also included to allow you to custom build your own multi-colored display! Effects include 3 static displays, 15 blinking displays, and 6 animations complete with fading! In addition, "all effects" sequencing is available.

Runs on your choice of a standard 9V battery or an external 9-12VDC source. Measures 4.13" x 4.33" x 1.38". From Velleman.

MK170 LED Animated Effects Star Kit

AC125 110VAC Power Supply

**KIT** \$22.95  
**KIT** \$9.95



## SMT LED Flashing Heart

- ✓ 6 Alternating flashing SMT LEDs!
- ✓ Learn about SMT devices and design
- ✓ Gets her attention!

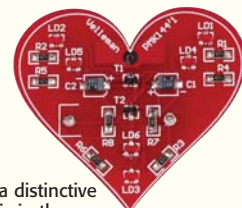
### The SMT Valentine!

Just like the MK142 Christmas Tree, this little kit gives you a distinctive display using 6 Surface Mount (SMT) LEDs. The PC board is in the shape of a heart and is also red.

The small size makes it perfect to be used as a badge or hanging pendant around your neck. Runs on a small CR2025 or CR2032 button cell (not included). Makes a great SMT learning kit and extra SMT components are included just in case you lose or damage any! Measures 1.9" x 1.7" x .3". From Velleman.

MK144 SMT LED Flashing Heart Kit

**KIT** \$11.95



## Electronic "Love Tester"

- ✓ 10 LED love scale display!
- ✓ Audible love level sound!
- ✓ Great party fun!

### Check Your Love Life!

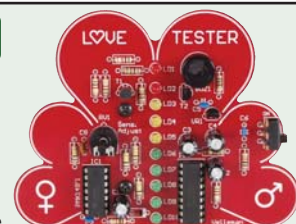
This uniquely shaped "Love Tester" is the ultimate gag for any couple! Designed to check your love life, each partner holds one end of the tester PCB at the appropriate male and female touch pads. Then they romantically join hands and watch the results on the love meter!

10 green, yellow, and red LEDs act like a scale and just like the carnival, when it hits the top they flash, indicating you're a red hot couple! There is also an audible alarm that changes with the "love level."

Next time you're at a party that just isn't going anywhere bring out this little tester and the party will come to life! It's a riot! Wide sensitivity range is compatible with all couples. Includes a built-in power on/off switch. Runs on a standard 9V battery (not included). Measures 4.1" x 3.1" x .98". From Velleman.

MK149 Electronic Love Tester Kit

**KIT** \$16.95





## Dual Electronic Dice

- ✓ Displays two separate dice!
- ✓ Single or dual selection!
- ✓ Can't cheat with these dice!

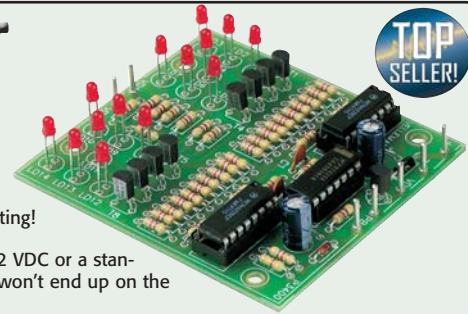
*These Dice Won't Fall Off The Table!*

A lot of board games require a roll of the dice. And a lot of dice rolls end up on the floor, knocking over the board tokens, the little green houses, or even worse, the red hotels! Not anymore, problem solved! Just hit the switch and the dice randomly cycle and slowly come to rest displaying the number! You can select either one die or a pair of dice, depending on the game. Bright LEDs display the same patterns as regular dice. Great for travel games, not to mention this pair of dice won't allow cheating!

When the game is over, don't worry, the auto power saver switches them off after 30 seconds to save battery life. Runs on 8-12 VDC or a standard 9V battery. Board measures 3" x 2.8" and can be mounted in your own special enclosure. You can be sure that the dice won't end up on the floor! From Velleman. *(Well, when the cheater isn't happy I guess he **could** throw it on the floor!)*

K3400  
AC125

Dual Electronic Dice Kit  
110VAC Power Adapter



\$17.95  
\$9.95



KIT

*Make Up Your Mind Already!*

When a decision is simply too important to rationally analyze, let this handy gadget make the tough calls for you with a simple push of a button! One push and the green "Yes" and red "No" LEDs begin to flash. Flashing speed gradually decreases and only one LED remains lit.

What will it be? Yes or No? Push the button and find out! Also features auto power-off to conserve battery life, which, by the way, is a standard 9V battery (not included). Measures 2.2" x 1.2" x 1.4". From Velleman. *(I wonder if these should be on the GSA contract!)*

MK135

Electronic Decision Maker Kit

\$6.95

## Electronic Roulette

- ✓ Spinning sound!
- ✓ Winner tune!

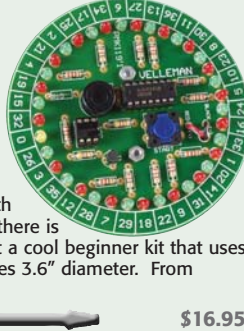
*Easy To Spin This One!*

This electronic version of roulette features a neat round PC board with 37 LEDs simulating a real spinning Roulette game! And when it spins, you hear the spinning sound with microprocessor technology! When the spinning stops and there is a winner you hear a winning tune! Easy assembly makes it a cool beginner kit that uses ICs. Runs on 3 AA batteries (not included). Board measures 3.6" diameter. From Velleman.

MK119 Electronic Roulette Kit

KIT

\$16.95



## Shaking Electronic Dice

- ✓ Just give it a shake like real dice!
- ✓ Microprocessor controlled!

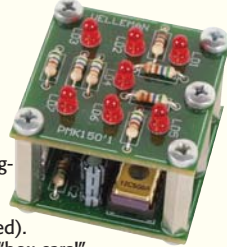
*Shake, Don't Roll!*

You don't have to throw it, just shake it and it acts just like regular dice! It rolls out slowly and flashes the last combination or "winning number!" It's microprocessor controlled circuit is fun to learn! Runs on one 3V Lithium button cell (not included). Get two to simulate a pair of real dice to get "snake eyes" or "box cars!" Measures 1.4" x 1.4" x 1.3". From Velleman.

MK150 Shaking Electronic Dice Kit

KIT

\$13.95



## 4 Player Quiz Table

- ✓ Shows first button pushed!
- ✓ Quizmaster reset!

*The Correct Answer Is?*

Just like the TV game shows, you can have up to 4 players "on the ready" just waiting to be the first one to answer the question. But how do you know who's first? That's simple with the MK133! 4 player push buttons are provided.

The first player to push their button is indicated with a latched on LED. Just like on TV! The "Quizmaster" button resets it for another round! If you have more than 4 players you can even daisy-chain two MK133s together for up to 8 players! Runs on a standard 9V battery (not included). Measures 4.3" x 3.1". From Velleman.

MK133 4 Player Quiz Table Kit

KIT

\$10.95



## Electronic Brain Game

- ✓ Hours of fun with just 4 buttons!
- ✓ 4 difficulty levels!
- ✓ Audio or silent LED operation!
- ✓ Microprocessor controlled!

*You Will Spend Hours!*

The game is simple... repeat a pattern that is randomly generated by the built-in microprocessor. Sound simple? You'll be amazed! At power-up you choose from one of 4 difficulty levels. The pattern is displayed by the 4 LEDs, or by the built-in audible alert, or both.

The speed of the game gradually increases to make it even more challenging! The sleek ergonomic design is easy to hold and the 4 oversized push buttons make it easy and fun to use. You'll find yourself addicted to this little game. Runs on 3 standard AA batteries (not included). Measures 3.3" x 2.6" x 1.6". From Velleman. *(The fun is in the challenge!)*

MK159 Electronic Brain Game Kit

KIT

\$24.95



## Wheel Of Fortune

- ✓ Electronic LED spinning action!
- ✓ Spinning gradually decreases!

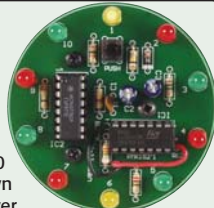
*Where She Stops...*

Acts just like the casino game! Just push the button and the 10 LEDs start showing a spinning action. They gradually slow down until the "winning" one remains lit. Push the button to start over again. Auto on/off assures a long battery life. Measures 2.6" x 1.3". Requires a standard 9V battery (not included). From Velleman.

MK152 Wheel Of Fortune Kit

KIT

\$7.95



## Walking Electronic Bug

- ✓ Avoids obstacles!
- ✓ Steer him with a flashlight!
- ✓ Blinking LED eyes!

*THIS Bug Doesn't Eavesdrop...It Crawls!*

Built around a couple of subminiature vibrating cell phone motors, the bug wanders around looking for things to bump into!

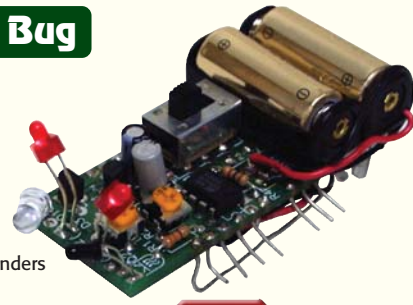
Don't worry though, because sensors below his blinking eyes sense obstacles and make him turn away!

Likewise, you can steer him around with flashlights or laser pointers! Travel direction and pattern are customized with separate speed and sensitivity controls.

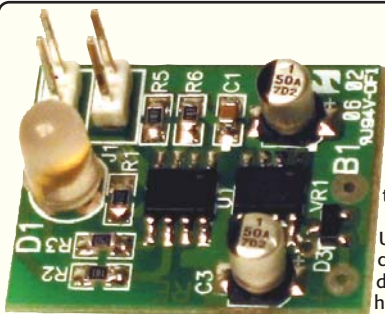
Runs on two "N" batteries (not included). Has two brilliant blinking red LEDs as "eyes". This is a fun kit that is guaranteed to keep you amused, at least until the batteries die or the dog kills it! *(My Chocolate Lab would probably try to make friends with it!)*

WEB1 Walking Electronic Bug Kit

\$29.95







KIT

## SMT Multi-Color Microprocessor Blinky

Learn SMT With The Latest Technology LEDs!

- ✓ Bright full color LED, red, green, and blue elements
- ✓ 8 Pin Microcontroller
- ✓ Operates from 6-12 VDC
- ✓ Extra SMT components are included!

Don't let the old "blinky" name scare you away from this marvelous little kit! It was originally designed as a way to show off the latest technology in RGB (Red, Green, Blue) full color LEDs while providing kit builders with a fun and economical SMT practice kit.

Uses PWM methods to generate any color with a simple 8-pin microcontroller, and features switchable speed selection! The dual jumper control system tells the microprocessor what scanning speed is desired for a full cycle of 16,777,216 possible colors from the LED! It randomly selects different color scanning modes to wow any observer to the point of distraction. This little attention getter is fun to build and has loads of possible applications.

The SBRGB is a perfect attention getter for sales displays, name badges, and beanies. Operates from 6VDC to 12VDC and will run continuously on a standard 9V battery for several days! And if you're new to SMT technology, don't worry, we include extra SMT components to cover your mistakes! You may wonder why you would pay 30 bucks for a blinky kit... but wait till you see the LED smoothly change colors in front of your eyes! (Yes, there are over 16 million possible colors, but I didn't count them!)

SBRGB1

SMT Multi Color Microprocessor Blinky Kit

\$29.95

## High Intensity SMT Blinky

- ✓ Super bright SMT LEDs
- ✓ Subminiature board, perfect for displays
- ✓ Operates from 6 VDC with included cells
- ✓ Learn SMT the FUN WAY!

KIT

Super Bright...  
Super Small!

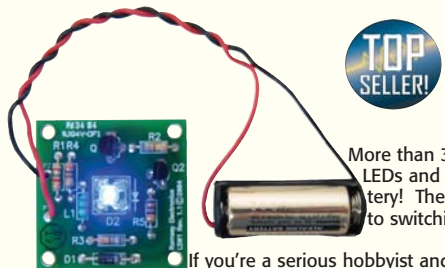
What can be said about a Surface Mount blinky kit? The BL2 is the revival of our classic BL1 blinky kit in a new, modern form! Yes, two LEDs that blink, just like our original blinky kit that has made us famous! This one, however, is subminiature and designed with SMT components! Why, you ask? Besides the obvious, a really neat, super bright attention grabbing display, there's no better way to learn how to work with SMT components! Don't worry, we even include spare SMT chips for when you goof up!

When complete, the BL2 provides alternating super bright red and blue LEDs. Runs on 6VDC and includes two LR55 button cells and a cell holder to mount on the backside of the board. It's one complete unit! If you don't want SMT LEDs you can also use regular T1 3/4 LEDs (included). If you want to learn what SMT is all about, the BL2 is for you! While you're at it, you might want to check out the magnifiers in our tools section, you'll need them! (You'll definitely want to keep your reading glasses handy when you build this one!)

BL2

High Intensity SMT Blinky Kit

\$17.95



TOP  
SELLER!

See... It IS Possible...  
And Learn How!

KIT

## LED Switcher Blinky

- ✓ Run a 3V LED with 1.5V!
- ✓ Learn about switching supplies!
- ✓ Super bright Blue LED!

More than 30 years ago we came out with our ever famous BL1 Blinky kit. Thousands and thousands were built teaching people exactly how LEDs and transistor circuits work. Now we're going one step further! The LSW1 will show you how to light a 3V LED with a single 1.5V battery! The circuit is actually a very unique "switching power supply" which steps up the 1.5V battery voltage to around 5VDC! If you're new to switching power supplies this is the perfect little kit to get your feet wet!

If you're a serious hobbyist and want to see the neatest little circuit then you're in for a treat too! When you're all done you end up with a super bright Blue Telux™ LED running on 1.5V! But it doesn't blink you say? Sure it does... just at 140kHz! Requires a single AA battery (not included). Board measures 1.5" x 1.5".

LSW1

LED Switcher Blinky Kit

\$14.95

## LED Red Blinky

- ✓ Tweak a child's interest!
- ✓ Perfect 1st learning kit!
- ✓ Thousands and thousands sold!

TOP  
SELLER!

Great Starter Kit!

Alternately flashes two jumbo red LEDs. This is the kit you've seen on name badges, buttons, hats, and toys, but there's more to it than that! Add a couple of relays and Christmas light strings and you've got yourself a super light chaser just like the theater marquee. Add a zener diode and make an attention getting overvoltage warning light!

Runs on 3-9 VDC, typically a 9V battery (not included). Used throughout the world as the first learning kit for students young and old. Measures 1" square.

BL1

LED Red Blinky Kit

KIT

\$7.95



## LED Flickering Tea Lights

- ✓ Simulates a flickering candle!
- ✓ Set of two!

Wired & Tested

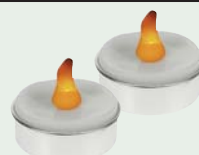
Sit Back And Relax To The Flicker!

These little lights simulate the pleasing effect of a flickering candle, but without the smoke, flame, or hot candle wax on your fingers!

They are powered by one Lithium 2032 button cell that's included with the lights. Measure 1.42" x 1.18". Assembled and ready to go. From Velleman. (Recommended for indoor use, not because of the wind outdoors, but because you won't see them in bright sunlight!)

XMCL3 LED Flickering Tea Light, Factory Assembled

\$2.95



## SMT LED Smiley Face

- ✓ Alternating flashing SMT LEDs!
- ✓ Can be worn as a pendant!

Smile...And Learn SMT!

Build this little attention grabber and learn about SMT at the same time! Measuring only 1" this smiley face can be worn as a pendant or just as a conversation piece. And don't worry about losing or damaging the parts, as we give you extras! Requires a 3V Lithium Ion button cell. Measures 1.1" x .3". From Velleman.

MK141 SMT LED Smiley Face Kit

KIT

\$9.95



## Dual Super Bright LED Display

- ✓ 2 super bright red LEDs!
- ✓ Auto-on at dark!
- ✓ Adjustable sensitivity!

Grab Their Attention Automatically At Night!

This little kit alternately flashes two super bright red LEDs that are extremely "attention getting"! But it goes beyond that. If desired, a built-in light sensor automatically turns it on at night and off at dawn.

Light sensor is adjustable. Runs on a standard 9V battery or external 9-15VDC power. Measures 2.2" x 1.3" x 1.6". From Velleman.

MK148 Dual Super Bright LED Kit

KIT

\$8.95



## Blinky-Eyes Animated LED Display

KIT

- ✓ Blinking Eye display of 66 super bright LEDs!
- ✓ Microprocessor controlled
- ✓ Changes brightness with ambient light levels
- ✓ Animated with constant motion!

*A Real Eye Catcher!*

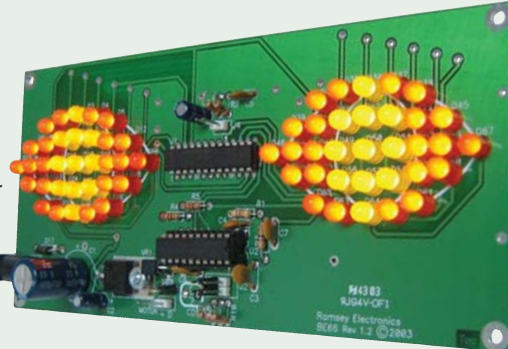
The ultimate animated LED kit that will dazzle you and delight your friends! Uses a microcontroller to randomly select from many different animations such as a long pause before a wink or a twinkle of the eye to startle passers-by. Great for Halloween applications.

Four animation modes: 1. Off for long random periods, then blinks or winks. Designed to scare! 2. On for long periods before performing an animation, perfect for costumes and displays! 3. Animates all the time for constant motion, perfect display attention-getter. 4. Random fire! When placed in a pumpkin, will light the pumpkin like there is a fire within! Truly awesome!

As if all that weren't enough, the BE66 can also control a small hobby motor to shake bushes at random intervals or signal an external player to make a scary sound! Also has a CDS cell to control various modes of automatic light control. Runs on 12VDC or optional AC power supply. (No boring twinkle kit here! You have to see it to believe it! If anything will grab your attention, this will!)

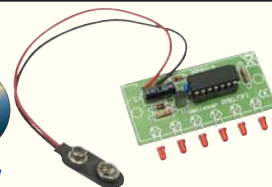
BE66 Blinky-Eyes Animated Display Kit  
AC125 110VAC Power Supply

\$59.95  
\$9.95



## Mini LED Light Chaser

- ✓ 6 bright red LEDs!
- ✓ Sequentially flash in order!
- ✓ Great attention grabber!
- ✓ Runs on standard 9V battery!



*Just Like Those Classic Turn Signals!*

The K8032 gave us a high level output to sequentially flash incandescent lights but what if you just want a small attention getter to do the same with LEDs? We've got you covered! Remember the sequential flashing turn signals on the classic T-Birds and Cougars? Hey, if you can remember KITT you can also remember these! This little kit flashes 6 high intensity 3mm red LEDs sequentially in order. Great small attention getter for signs in stores, exhibitions, model R/C cars, and a whole lot more. Get flashing with the MK173 (Just like Ritchie's award winning classic T-Bird... What a beauty!)



MK173 Mini LED Light Chaser Kit

KIT

\$15.95

## LED Traffic Signal

- ✓ 4-way traffic signal!
- ✓ Automatic switching!
- ✓ Adjustable delay!



*Sure To Stop The Traffic!*

Impress your friends by building a really neat, simulated 4-way traffic signal light! Bright red, green, and yellow LEDs are positioned just like a 4-way signal and automatically sequence. Adjustable timing allows you to change the delay, something we all wish we could do on the road! Runs on a standard 9V battery (not included) and draws only 15mA for long life. Perfect for model railroads, models, and any hobbyists that just want to build something really neat! Measures 2" x 1.4" x 4.5". From Velleman.

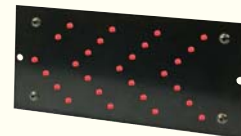
MK131 LED Traffic Signal Kit

KIT

\$7.95

## LED Animated Chevron

- ✓ 28 LEDs create a great animation!
- ✓ Adjustable speed!
- ✓ 10 different animation speeds!
- ✓ Includes front panel faceplate!



*Hey You... Look This Way!*

This animated chevron-type arrow display uses 28 bright red LEDs to display a variety of different animations. Rolling, scrolling, inverse scrolling, blinking, partial blinking and more! The choice of animation and the speed can be easily selected from the front panel, and built-in memory stores your choices even when the power is off. A cool way for businesses to highlight sales, etc., use as a pointer to emergency exits, or just as a great attention getter!

Also useful for auto safety applications - tell 'em to move over! You can power it either with an external supply, or use a standard 9V battery for extra versatility. Dimensions: 2.5" x 5.12" x 0.63" From Velleman.

MK176 LED Animated Chevron Kit

KIT

\$22.95

## LED Animated Smiley

- ✓ Choose from 9 expressions to suit any mood!
- ✓ Static and animated expressions!
- ✓ Auto power-off saves battery life



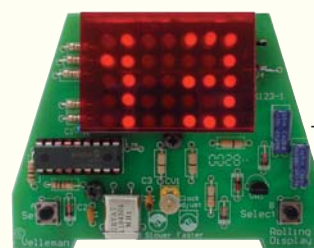
*Hey You... Look This Way!*

This cute little smiley toy is the perfect desk companion! Let everyone know how you're feeling with one of 9 different brightly-lit cartoon faces! You can choose between any of the static expressions, or animate them for a dynamic display. This kit is powered by 3x standard AAA batteries. Dimensions: 3" x 3" x 1.28" From Velleman.

MK175 LED Animated Smiley Kit

KIT

\$19.95



KIT

*Put The Clock In Motion...  
Scroll The Date & Time!*

This scrolling timepiece shows the date and time in alpha numeric characters in a smooth rolling animated display. A typical display would be "Jun-23 12:57".

No external editor is needed to set the date/time. Just select hours, minutes, month or day with the "select" key and enter the values with the "set" key. Time is set in the 24 hour mode and displayed in the 12 hour mode. Runs on 9-12VDC and uses a Type 6LR61/6F22 backup battery if required. Measures 1.8" x 3.5" x 2.6". From Velleman.

MK123

Rolling Clock Display Kit

\$16.95

## Rolling Message Display

KIT

- ✓ 35 LED display!
- ✓ 16 character message
- ✓ Adjustable speed

*Scroll Your Message!*

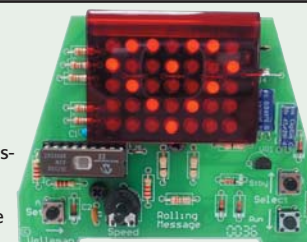
Create your own scrolling or rolling message with this high visibility LED display! Contains 35 brilliant LEDs to light up each character of your custom message, which can be up to 16 characters.

Built-in message editor is simple to use. Press "set" to change a character, then use the "up/down" key to select the character and end with the "<" key. Includes a standby/run mode to restart the display. Runs on 9-12VDC and uses a Type 6LR61/6F22 backup battery if required. Measures 1.8" x 3.5" x 2.6". From Velleman.

MK124

Rolling Message Display Kit

\$16.95





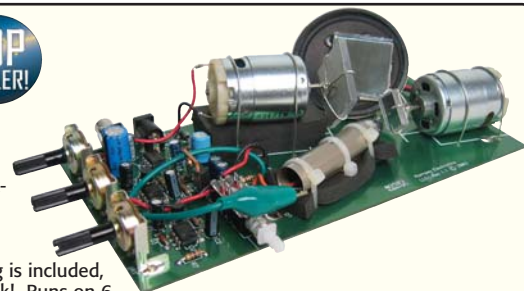


## Laser Light Show

- ✓ Audio input modulates pattern!
- ✓ Adjustable pattern and speed
- ✓ Projects neat motorized patterns



*True Laser Beam Patterns...  
With Audio Modulation!*

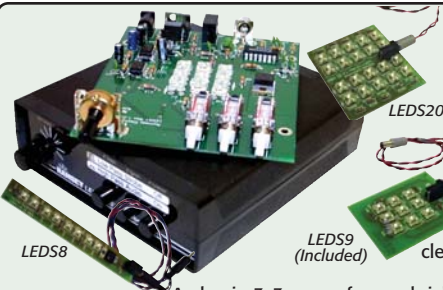


You've probably seen a laser show at concerts or on TV. They're pretty impressive to say the least! Knowing that you can't afford a professional laser display we challenged our engineers to design one that's neat and easy to build, yet inexpensive. The result? The LLS1 Laser Light Show! This thing is sweet! It utilizes two small motors and a small standard laser pointer as the basics. Then we gave it variable pattern and speed controls to customize the pattern!

Not enough, you say? How about a line level audio input to modulate the pattern with your music? You bet! Everything is included, even the small laser pointer. And to make the kit absolutely safe we used plastic mirrors instead of glass that could break! Runs on 6-12 VDC or our standard 12VDC AC Adapter (not included). If you're looking for a fun and neat little laser kit, the LLS1 is for you! *(Goes well with the CD playing on the front cover!)*

LLS1 Laser Light Show Kit  
AC125 110VAC Power Supply

\$49.95  
\$9.95



*Dance To the Beat!*

## High Power LED Strobe Light

- ✓ Everlasting LEDs won't burn out!
- ✓ Variable flash rate or audio trigger!
- ✓ Bass or treble trigger modes!
- ✓ Use as a stroboscope for stop action effects!
- ✓ Safe low voltage construction-no high voltage or fragile Xenon tube to break!

Everyone has seen Xenon stroboscopes "stop" a spinning quarter or flash to music. Now you can get the same effect without the expense and hassle of high voltage Xenon tubes! That's right, a strobe without a Xenon flash tube to break! The price of super bright LEDs keeps falling as their light output keeps increasing, making them affordable for everything from traffic signals to vehicle tail lights... and now, flashing strobe lights!

A plug-in 3x3 array of super bright Telux™ LEDs creates a brilliant, sharp flash similar to a Xenon flash tube. The LEDs can also be mounted directly on the main PC Board if desired. In the standard flash mode, a variable rate control varies the flash frequency from approx. 1 to 220 flashes per second. In the audio sync mode, the flash is triggered by any audio input you provide into the standard RCA audio input connector. Built-in low and high pass filters allow you to select either bass or treble music triggering! An external trigger in/out connector lets you connect multiple units together for simultaneous flash.

Optional plug-in display boards with 8 or 20 LEDs are available for even more strobing power! Just imagine surrounding your room with a few of these, triggered to your stereo! Runs on 12-15 VDC and unlike the high voltage Xenon strobes of the past, the LEDS1 is safe for the kids to build! The plug-in display boards may be mounted on top of the case, or remotely located. Be one of the first to experience the new high output LEDs! *(No, an 8-track of disco music and a leisure suit aren't included with this kit!)*

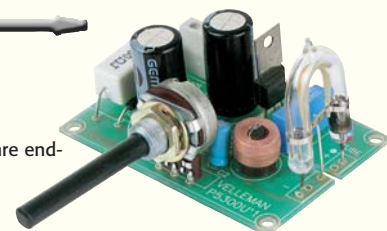
LEDS1C High Power LED Strobe Light Kit With Case  
LEDS8 Display Board, Inline Array Of 8 LEDs  
LEDS20 Display Board, 5x4 Array Of 20 LEDs  
AC125 110VAC Power Supply

\$49.95  
\$17.95  
\$29.95  
\$9.95

## Xenon Tube Strobe Light

- ✓ Ultra bright Xenon flash tube!
- ✓ Adjustable flash rate!
- ✓ Runs on 110-120VAC

*Oh No... We're Back To The 70's!*



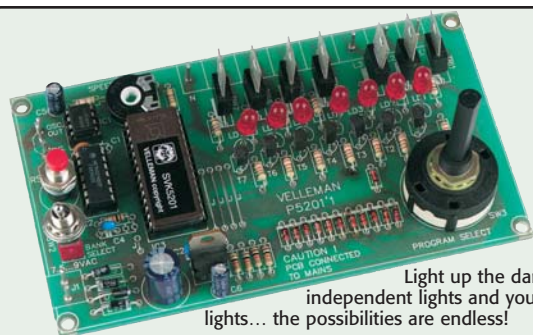
Light up the dance floor, create lightning effects for Halloween, or pretend like you're in a silent film from the 1920s! The possibilities are endless with this compact and easy-to-build strobe kit. All you need is the disco ball, a place to hang it, and some old 8 track tapes!

This kit reminds me of my early Popular Electronics kit days in high school! Yep, one of the projects was a Xenon tube strobe kit and I built it... to go with my polyester leisure suit, paisley shirt, and white shoes! Decades later, these strobes are as popular as ever!

Simple board construction includes a variable flash rate control from 2-20 flashes per second. Runs on standard 110-120VAC. From Velleman. *(Do I still have the leisure suit? No... but it's probably still at the Salvation Army where I last left it!)*

K5300 Xenon Tube Strobe Kit, 110-120VAC  
K2601 Xenon Tube Strobe Kit, 220-240VAC

\$19.95  
\$21.95



*Let There Be Lights!*

## Light Computer Control Module

- ✓ Sixteen different patterns
- ✓ Seven outputs
- ✓ Adjustable speed
- ✓ External oscillator output
- ✓ Daisy-chainable
- ✓ Special two-unit link mode for 14-channel operation
- ✓ Pattern indication via LEDs

Light up the dance floor at a club or brighten up any party with this light control computer module. It's got outputs to control seven independent lights and you can choose from sixteen different programmed patterns! Clubs, parties, advertisements, sign installations, Christmas lights... the possibilities are endless!

The circuit is designed so that once installed, it can easily be controlled from the front panel. You also get on-unit visual feedback with the built-in status LEDs. If you need to control more than seven lights, no problem! The K5201 can be operated in a unique dual-unit mode specially designed to make two modules operate as one, and for additional flexibility an unlimited number of units can be daisy-chained for synchronous operation!

Note, this controller is for use with resistive loads such as regular incandescent light bulbs. Not for use with transformer operated or fluorescent lighting. Dimensions: 5.3" x 3.1" From Velleman.

K5201 Light Computer Control Module

\$59.95



## LED Dual White Strobe

- ✓ 2 super bright white LEDs!
- ✓ Powerful flash effect!
- ✓ Adjustable speed!
- ✓ Includes front panel faceplate!

### OK, You Got My Attention!

This adjustable-speed strobe is great for parties, projects, as attention grabbers, and a whole lot more! The awesome strobe effect is achieved with super-bright LEDs, and you can control the speed of the flashing anywhere from 1-60 flashes per second! Besides an attention getter it makes a great "pocket strobe" to observe moving parts and rotating machinery.

Also features a toggle to switch quickly between fast/slow flashing. Powered by a standard 9V battery (not included). Measures 2.2" x 1.3" x 1.6" From Velleman.

MK147 LED Dual White Strobe Kit

KIT

\$10.95



## High Power LED Driver

- ✓ High efficiency switch-mode circuit!
- ✓ Drives the latest high power LEDs!
- ✓ Short circuit protection!
- ✓ Compact size fits any project

### Use Them... The Costs Came Down!

High-power LEDs are quickly finding their way into the mainstream thanks to their ever-lowering cost and high-reliability. Get some into your projects easily with this compact and efficient driver! It may be small, but it features short circuit protection, a built-in rectifier for easy AC source connection, and will deliver the accurate constant current needed to drive high-power LEDs correctly! Use it at home, for a club, on a stage, in education, architectural lighting, science projects, etc... This versatile circuit can even double as a fixed current NiCd/NiMH battery charger!

Delivers 350mA or 700mA at a constant current. Input voltage 6-12VAC or 9-18VDC. Power consumption 650mA max. Measures 1.8" x 1.2" x .64". From Velleman.

K8071 High Power LED Driver Kit

KIT

\$14.95



MK155

LED Magic Wand Kit

KIT

### Say It... In Mid Air!

This is as close as it comes to a "Magic Wand"! Shake it back and forth and brilliant messages seem to appear in mid-air! Six high intensity LEDs are microprocessor controlled to display messages and graphics that are pre-programmed into the wand.

You can also custom program a message of your choice! From amazing your friends, to making a statement at a concert or simply telling your loved one how you feel, the message wand can't be beat! Runs on two AAA batteries (not included), and the auto power off circuit gives you long battery life. Measures 6.4" x 1" x .9". From Velleman. *(I tried to program it to say "I'm tired of writing catalog copy" but it was too many digits!)*

## LED Magic Message Wand

- ✓ Message floats in air!
- ✓ Fun at concerts, events
- ✓ High visibility red LEDs

\$12.95

## Music Lights Controller

- ✓ Controls 3 channels of lights!
- ✓ Plug in your standard 110V lights
- ✓ Different lights flicker to different tone ranges of your audio
- ✓ Easy to connect, just plug in the lights
- ✓ Runs on 110VAC!

### Create A Dazzling Display Of Light!

See your music come alive and set the mood with our infamous music lights kit! This sweet little kit controls up to three separate incandescent light circuits to make them timed directly by the tonal qualities of your music. Set one channel output to respond to the bass beat or "lows" and really kick into the mood with some floods or spots. Set the "Mids" to control ambient lights and the highs to control some secondary lights. Turn your music on and have a party!

Input is a standard 110VAC plug, and each output is connected to a standard consumer "extension cord outlet" for a safe connection. Each channel load can be a maximum of 300 watts, and that's a lot of light! Plug in your holiday light strings and make them dance to the music! Plug in some strip lights around your room, set the controls and "crank'er up"!

The kit includes a custom case/knob set to give you a great finished look to match your stereo equipment. Can only be used with incandescent bulbs and fixtures, and cannot be used with high efficiency replacements, fluorescents, or other non-standard lights. The case size 5"W x 11 1/2"H x 5 1/4"D.

ML1C

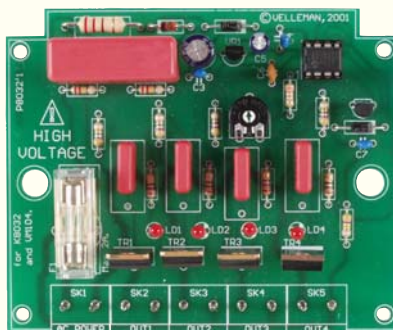
Music Lights Display Controller, 110VAC

\$59.95



KIT

### Run Light, Run!



This neat little running light kit will power four incandescent lighting loads in sequence, so that the light appears to "travel" back and forth (just think of the red lights on the hood of KITT from Knight Rider... the original series of course, not the new one, ugh!).

Use it for a flashy light display on the dance floor or hypnotize unsuspecting victims with its rhythmic display! Speed is adjustable between 0.2Hz and 3.0Hz. to provide the light pattern you desire. Maximum load per channel is a whopping 450W at 240VAC and 230W at 115VAC.

Input AC power is 110-240VAC depending on your output requirement. So it's compatible with standard US households as well as European mains and commercial 208/220/230/240 sources and lighting.

On-board LED indicators show the actual output lighting display. Board measures 3.9" x 3.2" x 1.4" From Velleman. *(Yikes, I remember KITT, watched it every week, maybe that's why all my cars are black! Now he's a talent judge and makes weird videos!)*

K8032

4-Channel Running Light Kit

\$38.95

## Running Lights Controller

- ✓ Controls 4 separate lights in sequence!
- ✓ On-board LED indicators
- ✓ Adjustable speed
- ✓ Easy assembly
- ✓ Runs on and controls 110-240VAC!



KITT!





## Multifunction Digital Clock

- ✓ Time, date, & temperature!
- ✓ Countdown, lap, scoreboard, and more!
- ✓ 6 1.42" high digits!
- ✓ Keychain RF remote control included



B8009 Custom Enclosure



**The Digital Clock... That Simply Has It All!**

This clock kit features a mind-boggling array of functions! Set a timer, count down to a special date (a wedding, or more importantly the release of the new Star Trek movie?!), hook up a relay and use it as a temperature control... the possibilities are endless! Six IC's control 132 LEDs to form six eye-catching 1.42" tall digits that display practically any function you could expect from a clock radio type device -- and even some you wouldn't!

Features include: Time, date & temperature indication, selectable with toggle option. 1 second resolution chronometer with lap function. Count down function to a specific date (on the last day H:M:S are displayed.) Scoreboard function (two players or teams, count up to 199). Random generator from 00 to 99. 2 digit dice. Count function. Chime beep option. Relay output for temperature control or time alarm. US and European display options for time, date, and temperature (Celsius or Fahrenheit).

All functions and settings are done through the included 433MHz RF wireless keychain remote control! Battery backup provided by a standard 9V, power supply is 12V DC / 300mA. Circuit board measures 10" x 3.2". Order the matching B8009 custom enclosure and faceplate for a really nice finished looking kit. (*I'm going to get one of these and set the count-down clock to when I have to write next years catalog... then leave on vacation the day before!*)

K8009	Multifunction Digital Clock Kit	\$89.95
B8009	Matching Custom Case Set & Faceplate For K8009	\$34.95
AC125	110VAC Power Supply	\$9.95



MK151  
AC125



LED Digital Clock Kit  
110 VAC Power Supply



**Digital Clock Kits Are Back!**

Not your everyday clock kit! This digital clock kit features red 7 segment LED displays in a modern attractive case. Automatic time-base selection gives you the option of internal or line-frequency controlled 50/60 Hz.

Internal timebase has a fine tuning adjustment for precision time keeping. It can also be set for either 12 or 24 hour mode and features battery backup (3 AA batteries, not included) in case of a power failure. Runs on 9V AC or DC. Order our AC125 power supply. Comes complete with the custom designed case to give your clock a great finished look. From Velleman.

## LED Digital Clock

- ✓ Automatic timebase selection!
- ✓ 12/24 hour mode
- ✓ Battery backup

\$29.95  
\$9.95

## Jumbo Multifunction Digital Clock

- ✓ Four huge red 7-segment displays
- ✓ Optional temperature sensor available
- ✓ Displays time, temperature, and OPEN/CLOSED
- ✓ Choose between 12 or 24 Hour Time, Celsius or Fahrenheit
- ✓ Enclosure included
- ✓ Battery Backup



**Bright and Bold Time and Temperature!**

The Jumbo Single Digit Clock below has always been a fun kit for those looking for a quirky clock, but what if you want the whole clock? Well we finally have the answer! This kit combines four of the the jumbo seven-segment displays below into one giant display perfect for offices, computer rooms, and shop windows! Not only does it display the time in your choice of either 12 hour or 24 hour formats, it can also display temperature in Fahrenheit or Celsius! A bonus mode cycles automatically between your choice of time, temperature and OPEN or CLOSED ("CLOSED" scrolls across the display) or a combination of the three. Easy-to-use controls let you set the time and switch modes. You can even put the OPEN/CLOSED switch in a remote location so you can toggle easily from the other side of your shop! And it even has a secret bonus feature: hold down the "HOUR" button and apply power and it will display the AC frequency of your power grid! The entire clock is ready for easy wall-mounting and measures 9" W x 2.9" H x 1.26" D. From Velleman.

K8089	Jumbo Multifunction Digital Clock Kit	\$84.95
K8067	Temperature Sensor (Kit)	\$19.95
VM132	Temperature Sensor (Assembled)	\$24.95
AC125	110VAC Power Adapter	\$9.95



**The Most Unique Clock You'll Find!  
But Don't Take Your Eyes Off It!**

Now THIS is the ultimate gadget digital clock for the electronic enthusiast! It's just one single digit... but it's a big one! A huge bright red 57mm, 7-segment display brightly displays complete 12-hour time format in a sequence of digits... one digit at a time! And for those that don't know how large a 57mm 7-segment display is, the numeral itself measures 2.25" W x 1.6" H! This clock will definitely be a conversation piece!

But you don't just get a large 7-segment display with some parts on the back of it. The display is mounted in a dark attractive hi-tech enclosure that features a single button to control all the features of the clock! It also includes a "blank display" dark mode. Built-in clock accuracy is 30ppm. Runs on 9-12VDC at 150mA. Finished case measures 2.9" x 2.3" x 1.3". From Velleman. (*One, Two, Three, Four... Only you will know the time is 12:34!*)

MK153	Jumbo Single Digit Clock Kit	\$26.95
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## Jumbo Single Digit Clock

- ✓ One giant red 7-segment display!
- ✓ One button operation!
- ✓ Time is displayed as a sequence of digits!
- ✓ The ultimate gadget!
- ✓ Includes the hi-tech looking enclosure!
- ✓ Dark mode

\$26.95



## Classic Nixie Tube Clocks

KIT

Wired &amp; Tested

- ✓ .7" bright orange Nixie display
- ✓ Soft fade display!
- ✓ 12 or 24 hour format!
- ✓ Top face or side face Nixie tubes
- ✓ Today's technology with yesterday's display!
- ✓ The ultimate conversation piece!
- ✓ Unique and attractive case designs

*It's Time To Go Back In Time...  
With Time!*



IN14TM

### THE HISTORY

The Nixie tube made its debut in 1954 and quickly found its way as a digital display in high end test equipment, frequency counters, military applications and research projects. Soon they were used as the very first electronic digital display in consumer products like calculators, and the very first digital clocks. For those that were there, who could forget that warm golden glow of digital numbers changing before your eyes!

In the early 70's, seven segment vacuum fluorescent displays quickly replaced the Nixie because they did not require the complex cathode structure and also provided higher resolution graphics. As technology grew, vacuum fluorescent displays were quickly replaced with LED displays because they were much smaller, less fragile, had lower power consumption, and could rival the brightness and intensity of VCDs. Not requiring high voltage, LED seven segment displays quickly became the standard display for virtually all digital display products. Subminiature versions even found their way into the early Pulsar wristwatches!

Ironically, Ramsey Electronics started up in the early 70's and one of our first products was a neat and very high tech 7 segment LED clock kit in a nice extruded aluminum housing. It became extremely popular and we became famous for bringing state-of-the-art IC driven LED display technology to the hobbyist! Now, more than three decades later, we are proud to bring not only a piece of history, but a piece of Ramsey history back to the hobbyist... The Nixie Tube Digital Clocks!

### RETRO AT ITS FINEST!

Designed to pay homage to the era which birthed the Nixie, these clocks won't pick up radio stations, won't dock your iPod, and certainly won't play CDs. They won't even wake you up in the morning! But what they will do is display the time, beautifully and simply, like no other clock today can! Once utilized for military and high-end test equipment, Nixies are now prized for their modern aesthetics. The warm neon glow of a Nixie clock adds a cool retro touch to any office, home or work area.

Since their "demise", Nixie tubes haven't been manufactured domestically for decades. However they were still being manufactured in high volume in the mid 80's in the former Soviet Union. These Nixie tubes are the only ones readily available today and are the tubes used in the clocks. These space-race era Russian manufactured tubes also feature a great conversation starter... the number "5" is an upside down "2" reflecting an efficient and cost effective design philosophy from the cold war superpower! Both unexpected, effective, and thought provoking!



IN12AL

### THE CLOCKS

**IN14TM** Features six IN14 Nixie tubes mounted in a beautiful hand crafted Teak and Maple base. The base finish is hand rubbed varnish and linseed oil. The Hours, Minutes, and Seconds are separated by an NE2 Neon bulb matching the era of the clock. Advanced features include brightness control and auto-dim. From the two setting buttons you can increase or decrease the brightness of the Nixies from 0 (off) to 10 (full brightness). You can also set the clock to lower the brightness between two specified hours in the day (such as 08 to 17 when you are not home) to extend tube life or to customize your display for nighttime use. The IN14 is powered by a provided 110VAC to 12VDC power supply, and utilizes a crystal oscillator for the time base that is accurate to 20ppm. A simple calibration procedure can achieve an accuracy even better than 10ppm! The IN14 can be used overseas with the optional SPS15U power supply. It can also be used with a 12VDC source. Measures 8.25"W x 3"H x 4"D.

**IN12AL** Features six IN12 Nixie tubes mounted in an attractive aluminum housing with black bevels to match any modern desk decor. Dual rear buttons set the time and select your choice of 12 or 24 hour mode. The clock runs on 120VAC, 60Hz. It uses the 60Hz line frequency as the time base, so it cannot be used outside domestic 120VAC/60Hz power sources. Measures 6.5"W x 3"H x 1.75"D.

Both clocks perfectly mesh today's technology with the Nixie era technology of the 60's. The brain of the clock is the MicroChip PIC16FXXX PIC series micro-controller which controls all functions of the clock. The Nixie tube display is driven with a surface mount (SMT) Supertex HV5522 high voltage serial to parallel converter. From there, either "top face" IN12 or conventional "side tube face" IN14 Nixies are used. Both feature a very unique soft fade display for an incredibly smooth transition as the numbers change. They also support 12 or 24 hour display format.

### WHAT IS A NIXIE TUBE?

The Nixie tube is a cold-cathode tube filled with neon gas and equipped with a wire mesh anode and multiple cathodes in the shape of numerals. Applying power to one of the cathodes creates the characteristic and appealing soft orange glow. Although the technology was pioneered in the early 20th century, nixie display tubes weren't brought to market commercially until 1954 by the Burroughs Corporation. The name "Nixie" was derived by Burroughs from "NIX I", an abbreviation of "Numeric Indicator eXperimental No. 1".

Nixie tubes were always designed to have an extended life. It is not uncommon to expect a tube life of 5 years or more. The new Russian Nixie tubes used in these clocks are hand selected and tested for brightness, flaws, and irregularities. They are warranted against failure (not breakage!) for 30 days. If a tube in a new clock fails within 30 days, send us the clock and we will replace it free of charge. Replacement tubes are available with clock purchase, see below for terms. (Note, they are not plug-in like miniature vacuum tubes, soldering/desoldering is required). Beyond the tubes, our standard product warranty applies.

### THE ULTIMATE CONVERSATION PIECE!

Show your nostalgic fondness for yesterday's technology with a Nixie tube clock. It is rather ironic that in their heyday the use of Nixies was considered too expensive for consumer products like clocks, and here we are today! The unmistakable soft orange glow and the remarkable fade display feature in an incredibly beautiful hand rubbed teak and maple base! Then there's the discussion of Russian tubes made during the cold war, with an upside down "2" as a "5"... It just doesn't get any better than that! Get on the retro bandwagon with your very own Nixie classic clock! (*My first frequency counter had Nixie tubes, it was so cool... at the time!*)

### SEE IT IN ACTION!

If you want to see these clocks in action, visit [www.ramseykits.com/nixie](http://www.ramseykits.com/nixie). You will see that warm golden glow of digital numbers changing before your eyes!

IN14TM	Nixie Tube Clock, IN14 Tubes, Teak Maple Base, Kit	\$329.95
IN14TMWT	Nixie Tube Clock, IN14 Tubes, Teak Maple Base, Factory Assembled & Tested	\$369.95
IN12AL	Nixie Tube Clock, IN12 Tubes, Aluminum, Kit	\$169.95
IN12ALWT	Nixie Tube Clock, IN12 Tubes, Aluminum, Factory Assembled & Tested	\$209.95
SPS15U	Optional Switching Power Supply For IN14TM, 80-280VAC, (Required For International Use Only)	\$29.95
IN12	IN12 Spare/Replacement Nixie Tube *	\$7.95
IN126	IN12 Spare/Replacement Nixie Tube, Six Pack *	\$44.95
IN14	IN14 Spare/Replacement Nixie Tube *	\$7.95
IN146	IN14 Spare/Replacement Nixie Tube, Six Pack *	\$44.95

\* Spare Nixie tubes are only available with the purchase of a clock or within 1 year of a purchase (there are only so many!)





## Electronic Siren

- ✓ Just like the police cars!
- ✓ 5W audio output!

*Here Come The Cops!*

The SM3 has been one of our most popular mini-kits for decades! It's a great starter kit, and the feeling of achievement is great when you connect a battery and speaker, push the button and hear an electronic police siren!

This little circuit exactly duplicates the upward and downward wail of an electronic police siren. A closure (typically a push button) generates the upward wail, releasing the switch makes it return downward.

Powerful 5 watt audio output drives any speaker but a "horn" type speaker provides the loudest results. Runs on 6-12 VDC, typically a small 9V battery. Great little kit to build into your projects or as a stand-alone fun generating siren!

SM3 Electronic Siren Kit

\$7.95



## Effects Sound Generator

- ✓ 10 different sound effects!
- ✓ Speaker and line level outputs!
- ✓ 1 watt audio output
- ✓ Runs on 8-10VDC

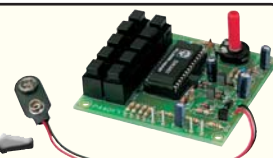
*Annoy Your Enemies, Amuse Your Friends!*

This pocket-sized kit is a great attention-getter! Just attach to any speaker and select from any of the following sound effects: machine gun, European siren, "phaser" gun, racing car with motor howl, screeching car tires on a curve, explosion, machine gun fire followed by explosion, "wild charge tune," "snake charmers tune," and a US siren! Ideal for DJs, parties, etc.

Powerful 1 watt output drives any speaker and line level output feeds any standard amplifier aux input. Runs on 8-10VDC or a standard 9V battery. From Velleman. Kids love this kit. *(A little more than their parents do after it's completed and operating!)*

K4401 Special Effects Sound Generator Kit

\$29.95



## Digital Voice Changer

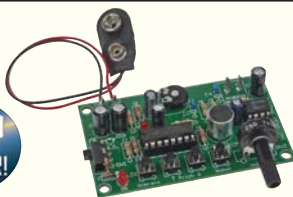
- ✓ Alter your natural voice!
- ✓ Hi pitch, low pitch, vibrato, etc!
- ✓ Built-in microphone!
- ✓ Great for parties!

*You Aren't Who You Are!*

This voice changer kit is a riot! Just like the expensive units you hear the DJ's use, it changes your voice with a multitude of effects! You can sound just like a robot, you can change the pitch of your voice variably from low to high. For even more effect, add vibrato to your voice! Great for parties, recordings, bands, and the ever popular prank phone calls! Not that we endorse those incredibly funny prank phone call CD's, TV shows, and DVD's! Speaker output provides a powerful 1.5W output at 4 ohms. A line output is also provided to interface into your audio equipment... or telephone coupler! Runs on a standard 9V battery (not included). Board measures 3" x 1.8". From Velleman. *(No, I only have all those CD's and DVD's for research purposes!)*

MK171 Voice Changer Kit

\$14.95



## Pink Noise Generator

- ✓ Pseudo random digital noise!
- ✓ Adjustable from 30-100kHz!
- ✓ Optimize your acoustics
- ✓ Runs on 1-12VAC or 12-15VDC

*Think Pink!*

Pink noise is a great tool for testing and equalizing rooms (especially living/listening rooms) to make sure your sound system is giving you the best possible audio. Using this generator and a spectrum analyzer you can equalize your room to exacting specifications.

Why Pink noise? Unlike white noise, which has equal power per Hz, pink noise is filtered to give equal power per octave or per 1/3 octave. This means pink noise contains more of the frequencies that the human ear is attuned to, making it ideal for acoustic equalization! If desired this kit is easily modifiable to produce standard white noise as well. Dimensions: 2.8" x 1.7". From Velleman.

K4301 Pink Noise Generator Kit

\$19.95



## Siren Sound Effects Generator

- ✓ Generates 4 separate sounds!
- ✓ Includes on/off switch!
- ✓ Includes PC mounted speaker!
- ✓ Runs on a standard 9V battery!

*This Little Kit Is A Riot!*

This fun little sound generator is more than a siren. Once assembled you can create your choice of 4 different sound effects: Police siren, fire brigade, emergency vehicle, and laser gun! Use the laser gun to go on a rampage and then just call in the police and fire vehicles to clean up your mess! Wow, how's that for catalog writing imagination!?

Variable pitch control allows you to customize the sound! Built-in PC board mounted speaker makes this kit ready to go when you're done. Runs on a standard 9V battery (not included). Measures 2.4" x 1.6". From Velleman. *(Did I say imagination?!)*

MK113 Siren Sound Effects Kit

\$12.95



## Electronic Metronome

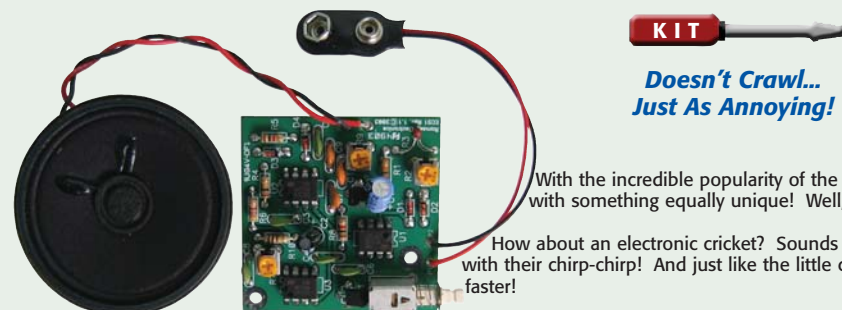
- ✓ Audible and visual indication!
- ✓ Adjustable volume and BPM!
- ✓ Built-in speaker!
- ✓ Compact size!

*Keep Perfect Time!*

For centuries musicians have used metronomes to keep a standard tempo, but mechanical wind-up metronomes are bulky and require winding. On the flip side, newer pre-assembled electronic metronomes tend to be pricey and cluttered with unnecessary features. This kit is perfect for anyone looking for a simple, compact, and inexpensive metronome that they can build themselves! Features controls for volume and beats per minute. The PC mounted speaker gives you a pleasant timing beat and a board mounted LED gives you visual indication for the "silent mode" of operation. Runs on a standard 9V battery (not included). From Velleman.

MK106 Electronic Metronome Kit

\$10.95



*Doesn't Crawl...  
Just As Annoying!*

With the incredible popularity of the "Electronic Dripping Faucet" kit (EDF1, page 18) we figured we had to come up with something equally unique! Well, this one is unique... to say the least!

How about an electronic cricket? Sounds just like those little black critters that seem to come from nowhere and annoy you with their chirp-chirp! And just like the little critters, we made it sensitive to temperature so when it gets warmer, it chirps faster!

That's right, you can even figure out the temperature by the number of chirps it generates! Just count the number of chirps over a 15 second interval, add 40, and you have the temperature in degrees Fahrenheit! Not as fancy as a digital thermometer but much more unique! And unlike its little black predecessor, the ECS1 operates from around 50°F to 90°F! I don't think there are too many real crickets chirping away at 90°F! A unique thermistor circuit drives a few 555 ICs providing a variable chirp that is guaranteed to annoy everyone around you! But just watch their faces when you tell them the temperature outside!

Runs on 9-12VDC or a standard 9V battery (not included). Includes everything shown, including the speaker and battery clip, to make your cricket project a breeze. *(If it drives you nuts you probably can squish it under your feet to make it stop... but that voids the warranty!)*

ECS1 Electronic Cricket Sensor Kit

\$24.95

## Electronic Chirping Cricket Sensor

- ✓ Chirps like a real cricket!
- ✓ Senses temperature and changes its chirp accordingly!
- ✓ You can actually determine the temperature and amaze your friends!



## Electronic Watch Dog

- ✓ A barking dog on a PC board!
- ✓ Two barking sounds!
- ✓ Automatic sound detection!
- ✓ Eats very little and never sleeps!

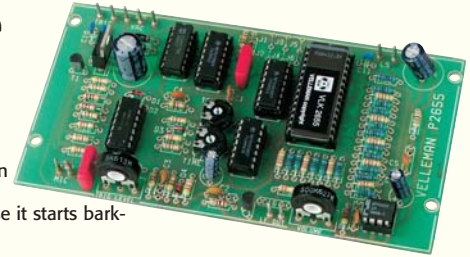
There are many times when it's nice to have a barking dog react to someone at your door or a strange noise in the house when you're gone, but not all of us can have a dog! The answer... the Electronic Watch Dog! This unique circuit generates two different sounds of barking dogs. You can select which "dog" you would like! Then when your electronic dog "hears" a strange noise it starts barking!

Unlike a real dog, the super sensitive microphone has adjustable sensitivity to control what activates it (I mean makes it bark!) The "dog" produces 2 watts audio output at 4 ohms. This dog doesn't eat dry or moist dog food, instead it eats 2-8VAC or 9-12VDC! And it's a little guy: only 5.6" x 3"! You can order the handy power supply below. If you're not building the doggie into your own case or application you can also order the custom case set below. From Velleman. *(I believe our real watchdog has a bit more than 2 watts output!)*

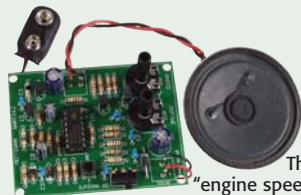
K2655 Electronic Watch Dog Kit  
WCAH2851 Matching Case Set  
AC125 110VAC Power Supply

*Automatically "Barks" At  
The Sound Of Noise!*

KIT



\$39.95  
\$6.95  
\$9.95



building the kit!

This cute little project authentically simulates the sound of a vintage steam engine locomotive and whistle! The unique design also provides variable "engine speed" as well as volume, and at the touch of a button the steam whistle blows! Includes a small 8 ohm speaker so all aboard when you're done

Great for model railroads, sound effects for radio and stage, or just plain fooling around! Runs on a standard 9V battery (not included). Measures 3.9" x 3.3". From Velleman. *(Could have used this with my old original Lionel set that was given away and is now worth a fortune!)*

MK134 Steam Engine & Whistle Kit

KIT

## Steam Engine & Whistle

- ✓ Vintage steam engine on a PC board!
- ✓ Adjustable "speed" and volume!
- ✓ Push button steam whistle!
- ✓ Runs on a standard 9V battery!

\$11.95

## Electronic Multi-Tone Chime

- ✓ 1, 2, or 3 tone selectable!
- ✓ Adjustable tone and volume!
- ✓ Uses batteries or doorbell supply!

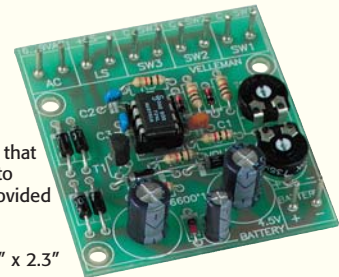
This electronic chime generates three different available chime tones which can be selected by individual switch closures. Perfect for replacing that old doorbell buzzer or bell. It can also handle three separate door sounds! The IC design provides a clean audio output of a third of a watt into any standard 8 ohm speaker (not included). The circuit runs on 4.5VDC (three 1.5V batteries, not included) or 6 to 9VAC which is normally provided by the old doorbell transformers! Just use that if you have one.

Terminals are included for three separate switch contacts, speaker output, AC, and 4.5V battery connections. The compact board measures 2.1" x 2.3" and can easily be installed in any suitable location. For a great finished look, order the recommended case set below. From Velleman.

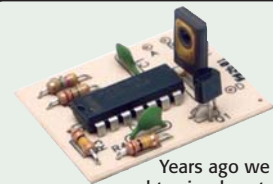
K6600 Electronic Multi-Tone Chime Kit  
G416 Recommended Case Set For K6600

*Replace That Old Bell!*

KIT



\$22.95  
\$8.95



*Our Original "Mad Blaster"*

Years ago we came out with this little kit that was quickly given the title "The Mad Blaster" because it produced a nasty and extremely loud warble tone. If you need to simply get attention, this little mini-kit producing a LOUD ear shattering raucous racket is certainly the answer!

Producing an incredible 15 watts of audio, it's great for simply producing an annoying sound, or even better as an alarm signal. Whether it's in your home or your car, once it's tripped, they'll run for sure!

Drives any 4-8 ohm speaker, but if you're looking for maximum volume use a horn type speaker (like outdoor PA speakers), they amplify the sound even more! Drives any speaker but a horn type provides the loudest sound. Runs on 9-12VDC, 12VDC producing the loudest "blast"! The little board measures 1 1/8" x 1 1/4" x 1/2". *(At the risk of dating myself, this circuit was the heart of my "Little Honker" project in Junior High School! That's when I first learned what the word detention meant!)*

MB1 Warble Alarm Kit

\$9.95

## Classic Ding-Dong Chime

- ✓ Built-in push button!
- ✓ External switch input!
- ✓ Sounds just like the classic door bell
- ✓ Runs on 9-12VDC

*Is There Anybody In There?*

Just like the good old days of the mechanical door bell, this little kit reproduces the classic "ding-dong" sound through its built-in speaker. Plays it twice when triggered.

Use the built-in push button or wire external switches. Runs on 9-12VDC. Measures 2.75" x 3.8" x 1.2".

MK177 Classic Ding-Dong Chime Kit

KIT

\$11.95

## Electronic Dripping Faucet

- ✓ Repeated "Plink" sound!
- ✓ A pleasant alarm!
- ✓ Like a drip in a bowl!
- ✓ Runs 4-9VDC

*Drip, Drip, Drip!*

We've been known for decades for coming out with little mini-kits that produce the weirdest sounds! Well, this one is a mere drip in the bucket! Somewhere between a dripping faucet and electronic "chime" in a new car! Just like a drip into a bowl of water! Use it where a unique sound is needed. Learn how a simple oscillator works too! Drives any speaker. Runs on 4-9VDC. *(That O-Ring kit won't fix this one!)*

EDF1

Electronic Dripping Faucet Kit

KIT

\$12.95

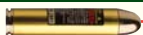






## Laser Light Trip Sensor

**KIT**



- ✓ Set up a security fence for over 500 yards of continuous coverage
- ✓ Includes both audible and visible alert indicators!
- ✓ 5 Amp external trigger relay for custom applications!
- ✓ Detector standby current draw of only 10 uA!!!



**Build It Tonight, Sleep Tight!**

For years hobbyists have been intrigued by the possibility of using a 'beam of light' to control other devices! The abundance of inexpensive laser elements that have now become available has further pushed the demand for useful products and experimental kits. The LTS1 Laser Trip Sensor was developed with the intention of providing a fun and educational kit that can actually be used constructively upon completion.

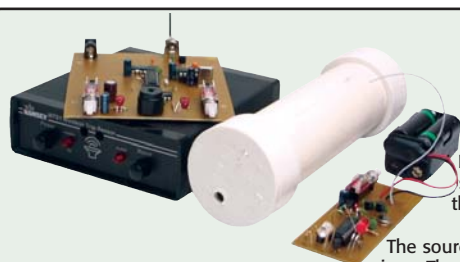
The kit comes with all you'll need to set up your own laser fence: the laser element (small keychain type high power laser pointer!), the PVC enclosure, and the laser detector with built-in Audible and Visible Alert indicators. (And yes, you can put the laser pointer on your keychain instead, and get thrown out of concerts, no problem!)

The LTS1 can be used in a number of different ways. The break-away circuit board gives the user the flexibility of remotely mounting the detector circuit (optionally powered with a standard 9 Volt battery) over 500 yards away without the need for mirrors. If mirrors are used, arrangements in a doorway or as a perimeter fence can almost guarantee detection of any unwanted guests.

For added functionality, the relay output (5 Amp rating) can be used to drive other devices such as an event counter, lights, or even camera modules! Operates from 9 - 18 VDC @ 90 to 100 mA. Detector portion can use a standard 9V battery with long life. Board dimensions: 4" L x 1" W (max component height: 5/8"). Includes a 6" length of 1/4" ID PVC to conveniently house and mount the board assembly. (Now all you need is a fog machine so you can see the laser beams just like those spy movies!)

LTS1  
AC125 Laser Light Trip Sensor Alarm Kit  
110VAC Power Adapter

\$29.95  
\$9.95



**KIT**

**Wired & Tested**

**Remotely Detect Motion!**

## Wireless Trip Sensor Alarm

- ✓ Our popular Laser Trip Sensor...NOW WIRELESS!
- ✓ Remote sensing up to 300' away
- ✓ Provides both audible and visible alarms

Following up on the popular Laser Trip Sensor, we now bring you the Wireless Trip Sensor! We combined a very low power sensor along with a powerful UHF transmitter that can send from over 300 feet away. Each transmitter and receiver can be set for their individual code allowing you to protect various "zones" and telling you which zone was violated!

The source is generally placed near a continuous power source and the remote transmitter can be placed anywhere without running any wires. The transmitter is typically effective for up to 600 feet. The WTS1 will constantly look at the ambient light in the room or area you wish to protect and sense any blockage of the light. Once that happens it sends its wireless signal to the matching receiver to alert you! No definitive trip paths and no wires!

The sensor/transmitter mounts in a standard piece of 1 1/2" PVC pipe (included) for easy and inconspicuous mounting. Being battery powered, there are no wires or plugs attached. The receiver includes a visible LED alarm as well as a built in audible alarm. Once tripped, the alarm remains on until it is reset by the front panel reset switch. Transmitter and receiver work at 433MHz and are designed around our proven RF modules. Receiver includes a built-in wire whip antenna and the attractive black custom case set shown. The transmitter operates on four AA batteries (not included) and the receiver runs on 9-15 Volts DC, or our AC125 power adapter (optional). Case size 5"W x 1 1/2"H x 5 1/4"D. Find out when someone goes into that room with the Wireless Trip Sensor!

WTS1C Wireless Trip Sensor Kit With Case  
AC125 110VAC Power Adapter  
WTS1WT Factory Assembled & Tested WTS1 With Case And Power Supply

\$64.95  
\$9.95  
\$104.95

## Microwave Motion Detector

- ✓ Great introduction to microwave basics
- ✓ Ideal for home alarms

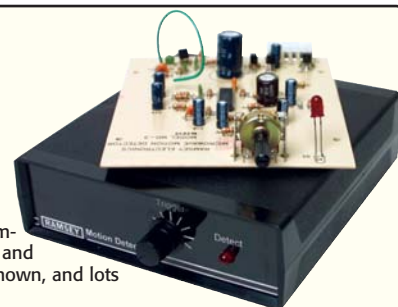


**KIT**

**Don't Cook... Detect Motion!**

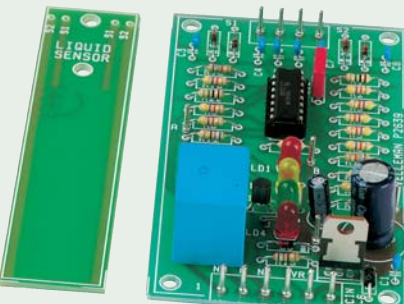
This unit sends out a microwave signal and looks for a return (a moving object that will reflect back some microwave energy) and then detects it. Since microwaves (no, you won't get cooked or burned by them!) are used - heat, light, sound or vibration will not affect the sensor!

This makes it ideal for car and home alarms, outdoor and garage light operators, animal in-your-garbage alarms, and tons more ideas limited only by your imagination. The MD3C is a great introduction to the basic principles of our SG7 "Speedy" Personal Speed Radar Gun and you can use it to investigate the properties of microwaves. Kit includes detailed instructions, theory of operation, the custom case set shown, and lots of applications and hook-ups. Runs on 9 to 15 VDC. Case size: 5"W x 1 1/2"H x 5 1/4"D.



MD3C Microwave Motion Detector Kit

\$34.95



**KIT**

**Check The Water Level Remotely!**

## Liquid Level Controller

- ✓ LED level indicators!
- ✓ Relay switch output!
- ✓ Selectable alarm output!

If you have a reason to monitor the level of water or other liquids, the K2639 Liquid Level Controller is just the kit! Not just an alarm like its little Mini-Kit brother the MK108, it gives you an LED display of LOW, MIDDLE, or HIGH levels. You can also have it turn on a pump or switch open a valve with a 240VAC, 3A relay output. Plus, there is an alarm output that you can selectively set to sound under a HIGH or LOW condition.

Runs on 12-14VAC or 16-18VDC. Relay output is rated 3A at 240VAC. Main controller board measures 4.1" x 2.4". Separate sensor board measures 4.1" x 1.0". If you're looking for a nice matching power supply, get the matching PWR25. Now there are no excuses for a wet basement! From Velleman. (Well, actually there IS an excuse for a wet basement... I never put one of these down there and what a mess!)

K2639 Liquid Level Controller Kit  
PWR25 12VAC Power Supply

\$23.95  
\$12.95



*Measure Elevation To A Third Of An Inch And Air Pressure In Nine Formats!*

**KIT**



**Wired & Tested**

## High Resolution Air Pressure-Elevation Sensor

- ✓ Pressure resolution greater than 0.0001kPa!
- ✓ Super elevation resolution better than 1/3"!
- ✓ 128 x 64 pixel graphical display!
- ✓ Shows realtime elevation & pressure changes!
- ✓ USB computer interface for easy data transfer!
- ✓ 13,824 samples of FLASH storage available!
- ✓ Small coat pocket size
- ✓ Input for storage of data when YOU want it!
- ✓ Multiple built-in alarms
- ✓ Settable offsets for pressure and elevation
- ✓ Built-in Li-Ion rechargeable battery
- ✓ Built-in charging & power management system
- ✓ Run & charge from internal battery, USB power, or external 6-30VDC source!
- ✓ Runs 2 days on a single charge
- ✓ Simple graphical menu based operation

*The Next Generation Is Here!*

### THE BEST JUST GOT BETTER!

The response to the UP24 was incredible! Customers from professional land surveyors, meteorologists, scientists, pilots and hikers to the curious hobbyist were overwhelmed with its sensitivity and accuracy. Reading realtime elevation to a third of an inch blew their minds! Even with this response we considered it a challenge to make it even better... and we sure did! Introducing the next generation UP24B!

First, for extended field use, we designed an internal lithium ion power cell and a state of the art power management system. Now you can charge the internal power cell from either an external source of 6VDC to 30VDC or a standard 5VDC USB connection from a PC, laptop, or USB charger! The power management system determines the best charging source to use as well as operates the UP24B while keeping the lithium ion cell at full charge. Charging status and battery condition displays are also provided.

Next we added a "MARK" feature. This allows storing a single data point reading when YOU want instead of blindly storing readings at the selected sample rate. A connection jack is provided for a simple contact closure to make a reading. This closure can be a "dry" set of contacts or electronic closure. Data storage is in comma delimited format for easy loading into a spreadsheet. Each time you enter the "MARK MODE" a new data block is started allowing you to easily identify multiple sets of data. Current data is constantly displayed for your convenience in mark mode.

Finally, we streamlined the controls to make a more compact profile. The rotary menu navigation dial has been replaced by contactless proximity buttons for more reliable operation! Just touch your way through the menus without any dials or switches!

### THE ULTIMATE PRODUCT FOR THE SERIOUS, THE CURIOUS, AND THE PROFESSIONAL!

We did it again! The UP24 was one of our most advanced kits to date. Rather than resting on our laurels we made it even better and the new UP24B is an absolute MUST for anyone serious about the environment around us! But the applications only begin there. The unique design allows unprecedented super high resolution measurements and display of absolute atmospheric air pressure and elevation. Hobbyists and weather enthusiasts absolutely love it! Land surveyors, scientists, and pilots have made it a "must have"!

### ELEVATION TO A THIRD OF AN INCH!

I have written a lot of catalog pages and a boatload of specification sheets but this one is a challenge because the applications are endless and the performance characteristics are beyond description! The UP24B senses ambient air pressure and critically calculates elevation with unheard of precision!

Using a highly sensitive sensor and 24-bit A/D converter in a special noise-immune design, less than 1/3" of an inch of elevation resolution is achieved! YES, we said 1/3 of an inch! This high accuracy and resolution opens the door to a host of sophisticated environmental air pressure monitoring applications.

### AIR PRESSURE IN ANY FORMAT!

Unlike your normal run-of-the-mill barometer, air pressure is sensed in Pa's or kPa's. What are those you may ask? Pascals or KiloPascals. However, don't be afraid, for your convenience, and to fit any application you may have, it is also displayed in millibars, bars, PSI, atmospheres, millimeters of mercury, inches of mercury, and feet of water! Take your pick! The range of the UP24B is 15kPa to 155kPa. That also means:

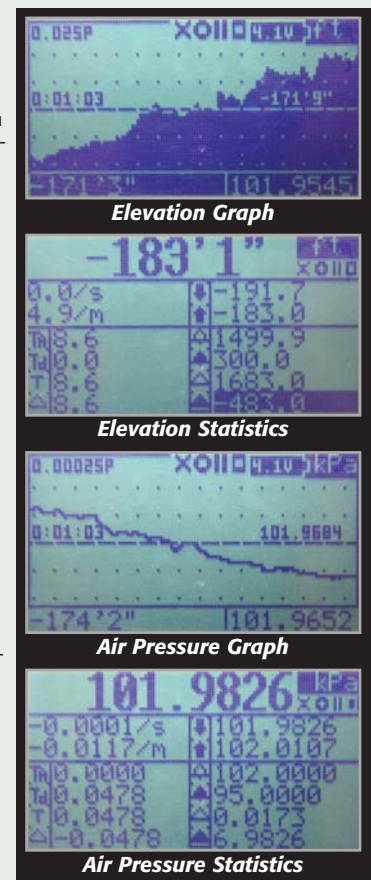
- ✓ 15000 to 155000 Pascal's
- ✓ 150 to 1550 Millibars
- ✓ 0.15 to 1.55 Bars
- ✓ 2.175566 to 22.48085 Pounds per square inch
- ✓ 0.1480385 to 1.529731 Atmospheres
- ✓ 112.5093 to 1162.596 Millimeters of mercury
- ✓ 4.429498 to 45.77148 Inches of mercury
- ✓ 5.02 to 51.9 feet of water

### THE HI-RES REALTIME ATMOSPHERE SENSOR!

Gradual pressure changes, like a barometer, can show you gradual changes in the weather. Instantaneous changes in air pressure can show you a whole lot more! Weather-wise, high resolution pressure changes can be used to anticipate and even estimate related wind gusts and speeds. This together with "on the fly" pressure changes will give you the upper hand in weather monitoring. Part of ARPS (Advanced Regional Prediction System) is to obtain and analyze realtime data to provide a prediction system for weather components. The UP24B is ideal as a source for highly accurate realtime data.

### THEN THE ENGINEER SAID "WATCH THIS"!

But what if the air pressure changes that need to be sensed and recorded are ever so slight? You have the perfect ultra reliable sensor and heart of an alarm system for a building. When I first heard this I questioned it. Then the engineering staff said "watch this..." A hundred feet from the main entrance of Ramsey they called the front receptionist and asked her to open the front door to the building. WOW! An immediate change in air pressure registered on the UP24B! From an open door, to a broken window, to wind damage, it's all detected and recorded in the UP24B! The built-in alarm settings can be set for high or low limits to trip other equipment.







### THE ULTIMATE ELEVATION METER!

We've talked about air pressure, now let's talk about elevation! The incredibly precise 24 bit A/D converter in the UP24B looks at the air pressure and converts it to elevation above sea level. Once again, there I was standing in the engineering office watching the LCD graph. The text at the bottom of the screen said 472' 3". I said yea, so what? They said raise it up a few inches and watch. As I raised it the display constantly changed... 472' 8"; 473' 1" and so on. I couldn't believe it. The following day I took it to a tower site where I knew the ground elevation and it was dead-on... 1701' 6". Not only did I have the text display of the elevation but a chart graph of the elevation history!

The applications for the super accurate elevation meter are endless. From watching and recording elevations during hiking trips to measuring and recording the wave heights on boats! Let your imagination take over from there!

### MARK MODE!

The special mark mode feature allows you to take readings when you want to. Simply supply a contact closure to the "MARK" input jack with the unit in Mark Mode and the current reading will be stored in internal FLASH memory. You can then download the data using the USB connector. Stored data is in comma delimited format for easy insertion into a spread sheet.

### SPECIAL AIRCRAFT MODE!

What about aircraft? Needless to say, as a handheld device measuring air pressure, aircraft applications are limited to un-pressurized cabins. But the UP24B provides valuable flight assistance in such cabins and smaller aircraft. In fact, a special "Pilots Mode" is included in the menu to set a min/max altitude window setting to use in conjunction with the built in high and low alarms! The window is easily set up by programming in the desired high and low altitudes. If these limits are exceeded the UP24 will sound an alarm.

### LOCAL OFFSETS & ALARMS...NO PROBLEM!

To accommodate site variances, offsets for pressure, elevation, and related hysteresis are also provided as a menu selected operation. Likewise, both high and low alarms can be enabled and set over a wide range of lows and highs for both pressure and elevation!

### SMALL, LIGHTWEIGHT, THE SENSOR OF YOUR DREAMS!

While the UP24B is small enough to be kept in your coat pocket, it boasts a large 2.78" x 1.53" 128x64 pixel LCD display screen making viewing easy. Display modes include both realtime pressure and elevation graphs as well as pressure and elevation statistics. There are 12 user selectable sample rates from 1/10th of a second all the way up to every 15 minutes. The special MARK MODE is also available to allow data collection at your own rate.

What if you're in the field and want to save data captured in your UP24B? No problem there either! The built-in FLASH storage provides 13,824 samples of storage. That's equivalent to 3 hours and 50 minutes at the 1 second sample rate! Of course it's about 20 minutes at 1/10th of a second sample rate but that's probably faster than anybody, other than Wile E. Coyote, would need! When you get back you can transfer your data to your PC through a standard USB interface. A simple set of commands sent via your USB port can be used to set up many of the parameters of the UP24B directly from your computer using a terminal type interface or your own program. The data is comma delimited so it can easily be loaded into a spreadsheet.

Does all of this sound too good to be true? It comes close! And it all fits in a small handheld case that measures 5.5" x 3.6" x 1.5" and weighs about 4oz with batteries. It runs on a single internal lithium ion battery and includes a built in charger/power management system. The UP24B can be operated on the internal battery, connected USB port on any PC or laptop, or external 6VDC to 30VDC power source. The power management system decides what source to use and also charges the internal battery from the connected source. Operating time on a full charge is over 2 days of continuous operation.

Want to run 24/7 even during power outages? Just connect either external source and turn on the UP24B. It will maintain the battery charge and operate the UP24B as long as necessary. If the power goes off the batteries will take over. Once the power is restored the battery will be recharged for the next time. If you're looking for the finest air pressure and elevation sensor, check out the UP24B, truly a marvel in the industry!

### SIMPLE VISUAL BASIC APPLICATIONS!

A Visual Basic application available on our web site enables you to have a dial type graphic display of pressure, altitude and statistics in real time on your computer and update the data on-the-fly as text data into a custom spreadsheet. Want to design your own interface? We even supply the Visual Basic source code for the graphics display application. You are free to use it to customize your own application. Routinely updated interface software is available FREE at our website 24/7! Got an application you'd like to share? We'll be glad to make it available to other UP24B users!

Pressure Range:

Pressure Units:

Elevation Range:

Elevation Units:

Display Modes:

Resolution:

Sample Rates:

Offsets:

Offset, pressure:

Offset, elevation:

Offset, pressure hysteresis:

Offset, elevation hysteresis:

Alarms menu:

Alarm, high pressure:

Alarm, low pressure:

Alarm, high elevation:

Alarm, low elevation:

Storage:

Mark mode:

Pilot elevation window:

User interface:

Computer interface:

Utility menu, calibrate:

Utility menu, resets:

Display:

Power Requirements:

Color:

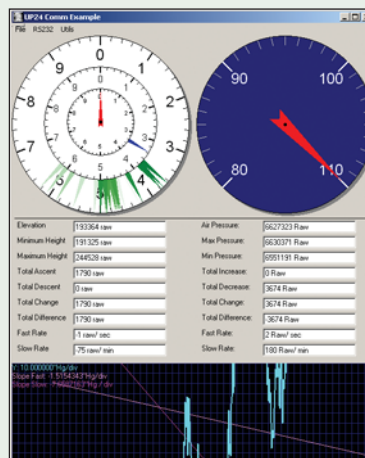
Dimensions:

Weight:

### SPECIFICATIONS

15kPa to 155kPa  
KiloPascals, pascals, millibars, bars, pounds per square inch, atmospheres, millimeters of mercury, inches of mercury, feet of water  
-1,000 feet to 44,300 feet  
(-308.4 to 13,504 meters)  
Feet/inches, meters, kilometers  
Pressure graph, pressure stats, elevation graph, elevation stats  
Better than 1/3 of an inch (8.5 mm)  
12 selectable rates: 1/10 sec, 1/5 sec, 1/2 sec, 1 sec, 10 sec, 15 sec, 30 sec, 1 min, 5 min, 10 min, 15 min  
Selectable pressure, elevation, pressure hysteresis, elevation hysteresis  
14kPa to 114kPa in 0.1Pa increments  
-3,298.4' to 45,639.4' in 0.1' increments  
0Pa to 10Pa in 0.1Pa increments  
0' to 32.8' in 0.1' increments  
Low and High Pressure, Low and High Elevation, low/high on/off  
100kPa to 114kPa in 0.1Pa increments  
14kPa to 100kPa in 0.1 increments  
158.6' to 45,639.4' in 0.1' increments  
-3,298.4' to 45,639.4' in 0.1' increments  
13,824 samples or 3 hours 50 minutes at 1 second sample rate  
Stores single realtime event upon external contact closure  
0.0' to 45,639' in 0.1' increments  
Contactless proximity touch switches with graphical drop down menus, power push on/push off  
USB 2.0  
-1,000Pa to 1,000Pa in 0.1Pa increments  
Reset stats, reset chart data, reset to default settings  
LCD, 128W x 64H pixels  
Viewing Area: 2.78"W x 1.53" H (70.7mm x 38.8mm)  
Dot Pitch: 0.02" W x 0.02"H (0.52mm x 0.52mm)  
Dot Size: 0.019" W x 0.019"H, (0.48mm x 0.48 mm)  
Internal Li-Ion battery, charges/operates from 5V USB port or external 6-30VDC source  
Black  
5.5"L x 3.6"W x 1.5"H, (139.5mm x 91.4 mm x 38.1mm)  
4 oz, 0.12 kg including battery

**Aviation... Mountain Climbing...  
Hiking... Wave Heights, Land  
Elevations... Pressure Alarms...  
Burglar Alarms... Air Movement  
Detection... Structure Heights,  
Weather Changes...  
And a Whole Lot More!**



UP24B Visual Basic software application screen display

### Command Description

G EL	Get elevation
G PR	Get pressure
G OP	Get offset pressure
G OE	Set offset elevation
G VB	Get supply voltage
G CH	Get entire chart (in CSV format)
G PS	Get pressure stats (in CSV format)
G ES	Get elevation stats (in CSV format)
G PU	Get Pressure Units and index
G EU	Get Elevation Units and index
G SR	Get Sample Rate and index
G SD	Get Screen dump
S PU #	Set pressure units index
S EU #	Set elevation units index
S RE	Set reset elevation stats
S RP	Set reset pressure stats
S SR #	Set sample rate index
S RM #	Set report mode (send data per sample mode, 0 off, 1 on)

### UP24B GET and SET commands


**KIT**

**Don't Hit It...  
Detect It!**

If you have problems parking your vehicle without running into things (like the garage, another car, a wall, etc!) then the Parking Radar kit is for you! Mount the sensor board on the rear of your car, truck, or trailer and it will detect the proximity of whatever you're getting close to!

Ultrasonic audio waves, outside the range of human hearing, are used to "measure" the distance! The sensor board is connected to the detector that includes an audible alarm. The proximity can be adjusted anywhere from 2" to 5' and has a detection angle of 5 degrees. The uses of this handy little detector are endless, and it will save you a lot of crumpled metal!

Running on 10-15VDC the Parking Radar is ideal for 12VDC vehicle power. Just connect a lighter plug cord and you're all set! The small sensor board measures 1.1" x 3.7". The main board measures 1.9" x 4.9". The boards can be custom installed in your vehicle, in your own case, or you can order the recommended enclosures below. From Velleman. (My daughter needs one of these on both sides plus the front and rear bumpers of her car!)



**K3502 Ultrasonic Parking Radar Kit**  
**G416 Recommended Case Set For Main Board**  
**G407 Recommended Case Set For Sensor Board**

**\$34.95**  
**\$8.95**  
**\$6.95**

## Voltage Wire Detector

- ✓ Find wires up to 4" away!
- ✓ LED indicator shows wire proximity!
- ✓ Compact PC board
- ✓ Runs on a standard 9V battery

**Find It Before The Nail Does!**

How many times have you driven a nail or screw into a wire behind a wall? Well, I don't know about you, but I certainly have! Especially those long drywall screws that love to cut right through a chunk of romex cable!

SPECIFICATIONS	
Indication:	Flashing LED, buzzer optional
Sensitivity:	Adjustable, up to 3.9"
Supply Voltage:	9V battery
Dimensions:	2.2" x 2.5"

Been there, done that!

This detector kit will let you easily search for wires inside or behind walls, as well as track down interruptions. Simply hold the device around the area you wish to check and the LED will begin to flash when it gets near a wire with supply voltage. The faster the flashing, the closer you are to the wire!

If you would prefer an audible cue, the kit is built to work with an optional PC mounted buzzer as well. Board measures 2.2" x 2.5". From Velleman. (Yes, the wall was just finished, and yes, it was a 220V line for a baseboard heater, and yes, I had to open up the wall!)

**K7101 Voltage Wire Detector Kit**  
**SV412S Optional PC Board Buzzer**  
**G407 Recommended Case Set for K7101**

**KIT**

**\$12.95**  
**\$4.95**  
**\$6.95**

## Water Sensor Alarm

- ✓ Sounds alarm when water is present!
- ✓ Can be remotely located!
- ✓ Includes buzzer alarm
- ✓ Runs on a 9V battery

**Find Out BEFORE You're Flooded!**

We've recently heard people say "what can you get for 10 bucks these days?" How about "peace of mind"! Pretty cheap price to pay for that, yet this little kit does just that!

Some of us have been there... the sump pump quits for whatever reason (it fails, the breaker blows, there are a lot of reasons) and because you don't live in your basement you're none the wiser. You just keep on putting around upstairs like nothing is wrong! Then you have to run downstairs to get something, and bingo, you step in a foot of water! The result? A flooded basement and a lot of damaged things that are in the basement! And once that happens, things never seem to be the same. Stored pictures are ruined, electronic things are ruined, and everything is musty and moldy.

Now build a cute little water sensor alarm to let you know! Simply mount the alarm in the area you want to sense water and the moment it touches the contacts the included alarm will sound. No wires, no external alarm system, nothing but this tiny little board just waiting to alert you! The sensor can be remotely located by cutting that section of the board if desired. I'm thinking 7 bucks is pretty cheap insurance! Runs on 9V battery (not included). Size: 1.8" x 2.8". From Velleman.

**MK108 Water Sensor Alarm Kit**

**KIT**

**\$6.95**



## Temperature Sensor Module

- ✓ Measures -4° to +158° Fahrenheit!
- ✓ Highly accurate!
- ✓ Simple adjustment

**Quick & Easy  
Temperature Sensor!**

Looking for a general purpose, easy to interface temperature sensor for your projects? This is it! Whether you need to control heating and cooling of rooms or equipment, monitor temperatures in circuits, monitor your pool temperature, or simply put a temperature readout on your website, the K8067 fits the bill. With an accuracy of 2° over the full range!

The small board makes integration into your project or equipment simple, and the sensor device can be board-mounted or placed remotely. The temperature range is -20°C to +70°C (-4°F to +158°F). The output is a standard 0-20mA current loop for easy interfacing. Input voltage of 12VDC provides 0-5V output while an input voltage of 15VDC provides 0-10V output. Current consumption is 30mA max. Board measures 2.2" x 1.4" x 0.6". From Velleman.

**K8067 Temperature Sensor Module Kit**

**\$19.95**

**KIT**


- ✓ Easy contact-free temperature measurement
- ✓ Momentary or continuous measurement
- ✓ Last measurement data hold/display
- ✓ Large backlit LCD display

**Need The Temperature?  
Ready, Aim... And Measure!**

This beauty is one of the neatest thermometers we've ever seen! You can measure the temperature of anything merely by pointing an IR beam of light at it! That's right, no contact, no sensors, no wires, no glass, nothing but a beam of IR light!

Is your motor running hot? Is your refrigerator cold enough? How cold is that bottle of soda? If you want to know, just aim and push the button. The temperature is immediately displayed on the backlit LCD display! Check the temperature of your oven and stovetop for perfect cooking results! The last measurement is automatically held and stored until power-off. Measurements can be momentary or continuous with minimum and maximum temps held during measurement! You can't ask for much more than that in a handheld thermometer that is contact-free besides! Runs on 4 LR44 cells (included) for a long life. If you want to know what the temperature is, check it out with the IR101! (The bartender didn't care when I told him my "ice cold beer" was 47.3° so I showed him... he still didn't care, he just wanted my money!)

**IR101 Infra-Red Thermometer**

## Infra-Red Thermometer

**Wired & Tested**

### SPECIFICATIONS

Range:	-5°F to 575°F
Resolution:	0.1°F
Accuracy:	±4°F
Units:	°F or °C
Dist to measurement spot:	6:1
Ambient temp range:	32°F to 104°F
Emission factor:	0.95
Power supply:	4 x LR44 cells
Battery life:	2000 measurements approx.
Dimensions:	2.25" x 1" x 4"

**\$39.95**





### No More Guessing... KNOW The Wind Speed!

Wired &amp; Tested

## Handheld Wind Speed Anemometer



We've all seen them on TV... the professional weather talent (now known as meteorologists!) standing in the middle of the hurricane report holding up their wind meter clocking the fastest wind gusts. Usually that's just before they get blown to the ground along with their producer and camera crew! Well now you can have the same professional wind speed meter on a hobbyist budget!

This meter goes beyond just displaying the current wind speed! Besides displaying the realtime instantaneous wind speed it also stores and records the maximum gust AND average since it was powered up! Realtime wind speed is also displayed on a Beaufort wind scale ranging between 0 and 12. Whether in the middle of a storm, on your boat, hiking, the EA3010 is your answer.

#### SPECIFICATIONS

- ✓ Wind speed range: 0.44 to 67.0 mph
- ✓ Wind speed resolution: 0.1 for all units of measure
- ✓ Temperature range -21.8 to 138.2 °F (-29.9 to 59 °C)
- ✓ Temperature resolution: 0.2°F (0.1°C)
- ✓ Records and displays max and average wind speed since power up
- ✓ Beaufort scale bar graph, 0-12
- ✓ Wind chill display in °F or °C
- ✓ Runs on one CR2032 lithium button cell for 12 months life
- ✓ Measures 7" x 4" x 1.63"

EA3010

Handheld Wind Speed Anemometer

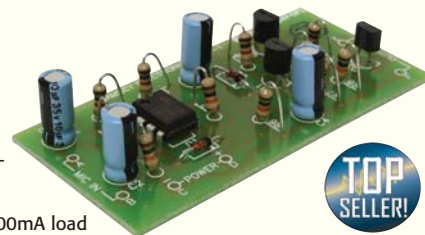
\$34.95

## Automatic VOX Voice Switch

KIT

- ✓ Use your voice or noise to control!
- ✓ Directly switches relays or low voltage loads up to 100mA!
- ✓ Endless applications!

### Automatic Voice Control!

TOP  
SELLER!

Our most popular Mini-Kit, the VS1 Voice Activated Switch (VOX) will provide a switched output when it "hears" sound. Use it to key a transmitter for hands-free PTT, turn on a tape recorder automatically when people are talking in a room, turn on lights, or anything else you can imagine... all controlled by the sound of your voice!

How about having your garage lights turn on when you beep your horn? The possibilities are endless! The output drives up to a 100mA load such as a relay, tape recorder control line, transmitter PTT line, etc. Runs on 6-12VDC for easy integration into any equipment. Board measures 2 1/2" x 1/2" x 1 1/4".

VS1

Automatic Voice Activated VOX Switch Kit

\$9.95



KIT

### The Ultimate Dimmer... With EPROM Backup!

## Multifunction Dimmer

- ✓ Microcontroller technology!
- ✓ 13 different functions!
- ✓ Works with resistive & inductive loads!
- ✓ Soft start prolongs the life of bulbs!

#### SPECIFICATIONS

Operating voltage:	110-125VAC or 220-240VAC
Frequency:	Automatic detection 50/60Hz
Maximum load:	2.5A (300W/120VAC)
Dimensions:	3.9" x 3.2" x 1.4"

Impulse switch, staircase light control, slow on/off dimmer, interval timer, and speed adjustment for fans are just some of the features you'll have at your fingertips when you build this dimmer kit!

Works with both resistive and inductive loads so you can control light bulbs, high-voltage halogen lighting, or low-voltage halogen lighting with a ferromagnetic transformer. Also includes soft-start technology to prolong the life of bulbs, fault protection, independent delay times, and EEPROM memory backup to save settings in case of power failure. 2 delay times (5 seconds to 2 hours) can be programmed through the learning mode. Board measures 3.9" x 3.2" x 1.4". From Velleman.

K8028

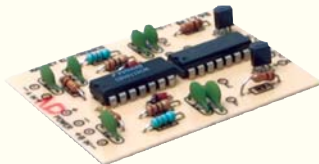
Multifunction Dimmer Kit

\$32.95

## Touch Switch

- ✓ Touch on, touch off, or momentary!
- ✓ Two circuits on one board
- ✓ Great CW Keyer

### 2 Separate Circuits!



The ultimate touch switch! Touch once - it's on, touch again - it's off, or use the momentary outputs that stay on only as long as touched.

Uses low power CMOS circuitry and functions on the principle of hum and noise pick-up when input is touched. There are two completely independent touch switch circuits on each board. It's like getting two for the price of one!

Will drive loads up to 100 mA such as a relay, bell, siren, etc. Includes project info for use as a CW keyer. Runs on 6-12VDC.

TS1

Touch Switch Kit

KIT

\$9.95

## RF Actuated Relay

- ✓ Automatically senses presence!
- ✓ On-board DPDT relay
- ✓ Protects against RF input damage

### Senses RF BEFORE The Damage!



This is just the unit you need when adding a preamp or power amp in line with an existing antenna.

It senses the RF power and closes an on-board DPDT relay which can be used to automatically switch in your added power amp or preamp. The relay is good up to UHF at 100W! Besides radios, many folks use one of these "lifesavers" in front of their expensive test equipment to prevent RF input damage!

Runs on 10-15VDC and senses power as low as 50 mW. Size: 1 1/2" x 1/2" x 4".

RFS1

RF Actuated Relay Kit

KIT

\$19.95

## Light Actuated Switch

- ✓ On-board SPDT relay!
- ✓ On at dusk, off at dawn
- ✓ Adjustable sensitivity

### Fully Automatic!



Tired of turning your lights on and off? Tired of paying the ever increasing cost of electricity because you forgot to turn them off in the morning? Consider it solved! The MK125 is a simple little kit that automatically senses light and automatically closes the on-board SPDT relay.

Light sensitivity is adjustable over a wide range, and a delay circuit prevents recycling. Relay contacts rated at 5A. Runs on 12VDC. Board measures 2.6" x 2". From Velleman.

MK125 Light Actuated Switch Kit  
AC125 110VAC Power Adapter

KIT

\$8.95

\$9.95

## Multifunction Relay Switch

- ✓ 14 different functions!
- ✓ 2 pre-programmed delays!
- ✓ Push button control!
- ✓ EEPROM storage!

KIT



### Build Your Own Switches!

This versatile relay switch is packed with features and can be used for a variety of control applications, timers, switching, flashing, interval, random switching, and more! Other features include learning mode for delays anywhere from 2s to 12 days, EEPROM for delay time storage in case of power failure, and on-board transient filter for the relay contacts! From Velleman.

#### SPECIFICATIONS

Operating voltage:	9-12VAC or 12VDC
Max load:	2.5A (275W at 110VAC)
Dimensions:	3.4" x 1.5" x 1.0"

K8015 Multifunction Relay Switch Kit  
G410 Recommended Enclosure

\$22.95

\$6.95



## Ultimate 555 Timer/Oscillator

**KIT**

- ✓ Unlock the full potential of the classic 555 timer IC!
- ✓ Available in through-hole or SMT versions!
- ✓ Onboard output drivers
- ✓ Onboard Start and Reset switches
- ✓ Onboard Pulse Width control
- ✓ Onboard Rest Time control
- ✓ Interfaces with the R11 for "real-world" switching applications

*The BEST 555 timer kit on the market!*

First brought to market in 1971, the 555 timer has been a staple in the electronics world ever since, and the Ramsey UT5 timer kit has always been one of our top sellers. The UT5 provided a quick and easy way to harness the power of the 555 timer IC - a valuable tool for any electronics hobbyist! But there is only so much you can do with the UT5 before you start running into its limitations. We knew people wanted a kit that would let them do more with the 555 timer, so to that end, we present the brand new UT5A series kit.

This new series builds on the classic UT5 kit, but takes it to a whole new level! We've packed it with tons of features that you won't find in any other 555 timer kit on the market. You can configure it on the fly with easy-to-use jumper settings, drive relays, and directly interface all timer functions with onboard controls or external signals. All connections are easily made through terminal blocks. Plus, we've replaced the ceramic capacitor of other timer kits with a Mylar capacitor which keeps your timings stable over a much wider range of voltages!

Feature	K2579	UT5	UT5A
On Board Start Switch	Yes	No	Yes
On Board Reset Switch	Yes	No	Yes
Negative Signal Input	No	Yes	Yes
Negative Signal Input pull up resistors	No	No	Yes
Positive Signal Input	No	Yes	Yes
External Reset Input	No	Yes	Yes
External Control Voltage Input	No	No	Yes
On Board Pulse Width Control	Yes	Yes	Yes
On Board Rest Time Control	No	No	Yes
On Board Control Voltage Adjust	No	No	Yes
Output Buffer Circuits	No	No	Yes
Output Inductive Kick protection	No	No	Yes
Timer Output Inversion Select	No	No	Yes
Selectable Independent 3 to 24V Output	No	No	Yes
Multiple Components for Accurate Timing	No	No	Yes
Detailed Theory of Operation	No	Yes	Yes
5 to 15 Volt Supply Voltage	No	Yes	Yes
Terminal Blocks For Inputs and Outputs	No	No	Yes
Outputs	Single Pole Double Throw Relay, Dry Contact	Timer IC output, 5 to 15 Volts 100mA continuous	Buffered, 3 to 24V 200mA continuous, Invert Selectable
Output Interfaces w/R11 120/240V 10Amps		Yes	Yes

Then, to separate the hobbyist from the advanced hobbyist (or the wanting to learn more hobbyist!) we duplicated the through-hole UT5A in a surface mount (SMT) version! If you want to learn SMT construction, or polish up your existing SMT techniques while exploring the ever popular 555 timer, the UT5AS is for you! Just check out the comparison table to see how everything that's new and improved in the UT5A series!

### SPECIFICATIONS

#### Input Requirements

Timer Power:	5 to 15 VDC
Output Circuit Power	3 to 24 VDC or Timer Power

#### Modes of Operation

Monostable	Most Pulse Widths from 110µs to 27.5 Minutes with included parts
Astable	Most Time Cycles from 210µs to 57 Minutes with included parts
Maximum Load:	200mA Inductive kick protected
Dimensions-UT5A:	2.5in (W) X 2.5in (L) X 1.0 (H); 63.5mm (W) X 63.5mm (L) X 25.4mm (H)
Weight-UT5A:	1.1 Oz, 0.0312 Kg
Dimensions-UT5AS:	1.5in (W) X 2.5in (L) X 1.0 (H); 38.1mm (W) X 63.5mm (L) X 25.4mm (H)
Weight-UT5AS:	0.8 Oz, 0.023 Kg

UT5A Ultimate 555 Timer/Oscillator Kit, Through-Hole Version  
UT5AS Ultimate 555 Timer/Oscillator Kit, SMT Version

\$24.95  
\$26.95

## Electronic Kitchen Timer

- ✓ 1 minute to 1 hour timing!
- ✓ Simple one button operation!
- ✓ Audible and visual alarm!
- ✓ Discrete pre-alarm!

*For The Cookies We DO Like!*



What good is the built-in timer on your stove if you're not there in the kitchen? It isn't, and the cookies will be burnt! Exactly!

This modern kitchen timer will not only save the cookies but will be a fun project to build and use. Times anywhere from 1 minute to 1 hour. Single button makes it a breeze to use with the following settings: 1 to 10 minutes in one minute steps; 10 to 30 minutes in five minute steps; 30 to 60 minutes in 15 minute steps. Measuring a mere 3" x 1.3" this little timer can go in your pocket outside with you while the cookies are in the oven! Even includes a pre-alarm to get you back inside in time! Runs on 3 AAA batteries (not included). From Velleman. (Sorry, does not include the recipe for Ma Leo's famous chocolate chip cookies... that's a secret!)

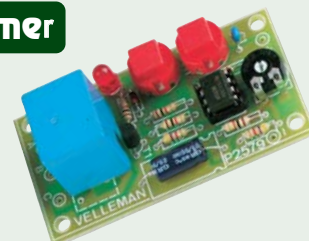


MK128 Electronic Kitchen Timer Kit **KIT** \$17.95

## Universal Start/Stop Timer

- ✓ Delay up to 60 minutes!
- ✓ On-board relay
- ✓ Runs on 12VDC

*Start & Stop With Delay!*



The K2579 is a miniature timer for any application that requires a start and stop function with a delay. Board mounted switches are provided for both start and stop.

Time interval is variable and adjustable from 0 to 15 minutes, and extendable to 60 minutes with a modification. LED status indicator is provided.

Relay is rated at 2A/240VAC max. Runs on 12VDC. Board measures 1.5" x 2.7". From Velleman.

K2579 Start/Stop Timer Kit **KIT** \$13.95  
AC125 110VAC Power Adapter \$9.95

## Universal Timer

- ✓ Trigger or oscillator
- ✓ 555 timer IC design

*Learn & Use IC Switching...For \$10!*

Add a time delay, keep something on for a preset time, provide timing or clock pulses, or provide an audio tone. The UT5 does it all using the famous 555 timer IC. It uses it in three modes:

The Monostable mode can be used to provide a delay, turn a device on or off for a pre-determined period of time, or various timing signals. Bistable mode can be used to toggle a device between on and off or be used as a divide by two circuit. Astable mode is basically a square wave generator. It can be used for clock signals or even provide audio tones. The applications for this little gem are limited only by your imagination.

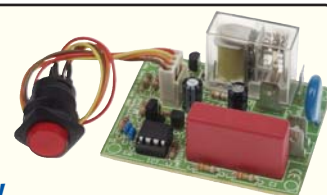
The UT5 operates on 5-15VDC and controls up to 100mA. Detailed manual included.

UT5 Universal Timer Kit **KIT** \$9.95

## Power Saver & Timer

- ✓ Single button operation!
- ✓ 1H, 2H, 4H, 8H, 24H options!
- ✓ On-board LED indicator!
- ✓ 10 amp relay output!

*Set It, And Forget It!*



This little timer kit can be easily added to any existing project to allow for automatic shutoff. Tons of applications like heating, cooling, lighting, entertainment systems, fans, pumps, sprinklers, cryogenic stasis tubes... well maybe not that last one!

Just set the jumper for short or long timers, use the push button to select your desired timer and the LED indicator will blink faster for the shorter timer, slower for the longer timer. It's that easy! 10A suppressed relay output, 100-240VAC power supply. Board measures 2.6" x 2" x 1". From Velleman. (We're not responsible for family members or pets lost due to cryogenic stasis failure!)

K8075 Power Saver & Timer Kit **KIT** \$26.95





## Enhanced DTMF Control Interface

KIT

New For  
2010

- ✓ 6 user configurable modes
- ✓ Crystal controlled DTMF decoder
- ✓ Continuous 1 of 16 lines decoding of all 16 DTMF tone pairs
- ✓ Security feature for BCD output decoding of all DTMF tone pairs
- ✓ BCD output configurable to latch on tone reception or active only with tone in either secure or non-secure mode
- ✓ Input may be from any DTMF tone source (phone line or other clean audio source)
- ✓ Audio filtering to reject normal telco signals (ignores non-DTMF tones)
- ✓ Special configuration mode to provide remote control of our DVMS voice messaging system



*Encode, Control, Create... All From DTMF Tones!*

What do you get when you combine our popular DCI1 DTMF Remote Control Interface and top selling TT7 Touch Tone Decoder? The most versatile DTMF control kit yet, that's what! We took the functionality of both these classic Ramsey products and joined them together in one great kit... and then we packed in even more new features exclusive to the DCI2!

While there are no power relays on the DCI2, you can now easily control up to 16 different devices using DTMF tones in a secure environment. The DCI2 also provides continuous decoding of all 16 tone pairs regardless of the security mode. With the addition of a few simple circuits (instructions included, of course!) you can control practically any device imaginable!

The DTMF is also the perfect companion to our DVMS Digital Voice Messaging System (Page 36). The DVMS is our souped-up successor to the popular BS2 Bullshooter kit (Page 35) allowing playback of up to 8 different prerecorded messages. When you combine it with the DCI2, you've got an easy-to-use play-on-demand audio setup that doesn't require complicated and expensive computer systems! The DCI2 is a highly adaptable product that is limited only by your imagination. Combined with an inexpensive answering machine, it gives you an elegant but powerful remote control system. Available as a kit, or factory assembled & tested.

DCI2	DTMF Touch-Tone Control Interface Kit	\$62.95
DCI2WT	DTMF Touch-Tone Control Interface Kit, Wired and Tested	\$109.95
AC125	110VAC Power Adapter	\$9.95

## DTMF Touch Tone Decoder

- ✓ Decodes DTMF Touch Tones from telephones, radios, etc!
- ✓ 20mA output drives relays, LEDs, digital devices and more!
- ✓ Decodes 0 through 9, \*, #, plus A, B, C, D



TOP  
SELLER!

*Your Phone Is Your Encoder!*

You can set up the TT7 for detection of any single digit, including the secondary A,B,C,D digits. When the decoder detects the selected digit it will provide a closure to ground for driving a relay, lamp, sounder, or other load of up to 20 mA. A commercial central office quality decoder IC chip is used, which means the TT7 is extremely reliable, fast, and sensitive! You may connect the TT7 directly across the speaker or detector output on any receiver, and we even detail how it may be connected directly to a telephone line.

If your needs are single function remote tone control, the TT7 is for you. (For digital display of dialed touch-tone numbers, use our TG2 Tone Grabber, for remote control use our DCI series.) Runs on 5VDC. PC board measures 1 1/2" x 7/8" x 2 1/4".

TT7 DTMF Touch Tone Decoder Kit **KIT** \$24.95

## DTMF Remote Control Interface

- ✓ User configurable security codes
- ✓ Control household lights from your cell!
- ✓ Confirmation tones for each command!
- ✓ Remote control from any DTMF device!



TOP  
SELLER!

*Full Control From Any Telephone Or Cell Phone!*

This microprocessor controlled DTMF decoder fits the bill for multiple applications. Remotely control almost any device with the built-in relay circuitry. The DCI series unit continually monitors your phone line and looks for the proper user programmed security code. Once it is heard, the user may select which of the trigger relays to turn on or off. For your convenience, the DCI1C features four outputs.

Feedback tones from the DCI are then sent back over the line to confirm your selection. No more wondering if your commands are carried out as is commonly found with other similar devices! Now you can call home and when your answering machine picks up, control lights, security systems, or just about any number of other custom applications! Provides four 5 Amp (1250VA AC/150W DC) relay outputs, each with its own sure grip screw terminal. Requires 9-18VDC at 300 mA. Our standard AC125 110VAC power adapter is available.

DCI1C DTMF Controller Interface Kit With Case **KIT** \$52.95  
AC125 110VAC Power Adapter \$9.95



KIT

*Turn It On... Turn It Off - Via Phone!*

This remote control system requires no authorization from network operators and won't run up your phone bill, as there is no connection completed through the telephone lines! The receiver is actually switched on and off by letting the phone ring several times (number of rings is adjustable). Sneaky! The applications are limitless - toggle lights on and off at irregular intervals when you are on vacation, switch the heat or AC on in advance... We're sure you can think of plenty more to do with this versatile device! Max relay output of 240V/3A. Powered by 12VDC regulated/90mA. PCB measures 5.5" x 2.9". For a great finished look order the WCAH2851 case. From Velleman. (Wouldn't this be free use of the phone line?? Yea!!!)

K2650 Call Code Activated Switch  
AC125 110VAC Power Adapter

\$29.95  
\$9.95

## Tone Encoder/Decoder

- ✓ Encodes and decodes 40 to 5000Hz!
- ✓ Drives any load up to 100mA!
- ✓ Compact size and easy installation

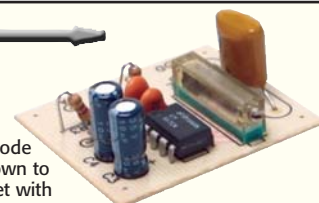
*Encode and Decode With The Same Kit!*

The TD1 was engineered to provide all your tone control needs on a single PC board! The unique design will simultaneously encode and/or decode any audio frequency between 40Hz and 5000Hz. If you want to go even lower, we provide the documentation to change one capacitor to go down to 10Hz! This little board is great for 2-way radio "PL" tones, remote controls, tone burst FSK or anywhere tones are involved. Frequency is easily set with the precision 20 turn trimpot and the circuit uses a voltage regulator and Mylar cap for the ultimate in stability. The decoder output will drive any load up to 100mA, making it simple to connect to your equipment. Runs on 5-12 VDC, will drive up to 100 mA load. Encoder output provides approximately 1V P/P output to easily drive your application. PC board measures 1 1/4" x 1/2" x 1 1/2".

TD1 Tone Encoder/Decoder Kit

\$9.95

KIT





## DC Motor Speed Control

KIT

- ✓ Real pulse width modulation for accurate, stable motor control
- ✓ Controls DC motors from 3 to 50 volts - up to 10 Amps!

Full Power...  
Any Speed!

Controlling a DC motor's speed is not as easy as just varying its supply voltage. The motor loses torque (power) as the voltage is lowered and it finally stops rotating. The MSC1C uses a technique known as "Pulse Width Modulation" - PWM - to control speed. This is the same system used on electric cranes, buses and subway cars. With PWM the motor receives full voltage whenever energized - however, the duration of the voltage changes; it's sort of like flipping an on/off switch very rapidly! The motor rotates smoothly and with full power - no matter what the speed.

The MSC1C will control DC motors from 3 to 50 volts at up to 10 amps! Complete instructions detail how the PWM circuitry operates and some hook-up ideas. Assembly takes only an hour or two. Kit operates on 9 to 12 VDC and controls motor supply of 3 to 50 volts. Includes our custom case set measuring 5"W x 1 1/2"H x 5 1/4"D. (To our friend that tried to use this to control 480V/100A industrial motors... sorry about the melted case!)

MSC1C

DC Motor Speed Control Kit With Case

\$34.95



TOP SELLER!



KIT

Finally...A Stepper For All  
Those Surplus Motors!

TOP SELLER!

## Stepper Motor Controller-Driver

- ✓ Controls direction, step size, and power to the motor
- ✓ Output drives 5 to 15 volts
- ✓ Uses Motorola Stepper Motor Driver IC Chip

The motors are top quality but how the heck do you drive them without shelling out a fortune? Easily, with the Ramsey Super-Stepper! Build an accurate positioner, X-Y controller, plotter or even a Robot!

The Super-Stepper will drive almost any stepper from 5 to 15 volts. You'll be able to control direction, speed, step size (rotational increment), and even power-down the motor after rotating it. An on-board clock generator is provided for easy hook-up-and-go operation or you can externally drive the kit for more exotic control.

We give complete details and ideas for additional uses. Put those versatile, first rate (and cheap!) motors to work with this exciting kit. Includes the matching black custom case set. Operates on 5 to 15 VDC. Case size 5"W x 1 1/2"H x 5 1/4"D.

SMD1C  
AC125Stepper Motor Driver Kit With Case  
110VAC Power Adapter\$34.95  
\$9.95

## AC Motor Speed Controller

KIT

- ✓ Load 24-240VAC at 5.5 amps!
- ✓ Input voltage 110-240VAC!
- ✓ Speed range 5-95%
- ✓ Low RFI

Adjust Speed But Maintain Torque!



This controller was designed to control AC motors with carbon brushes, anything from drills to vacuum cleaners to saws. Unlike normal dimmers there is a phase-cut only once per period.

The moment of cutting determines the speed, which can be adjusted from 5-95%. Thanks to this control, this kit provides high torque even at low speeds! Not just for 110VAC and 220VAC motors, this kit can also be used for low voltage (24VAC) AC motor loads. The supply and load circuits are electrically isolated from each other for both safety and reliability. Unlike a lot of AC controllers, RFI is suppressed to eliminate noise and interference. AC power input is 110-240VAC. Load voltage is 24-240VAC. Measures 5.1" x 3.0". From Velleman.

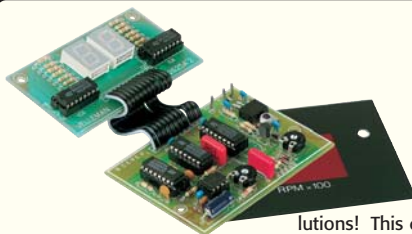
### SPECIFICATIONS

Voltage Supply:	110-240VAC
Load Voltage:	24-240VAC, 5.5A maximum
Speed range:	5-95% of rated motor speed
Dimensions:	5.1" x 3.0"

K2636

AC Motor Speed Controller

\$38.95



KIT

The Easy Way To Display RPM...  
Or Simply Revolutions!

## Digital Tachometer

- ✓ 100 to 9900 RPM!
- ✓ 2 digit display
- ✓ Easy calibration!
- ✓ Includes front bezel
- ✓ Runs on 10-15VDC@200mA

What a simple, neat, and "custom" way to add a tachometer to your vehicle or any other application where you need to count revolutions! This digital tachometer includes two interconnected boards. One contains two bright 7 segment LED displays to provide a unique digital display of your RPM! The 2nd board is connected with a flexible ribbon cable to make installation a breeze in any vehicle or application. Range is 100 to 9900 RPM to cover anywhere from a slow idle to a lead foot (usually followed by a blown engine!). An attractive red filter front bezel is included to give you a perfect custom "built-in" look! Runs on vehicle voltage (10-15VDC) at 200mA.

The small main board measures 3.2" x 2.4" and the display PCB measures 3.2" x 1.8". The matching red filter bezel measures 2.8" x 3.5". If you're looking for a super looking tachometer for your vehicle, the K2625 does the trick. From Velleman.

K2625

Digital Tachometer Kit

\$32.95

## Optically Isolated Interface Module

KIT

New For  
2010

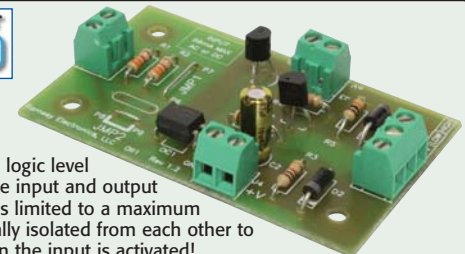
- ✓ 5000 VAC of isolation!
- ✓ Drives up to 150mA at up to 40VDC
- ✓ Works with your existing projects and applications

The OM2 provides an optically isolated interface between two devices. It can be used to convert nearly any AC or DC signal to logic level signals. It can also be used to activate a relay upon detection of an input signal. BUT the really great thing about the OM2 is the input and output are **totally isolated** from each other! Use virtually any voltage input level above 1.5 volts (as long as long as the input current is limited to a maximum of 60mA). The input can be a simple DC level or an AC signal with a frequency up to 250KHz. The input and output are optically isolated from each other to 5000 volts AC (rms), and the output can drive up to 150mA at up to 40VDC. It even provides active low and high outputs when the input is activated!

OM2

Optically Isolated Interface Module

\$9.95







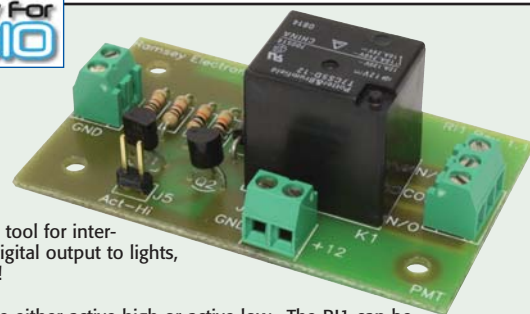
## Logic Interface Module

**KIT**

New For  
2010

- ✓ Use your kits for real world applications!
- ✓ Connects a SPDT Relay to almost any digital output
- ✓ Works with your existing projects and applications
- ✓ Switches up to 240 Volts at 10 Amps
- ✓ Digital Low less than 0.5 Volts, Digital High 1 to 12 Volts
- ✓ Easily interfaces to your project through terminal blocks

*Convert The Digital  
World To The Real  
World With Ease!*



The RI1 is designed to be a simple and practical interface between different types of electronic circuits. It's the perfect tool for interfacing a typical logic (or other DC) level to an onboard SPDT relay, which means it's a snap to connect almost any digital output to lights, motors, or any other electrical devices that require load switching of up to 240 Volts AC or DC and 10 Amps of current!

It takes a digital low (0.5 VDC or less) and high (+1 to +12VDC) and provides relay contact closures (SPDT) that can be either active high or active low. The RI1 can be used in conjunction with almost any digital kit, including the TS1, VS1, UT5, TT7, TD1, ICI16, Ramsey RF Wireless Link Modules, BD416, OM2, MD3, and the WTS1 just to name a few! It also works with many Velleman digital products, as well as countless other kits. There are literally millions of additional real world applications!

The output of the RI1 is a high current, normally-open/normally-closed set of dry contacts. The input signal can be nearly any type of logic level or other voltage level between 0 and 12VDC. Input level pull-up, pull-down, and current limiting resistors are available to meet the needs of almost any project. The RI1 requires 12VDC at less than 60mA to operate. Relay contacts are rated 12A at 120VAC, 10A at 240VAC, 10A at 28VDC. measures 1.5" x 2.5" with mounting provided on a 1" x 2" grid.

RI1

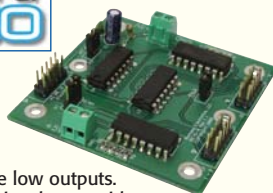
Logic Interface Module

\$11.95

## 4-to-16 Line Encoder

New For  
2010

- ✓ Jumper configurable
- ✓ Active high, active low, or both
- ✓ Works with your existing projects and applications



The BD416 is a 4 bit binary to 16 line decoder with active low outputs. Use it to interface to any 5 volt 4 bit binary output logic signal to provide a one of 16 line output signal. The output may be configured to either directly follow the binary input or to latch when the valid data signal input is applied. The valid data signal may be configured to be either active high or low. In the latched output configuration the BD416 may be configured to initialize in either a set, low output, or reset, high output, state. Configuration is accomplished using simple jumper block settings!

The BD416 may also be used with the RXD433A and RXD916 wireless receiver modules to provide a 1 of 16 output from the binary output. Each of the outputs is an active low, open collector signal able to drive an LED indicator or you can use our new RI1, or OI11 interface circuits and drive relays, or other high power loads. The BD416 operates on 5VDC and is 2.5" x 3.75" with mounting holes on a 2" x 3" grid.

BD416 4-to-16 Line Encoder

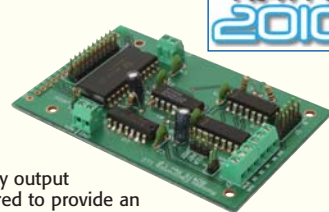
**KIT**

\$24.95

## 16-to-4 Line Encoder

New For  
2010

- ✓ Drive loads up to 150mA at 40VDC
- ✓ Active high, active low, or both
- ✓ Works with your existing projects and applications



The BE164 is a 16 to 4 line or 8 to 3 line binary output encoder. The encoded output may be configured to provide an active low binary signal that continuously follows the input or is active only when data valid signal is activated. All inputs are active low and the output is configurable to be either active high or active low. An active high data valid signal is provided at the output. Input and output connections are via three 10 pin 0.1" DIP connectors.

The BE164 may be used with our TXE433 and TXE916 Wireless transmitters to provide encoded data inputs. You may also use it to provide a binary encoded signal to any device such as a computer that uses a 5 volt binary logic level. It is also designed to operate with our Digital Voice Messaging System, DVMS. A simple direct connection to the DVMS provides direct access to any of the up to 8 stored voice messages. All configuration is done using simple on-board jumper blocks. Runs on 5VDC and is 2.5" x 2.5".

BE164 16-to-4 Line Encoder

**KIT**

\$24.95

## Infra-Red Switch Remote Control Interface

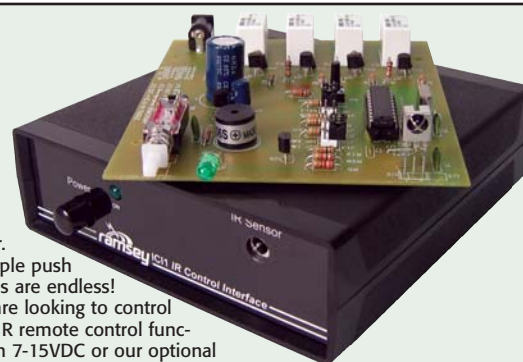
**KIT**

- ✓ "Learns" the signal from your existing IR remote controls!
- ✓ Controls up to 4 separate relay outputs at 3 amps!
- ✓ Provides latch on/latch off functions
- ✓ Includes matching case set

*Push On, Push Off...  
ANYTHING!*

One of the latest in the series of ICI Infra-Red interfaces from Ramsey! Now it's a breeze to control any on/off function with any button of your existing IR remote control! That's right, any button of your EXISTING 38 kHz remote control!

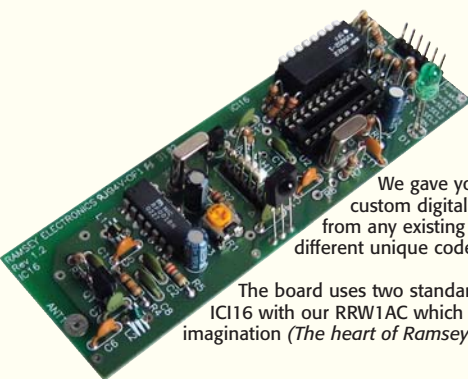
Using the latest Motorola microcontroller as its "brain," the ICI1 learns the IR code from any existing IR remote controller. An IR photodiode detects the IR remote and controls up to 4 separate relays. The relays turn on and turn off with a simple push of the remote control button programmed! The heavy duty relays are rated to switch up to 3A, so the control capabilities are endless! The relay outputs are brought out to 2-pin headers on the rear of the case to accept standard wire connections. If you are looking to control audio volume with a standard IR remote control, check out our ICI2 IR Audio Control Interface Kit below. It learns your IR remote control functions and can be programmed to provide a variable "volume control" to control any line level audio source! Operates on 7-15VDC or our optional AC125 power adapter. (push on, push off... the pusher!)



ICI1C  
AC125

Infra-Red Switch Control Interface Kit With Case  
110VAC Power Adapter

\$45.95  
\$9.95



**KIT**

*Create Any  
Digital Output!*

## Infra-Red Digital Remote Control Interface

- ✓ Generates a digital output from any IR remote button!
- ✓ "Learns" the signal from your existing IR remote controls!
- ✓ Plugs into your existing projects and applications
- ✓ The perfect experimenters kit!

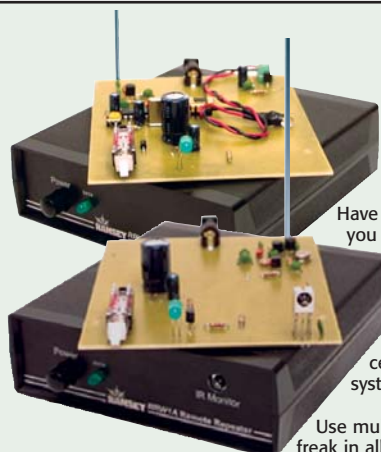
We gave you on/off switch control with our ICI1 (above) but now we've taken IR remote control one step further! The ICI16 gives you a custom digital output from your IR remote control buttons! Using the same Motorola microcontroller brain as the ICI1 it learns the IR code from any existing 38 kHz IR remote controller. Once learned, a push of the button generates a 0-15 coded output on 4 lines depending on 16 different unique codes learned from the IR controller!

The board uses two standard 6-pin 0.1" center connectors for easy mounting, plug-in, and wiring. Out of IR range and want to get really creative? Use the ICI16 with our RRW1AC which converts your IR to RF. The ICI16 receives the RF and converts it to a 1 of 16 digital signal output! Just use your technical imagination (The heart of Ramsey's 38 year history!). Operates on 7-15VDC.

ICI16

Infra-Red Digital Remote Control Interface Kit

\$45.95



KIT

**Don't Be A  
Control Freak!**

Have you ever been frustrated with the range of your remote controls? Tired of having to bounce your IR remote off ceilings and walls? Do you want to run your system from another room or floor? This is the answer to your prayers! Extend the range of your remote controls through walls, around corners, and even from outdoors. Unlike store bought units, error correction can be turned on for pulse width regeneration. The foolproof IR repeater!

Take advantage of wireless technology with this practical kit that almost anyone can use! The RRW1A and RRW1B pair allow you to rebroadcast your AV Infrared 38 kHz remote controls wirelessly on 433 MHz up to 100 feet. Broadcast through walls, doors, floors, and ceilings. Use the pair to control the satellite receiver downstairs and watch it upstairs! Be outside and control the tunes on your stereo system in the living room!

Use multiple RRW1As to broadcast from multiple locations in the house to the single RRW1B receiver near your equipment. Feed the control freak in all of us! Both units operate on 7-18V AC or DC. For continuous operation, use our AC125 AC power adapter. Sleek matching cases measure 5"W x 1 1/2"H x 5 1/4"D.

## Wireless IR Remote Control Repeaters

- ✓ Works with almost any remote control, does not need to be programmed!
- ✓ Transmitter converts your IR remote to RF
- ✓ Receiver converts transmitted RF back to your IR signal
- ✓ Operate from 7V to 18V AC or DC

RRW1AC  
RRW1BC  
AC125  
RRW1P

Wireless IR/RF Transmitter Kit With Case  
Wireless RF/IR Receiver Kit With Case  
110VAC Power Adapter  
Complete Package, RRW1AC, RRW1BC, And Two AC125 Power Adapters (\$99.80 Value)

\$34.95  
\$44.95  
\$9.95  
\$79.95

## Wired IR Remote Receiver/Repeater

- ✓ Control those components anywhere in the house
- ✓ Works with any 38 KHz carrier IR remote
- ✓ Indicator shows IR reception
- ✓ Operates from 6V to 16V AC or DC

**Don't Rearrange  
Your Room!**

Have you ever been so frustrated with the range of your remote that you have to go through the effort of rearranging your entertainment room? Tired of having to bounce your IR remote off ceilings and walls? Do you want to control your system from another room?

The RR1 is the answer for you. We use a super integrated IR detector with bandpass filtering, AGC, and RFI shielding. Receiving range is easily over 35 feet! It extends the range of your IR remote controls to distances limited only to the wire length you use!

Locate the IR receiver in a convenient location reachable with your existing remote control and run the IR LED extender cable near the front of the equipment you wish to control. It's that easy! Keep your expensive components safely locked away and let the RR1 be the key to control them! While you're building this kit, learn the theory of how IR remotes work and how we use the power of a microprocessor to provide you with flawless performance and the added benefit of error correction! The included matching case set measures 5"W x 1 1/2"H x 5 1/4"D.

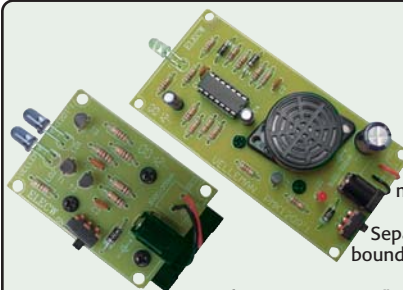


KIT

RR1C  
AC125

Wired IR Receiver/Repeater Kit With Case  
110VAC Power Adapter

\$34.95  
\$9.95



KIT

**Just Break The Beam!**

Create an invisible beam of light that will sound (and light) an alert whenever it is broken! Uses IR emitting LEDs for the transmitter to send a powerful beam up to 13 feet! Once setup and armed a break in the IR beam will sound a built-in 85dB audible alarm and illuminate a red alert LED on the receiver.

Separate transmitters and receivers are provided and both run on standard 9V batteries (not included). Great for store entrances, setting boundaries, and science fair projects to demonstrate how IR light works.

Transmitter measures 2.2" x 1.6". Receiver measures 3.9" x 2.0". On/off switches are included on both. Because IR light is used, this is not recommended for outdoor use. From Velleman. (I'm putting one by my office door so I can look busy writing catalog copy when the boss walks in!)

MK120

IR Light Barrier Alarm Kit

\$8.95

## IR Remote Control Checker

- ✓ Just point and check!
- ✓ Confirms IR signal generation!
- ✓ Provides peace of mind!
- ✓ Runs on a standard 9V battery!

**Check It Before You Wreck It!**

We've all been there, sitting on the couch or easy chair and the TV doesn't seem to respond to your remote control. First you smack it, then you hold it in the air and aim it closer to the TV... but the channel still won't change! At that point there's three options: get up and change the channel (ha, that will never happen), change the batteries and see if that works, or take another Xanax!

Before you go through all that, give yourself a treat and check the remote with this handy IR tester. Simply point your IR remote at the board, press a function button, and the 4 LEDs confirm proper IR receive! Runs on a standard 9V battery (not included). Measures 2.2" x 1.2" x 1.3". From Velleman. (I guess I forgot about option #4, throw the remote at the wall!)



MK137

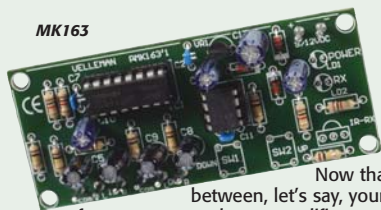
IR Remote Control Checker Kit

\$6.95





MK163



**KIT**

### Control Line Level Stereo Levels Between Units!

Now that you have your K8049 remote control, look how simple it is to control stereo audio levels between, let's say, your PC and your stereo amplifier! Just put this little board in line with the line level audio output of your source and your amplifier, program it, and you're all set! Provides continuous "up" and "down" control from 0dB to -78dB attenuation in 62 steps! Also features audio "mute" with "auto fade-in". The tiny board is small enough to be built inside any existing unit you wish to control audio levels on. Runs on 9-12VDC for easy connection to existing power supplies or even a 9VDC battery. Measures 3.1" x 1.4" x 0.6".

If you want a stand-alone unit, check out the MK164! Built in a sweet little enclosure with an IR viewing window, it has audio input, output, and power jacks to make external connection a breeze. Just plug the unit between the audio source and the amplifier or destination and you're all set! Includes the slick little housing shown. Measures 3.2" x 2.2" x 1.3". From Velleman.

**MK163** IR Stereo Volume Control Board Kit  
**MK164** IR Stereo Volume Control, External Kit With Enclosure

## IR Stereo Volume Control

- ✓ Control line level stereo audio!
- ✓ Range 0dB to -79dB in 62 steps!
- ✓ Mute, up, down, and auto fade-in



\$16.95  
\$27.95

## 15 Channel IR Hand Held Remote Transmitter

- ✓ 15 channels with 4 separate addresses!
- ✓ Professional rubber keypad!
- ✓ Compatible with multiple receiver kits
- ✓ Includes stylish case



Control A LOT Of Stuff!

**KIT**



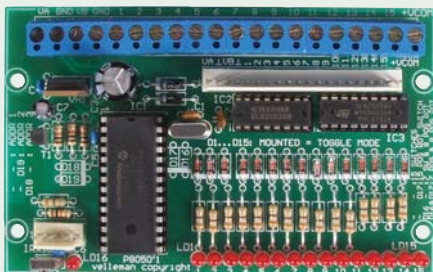
IR remote control is here to stay! Virtually all consumer electronic equipment is equipped with its own IR remote. So why not use IR to control your own projects, circuits, or household functions? Well, up to now there was no easy and "stylish" way to have a consumer attractive remote to use with your equipment. Consider that problem solved with the K8049 remote!

It features 15 separate channels that can be programmed to control anything using compatible receivers and receiver circuits. In addition, the K8049 features 4 separate addresses to allow the use of multiple receivers in one room!

You can use this single remote with the MK161, MK163, M164, K6712, and K8050 receivers featured on the following pages. It really doesn't get much easier than that! Includes built-in LED function indicators and runs on three standard AAA batteries (not included). From Velleman.

**K8049** 15 Channel IR Transmitter Kit

\$46.95



**KIT**

15 Channels, 3 Addresses...  
In A Single IR Receiver!

Use this 15 channel IR receiver with your K8049 transmitter and control multiple devices in several rooms! Provides 15 channels of control with 3 possible separate addresses for use in multiple rooms. 4 operating modes provide 15 independent outputs, 15 rotary outputs, 7 independent outputs and 8 rotary outputs, or 7 rotary outputs and 8 rotary outputs independent from each other! Each output is an open collector rated at 50V/50mA.

Runs on 8-14VDC, 10mA all outputs off, 150mA all outputs on. Comes complete with one LED IR sensor. Order up to two additional LED IR Sensors below for up to 3 separate receive locations. PC board measures 2.8" x 4.5" and has easy to connect terminals for all outputs. From Velleman.

**K8050** IR 15 Channel Receiver Kit  
**IR38DM** LED IR Sensor

\$32.95  
\$3.95

## 2 Channel IR Remote Receiver

- ✓ Two channel relay output!
- ✓ 'Learn mode' settings are stored in EEPROM
- ✓ Toggle or pulse selection for each channel

Program Two Functions!

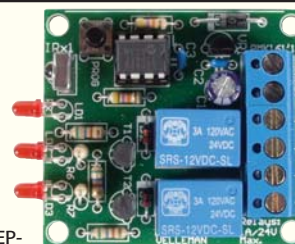
**KIT**

Use the sleek K8049 as the main remote for your IR control. Perhaps add an automatic light dimmer with the K6712. With 15 channels available on your remote, you'll have plenty of control room to spare! This tiny little receiver gives you two separate channel functions, providing relay closures for each!

Each control function can be set for either toggle or pulse mode to fit your specific application. Plus, all settings are stored forever in the built-in EEPROM! Channel and acknowledgement of reception are indicated on the attached LEDs. Relay outputs are rated at 24VAC/VDC at 1A. Runs on 12VDC at 0.75mA and measures a small 1.7" x 1.9" x .6". From Velleman.

**MK161** IR 2 Channel Remote Receiver Kit

\$19.95



**KIT**

Update Your Equipment To Use KeyFobs!

Bring the convenience of key fob control to any application with this awesome kit! The tiny handheld transmitter fits on your keychain (or anywhere else you need it) and can control any of the IR receivers above. Easy channel switching (just hold down both buttons) lets you use multiple transmitters in the same area - up to 16 separate channels! A standard red LED lets you know when you are transmitting or switching channels. Powered by a 12V battery (e.g. VG23GA, GP23GA, etc. not included) Dimensions: 2.3" x 1.6" x 0.5" From Velleman.

**MK162** IR 2 Channel Mini KeyFob Kit

\$17.95

## 2 Channel Mini IR KeyFob

- ✓ Compact 2-button IR keychain!
- ✓ Dual LED's indicate operation and programming!
- ✓ Up to 50' range!



KIT

Wired &amp; Tested

### 512 DMX Channels Over An XLR Cable!

At this point some of you may be wondering... "um, what is a DMX interface?" While it's not something you would find in a typical home, it's widely used in stage and music productions. DMX is short for an EIA-485 based communications protocol that is commonly used for stage lighting and stage effects. If you ever wondered how do they control all those stage lights, lasers, and other effects remotely from a single control point, now you know!

This little controller is USB controlled via a PC or laptop. "DMX Light Player" software is included to give you flexible control of up to 512 DMX channels, each channel with 256 levels! Now you're starting to get it! DMX fixtures are connected to the controller via standard XLR cables. Multiple fixtures are simply "daisy-chained" together giving you one final connection to the controller.

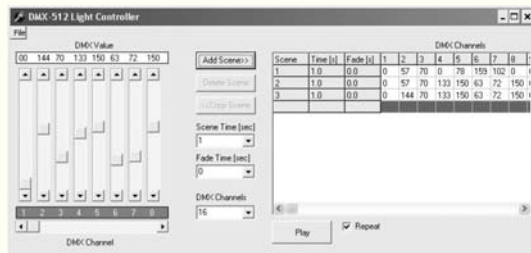
In addition to the Light Player software, test software is included to test all fixtures and a custom DLL is also provided allowing you to write your own software. Any PC compatible with USB1.1 is compatible with the controller. The controller is powered via the USB cable connection, however an optional 9VDC battery can also be used for stand-alone testing. This is handy when using the built-in test mode that outputs to all 512 channels with adjustable levels without a USB connection or external software!

The controller is available as a do-it-yourself kit, or factory assembled and tested ready to operate. It comes complete with a professional enclosure, USB cable, and installation CD that includes test software, DLL, and DMX Light Player. If you need to control multiple stage lights and effects that have DMX control, but don't want to spend a fortune for a commercial controller, this USB controller fits the bill! Take total control of your lights with DMX! From Velleman.

K8062  
VM116

USB Controlled DMX Interface Kit  
USB Controlled DMX Interface, Factory Assembled & Tested

\$67.95  
\$78.95



## DMX Controlled Power Dimmer

KIT

- ✓ Dim standard incandescent and halogen lights
- ✓ Handles a 500W load at 110VAC
- ✓ Dip switch programming to any of 512 DMX addresses
- ✓ Stand-alone test mode

No DMX Lights?  
No Problem!



OK, so you got the introduction to DMX control above, so at least you know what the basics are. Get a commercial controller, or the inexpensive USB controller above, plug in a daisy-chain of XLR cables to a number of lights and fixtures that have a standard DMX input, set and map the addresses, and you're all set! Sounds simple, huh? Well, here's the next problem! What happens when you want to control standard incandescent lighting fixtures that don't have a DMX control? It's simple, use this simple single channel dimmer!

This little dimmer circuit allows you to control a lamp or group of lamps with your DMX controller. It is designed to dim resistive loads such as incandescent lamps and line operated halogen lamps (not low voltage halogen's!). The controller has a primary power input of 115/230VAC so it can be used with either primary power mains. Likewise, the output follows the input voltage to power the light(s) you connect.

110VAC input will power 110VAC lights, 230VAC input will power 230VAC fixtures. The maximum resistive load is 1000 watts at 230VAC, or 500W at 115VAC. The dimmer can be programmed to any of the 512 DMX addresses with a simple dip switch. It also features a status LED for power and DMX error detection, toroidal filtering for low noise, and a stand-alone test mode. The DMX input is a standard XLR connector. The board measures 5.9" x 2.3" x 1.8". From Velleman.

K8039

DMX Controlled Power Dimmer Kit

\$54.95



KIT

Wired &amp; Tested

Turn It On...  
Turn It Off!

## DMX Controlled Relay Switch

- ✓ 8 Amp switching capacity!
- ✓ 512 DMX channel addressability!
- ✓ Relay hold in case of DMX signal loss
- ✓ Runs on 12VDC

What if you need to do more than dim a resistive incandescent light in your DMX control chain? What if you need to provide an on/off function? Just like the dimmer above, if you are switching a device that doesn't have a standard DMX control input, you're pretty much out of luck... unless you have this handy little relay board!

Here's how it works: First we plug this relay board into the DMX control daisy-chain (or directly to a controller if that's all you're controlling). Next, set the dip switches to the desired DMX address. There can be up to 512 addresses in a single DMX chain, so you've got plenty of room to add more devices later! Finally, map that address in your controller, and you're now "talking" to the relay switch with the controller, and can enable the on/off function of the relay. It's that simple!

The switch is actually a bus-controlled power driver. The on-board relay will be activated when the DMX value of the set channel equals 140 or more, and will shut off when the value is 120 or less. LED indication is provided on the board for power supply and DMX error detection.

In addition, "Safe DMX Data Stream" mode is used to reduce interference. If the DMX signal is lost (i.e. somebody trips on the cable!) the "Relay Hold" function will continue to latch the relay. DMX input is via a standard XLR connector. Relay switching capacity is 8A. The board runs on any 12VDC unregulated power supply or source. Available as a do-it-yourself kit or factory assembled & tested for immediate use. Board measures 4.1" x 2.4" x 1.2" From Velleman.

K8072  
VM138

DMX Controlled Relay Kit  
DMX Controlled Relay, Factory Assembled & Tested

\$39.95  
\$52.95

## DMX CONTROL... What is it?

"DMX512 was originally intended as a 'lowest common denominator' protocol for use between interfaces supporting proprietary protocols. However, it soon became the primary method for linking not only controllers and dimmers, but also more advanced fixtures and special effects devices such as fog machines and moving lights."







KIT

Wired & Tested



## 42W Universal Stereo Amplifier System

- ✓ 42 watt class D amplifier spread spectrum design!
- ✓ Highly efficient heat-free operation!
- ✓ Built-in click and pop suppression!
- ✓ 0.1% distortion!
- ✓ Balanced and unbalanced audio inputs!
- ✓ All DC digital controls for noise-free operation!
- ✓ Selectable pre/post process line outputs!
- ✓ Short circuit proof!
- ✓ Operates on 12-18VDC at a mere 3.3A!
- ✓ Compact and attractive shielded aluminum case!

*The Ultimate High-Tech  
Super Efficient Amplifier Solution!*

First we designed the UAM2, the extremely popular audio amplifier module that provides 20 watts of clean audio with virtually no heat... or heatsink! People loved it, and "stuck" them everywhere, from the back of speakers to inside their custom equipment to drive speakers. Last year saw the introduction of the "big brother" of the UAM2, our UAM4. The UAM4 upped the ante; this little 2.5" board provided 42 watts of stereo from a single SMT device! Just like the UAM2, people fell in love with it, and then they suggested we put together a complete audio amplifier system based on the UAM4 design. Their requests seemed like a great idea, so the UAM4SYS was born!

### SPECIFICATIONS

Audio Output:	2 x 21W stereo mode, 8 ohms 1 x 42W mono mode, 4 ohms
Signal/Noise:	91dB into 8 ohms, 22Hz-22kHz
THD+N:	0.1%
Audio Input:	Balanced, unbalanced, hi-Z
Gain Adjust:	Jumper settings, +22dB, +25dB, +29.5dB, +36dB
PSRR:	90dB at 1kHz
Efficiency:	Up to 87%
Protection:	Short circuit, thermal overload Auto short together shutdown Auto thermal shutdown
Modulation Scheme:	Spread-spectrum (SSM) Clock frequency 200kHz $\pm$ 4kHz
Line Outputs:	Selectable pre/post processing, dual RCA unbalanced
Headphone Out:	64 step digital level control with memory, 3.5mm front panel
Speaker Out:	Spring clamp terminal block, 14- 28AWG, rear panel
Front Panel Controls:	Volume, bass, treble, balance, dig- ital DC controls
Mute:	Digital push button with LED
Loudness:	Digital push button with LED
Power:	On/off with LED
Over Temp:	LED indicator
Audio Input:	3.5mm stereo unbalanced 3.5mm balanced/unbalanced each channel, 10K impedance
Case:	Anodized aluminum
Power Supply:	12VDC to 18VDC, 3.3A at 18VDC, 2.1mm center positive rear panel
Dimensions:	5.28" x 6.2" x 1.2" board 5.6" x 6.6" x 1.6" case
Weight:	1.24 lbs

Our goal was to make a universal amplifier that is both compatible with anyone's system requirements, and could be simply plugged in and used. Sounds simple, but it took some serious design work, and resulted in a lot of seriously awesome features! Like the UAM4, the amplifier is based on a single SMT device that runs in class D, which means it's highly efficient (up to 87%) and produces very little heat. It provides stereo audio power of 21 watts per channel, or 42 watts total audio power!

Easy-to-use board jumpers offer selectable gain of +22dB, +25dB, +29.5dB or +36dB to match your input levels. Board jumpers also enable protection and shutdown options as well as stereo/mono/bridge mode. The amplifier also features built-in click and pop suppression to protect not only your ears and sanity, but your speakers and equipment!

Construction wise, the entire amplifier assembly is nicely designed around a main board and a front panel control board. The micro-miniature SMT amplifier and related SMT components are pre-installed on the main board. The remaining parts are through-hole to make construction simple. Look at the front and rear view of the boards... what's missing? Yep, no heat sinks! The amplifier runs 87% efficient, and produces little (if any) heat!

The high impedance input is designed to use your choice of either a balanced line input or an unbalanced signal source. A single stereo 3.5mm input can be used for a single stereo unbalanced input (i.e. a typical computer audio stereo cable) and there are separate 3.5mm left and right audio inputs that can be used as balanced (TRS) or separate unbalanced inputs. It's your choice!

Speaker outputs are provided on the rear panel via spring clip terminal blocks compatible with 14-28AWG speaker wire. Separate left and right line outputs are also provided on the rear panel via RCA unbalanced connectors. Best of all, you can select these outputs to be either pre or post processing!

Front panel controls are all DC or digital, giving you noise-free operation. No noisy/touchy volume pots ever again! Volume, bass, treble, and balance controls are provided to let you configure the audio exactly to your personal preferences. In addition, mute and loudness on/off's with matching LED indicators are provided on the front panel.

We're especially proud of the headphone output circuit on the UAM4SYS. The standard 3.5mm stereo headphone jack on the front panel is controlled with digital up/down push button controls. This gives you 64 steps of audio level, and even stores your last setting so your headphone level will remain the same! The headphone jack is also pre-mute to allow monitoring while the speakers are muted. It also makes it possible to have a "single master" unit with remote amplifiers daisy-chained or bridged together with the ability to turn one off individually without disturbing the others downstream. That's just one of the many systems you can implement with the UAM4SYS - the only limit is your creativity and imagination!

An over-temp LED is provided on the front panel to indicate problems like shorted outputs. The amplifier also detects this condition and automatically shuts down for protection until the short is cleared. Considering all these features, you may be surprised to learn that we managed to fit the whole thing in a compact anodized aluminum case that is a mere 1.6" high! It makes an attractive addition to any equipment stack or computer setting.

If you're looking for a great way to properly drive speaker monitors from the line out of your computer, the UAM4SYS is perfect. One single stereo input cable between the computer and the UAM4SYS, a pair of decent nearfield monitor speakers, and you're all set. This is great for people that use their PC for audio and video editing. It's also the perfect choice for anyone looking for a high quality amplifier for an iPod or MP3 player.

Input power is 12-18VDC. At 18VDC and providing maximum power output, the high efficiency amplifier only draws 3.3A! The broad power input range also makes it perfect for automobile use. Just plug it into an accessory power plug (formerly known as a cigarette lighter plug!).

A lot of customers use their own power supplies or use the UAM4SYS in a mobile environment, so we do not include a power supply. The optional SPS183 is a compact desktop switching power supply that provides 18VDC to produce the maximum output power of the amplifier. It has a wide input range of 100-240VAC so it's compatible with domestic or international mains. (If you order the factory assembled and tested version, we include the power supply so you can plug it in and crank it up!) The complete amplifier measures 5.6" x 6.6" x 1.6". If you've been looking for the perfect audio amplifier, look no further!

UAM4SYS	42 Watt Stereo Amplifier Kit	
UAM4SYSWT	42 Watt Stereo Amplifier, Factory Assembled & Tested, With SPS183 Power Supply	
SPS183	18VDC, 3.3A Switching Power Supply, 100-240VAC, 50/60Hz	

\$169.95
\$249.95
\$59.95

## Subminiature 20W Amplifier

- ✓ 20 Watts from one SMT package!
- ✓ Super efficient Class D design!
- ✓ Super clean output!
- ✓ No heat/heatsink concerns!

**KIT**

**22 Watts..And NO Heat!**

**TOP  
SELLER!**



### SPECIFICATIONS

Audio Output:	20W max
Signal/Noise:	102dB into 8 ohms
Total Harmonic Distortion:	Less than 1%
Audio Input:	Line level 10K unbalanced
Gain Adjust:	4 input gain settings
Protection:	Auto short to ground shutdown Auto short to Vcc shutdown Auto short together shutdown Auto thermal shutdown
Power Input:	8-18 VDC, 2.1mm connector (18VDC for full rated output)
Dimensions:	2.6" square, 1.43" diameter

The UAM2 is probably the neatest audio kit to come along in quite a while! It uses the latest amplifier technology to bring you clear, crisp, high-power audio without any of the heat which is normally generated!

Lesson time: This is what is called a class "D" amplifier or as the media calls it, a "Digital" amplifier. Instead of operating like a classic class "A" or class "AB" amplifier which leaves transistors biased on all the time, losing energy whether they are producing audio or not, the class "D" amplifier only produces power into the load of your speaker! This means that the amplifier device can deliver a full 20 watts of power without getting so much as warm! Now it gets even better... The entire 22 watt amplifier device is a single SMT component! YES, I said SMT or Surface Mount!

We designed the amplifier around the device to provide all the necessary interfaces, inputs and outputs in a convenient mounting package. Audio input is standard unbalanced line level at 10K brought out to an RCA jack. Speaker output is brought out to convenient board mounted screw terminals. The amplifier has selectable gain of 12dB, 18dB, 23.6dB, and 32dB. This is selected via board jumpers. A amplifier shutdown terminal is also brought out to the Euroblock. You can use that to switch the amplifier on/off by taking it to ground.

The UAM2 runs on 8-18VDC, and is brought out to a standard 2.1mm power jack AND two terminals on a Euroblock. Therefore if you're hardwiring it, you don't need to use a plug from a separate power supply! Full rated output will be achieved at 18VDC, but will operate all the way down to 8VDC! And that means it works great in a vehicle at 12VDC! Just think of the applications!

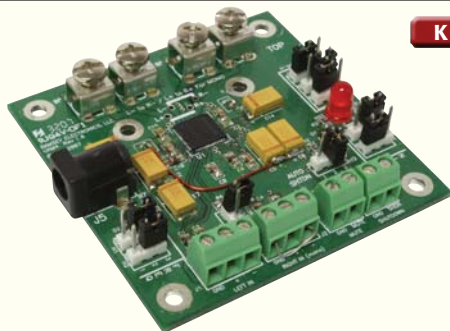
The entire amplifier board is 2.6" square and can be easily installed inside your speaker enclosures, or other components. We made it even easier with a unique board that can be "snapped" out into a small circle to be double face tape mounted directly to the back of a speaker! And however or wherever it's mounted there is no concern for heat, ventilation, or the need for a heatsink!

This IS a Surface Mount (SMT) kit, so you will need fine tweezers, magnifier, and a decent fine tip soldering iron! See assorted tools and accessories in the tools section. (Who ever imagined 20 watts in a single SMT device; I still remember fighting with vacuum tubes to get 20 watts!)

**UAM2**  
**SPS18**

**20 Watt Audio Amplifier Module Kit**  
**18VDC Switching Power Supply, 1.7A**

**\$34.95**  
**\$39.95**



**KIT**

**TOP  
SELLER!**

**42 Watts, 87% Efficient,  
No Heat, All On A 2½" Board!**

## Subminiature 42W Stereo Amplifier

- ✓ The EXTREME big brother of the UAM2 in stereo!
- ✓ 2 independent 21W amplifiers in one SMT package!
- ✓ Super efficient Class D spread spectrum design!
- ✓ Built-in click and pop suppression!
- ✓ Balanced & unbalanced hi-Z inputs!
- ✓ Logic level mute and shutdown functions!
- ✓ Selectable gain from +22dB to +36dB!
- ✓ Built-in thermal protection!
- ✓ Programmable device shutdown with LED indicator!
- ✓ Runs cool, no heat sink required!
- ✓ All this on a 2½" square board!

### SPECIFICATIONS

Audio Output:	2 x 21W stereo mode, 8 ohms
Signal/Noise:	1 x 42W mono mode, 4 ohms
THD+N:	91dB into 8 ohms, 22Hz-22kHz
Audio Input:	0.1%
Gain Adjust:	Balanced, unbalanced, hi-Z Jumper settings, +22dB, +25dB, +29.5dB, +36dB
PSRR:	90dB at 1kHz
Efficiency:	Up to 87%
Protection:	Short circuit, thermal overload Programmable thermal flag Auto short together shutdown Auto thermal shutdown
Power Input:	10-18 VDC, 2.1mm connector (18VDC for full rated output)
Dimensions:	(18VDC for full rated output) 2.5" square

When we released the UAM2, it became the most popular audio amplifier product in our history. The novel Class D design, providing a clean 20 watts in such a tiny package, set the hobbyist world on fire! And that's a pretty tough task when it didn't even produce any heat at its full output! Because of the popularity of the UAM2, we put the engineering staff into overdrive and the result is the UAM4!

The UAM4 is the big brother to the extremely popular UAM2. It uses the latest spread spectrum amplifier technology to bring you clear, crisp, high-power audio without any of the heat which is normally associated with such an amplifier. It's extremely clean Class D design produces two independent 21 watt outputs! This can also be bridged to an extremely efficient (87%!) single channel (mono) 42 watt amplifier.

And at 42 watts, you're probably already wondering about the heatsink requirements to dissipate the heat, right? Stop wondering, there's no heat, so there is no heatsink required! And all that power is generated in a single SMT device the size of your thumbnail on a small 2½" square board! For a quick tutorial on Class D amplifiers, see the description of the UAM2 below!

The high impedance input is designed to use your choice of either a balanced line input or an unbalanced signal source using easy to connect Euroblock terminals. No more concerns about having a matching input connector or plug or whether it's balanced or unbalanced! Audio speaker output is brought out to simple screw terminals. It doesn't get much easier than that. Logic connections to ground are also provided to mute and/or shut down the amplifier. You can also enable the built-in over temperature signal to activate one of these controls automatically!

Easy to use board jumpers offer selectable gain of +22dB, +25dB, +29.5dB or +36dB to match your input levels. Board jumpers also enable protection and shutdown options as well as stereo/mono/bridge mode. The amplifier also features built-in click and pop suppression to protect not only your ears and sanity, but your speakers and equipment! Power input for maximum rated output is 18VDC at 2.64A. Input voltage can be reduced to a minimum of 10VDC with reduced output. If required, use our switching power supply below which provides 18VDC at 3.3A with an input of 100-240VAC, 50/60 Hz.

As a result of customer requests, we have also designed this amplifier circuit into a complete 42 watt stereo amplifier system! Check out the UAM4SYS on the previous page, it's a complete system amplifier in a compact aluminum case. Gives you the performance of a component system amplifier with no heat and in a compact form factor!

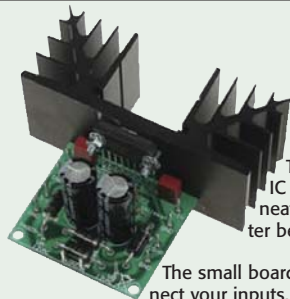
If you're looking for an incredible stand-alone stereo (or mono) amplifier to build into your equipment, speakers, or application, the UAM4 is the latest and the greatest! Remember, this is an SMT kit so you will need tweezers, a magnifier, some pretty good eyes, and a fine tip soldering iron or station. Check out SMT related tools in our Tools section. (Think back to the components, power supplies, and heatsinks it used to take to get 40 watts!)

**UAM4**  
**SPS183**

**42 Watt Audio Amplifier Module Kit**  
**18VDC, 3.3A Switching Power Supply, 100-240VAC, 50/60Hz**

**\$69.95**  
**\$59.95**





**KIT**

### The Super Easy Stereo Power Amplifier!

This unique small audio power amplifier is designed around the TDA1521 IC. The IC is thermal, short circuit, and overload protected for reliable operation. One of the neat features of this amplifier is that it needs no additional rectifier and smoothing filter because it can also run on AC!

The small board and custom heatsink design make installation and connection a breeze. Just connect your inputs, your speakers (4 or 8 ohm) and power. Don't worry about overloads, or shorts on your outputs because it has automatic protection.

In addition, transient suppression is switchable on/off as desired. If you're looking for a sweet little inexpensive stereo amplifier, this is for you! Board, less heatsink, measures 2.8" x 2". From Velleman.

**K4003** **2x30 Stereo Audio Power Amplifier Kit** **\$27.95**

## 2 x 30 Watt Audio Power Amplifier

- ✓ Dual channel, 30W max per channel!
- ✓ Latest IC circuitry, fully protected
- ✓ Includes heatsink
- ✓ Perfect drop-in power amplifier

#### SPECIFICATIONS

Audio Output:	2x30W max (2x15W RMS)
Signal/Noise:	98dB into 4 ohms
Total Harmonic Distortion:	Less than 0.07%
Channel Separation:	70dB
Frequency Response:	7Hz to 60kHz
Audio Input Sensitivity:	300mV/150k ohm
Protection:	Transient suppression on/off Auto overload protection Auto short circuit protection Auto thermal shutdown
Power Input:	2x12V AC/DC @ 50W/2A
Dimensions:	2.6" square, 1.43" diameter

## 7 Watt Audio Power Amplifier

- ✓ 7 Watts output maximum power
- ✓ Overload and short circuit protected
- ✓ Includes heatsink

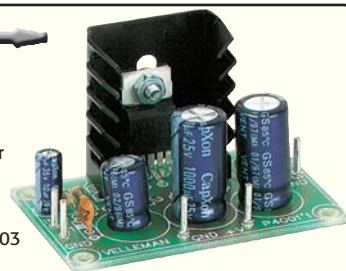
### The Easy Audio Amplifier!

A super amplifier to use stand-alone or as part of a system. The small circuit board and heatsink make it easy to integrate this into any of your applications requiring a good amplifier. 7 watts maximum audio output (3.5W RMS into 4 ohm) provides a Total Harmonic Distortion of .05% with a Frequency Response between 20Hz and 20kHz. Input sensitivity is 40mV at 150k ohm.

Supply voltage is 8 to 18VDC at .5A (15VDC for rated output). Automatic protection for shorted output and overload. Uses the newest TDA2003 IC for ultimate reliability. Includes the small but efficient heatsink shown. Board measures 2.2" x 1.4". From Velleman.

**K4001** **7 Watt Audio Power Amplifier Kit**

**KIT**



**\$14.95**



**Wired & Tested**

**KIT**

*Crank It Up Baby...  
Crank It!*



## Personal Practice Guitar Amplifier & DI

- ✓ Practice your guitar or bass without disturbing others!
- ✓ Standard 1/4" guitar audio plug input!
- ✓ CD/MP3 player audio headphone input to practice to your favorite music!
- ✓ Switchable bass boost!
- ✓ Great as a DI to your home stereo amplifier!
- ✓ Standard 3.5mm "Walkman" headphone jack!
- ✓ Uses a standard 9V battery

### CRANK UP THE AUDIO AS LOUD AS YOU NEED!

So you're a guitar player, and you live in an apartment... need we say more?! You would love to plug into your 100 watt HiWatt (my favorite!) amplifier and let it crank, but the neighbors probably wouldn't share your enthusiasm! The PGA1 was designed to give you hours of enjoyment playing your favorite electric guitar while isolating your family, friends, and neighbors from your music and your passion.

### FOR USE WITH ALL TYPES OF GUITARS!

Whether you use an acoustic electric, electric, or bass guitar, the PGA1 gives you an adjustable volume output to your favorite headphones. Unlike a lot of practice amps, the PGA1 has a special bass boost to enhance bass guitar use. One practice amp for all your guitars! If you want to practice to your favorite music, the PGA1 has a standard style audio input to play to your favorite music! Just plug in your Walkman style CD player, MP3 player, or even the headphone output on your mixer board and you'll hear both your music source and your guitar in your headphones!

### ONE WATT OUTPUT!

The PGA1 uses a powerful LM386 power amplifier to provide one watt of power to your headphones or even a small speaker! It gets even better...use the PGA1 as a cheap and easy direct inserter box to match your guitar into an aux input of a stereo receiver amplifier or PA amplifier! It sounds great! A standard 1/4" audio input connector is used for your guitar input, matching your standard guitar cables. A top mounted on/off/volume control adjusts the headphone output level through the full range. The small belt clip pocket size device runs on a standard 9V battery (not included). An LED indicates power-on and relative battery condition. The attractive compact case measures 4.5"W x 2.7"W x 1.1"D and can be worn on your belt or carried in your pocket. Available in kit to "learn as you build" or factory assembled and tested to get playing right out of the box! (My son keeps one of these tucked in the case of his new Gilmour Black Strat!)

**PGA1** **Personal Practice Guitar Amplifier Kit**  
**PGA1WT** **Personal Practice Guitar Amplifier, Factory Assembled & Tested**

**\$64.95**  
**\$99.95**



## Stereo Headphone Amplifier

- ✓ Make your headphones sound GREAT!
- ✓ Use with table radios, CD players, tuners, and more
- ✓ Great as a basic preamp for any line level signal

**KIT**

**Wired & Tested**

*No Headphone Jack?  
NO Problem!*



So, you buy a really good radio or CD player, go to plug in your headphones, and there isn't a headphone jack! You find a line level jack, plug in your headphones, and they sound terrible. Sound familiar?

Most good quality gear lacks an earphone output, or if there is one, it is woefully poor quality. We developed this kit to help us listen to our mixers, reverbs, voice recorders and other audio goodies. We took a pair of LM-386 250 mW audio amplifiers, added volume controls, power supply and a handy, switchable, high-cut filter. A common 1/4" stereo earphone jack is used for the output - assuring compatibility with all stereo headphones - and RCA phono jacks accept standard line level input signals. There's plenty of volume and of course, the "Fi" is quite "Hi". Available in money saving kit form or fully wired and tested. Runs on 9 to 15 VDC. Includes an attractive matching case measuring 5"W x 1 1/2"H x 5 1/4"D. (Did you know the leading and most well known manufacturer of high-end table radios recommends the SHA1 to all of their customers?)

**SHA1C** **Stereo Headphone Amplifier Kit With Case**  
**SHA1WT** **Factory Assembled & Tested SHA1 With Case And Power Supply**  
**AC125** **110VAC Power Adapter**

**\$32.95**  
**\$64.95**  
**\$9.95**





## Super Stereo Headphone Amplifier

- ✓ The next generation headphone amp!
- ✓ Separate volume, treble, bass, balance and loudness controls!
- ✓ Signal level clipping indicator LED!
- ✓ Stereo loop-through for multiple feeds with separate controls
- ✓ CD quality audio!

KIT

Wired &amp; Tested

*The New Generation  
Stereo Headphone  
Amplifier!*



A few years ago we designed the SHA1 stereo headphone amplifier to provide an audiophile quality headphone signal from a radio or amplifier that only had a line output. The success was overwhelming! As described in previous catalogs and on our website, the largest manufacturer of high quality table radios recommended the SHA1 to their customers who wanted to use headphones with their radio.

Well, it's been a couple of years and the need has been proven so we decided not to rest on our laurels with the success of the SHA1. We put our engineers to work, asking them questions like... what if a band wanted multiple headphones with separate level controls? And what about controls... how about the ability to tailor the audio characteristics to each user's preferences? What about multiple headphones from just one unit? When they got tired of all our questions they said "OK... you've got it, the new SHA2... the next generation headphone amplifier kit!"

Standard 3.5mm stereo audio headphone connectors are used for both looping input and dual outputs for simple Walkman style headphones. That was decided when I recently bought a hundred dollar set of Sony professional headphones that had the 3.5mm plug on them and an included 1/4" adapter. I figured it's time to concede to 3.5mm! And before you ask, we provide a dual RCA to 3.5mm stereo input cable with the SHA2 to match up with your standard unbalanced RCA line out connectors!

From there LM386's and LM1036's are used for audio processing providing nearly 1 watt of output to the normal 4-40 ohm headphones or speaker circuits. The loop-through inputs are properly isolated to prevent ground loop and hum problems when daisy chained or used in multiples. The dual outputs are great for that other person that just has to listen in too! We covered it all with the SHA2!

Runs on a built-in standard 9VDC battery and also has a rear power jack for 12-20VDC if you don't want to bother with a battery! If you're looking for a great headphone amplifier to simply listen to the line output of a radio, CD player, tape player, or receiver, our proven SHA1 is the answer. BUT... if you're looking for multiple outputs, looping inputs, daisy chained amplifiers, and bass, treble, loudness control, then try the SHA2, the next generation stereo headphone amplifier! Like the SHA1, it includes an attractive matching case measuring 5"W x 1 1/2"H x 5 1/4"D.

**SHA2** Super Stereo Headphone Amplifier Kit With Case  
**SHA2WT** Factory Assembled & Tested SHA2 With Case And Power Supply  
**AC125** 110VAC Power Adapter

**\$59.95**  
**\$99.95**  
**\$9.95**

## Super Snoop Amplifier

- ✓ High sensitivity, long distance listening!
- ✓ Powerful 2W audio output!

*Super High Gain!*



Here's a super sensitive amplifier that will pick up a pin drop at 15 feet (with a proper microphone attached)! It's also an ideal general purpose amplifier to simply boost the signal level of any audio source. The device is rated 2 watts audio output which relates to lots of gain!

When wired for high gain, makes an excellent room monitor. Simply connect one of our MC1 mini electret condenser mics. Likewise, this little amplifier is perfect to build a "big ear" high gain mic to listen in on the "wildlife" both in the field and in the city! Just like the ones the networks use at football games to listen to the players! Runs on 6-15VDC at 500mA. Drives any speaker or coupled headphones and runs on a standard 9V battery or anywhere from 9-15VDC. The tiny board measures 1 1/2" x 1/2" x 1 1/2".

**BN9** Super Snoop Amplifier Kit

KIT

**\$9.95**

## Mini Electret Condenser Microphone

- ✓ Extremely sensitive!
- ✓ Built-in FET preamplifier!
- ✓ Super small size, great fidelity!
- ✓ Runs on 3 to 15 VDC

**TOP  
SELLER!**



*You CAN Hear Me Now!*

This little subminiature condenser microphone element kit is great as a replacement microphone in tape recorders, walkie-talkies, radios, CB microphones, telephones, and other audio products. Extremely sensitive element has a built-in high gain FET preamplifier. A lot of customers use these microphone elements together with our BN9 Super Snoop Amplifier to build super sensitive "electronic ears".

The preamp is powered from 3 to 15 VDC on the audio line to the microphone. The kit includes a coupling capacitor and current limiting resistor to make the connection to your circuit a breeze! Comes complete with detailed connection details, schematic, and diagrams. The microphone element measures 3/8" diameter x 3/8" high! And THAT is small!

**MC1** Mini Electret Condenser Mic

KIT

**\$3.95**



**TOP  
SELLER!**

KIT

*What Did He Say?  
You'll Find Out!*

The "Stereo Ear" is an ultra high gain stereo audio amplifier! And when we say high gain, we mean it! It boosts audio 50 times and you can listen to it in stereo besides! Miniature high sensitivity microphones are placed at 45 degree angles to give you maximum separation.

This little kit also includes an on/off switch, volume control and audio output connector. Runs on 3 AAA batteries (not included). Measures 2.4" x 2.1". From Velleman. (Noisy tenants? Plug this into your PC audio in and record it all night, burn a CD, give it to your landlord... it works!)

**MK136**

**Stereo Ear Super Stereo Amplifier Kit**

**\$9.95**

## Pocket Audio Generator

- ✓ Digital waveform generation
- ✓ Stereo out, dual RCA plugs

*Test Those Inputs!*

A perfect test source for stereo line inputs on any amplifier or mixer. Provides 50Hz, 100Hz, 1kHz, 10kHz, & 20kHz tones, plus 32 bit digital pink noise. Great to help you identify cables or left/right reversals!

Output is line level to two standard RCA plugs. Runs on two CR2016/2025 batteries not included. Measures 3.4" x 2" x 1". From Velleman.



**K8065** Pocket Audio Generator Kit

KIT

**\$32.95**

## Pocket Vu Meter

- ✓ LED bar graph display
- ✓ Built-in microphone

*Watch That Music!*

Hand held audio level meter that fits in your pocket! Built-in mic picks up music and audio and displays it on an LED bargraph. Includes enclosure shown. Runs on one 3V Li-Ion button cell, not included. From Velleman.



**MK146** Pocket Vu Meter Kit

KIT

**\$8.95**





## Rat Blaster Varmint Repeller

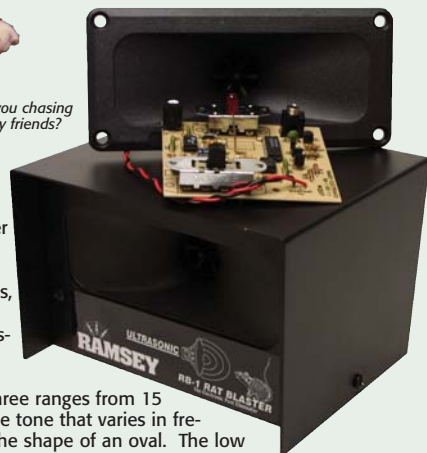
- ✓ Covers over 3,000 square feet
- ✓ Programmable frequencies for optimum repulsion
- ✓ Comparable to commercial units costing \$150!
- ✓ Build in your own case or wall, or use our custom case!
- ✓ Runs on 12VDC or our 110VAC power supply

KIT



Why are you chasing away my friends?

**Eliminate Them...  
Without Any Harm!**



Sure, you've seen these things advertised before. Big claims and a huge price! Well we won't carry on about how you'll be able to keep Godzilla out of your garbage cans but we will say that this unit will do a nice job of keeping the neighborhood dog, cat, or deer away!

Here's the story. We had a problem at the boss's house keeping the deer out of the garden. The boss, being the electronic nut he is, bought one of these things and tried it. It worked pretty well so he planned to get another for protecting the shrubs but at \$150 a box he figured it was cheaper to build his own. Here it is, cheaper and better! We've increased the power, put in a top-quality transducer (by Motorola), upgraded the frequency range, and made it affordable!

The RB1 produces approximately four watts of high frequency audio. The output frequency is selected via a front panel control in three ranges from 15 kHz to 30 kHz. Instead of just generating a single constant tone like many competitive units on the market, the RB1 creates a warble tone that varies in frequency which really annoys those pests. This unit is set outside facing the area desired to be protected. It then covers an area in the shape of an oval. The low frequency setting will cover an area of approximately 4000 square feet and is the best range for dogs. The high frequency setting, it covers an area of around 2500 square feet and is the best range for cats. Deer respond well to the middle setting. As for Big Foot, we're not sure, other than he will be blurry, and that's a guarantee!

A lot of customers prefer to build it into their own case (or even a garage, shed, or barn wall!) so we offer the custom metal case shown as a separate option. We're not thrilled by the price increase in the custom case... but the manufacturing costs skyrocketed for this! Runs on 12 to 15 volts AC or VDC (positive tip) or use our AC adapter.

RB1 Rat Blaster Rodent and Animal Repeller Kit  
CRB Matching Case & Knob Set for RB1  
AC125 110VAC Power Adapter

\$59.95  
\$39.95  
\$9.95



Wired & Tested

KIT

## Bullshooter-II Digital Voice Storage

**Feature Packed  
Digital Storage!**

- ✓ Multiple message storage and selection!
- ✓ Built-in mic, external mic and line inputs!
- ✓ Variable output levels to match your equipment!
- ✓ Great for telephone hold announcements, broadcast announcements, and much more!
- ✓ Single play and programmable repeat modes

Our first generation BS1 Bullshooter digital voice storage recorder provided the proverbial endless tape loop recorder/player without the tape! For the first time ever, the tape, along with the motors, drive belts and dirty and plugged tape heads were replaced with state-of-the-art digital voice storage! The BS1 became extremely popular to replace tape for basic voice announcements. As digital voice technology improved and came within reach of the consumer, it paved the way for the next generation, the BS2C! Requests came pouring in for longer voice storage, separate voice channels of storage, and different time duration channels of storage. The BS2C Bullshooter-II took care of all that, and a whole lot more!

Storage wise, the BS2C provides up to 8 minutes of digital voice storage. But it only starts there! That total storage capacity can be broken down into a maximum of 8 separate stored messages. In addition, the BS2C features four selectable sampling rates depending on the type and quality of audio being stored. A sample rate of 4kHz provides the full 8 minute storage, while 5kHz provides 6.4 minutes, 6kHz provides 5.3 minutes, and the highest sample rate of 8kHz provides 4 minutes. As an added sample rate feature, you can play back a slow sample rate message at a faster sample rate to achieve a "funny-fast" playback! Likewise playing a higher rate message at a lower sample rate to achieve a "slow" playback effect. And unlike tape, your messages are stored in a non-volatile memory for over 100 years without power!

Recording voice with the BS2C is simple with a built-in front panel mounted electret condenser microphone. Just setup to record, push a front panel button and speak! You can also plug in your own external electret condenser microphone for professional studio-sounding recording. You can also record audio from any audio source that has standard line outputs. Just plug it into the line input of the BS2! Line/mic input switching is provided by front panel control. Both external inputs also feature variable level controls to optimize your recordings.

Playback-wise, the BS2C features adjustable line level outputs (two mono outputs for stereo inputs) to properly feed any application or device! This is perfect for telephone system announcements on hold (MOH source), radio broadcasters, transmitters, and audio/visual displays. You can also directly drive a speaker with the built-in amplified speaker output. A built-in headphone jack is also provided to monitor audio levels. The message number is displayed on the 7 segment LED front panel display! Recording/playing/stopping is similar to a standard recorder, and you can start/stop/pause your message during both record and playback! Playback modes are selectable for single play and continuous repeat with programmable delays of 0sec, .5sec, 5sec, 1min, 10min, 30min, and 60minutes. Once setup you can also lock the unit with a multiple key code. Whatever your application is, the new BS2 has you covered! Runs on 12-15VDC or optional AC power adapter.

BS2C Bullshooter-II, Multi-Message Digital Voice Recorder Kit With Case Set  
BS2WT Factory Assembled & Tested BS2 with Case Set and Power Supply  
AC125 110VAC Power Adapter

\$89.95  
\$119.95  
\$9.95

## Karaoke Audio Interface

- ✓ Sing along with your favorite music!
- ✓ Easy connections to your equipment!
- ✓ Automatic vocal reduction!
- ✓ Runs on a standard 9V battery!

**How Do You Think All  
Those Idols Started!**

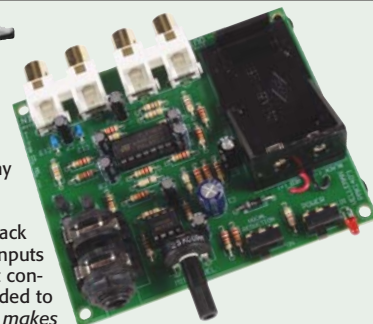
Get in tune with this simple yet full featured Karaoke "machine"! Just hook it between your amp and your CD player (or MP3 player, or any other line level source...) and get ready to sing!

Built-in vocal reduction circuit lowers the vocal tracks of most recordings automatically! That means you don't have to buy special soundtrack only CD's! Use any music from your existing library! Connections are simple. Standard RCA connectors are used for left and right music inputs as well as left and right outputs to your amplifier or receiver aux input. A standard 1/4" microphone jack is used that is common with most consumer microphones. Just hook it up, plug your microphone in, and start singing! A board mounted microphone level control is also provided to match your levels to the music. Measures 3.9" x 3.3" x 1". From Velleman. (Note: it has been proven that beer and alcohol consumption makes everyone sound better... at least in their own minds!)

MK140 Karaoke Audio Interface Kit

\$13.95

KIT



## Digital Voice Messaging System

- ✓ Up to 8 minutes of total message time!
- ✓ 2, 3, or 8 separate message versions available
- ✓ Automatic or manual message playback
- ✓ DTMF BCD controlled remote operation available
- ✓ Line level and speaker level playback audio outputs
- ✓ Line level and mic level record audio inputs
- ✓ Easy push button control
- ✓ All controls and status indicators can be remoted with one DB25
- ✓ Non volatile message memory
- ✓ Great for one-touch on-demand message announcements, museum displays, product kiosks, trade shows, emergency messages, and a whole lot more!

*Incredible Versatility That Even Pleased The Bean Counters!*

### THE THIRD GENERATION!

A few years ago we brought the emerging technology of digital voice storage to the hobbyist with the Bullshooter digital voice storage kit. Then, as the technology improved, so did ours when we introduced the next generation, the Bullshooter-II. To this day it remains extremely popular for digital voice storage for messages, endless "tape loops" and radio broadcast announcements. But when a number of major museums came to us to develop a similar low-cost unit for on-demand multi-language voice storage for diorama displays, we figured it was time to really get creative. In response, the DVMS series was created that not only met all of their requirements, but also kept their bean counters happy with the low cost!

### MUSEUM QUALITY AND VERSATILITY!

When the museums came to us the intent sounded simple enough... to be able to record and playback a few digitally stored voice messages with the press of a single button. But then the variables came into play! Sometimes there needed to be fewer but longer messages. Other times there needed to be multiple language versions of the same message. Some needed automatic unattended playback while others needed on-demand realtime playback. To top it off, some needed to remote control the unit for integration into their exhibits and displays. It was a pretty tall order, but our engineering staff likes challenges, so they went to work!

Let's look at a typical museum diorama display. A detailed description is present on a plaque, but there is simply too much information to have printed. Plus, what about different languages? All of a sudden there would be signs, signs, everywhere signs! It just doesn't work. But what if there was a basic sign or plaque identifying the object, followed by push buttons properly labeled for each language desired? It's intuitive to push the button labeled "English" or "Espanol," and a nice narrative can start in any language selected! Some of the museums built the DVMS into their main display sign, others remoted the switches to a bank of units for easy recording and maintenance at one common location.

### THE LATEST TECHNOLOGY!

We started with the latest digital voice storage technology. It provides up to 8 minutes of digital storage at a frequency response up to 3.5 KHz. (Total message time and frequency response is dependant on selected internal sampling rate.) And then through firmware we segmented those 8 minutes into several different versions to allow your choice of 1-2 channels, 1-3 channels, or 1-8 channels. Once recorded, messages are available for playback on-demand or automatic continuous looping. For continuous loop playback we even gave the DVMS programmable delays of 0, 0.5, 5, and 30 seconds as well as 1, 10, 30, and 60 minutes! The main unit has all the functions and display controls on the front panel which can be disabled with a lock code to prevent unauthorized tampering.

Remote control of the Play, Pause, Stop and Message Selection is standard on the remote control DB25 connector. The remote connector also provides signals indicating the current play status and message selection which may be used to directly drive LED's or for use as indicators and a speaker output for use on your own custom control system. Additional remote functionality, such as record, may be customized if required. There is also a special version available specifically designed for keying on a transmitter when a message is played. Contact the factory for additional information.

### MULTIPLE INPUTS AND OUTPUTS!

Standard RCA unbalanced line level output is provided for easy connection to any amplifier, amplified speaker, mixer, or sound system. In addition, a standard 4-8 ohm speaker output is provided to directly drive a monitor speaker. This output is frequently connected to built-in speakers in the museum or kiosk control panel. Audio input for recording is provided for either a standard line level such as a mixer or a direct microphone input with a built-in AGC (Automatic Gain Control)! Recording is controlled from the main front panel but may be added as a custom remote function. Contact the factory for more information.

### WE MAKE REMOTE CONTROL A BREEZE!

With the various applications the DVMS system is designed around, we also came up with a series of accessory products to enhance the remote control versatility of the system. All standard functions can be remotely controlled via the built-in DB25 connector, but we didn't stop there! The DVMS8BCD version provides a 3 wire BCD interface that also allows you to use the standard remote control signals. Using the DVMS8BCD version you can use your computer to directly access any of the 8 messages or with the use of our new DCI2 or BE184 interfaces you can have a standalone system. Here's what they offer:

You say you would like to select and control messages from a touch-tone phone. The DCI2 (see page 25) provides the ability to control the DVMS8BCD from any touch-tone phone. It provides selection of the message to play as well as the ability to stop the current message at any time. There is even a security feature that requires entry of a 4 digit code before access to the DVMS8BCD is allowed. All you need to provide is the phone line and an answering device such as an answering machine to answer the phone. From there simply connect the DCI2 to the RJ11 phone jack and you're ready to go. The BE164 (see page 27) provides the ability to access any of the 8 messages on the DVMS8BCD with the simple press of a single button. Simply connect the supplied cable between the DVMS8BCD and BE164 and you're in business.

The various DVMS versions are determined solely by microcontroller firmware, and can be easily changed in the field by installing the correct microcontroller. Additional microcontrollers are available for purchase by contacting the factory. So, whether you're the curator of a large museum, have a trade-show exhibit that needs an on-demand or auto-repeating voice message, or simply a hobbyist that would like to integrate high end digital voice storage in your project, the DVMS system is your answer.

Suggested possible uses of the DVMS systems include automatic control of a radio repeater system to indicate loss of main power, amusement ride safety messages played on demand or periodically, multi-lingual messages on demand for displays, alarm systems, message-on-hold systems, or any other prerecorded message. Let your imagination run wild!



DVMS2	Digital Voice Message System Kit, 1-2 Channels	\$99.95
DVMS2WT	Digital Voice Message System, Factory Assembled & Tested, 1-2 Channels, With Power Supply	\$149.95
DVMS3	Digital Voice Message System Kit, 1-3 Channels	\$99.95
DVMS3WT	Digital Voice Message System, Factory Assembled & Tested, 1-3 Channels, With Power Supply	\$149.95
DVMS8	Digital Voice Message System Kit, 1-8 Channels	\$99.95
DVMS8WT	Digital Voice Message System, Factory Assembled & Tested, 1-8 Channels, With Power Supply	\$149.95
DVMS8BCD	Digital Voice Message System Kit, 1-8 Channels, With BCC Interface	\$99.95
DVMS8BCDWT	Digital Voice Message System, Factory Assembled & Tested, 1-8 Channels, With BCC Interface, With Power Supply	\$149.95
AC125	110VAC Power Supply	\$9.95
DCI2	DTMF Touch-Tone Control Interface Kit	\$62.95
DCI2WT	DTMF Touch-Tone Control Interface, Factory Assembled & Tested	\$109.95
BE164	16-to-4 Line Encoder	\$24.95
DVMSCI	Interface Cable for connecting Remote Interfaces to the DVMS	\$19.95
DVMSCI2	Interface Cable for connecting DCI2 and DVMS8BCD	\$19.95





Wired & Tested

**Fully Automatic, Just Go Off-Hook!**

What is a telephone ring down, you may ask? They have been used for years as dedicated communications paths between two standard telephone sets. Over a single pair, with a phone at either end, merely going off hook with one phone immediately rings the other phone. When picked up you have a complete intercom path to talk. No dialing necessary! What are they used for?

Well, on the intercom or communications side they are commonly used for elevator phones, guard post hotlines, door entry phones in homes and offices, and on commercial job sites for rugged intercoms. But that's just the beginning!

They can also be used to test ringing, answering, and signal path conditions of devices, two-wire off premises extensions, PABX to Key System tie lines, and more. Ringing pattern is selectable to continuous ring; 1 on 1 off; 2 on 2 off; 2 on 4 off. Runs on 12 VAC at 500 mA (Power Transformer is included) or 20-28 VDC at 300 mA.

If you work on telephone equipment or are just looking for an ultra reliable telephone, the QLRD1 can't be beat! Measures 5/8 x 4 1/4 x 2 1/2 inches and is totally encapsulated in UL 94V-0 flame-resistant epoxy resin for long, reliable operation. (I used to install ring-downs with rotary dial 500's! I guess I'm REALLY dating myself!)

QLRD1

Automatic Telephone Ring Down, Factory Assembled & Tested

\$89.95

## Call-All-Stations "Ring Down" Extender

- ✓ Extends your ring down to multiple stations
- ✓ Any off hook rings all stations
- ✓ Meets legal requirements for backup communications!
- ✓ Compatible with standard and electronic telephones
- ✓ Runs on 24 VDC or 12VAC

Wired & Tested

**Calling All Stations...  
Calling All Stations!**



The QLRD1 above is the ultimate (and very popular) telephone ring down. As described, it provides an ultra reliable dedicated communications path between two standard telephones while providing an automatic ring of the called station by merely going off hook with the calling station. These 2-station ring downs have been used for years.

But now the plot thickens! What if you needed to to have multiple stations in the path? What if you needed up to 4 stations to simultaneously ring with an off hook of any one station? No problem with the new QLRD4 Call-All-Station Extender! Add it to the QLRD1 Ring Down and you now have a complete 4 station automatic ring down. If any station of the 4 goes off hook, it rings the other three stations. When a ringing station goes off hook to answer, a full duplex intercom path is established between all 4 stations!

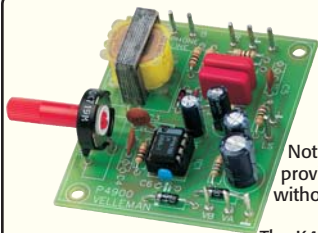
It gets even better! With both units designed to run on 24VDC, the pair can provide the legal requirement for some public locations (ski lodges, etc.) to have a battery backed emergency communications system between several points. Use standard gel cells, telco batteries, even two car batteries in series to provide a complete stand-alone system. Use AC chargers or even solar chargers to keep the system charged. The extender can also be run on the 12VAC power source from the QLRD1!

The extender is compatible with standard and electronic telephone sets. Just connect the stations, use modular RJ-11 cables to connect to the QLRD1, provide 24 VDC, and you're all set. Just like the QLRD1, the extender measures 5/8 x 4 1/4 x 2 1/2 inches and is totally encapsulated in UL 94V-0 flame-resistant epoxy resin for long, reliable operation. Makes it easy to mount in a small outdoor call box or other suitable enclosure.

QLRD4

Call-All-Stations Ring Down Extender, Factory Assembled & Tested

\$99.95



KIT

**Drives Speakers Or Mixers!**

Not a speakerphone, but a high performance isolated input amplifier that connects directly to a telephone line. Unlike a lot of amplifiers, this one provides both speaker output and line output. Speaker output is perfect for "group listen" applications with standard telephones for group gatherings without the inconvenience and interruption of vox operated speakerphones.

The K4900 also features line level output designed to be connected to the aux input of any standard audio mixer or amplifier. This makes it perfect for radio stations, home broadcasters, and larger applications that need to connect their phone line into their systems. Features a standard isolation transformer input for zero loading of the phone line. Speaker output is a half watt into 8 ohms. Line output is 0dB (.775Vrms). The circuit runs on 7-10VAC or 9-12VDC at 150mA. Board measures 2.5" x 2.1". This unit can be built into existing equipment, or as a stand alone amplifier with the optional G416 housing. From Velleman. (Group listen is great, no speakerphone interruptions yet everyone in my office can hear!)

K4900  
G416

Telephone Amplifier Kit  
Recommended Case/Housing For K4900

\$14.95  
\$8.95

## Phone Recorder Controller

- ✓ Undetectable on phone line
- ✓ Needs no battery, operates on telephone line power

KIT

Wired & Tested

**Telephone Line Powered  
Automatic Control!**

Keep a record of all your telephone calls - automatically. The TT1 connects anywhere on the phone line and will control any battery powered tape recorder that has standard microphone and control jacks. The recorder automatically starts and stops whenever the phone is used and records both sides of the conversation with excellent fidelity. Simply plug the TT1C into your recorder's microphone/control jacks, push "record" and you're all set. The moment there is activity on the phone line your recorder will start up and record both sides of the conversation. When the conversation is over, it will automatically stop your recorder!

Super-easy one hour assembly and a manual that tells you not only how to build the kit, but how it works as well. The controller is easy to use and looks great in the included custom case shown. Case size: 5"W x 1 1/2"H x 5 1/4"D. The TT1C is also available factory assembled and tested and ready-to-go! (I had something like this connected to my 3" reel-to-reel portable recorder from Lafayette... Yikes am I old!)

TT1C  
TT1WT

Tattle-Tale Recorder Controller Kit With Case  
Factory Assembled & Tested TT1 With Case

\$29.95  
\$59.95





KIT

Wired &amp; Tested

***Monitors The Entire  
Aircraft Band For Activity...  
Without Any Tuning!***

### INCREDIBLE PATENTED DESIGN!

For decades we have been known for our novel and creative product designs. Well, check this one out! An aircraft receiver that receives all nearby traffic without any tuning. It gets better... there is no local oscillator so it doesn't produce, and can't produce, any interference associated with all other receivers with an LO.

That means you can use it onboard aircraft as a passive device! And what will you hear? The closest and strongest traffic, i.e. the plane you're sitting in! How unique is this? We have a patent on it, and that says it all!

### NO TUNING, MONITORS THE ENTIRE BAND!

This broadband radio monitors transmissions over the entire aircraft band of 118-136 MHz. The way it works is simple. Strongest man wins! The strongest signal within the pass band of the radio will be heard. And unlike the FM capture effect, multiple aircraft signals will be heard simultaneously with the strongest one the loudest! And that means the aircraft and towers closest to you! All without any tuning or looking up frequencies! So, where would this come in handy?

1. *At an air show! Just imagine sitting there listening to all the traffic as it happens, even the unknown frequencies!*
2. *Onboard aircraft to listen to that aircraft and associated control towers*
3. *Private pilots to monitor ATIS and other field traffic during preflight activities (saves Hobbs time!)*
4. *Commercial pilots to monitor ATIS and other field traffic as needed at their convenience*
5. *General aircraft monitoring enthusiasts*
6. *Avionics service technicians to quickly verify transmitter go/no-go operation*

### NO LOCAL OSCILLATOR, NO INTERFERENCE!

Wait, you can't use a radio receiver onboard aircraft because they contain a local oscillator that could generate interfering signals. We have you covered on that one. The ABM1 has no local oscillator, it doesn't, can't, and won't generate any RF whatsoever! That's why our patent abstract is titled "Aircraft band radio receiver which does not radiate interfering signals." It doesn't get any plainer than that!

### THE HIT AT THE AIR SHOW!

What about an air show? The ABM1 is the perfect solution to communications monitoring! A lot of unknown frequencies are used between the ground and each plane flying. Listen to air-to-air, the air boss, PA talkthrough and the stunt planes with ease! With a normal receiver you need to know the frequency and tune into it. The ABM1 simply hears the activity as it occurs, perfect for an air show... should be standard equipment for all the spectators!

### THE PILOT'S DREAM COME TRUE!

Then there are the private and commercial pilots! A lot of private pilots rent aircraft. With an ABM1 they can listen to field traffic and ATIS broadcasts before firing up the aircraft avionics; this saves on Hobbs time (inactive rental time!) and is convenient! Same with commercial pilots. Your access to ATIS and other broadcasts can be as close as your flight bag, briefcase, or pocket!

### SIMPLE TO USE!

The receiver is in a compact case complete with a belt clip. Just plug your favorite pair of headphones or the provided set of ear buds into the receiver, turn it on, and you are now monitoring all local aircraft! A squelch control is even provided to mute background noise and interference! The receiver runs on a standard 9VDC battery (not included). You will hear all nearby aircraft, ground transmissions, local control towers, and any other traffic within the frequency range! Here in Rochester while I'm writing this catalog page I'm hearing local aircraft overhead calling Rochester Approach and Cleveland Center, and just heard the local News Chopper!

### EVERYTHING INCLUDED, AVAILABLE AS A KIT OR READY TO GO!

Even with its compact design, we engineered the ABM1 kit version for easy construction by the electronic hobbyist. Through-hole parts are used for all customer assembly. Several SMT components are part of the circuit, and they are pre-installed at the factory! We also realized that this receiver will be popular with aircraft enthusiasts that really don't have the time or ability to build an electronic kit. Therefore our engineering staff went into overdrive and designed a similar version using an all-SMT design as a factory assembled and tested unit. This unit features additional shielding only available with SMT design to reduce adjacent channel overloading. Whatever your choice is, both versions keep you in touch with the entire band with flying colors!

Where's the antenna you ask? The headphone wire is your antenna! We even discuss a couple of component changes you can make to optimize performance with other than normal lengths of headphone wires. A professional set of stereo ear buds is included with the ABM1 to get you listening quick! You can also use your favorite set of Walkman type headphones with the ABM1.

If you're a private pilot, commercial pilot, airport worker, aircraft enthusiast, attend air shows, or spend a lot of time in airports or onboard aircraft, the ABM1 is for you. The handy case has a built-in belt clip and measures 2.5" x 4.6" x .9". (If I had an Icon for "Super Top Seller" it would be right here!)



**Monitoring  
Times**

**The ABM1...Reviewed in the November 2006 Issue of Monitoring Times**  
Author Bob Grove reviews the Ramsey ABM1 Passive Airband Monitor...

*"I can't see the planes anywhere, but the ABM1 can hear them, and obviously from many miles away"*

*"Ramsey provides a nice manual with an introduction to air-band monitoring, which contains a complete schematic diagram of the monitor, along with stage identification"*

For information on this article, visit [www.monitoringtimes.com](http://www.monitoringtimes.com)

## Passive Aircraft Monitor Receiver

- ✓ **Monitors the entire aircraft band without tuning!**
- ✓ **Passive design, can be used onboard aircraft, no local oscillator, generates and creates no interference whatsoever!**
- ✓ **Great for air shows!**
- ✓ **Patented circuit and design!**

**TOP  
SELLER!**

### SPECIFICATIONS

Frequency Range:	118 MHz to 136 MHz
Receiver Type:	Patented Passive Detector
IF Frequencies:	None!
Receiver Sensitivity:	Less than 2 uV for detectable audio
Audio Output:	700mW, 8-24 ohms
Headphone Jack:	3.5mm stereo phone
External Antenna:	Headphone cord coupled
Power Requirement:	9VDC battery
Dimensions:	2.25" x 2.8" PC Board 2.5" x 4.6" x .9" Case
Weight:	4 oz. with battery

ABM1  
ABM1WT

Passive Air Band Monitor Kit  
Passive Air Band Monitor, SMT Version, Factory Assembled & Tested

\$89.95  
\$159.95





## Digital Tuned High Performance Aircraft Receiver

- ✓ Rock solid dual conversion PLL receiver!
- ✓ Airport runway lighting controller output!
- ✓ Full band scanner mode
- ✓ 4 user memory scanner banks, 20 frequencies each
- ✓ Full band skip scanner mode
- ✓ Adjustable skip scanner timer
- ✓ Internal front panel speaker
- ✓ External antenna input, speaker out, headphone out
- ✓ Stylish and shielded metal enclosure

Wired & Tested

KIT

TOP  
SELLER!



*The Ultimate & Affordable Aircraft Receiver...  
Even Controls Runway Lights!*

### THE LEGACY CONTINUES!

Continuing the legacy of our famous AR1 we decided to design the ultimate aircraft receiver kit. Now you're not limited to an all band receiver or scanner that has substandard performance in the AM aircraft band. Instead, you can have a super performance receiver designed specifically for the best aircraft reception possible! To begin with, we designed it with the latest technology, utilizing a rock stable synthesized PLL dual conversion receiver. We gave it superb image and adjacent channel rejection to allow you to lock onto the signals you want and not to be bothered by those you don't!

### ADVANCED FEATURES!

Once we got the RF portion designed we took a close look at the features desired in such a receiver. We gave it a neat 2x8 line LCD display to show you all the functions. Control of modes and setups is obtained through the front panel controls and confirmed on the LCD display. On/Off/Volume and Squelch controls are also provided on the front panel. We even gave it a front panel speaker in case you stack the lighting controller or something else on top of it!

So far we've described the ultimate aircraft receiver that's not only the perfect field monitor for a hangar or airport manager's office but for the serious enthusiast as well. Can it get any better than that? It sure can!

### CONTROL RUNWAY LIGHTS!

The top request we've had for a professional aircraft receiver was to embed automatic runway lighting control. Consider it done! The lighting controller follows the standard protocol for remote runway lighting. The pilot "keys" his microphone on the local CTAF channel for the specified number of times. All you need to do is set the receiver for the lighting control mode and then make sure the squelch is closed and will open on a suitably strong signal. Typically the number of "keys" or "events" according to the receiver control the lighting as follows: 3 events, 25% brightness; 5 events, 50% brightness; and 7 events, 100% brightness. The AR2's adjustable lighting timer sets turn-on duration to your needs.



And what happens in the event of a local power failure or interruption to the AR2? Absolutely nothing! All receiver settings and all lighting control settings are saved in the internal memory. The rear panel lighting control output of the AR2 connects to our AR2L to interface with individual runway lighting control circuits.

As we do with all of our kits, a detailed instruction manual not only leads you through the step-by-step construction and assembly procedures, it teaches you the circuit theory as well. Learn all about RF receivers and how a dual conversion PLL radio works! You'll be proud to tell your friends that you built this outstanding aircraft receiver!

Includes the matching case and knob set, plus power supply. For the aviation professional that is not interested in building the receiver, the AR2 and the lighting controller are also available factory assembled and tested, ready to go. Just plug it in and you're all set. (I can't get this thing off my desk, now I'm addicted to listening to Rochester approach!)

AR2	Synthesized Aircraft Receiver Kit With Case and AC Power Supply	\$199.95
AR2WT	Factory Assembled AR2C With Case and AC Power Supply	\$269.95
AR2L	Plug-In Runway Lighting Controller Interface Kit With Case & Power Supply	\$59.95
AR2LWT	Factory Assembled AR2LC With Case and AC Power Supply	\$99.95

## Ramsey AR2 In Action!

Dan Lipko of Barber Aviation in Pennsylvania has put the AR2 and AR2L to good use - landing his helicopters! Here you can see where Dan has mounted his AR2 and AR2L units in a weatherproof housing panel box "to keep the snow and the PA Whitetail's out"!

The AR2L activates the landing lights through the 110VAC/40A light relay on the right. A mobile antenna on the top of the box enhances the reception. Says Dan: "The timing function is really nice, as I've set mine to 6 minutes (save those \$11.00 bulbs!). Also, the pulsing at the end is nice and gives you the time to ask for six more minutes... squelch is set to quieting and a nudge... my range is 3 miles out they light up." (for more information visit [www.barberaviation.com](http://www.barberaviation.com))



Runway and landing area,  
marker lights controlled  
remotely from the air!



Landing a Robinson  
R44 Raven II



AR2 & AR2L Mounted in an  
outdoor enclosure with  
110V lighting relay controls



KIT

*Kit Planes Magazine...  
"Puts You In The Pilot's Seat!"*

TOP  
SELLER!

## Aircraft Band Receiver

- ✓ Picks up aircraft, control towers, and more!
- ✓ Tunes entire 118 MHz to 136 MHz Aircraft band
- ✓ Automatic gain and squelch controls

Tune into the exciting world of aviation and learn the circuits at the same time with the AR1C Aircraft Receiver! As the feature article in Kit Planes Magazine said "It Puts You In The Pilot's Seat"! Listen to the airlines, big business corporate jets, hotshot military pilots, local private pilots, control towers, and other interesting and fascinating air-band communications. You'll hear planes miles away as well as all local traffic and control towers.

The AR1C features smooth varactor tuning of the entire air band from 118 to 136 MHz. An extremely effective AGC and superheterodyne circuitry make it a super performing unit. Variable squelch mutes the receiver between conversations. Audio output jack drives any standard speaker or headphone. Includes our custom case & knob set as shown for a great looking finished receiver! Operates on 9 VDC battery (not included). Case measures 5"W x 1 1/2"H x 5 1/4"D.

AR1C

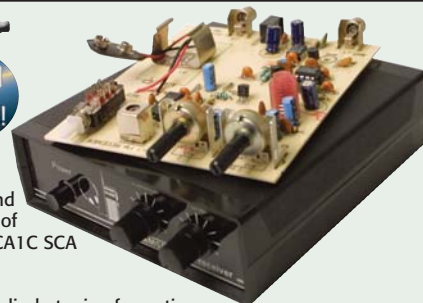
Aircraft Receiver Kit With Case

\$49.95

## FM Broadcast Band Receiver

- ✓ Standard FM receiver with larger tuning range of 70 to 110 MHz!
- ✓ Ideal for FM wireless mics, SCA programming, or standard FM broadcasts
- ✓ Demodulated audio output for driving our SCA1C decoder

*Perfect For  
"Out Of Band" Listening!*

TOP  
SELLER!

With a frequency range of 70 MHz to 110 MHz, the FR1C has become extremely popular for receiving the standard FM broadcast band (88-108 MHz) as well as large portions on each side. It's great for bug monitoring or detection and receiving SCA broadcast outside of the band. Unlike most FM receivers, the FR1C includes a separate demod output (unfiltered) to drive SCA decoders including our SCA1C SCA Decoder below.

The sensitive front-end features one microvolt sensitivity with a standard 10.7 MHz IF. An FM detector IC is used along with varactor diode tuning for optimum performance. Audio output is rated at 250mW and will drive any 4-45 ohm speaker or headphone (not included). Runs on a standard 9VDC battery (not included). Includes our matching custom case set, measuring 5"W x 1 1/2"H x 5 1/4"D.

FR1C

FM Broadcast Band Receiver Kit With Case

\$42.95



KIT

*How Do They Get That  
Commercial Free Music?*

Believe it or not, they get it off the local FM radio station with a special decoder! Now you can build your own decoder and tap into the wealth of programming available to those "in-the-know"! Programming available runs the gamut from stock quotes to rock music, from easy listening to all news. These services are "hidden" in subcarriers riding along with the standard FM radio station's usual programming. The decoder connects to the detector output (unfiltered audio) on an FM receiver. If your receiver does not have such an output, consider our FR1C FM Receiver above! Tune into what you've been missing, try the SCA1C. Includes a custom case set to match the FR1C receiver above. Runs on a standard 9VDC battery. Case measures 5"W x 1 1/2"H x 5 1/4"D.

## SCA Subcarrier Decoder

- ✓ Tunes entire SCA subcarrier band, 50 to 100 KHz
- ✓ Features both speaker and line level audio outputs
- ✓ Simply plugs into our FR1 FM broadcast receiver or tap into the detector in any FM receiver

SCA1C

SCA Decoder Kit With Case

\$39.95

## Speech Scrambler & Descrambler

KIT

Wired &amp; Tested

- ✓ Full duplex operation allows scrambling and descrambling at the same time
- ✓ Bypass mode provides quick change from direct audio to descramble

*Decode That  
Garbled Gibberish!*

Communicate in total privacy over your radio! This is the popular SS70C descrambler/scrambler that you've read about in all the Scanner and Electronic magazines. The technology used within the unit is known as speech inversion which is compatible with many police department systems; hook it up to your scanner speaker terminals and you're in business. (However, always be sure to check with your local authorities to ensure that you're not straying into any unlawful communications reception.)

The SS70C is full duplex in operation - you can scramble and unscramble at the same time. Easily configured for any use! Easy to build since all complex circuitry is contained in a custom ASIC chip which provides clear, clean audio. Powered by 9 to 15VDC, with 3.5mm mini phone type input/output jacks. The included case measures 5"W x 1 1/2"H x 5 1/4"D.

SS70C

Speech Scrambler/Descrambler Kit With Case

\$49.95

SS70WT

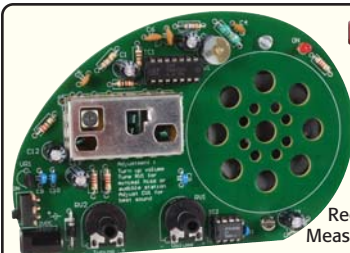
Factory Assembled &amp; Tested SS70C With Case And Power Supply

\$79.95

AC125

110VAC Power Adapter

\$9.95



KIT

*Learn It, Build It...  
Then Listen To It!*

The greatest part of building a kit is the enjoyment afterwards when you see and hear the results of your work! Now you can build yourself a little FM radio receiver, learn about FM receivers, and have a neat little radio in the end! The RF front end is preassembled to make it simple. Receives the whole FM broadcast band of 88-108 MHz. Includes an on/off switch, volume control, speaker, and LED indicator. Runs on 12VDC. Measures 4.8" x 3.3". From Velleman.

## Portable FM Radio Kit

- ✓ Preassembled front end!
- ✓ No coils to wind!
- ✓ Includes everything!

MK118  
AC125Portable FM Radio Kit  
110VAC Power Supply\$21.95  
\$9.95





KIT

Wired & Tested



Track Them Down...  
Quick!

Get in on the fun of radio direction finding (RDF) with this super kit! The latest in affordable Doppler direction finding equipment available in a complete kit form...this one even includes the receiving antenna assembly!

A must for the "fox hunter" at an unheard of price! Radio direction finding is a fascinating hobby and is becoming more and more popular in today's portable world.

With the increasing number of intentional jammers and other unknown transmitters around, Doppler DF locators have become the rage with a display that gives you a direct bearing on the location of the transmitter. Pretty neat trick considering you don't need multiple separate receivers at different locations to triangulate on the mystery transmitter!

The kit includes the Doppler Direction Finder display unit and all the parts necessary to build your own four point, 5 piece magnetic antenna assembly for easy setup and use. Operates on 12VDC and includes a matching 12VDC power plug for custom integration and connection into your vehicle or portable power supply. Easy to hook up to any FM receiver. Transmitter (the object of your DF'ing) need not be FM, it can be AM/FM or CW.

Requires only a connection to your receiver's speaker jack and radio's antenna. The whips can be cut and optimized for any frequency from 130-1000 MHz. An easy to build, reliable kit that compares most favorably to commercial units costing upwards of \$1000.00! Comes complete with matching case, 12VDC plug, magnetic antenna kit with cables, and a comprehensive instruction manual. (Rule of thumb-always look across the street for a guy on a lawnmower before you take the picture!)

**DDF1** Doppler Direction Finder Kit, With Case, Power Cable, And Magnetic Antenna Kit  
**DDF1WT** Factory Assembled & Tested DDF1 With Case, Power Cable, And Magnetic Antenna Kit

\$169.95  
\$269.95



## Mini VHF Series Receivers

- ✓ Tunes any 5MHz portion of selected receiver band
- ✓ Excellent performance, less than 1µV sensitivity
- ✓ True Superhet Receiver with sharp ceramic IF filters
- ✓ Front panel volume, squelch, and tuning controls

There are no short cuts taken in the design of these units-sensitivity is equal to full size monitor receivers or scanners. Schools, scout troops, clubs and hobbyists use these receivers for teaching, monitoring, and just plain building enjoyment. Any one of these little receivers is ideal for easy chair listening and with no big clunky box and wiring to aggravate the XYL!

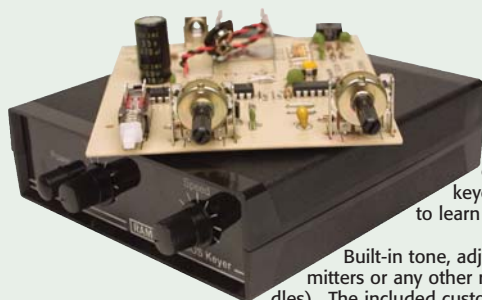
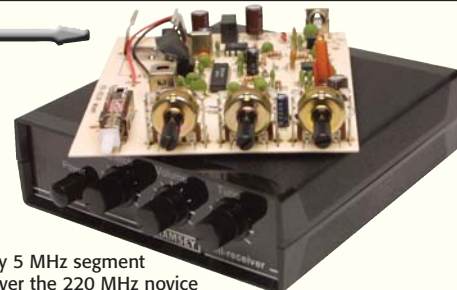
All four receivers can be tuned outside of the intended amateur bands. For example, the FR146 two meter receiver will tune any 5 MHz segment from 130 to 180 MHz. Choose your band and enjoy FM repeater and simplex monitoring on a budget! Help a newcomer discover the 220 MHz novice band. Listen in on exciting 10 Meter international FM action. Rediscover the fascination of 6 Meter sporadic E band openings and uncrowded new FM repeaters. For a professional finished look, our matching case and knob set is included. Kit includes detailed step-by-step manual that carefully guides you to a finished working radio. Runs on a standard 9VDC Battery. Case measures 5"W x 1 1/2"H x 5 1/4"D.

**FR146C** 2 Meter Receiver Kit With Case  
**FR6C** 6 Meter Receiver Kit With Case  
**FR10C** 10 Meter Receiver Kit With Case  
**FR220C** 220 MHz Receiver Kit With Case

\$49.95  
\$49.95  
\$49.95  
\$49.95

KIT

Low Cost...  
Easy To Build!



KIT

Works With Any Rig!

Add to your CW fun with our low cost CMOS Keyer Kit. You'll send clean code that's a pleasure to copy; self completing dots and dashes with properly weighted spacing and timing are all programmed into the CW7C's design. Assembly of the keyer is fast, easy, and fun. Our step-by-step instructions lead you to a finished unit in only one evening. Great for beginners to learn proper and perfectly formed CW right from the start!

Built-in tone, adjustable pitch, and front panel speed and volume controls are featured. The CW7 is the ideal companion to our QRP transmitters or any other rig you may own. You need to supply an external set of paddles (Manual includes details on constructing economical paddles). The included custom case and knob set matches our QRP receivers and transmitters and gives your keyer a nice attractive finished look. Runs on a standard 9VDC battery. Case measures 5"W x 1 1/2"H x 5 1/4"D.

**CW7C** CW Keyer Kit With Case

\$34.95

## EZ Key CW Keyer

- ✓ Perfect CW in one night!
- ✓ Ideal for code practice
- ✓ Great features-budget price

## Code Practice Oscillator

- ✓ Great starter kit for young or old!
- ✓ Ideal scouting project
- ✓ Practice your code anywhere!



Learn Code The Simple Way!

Looking for a great starter kit to spark the interest of a future engineer? Looking for an easy way to either learn or practice your code? This little code practice oscillator is inexpensive, easy to build, easy to use, and features an audio tone adjustment for your listening pleasure. The unique "key" built on the board simulates a standard CW key making it unnecessary to connect an external key. A small built-in speaker provides you a clear audible tone complete with adjustable pitch. Uses the ever popular 555 timer IC with full theory of operation to guide you through the construction. Handy 9 VDC battery operation insures hours of enjoyment and the chance to practice your CW code anywhere you go. Size: 3 1/2" X 1 1/2" X 3/4".

**CP03** Code Practice Oscillator Kit

\$14.95

KIT





KIT

*Get On The Air...  
For Under \$40!*

These little rigs are burning up the airwaves as young and old alike are rediscovering the fun in building their own equipment! Our detailed, step-by-step instruction manuals make building an enjoyable and rewarding experience. You're guided carefully to the completion of a unit that not only works but will provide hours of operating pleasure. These trusted and proven Ramsey all-mode mini rigs are routinely used worldwide by Hams of all ages.

You'll find you don't need high power - K71RK worked and QSL'd all states, plus global DX QSOs from Argentina to the former USSR—with only 2 mW! You don't need hundreds of watts, thousands of dollars or massive equipment; you'll find it's more fun with less!

These little receivers are based upon the SA-602 that we read about in Ham magazines and handbooks. Available in 20 meter, 30 meter, and 40 meter versions, the receivers are true superheterodyne direct conversion - a simple design that does not require the use of fancy IFs, RF filters, or exotic mixers. In short, the ideal design for easy hobby building. Only recently have high performance ICs become available that enable such circuitry to be constructed. Beginners can easily build these receivers, and experienced amateurs and QRP enthusiasts can use them as a reliable, economical, basic foundation for modifications.

Our single PC board has plenty of room for lots of modifications and hook-ups - tinker to your heart's content! Suggestions and technical info are included in every receiver manual. Isn't this what Ham radio is all about? Operates on 9 V battery (not included). Included case measures 5"W x 1½"H x 5¼"D".

HR20C	20 Meter Receiver Kit With Case
HR30C	30 Meter Receiver Kit With Case
HR40C	40 Meter Receiver Kit With Case

\$39.95
\$39.95
\$39.95

## QRP Amateur Radio Mini-Transmitters

- ✓ Four transistor circuit, oscillator, RF amplifier chain, and clean keying stage
- ✓ RF output of approximately one watt (3/4 W for QRP20)
- ✓ Pi-network output for good matching and harmonic suppression
- ✓ Provision for two internal crystals (one crystal provided), front panel switching
- ✓ VCXO tuning, frequency can be tuned approximately 7 KHz around XTAL frequency
- ✓ Available in 20 meter, 30 meter, or 40 meter versions

These nifty little CW transmitters are practical and economical take-along rigs for trips, camping, teaching or just amazing yourself with what a watt will do! With an exceptional manual of over 20 pages, the detailed step-by-step instructions guide you to a perfectly operating finished transmitter. They are available in 20 meter, 30 meter, and 40 meter models.

The rigs use a standard crystal that is connected into a VCXO circuit - which means that you can tune around the crystal's frequency by up to 20 KHz - thus giving you stable crystal control while still being able to tune around! A front panel switch lets you choose between two crystals; we include one, you can add another of your choice. A built-in T-R switch allows break-in operation.

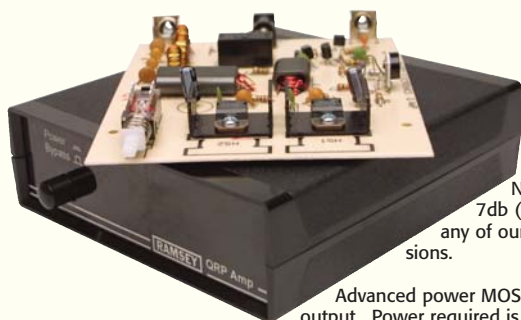
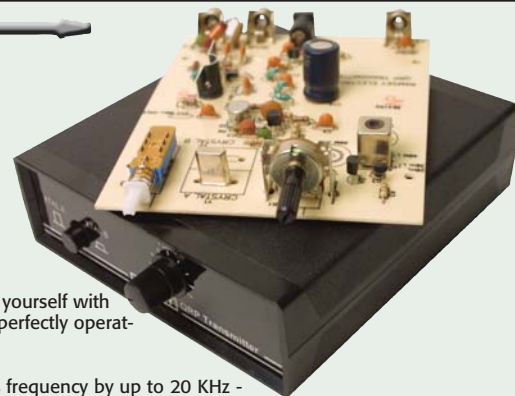
Of course, these transmitters interface perfectly with our QRP Mini-rig receivers and our CMOS CW keyer! And for the real Ham, there's plenty of room inside the included case for your own circuit modifications and experiments. These little rigs are often the heart of many QRP operator's stations. Modify "til the cows come home" or just use them as they are - these little rigs pack a lot of performance into an economical package. Runs on 12 VDC at 200 mA. Included case measures 5"W x 1½"H x 5¼"D".

QRP20C	20 Meter Transmitter Kit, Includes 14.060 MHz Xtal And Case
QRP30C	30 Meter Transmitter Kit, Includes 10.108 MHz Xtal And Case
QRP40C	40 Meter Transmitter Kit, Includes 7.040 MHz Xtal And Case
AC125	110VAC Power Adapter

\$44.95
\$44.95
\$44.95
\$9.95

KIT

*Work The  
World On A  
Watt!*



KIT

*Cut Through The QRM  
With 20 Watts!*

Need a little extra boost for your QRP rig? This nifty little amplifier may be all you need. Believe it or not 20 watts is only 7db (about one S unit!) less power than a full sized commercial transceiver. These compact amplifiers are easily driven by any of our QRP transmitters or any other unit in the ½ - 2 watt range and are available in 20 meter, 30 meter, and 40 meter versions.

Advanced power MOSFETs are used for the utmost in efficiency and purity while a multistage low pass filter is used to assure a clean signal output. Power required is only 12 VDC at 2 to 4 amps, depending upon power output. Complete step-by-step instructions are provided which make building the kit a breeze. The amplifier works well for all modes: CW, SSB and AM. Included case measures 5"W x 1½"H x 5¼"D".

QAMP20C	20 Meter QRP Amplifier Kit With Case
QAMP30C	30 Meter QRP Amplifier Kit With Case
QAMP40C	40 Meter QRP Amplifier Kit With Case

\$44.95
\$44.95
\$44.95

## QRP Amateur Radio Linear Amplifiers

- ✓ Works great with Ramsey QRP rigs or any other 1-2 watt transmitter
- ✓ Built-in T/R relay automatically switches between receive and transmit
- ✓ Operates all modes; CW, SSB, or AM

### What is QRP all about?

"People like to overcome challenges; it's part of our nature. I lack the physical skills to be a mountain climber, so I have instead chosen to challenge the fickle layers of the ionosphere with a transmitter that runs milliwatts. It's my way of riding the knife-edge of what can be done."

**Ed Hare, W1RFI**





**Great Gain And  
Super Selectivity!**

**KIT**

## 2-Meter Receiver Preamplifier

- ✓ 2 Meter Preamp with the sharpest filtering available!
- ✓ Can be powered up the signal coax (9 to 15 VDC)
- ✓ Helical filter for fantastic intermod rejection

Here's the ideal preamp for repeaters, base stations, mobiles - anywhere a selective, low noise signal boost is needed. Unlike other preamps the PR100 features extensive RF filtering to crush intermod before it reaches your radio.

Two poles of sharp Helical filtering combined with a 3 pole L-C tank allow only signals of interest to reach your receiver. A low noise microwave bipolar transistor provides an excellent 1 dB noise figure while remaining ruggedly insensitive to static and strong signals. Preamp is easily configured to be powered via the coax (for most mount applications) or powered through a separate power cable. Kit is designed to fit snugly into a 3" long piece of 1 1/2" PVC pipe with end caps, making an ideal outdoor enclosure. Runs on 9 to 15 VDC. Size: 4"W x 7/8"H x 1 3/8"D.

PR100

2 Meter Receiver Preamp Kit

\$34.95

## Low Cost Receiver Preamps

- ✓ Low noise (typically < 1 to 1.5 dB)
- ✓ High Q tuned circuits (very narrow band) prevent out-of-band signals from overloading front-end
- ✓ Available in 2 meter, 220 Mhz, 440 Mhz

**The Quick And Easy  
Preamplifier!**

**KIT**

Put some new "ears" on your rig with one of these hot little preamp kits. Their high gain combined with low noise will improve most any receiver. Fully protected against overload and designed for low current and stable operation, these preamps employ high Q tuned circuits which restrict out-of-band signals which can cause intermod blanking and overload of your radio's front-end.

Don't be misled by GaAs FET claims! The cheap dual-gate FETs (manufactured for TV tuner usage!) used by others just don't come close to the performance of these preamps designed with NEC microwave transistor devices. Gain is typically 16 to 20 dB and noise figure is 1 dB @ 2 Meters, 1.2 dB @ 220 MHz, and 1.4 dB @ 440 MHz. Compact design for easy installation into most any rig. Operates on 12 to 15 VDC. Size: 1" x 3/8" x 1 1/2".

PR10 2 Meter Receiver Preamp Kit  
PR20 220 MHz Preamp Kit  
PR40 440 MHz Preamp Kit

\$14.95

\$14.95

\$14.95



PR10



PR20



PR40

**Wired & Tested**

**Let These Modules Do All The  
Work In YOUR Next Project!**



## RF Wireless Link Modules

- ✓ The EASY way to send and receive data!
- ✓ 433MHz and 916 MHz units available!
- ✓ Transmitters, receivers, encoders, decoders
- ✓ Factory assembled & tested SMT design

Now you can build those special remote control projects in a flash and have the ultimate in reliability... and security! Unlike other units on the market, these units are crystal controlled for no frequency drift, yet are ultra small and very low power.

These wireless RF link boards are perfect for any wireless application - sending data, car alarms, door openers, home security, electronic monitoring... you name it! You can also monitor a test point or an alarm point on a circuit and have it alert you remotely. The applications are endless! Thousands of these have been provided to manufacturers for their OEM use! You may already have one of these and not know it!

The basic TX/RX models transmit one bit of unsecure information. Great for when you only need to turn one device on or off. Easy to connect, just solder your inputs and outputs to the provided pads.

The encoder/decoder models allow you to program each unit so that they only respond to your set address code, 256 different addresses possible. These units have four separate data lines for either sending four bit data or controlling four separate devices. No processor or computing required! The TXE/RXD use the same simple input and output solder connections as the TX/RX units, for the addressing simply solder desired address pads to ground. The A-Series modules include a programmable dip switch for encoder/decoder address settings and common dual row pin-outs for easy integration into your equipment!

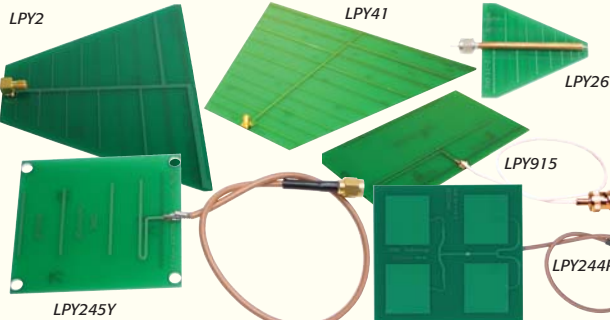
Two versions are available - 433 MHz and 916 MHz. 916 units can use shorter antennas (3 inches) and are better in high RF environments while the 433 units have better range but need larger antennas (7 inches). All units will operate on 5 volts DC. Depending on model other voltages are available. Worst case 20mA operating current, stand-by current in the low micro amps.

Dimensions of each board are as follows:

RXD433A	1.28" x 1.6"	TX433	.57" x .75"
TXE433A	1.28" x 1.3"	RXD916	1.16" x 1.7"
RXD433	1.42" x 1.26"	TXE916	.75" x 1.325"
TXE433	.75" x 1.325"	RX916	1.04" x 1.15"
RX433	.85" x 1.26"	TX916	.57" x .75"

Because these are subminiature SMT designed circuits and boards, they are factory assembled and tested at Ramsey! Not a kit, these are immediately ready to use or integrate with your project! (No, these do NOT send audio or video!!! There, saved you the email!)

RXD433A	433 MHz Receiver/Decoder Module w/Dip Switch	\$39.95
TXE433A	433 MHz Transmitter/Encoder Module w/Dip Switch	\$37.95
RXD433	433 MHz Receiver/Decoder Module, Assembled	\$34.95
TXE433	433 MHz Transmitter/Encoder Module, Assembled	\$32.95
RX433	433 MHz Data Receiver Module, Assembled	\$29.95
TX433	433 MHz Data Transmitter Module, Assembled	\$24.95
RXD916	916 MHz Receiver/Decoder Module, Assembled	\$34.95
TXE916	916 MHz Transmitter/Encoder Module, Assembled	\$32.95
RX916	916 MHz Data Receiver Module, Assembled	\$29.95
TX916	916 MHz Data Transmitter Module, Assembled	\$24.95



Wired &amp; Tested

TOP  
SELLER!

**Broadband  
Coverage And  
NO TUNING!**

## Precision PC Plane Antennas

- ✓ Small thin size with excellent performance
- ✓ Very directional—ideal for transmission or reception use
- ✓ No tuning needed!
- ✓ Rugged FR-4 construction
- ✓ Available log periodic, yagi, or patch!

This series of Log Periodic and Yagi PCB Antennas allows you to cover the entire spectrum from 400 MHz to 11.0 GHz! If you want to get the maximum performance out of your UHF to low frequency microwave wireless system, one of these little babies is the answer! Their directional property "compresses" the signal into a strong beam that is 4 times more powerful in the desired direction.

They are the ideal antennas for scanners, wireless LAN's, and other wireless devices. When you need a dedicated point-to-point link, they have no equal! Maintenance free construction on rugged FR-4 material boasts the added advantages of no tuning and no fragile antenna elements to break or twist! The small size and wide bandwidth make them ideal for feeding reflector antennas such as easily constructed corner reflectors or parabolic grids. Pick the one that's right for you and start enjoying the fruits of a well designed system!

The Log Periodic models easily interface to your system via the provided connectors. The wide bandwidth characteristics of the Log Periodic design ensure total reliability within their respective ranges. The Yagi model is a patented design perfect for directionally extending the range of your cordless phone or other 915 MHz wireless device. Finally, the answer to those poor range blues!

- LPY41 (400-1,000 MHz, SMA-female)
- LPY2 (900-2,600 MHz, SMA female)
- LPY26 (2,100-11,000 MHz, SMA-male)
- LPY244P (2.4GHz WiFi Patch, SMA male)
- LPY245Y (2.4GHz WiFi yagi, SMA male)
- LPY915 Yagi (915 MHz, BNC-male)

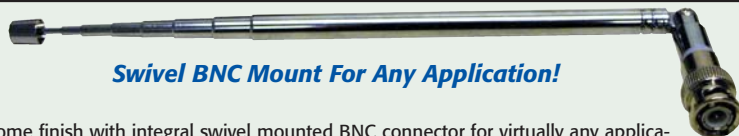
LPY41	Logi Log Periodic PCB Antenna, 400-1,000 MHz, Factory Assembled & Tested	\$39.95
LPY2	Logi Log Periodic PCB Antenna, 900-2,600 MHz, Factory Assembled & Tested	\$34.95
LPY26	Logi Log Periodic PCB Antenna, 2.1-11.0 GHz, Factory Assembled & Tested	\$29.95
LPY915	Directional Yagi PCB Antenna, 915 MHz, Factory Assembled & Tested	\$29.95
LPY245Y	Directional Yagi PCB Antenna, 2.4GHz WiFi, 8.5dBi Forward Gain, Assembled & Tested	\$32.95
LPY244P	PCB 4-Bay Patch Antenna, 2.4GHz Wireless LAN, 12dBi Gain, Assembled & Tested	\$34.95

## Telescopic Whip Antenna

- ✓ High quality with BNC connection
- ✓ Covers VHF and UHF bands

TOP  
SELLER!

**Swivel BNC Mount For Any Application!**



Ideal for handheld portables, receivers, and communications test equipment. Professional chrome finish with integral swivel mounted BNC connector for virtually any application! From the top of equipment to 90 degrees on the back of equipment, it will work like a champ! Whip extends 5.25" to 27.75" to cover a wide variety of ranges with ease!

WA10	Telescopic Whip Antenna	\$14.95
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TOP  
SELLER!

KIT

## Tru-Match FM Broadcast Antenna

- ✓ Fully weatherproof - rugged PVC construction
- ✓ Matches 50 or 75 ohm systems!
- ✓ Broadband for perfect match!

**Rugged PVC Construction...  
Keeps The Weather Out!**

Looking for a perfect low cost FM antenna? Our extremely popular TM100 Tru-Mach antenna will fit the bill! Matching your antenna to your transmitter is the single most important link in your transmitter setup. Without a proper match, power is reflected away from the antenna and back into the transmitter! This can cause the final amplifier stage to be damaged, not to mention spurious signals and (no better way to say it!) lousy range.

The unique design features PVC tubes and fittings to make it waterproof and impervious to rain and snow, which make the TM100 one of the most reliable antennas available for the private broadcaster! Unlike other FM transmitter antennas that need to be tuned to a specific frequency, the TM100 is broadband over the entire 88-108MHz band yet still maintains an excellent match! The antenna terminates with a standard "F" connector for easy connection with standard 75 ohm TV coax to your FM10C or FM25B. See our connectors section to adapt the "F" connector to a "BNC" for easy matching of professional 50 ohm coax or 75 ohm TV coax for use with our FM30 or FM100B series transmitters. Maximum power rating of the TM100 is 25 watts. BTW, also makes a GREAT and easy-to-connect omnidirectional receiver antenna!

TM100	FM Broadcast Low Power Antenna Kit (25W Max)	\$69.95
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## 5/8 Wave Colinear Vertical FM Antenna

- ✓ 5/8 wave for excellent gain and maximum range
- ✓ Field adjustable for a perfect match
- ✓ 3.4 dB gain effectively doubles your power!

**Precision Tune To Your Exact  
Frequency For A Perfect VSWR!**

TOP  
SELLER!

This is probably the most popular antenna we sell. Why? Let's start with the proven omnidirectional ground plane design, clean rugged construction, and how about easy mounting? The 5/8 wave design keeps your signal low to the horizon and not uselessly radiating up into space - great if your listeners are on the space shuttle, but the pits for the folks out at the edge of town! Imagine a donut shaped pattern of signal radiating from your antenna. For the most range out to the horizon, we need to "squish" that pattern flatter to squeeze more signal out - and that's exactly what this antenna does!

The antenna is easy to assemble and is adjustable to your specific frequency during assembly. Makes a super match and a perfect VSWR to your transmitter! The base of the antenna mounts on any standard antenna mast or pipe (not included). A professional SO-239 connector is provided at the base of the antenna to match a standard PL-259 connector. A perfect match, easy assembly, and a breeze to mount and connect, it really can't get much better than that! Try one and see if you don't agree that it's one heck of an antenna for the money! Height: 7' 7" 200 watt power rating. Visit [www.ramseyelectronics.com](http://www.ramseyelectronics.com) for matching coax cable assemblies to match up to your transmitter.



FMA200	5/8 Wave Colinear Antenna (200W Max)	\$129.95
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KIT

Wired & Tested

**Remove The Noise Automatically!**

## Signal Magnet Ferrite Rod Antenna

- ✓ Outstanding results from 500 KHz to 15 MHz
- ✓ High-Q Ferrite Rod antenna with Faraday shield eliminates noise from power lines, light dimmers, most static crashes, and more!

This antenna responds only to the magnetic field of the desired station and ignores the electrostatic field where most interference is found. It does a remarkable job pulling in stations lost down in the noise of power line crud, fluorescent lamp buzz, and light dimmer hash. Plus, it's very directional, able to null strong stations on the same or nearby frequencies!

Being in Rochester NY, we developed this antenna to pull in the Buffalo AM station more than 75 miles away, so we could listen to Buffalo Bills talk radio during the night. You can imagine all the power line and equipment noise we have here at the factory. So, we came up with this ferrite rod, varactor tuned active antenna that's Faraday shielded - it only responds to the magnetic field - and boy does it do the job!

Enough of the "why's" the SM100 was developed, now for the it's operation! The SM100 is designed to cover the AM broadcast band but includes details on building for any frequency range up to 15 MHz (works gang-busters on Shortwave)! The antenna portion works indoors or out and is contained in rugged PVC pipe with a single F-type coax cable connector. Operates with up to 500 feet of coax cable (not provided!) between antenna assembly and control box.

This compact antenna has remained a favorite with low frequency receiver enthusiasts, and in fact is used frequently to pick up the WWV and WWVB low frequency signals for instrument grade 10MHz reference systems in labs throughout the world! It works equally well as the long wire antenna options provided with these systems at a fraction of the price!

Includes all parts, matching case set and precut PVC materials. Operates on an external 120 VAC power adapter that is included. Antenna is 9 1/2" x 9" long, L-Shaped 1" PVC pipe with end caps. Control box case measures 5"W x 1 1/2"H x 5 1/4"D. (It worked just great to listen to the Bills players explain for 4 straight years why they lost the Super Bowl!)

SM100 Signal Magnet Noise Reduction Antenna Kit With Case  
SM100WT Factory Assembled & Tested for AM Band

\$89.95  
\$134.95

## Active Receive Antenna

- ✓ Works with HF or VHF/UHF
- ✓ Performs like a 60' Long Wire!
- ✓ Operates as a stand-alone antenna or in conjunction with an existing antenna

**The Easy Antenna...  
Regardless Of Frequency!**

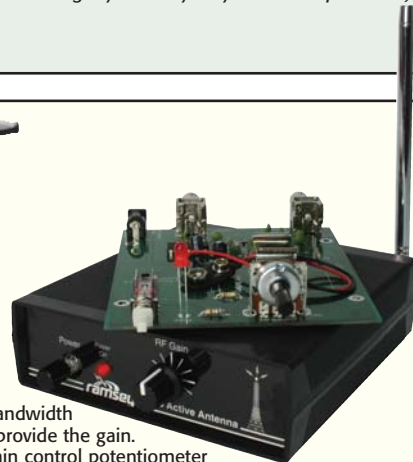
Our AA7C has been a favorite for the serious DX'ers, and now it's even better! It works on all bands - shortwave, HF, VHF and UHF! Imagine a self-contained unit just 4 inches square that pulls in the signals like a 60 foot long wire; that's the advantage of an active antenna! For jazzing up VHF/UHF receivers and scanners the AA7B has you covered too. Over 15 dB of gain pulls in the weak ones whether you use the included telescopic whip or an outside antenna.

Unlike it's predecessor, the AA7C requires no band switching to cover the range of 1MHz to 800MHz. That's right, it has a bandwidth of 800MHz with up to 20 dB of gain at an input signal level up to -20dBm. A pair of N-Channel MOSFET tetrode transistors provide the gain. Because they are tetrode MOSFET devices, the gain adjustment is accomplished using a variable DC control voltage so the gain control potentiometer won't cause any noise if it gets "dirty." The transistors and solid state relays are surface mount devices, so the signal path (and therefore a lot of potential signal loss!) is minimized.

What if you don't need any gain? No problem! Just turn the AA7C off and the solid state relays automatically route the signal directly through with no amplification and a very minimum, 1dbm or less, of signal loss. There are no mechanical switches in the signal path to get dirty and degrade the signal levels. High quality BNC connectors provide input and output connections to your antenna and receiver.

You can power the AA7C from a standard 9 volt battery for portable operation or plug in an external power supply between 7 and 15 VDC. The battery will be automatically disconnected when you use an external power source. There's even an LED indicator to show you the AA7C is turned on and ready to go.

Features of the AA7C include: Front panel RF gain control, power switch with preamp bypass switching, rear panel input and output connectors, convenient 9 volt battery operation and telescopic whip antenna (or connect your own antenna with the BNC connector). We think you'll agree that the AA7C is simply the most practical and best value of any active antenna on the market! Includes whip antenna and matching case set. Operates on a standard 9VDC battery (not included). Case size 5"W x 1 1/2"H x 5 1/4"D.



AA7C Active Antenna Kit With Case

\$49.95

## RF Preamplifier

- ✓ Broadband from 100 KHz to 1000 MHz!
- ✓ High Gain: 16 db
- ✓ Low noise, less than 4dB!

**We're Talking Broadband!**

This is the famous preamp that's been written up in all the radio and electronics magazines. New low-cost microwave transistors make it possible to give performance unheard of a few years ago!

Provides 16dB gain from 100kHz to 1GHz and is unconditionally stable! Runs on 12-15VDC at 15mA. Input and output impedance is 50-75 ohm. Measures 1" x 3/8" x 1 1/2".

SA7 RF Preamp Kit

KIT

\$19.95



TOP  
SELLER!

## AM/FM RF Preamplifier

- ✓ 10MHz to 150MHz!
- ✓ Shielded metal housing
- ✓ Direct or line fed DC supply

**Amplify Those Signals!**

Designed specifically for AM/FM radio reception, the K2622 provides 22dB gain between 10MHz and 150MHz. The sleek metal housing provides the necessary shielding and assures you of the least amount of interference.

Input power is 12-15VDC at 2mA and can be powered directly or up the coax. Input/output impedance is 50-75 ohm. Measures 3.4" x 1.4" x .9". From Velleman.

K2622 AM/FM Preamp Kit

KIT

\$18.95



## DOPPLER DIRECTION FINDER... Find That Transmitter Quick!

Track down jammers and hidden transmitters with a built-in compass heading display!

from \$169.95  
See Page 41





KIT

Wired &amp; Tested

## Universal Li-Ion Battery Pack

**Keep Your Battery Charged!  
Power Your USB Device!**

- ✓ Run and charge any USB device or cell phone for hours and hours!
- ✓ Provide up to 11.1VDC@1A regulated output
- ✓ Provides 5VDC USB power output at 1A
- ✓ Latest Li-Ion battery technology
- ✓ Smart charger protects the battery
- ✓ Input charging voltage 15-30VDC



A lot of us have been there, you're on a trip, you're on an extended weekend, you're simply on the beach or on your boat... and your portable electronic device battery died. Whatever it may be, your MP3 player, your iPod, your cell phone, you're pretty much hung out to dry until you get back, find your charger, plug it in, and wait! Now, after many suggestions from our customers, we introduce the Universal Battery Pack UB1! Easy to plug into any USB charger or external power supply input!

The heart of the UB1 is the custom designed Li-Ion battery pack. It is ultra-thin yet produces a whopping 11.1VDC at 1.8Ah! Having a custom highly efficient battery pack designed for us was the first difficult task. Next comes the charging circuit. As some of you know, Li-Ion battery charging circuits are critical for proper battery life as well as battery safety. We have all heard the stories of the exploding laptop Li-Ion batteries. We don't want that to happen, so a lot of work went into a flawless charging circuit for the UB1. The charging procedure for a Li-Ion cell requires careful attention to a charging rate controlled by voltage, current and time. The UB1 handles all that. The UB1 accepts any input voltage from 15-30VDC to properly charge a fully discharged battery pack in a few hours. The input is a standard 2.1mm power connector. Use any standard accessory charger within that voltage range, or order our PS27 power supply. You can also use 12-13.6VDC from a vehicle accessory plug to a standard 2.1mm plug to charge the UB1 while you're driving!

There are two power supply outputs - a standard USB connector to provide a regulated 5VDC USB charging power to any device (iPod, cell phone, MP3 player, etc.) and 11.1VDC fixed or variable 1.2VDC to 10.7VDC at 1A provided at the 2.1mm connector. LEDs are provided to indicate charge/operate mode. Measures 5.5" x 3.5" x 1.13".

UBP1	Universal Li-Ion Battery Pack Kit	\$179.95
UBP1WT	Universal Li-Ion Battery Pack, Factory Assembled & Tested With PS27 Power Supply	\$249.95
PS27	Universal AC Power Supply, 120/240VAC Input, 15V Regulated 1A Output	\$14.95

## Solar Generator Briefcase

Wired &amp; Tested

- ✓ Powerful 13W generators!
- ✓ 14VDC, 750mA
- ✓ Folding briefcase design

**Steal From  
The Sun!**

So you're outdoors away from the nearest electrical outlet and you need power. What do you do? Until now you had to have a small gas powered generator. That gets a tad bit bulky, heavy, and with the fuel needed, dangerous. Those days are long gone! Carry along your Solar Briefcase and capture the power from the sun... it's free!

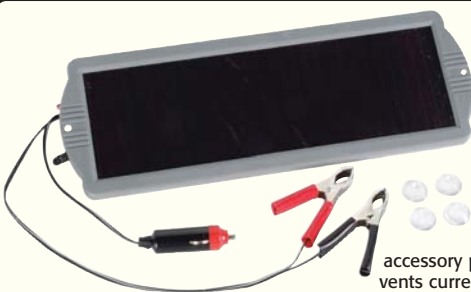
This incredibly handy package of power is great to run laptops, small electric hand tools, DC refrigerators, GPS systems, portable electronics, and a whole lot more! It's also great to charge your batteries. The two powerful solar panels generate 13 watts of power. That's 14VDC at a working current of 750mA! That's more than the average plug-in power supply!

Detachable connectors are provided for a variety of applications. The briefcase design measures 20.1" x 14.7" x 1.6" and weighs a scant 9.7 lbs.



SOL8 Solar Generator Briefcase, Factory Assembled & Tested

\$164.95



Wired &amp; Tested

## Solar Vehicle Trickle Charger

**Keep Your Battery Charged!**

- ✓ Works with any vehicle!
- ✓ Easy window or visor mounting!
- ✓ Easy connections

We've all been there; your car sat in a parking lot for a week or so, you came back and the battery was flatter than a pancake! It doesn't take much to drain a battery down if the vehicle is not run, and today's vehicles have electronics draining the battery 24/7 whether the car is on or off!

Now you can rest assured you will never have a dead battery! Just keep this handy solar trickle charger plugged into your accessory power jack (cigarette lighter plug for those of you that don't know the new name!) and you are all set. Built-in protection prevents current reversal. Provides 14.5VDC at 125mA. Comes complete with cigarette lighter plug, battery clamps, and window suction cup mounts. If your car sees the sun, your car's battery will never be dead! Measures 13.4" x 4.7" x 0.6", perfect for a sun visor. (My son keeps one of these in his '93 RX7 show car while he's not driving it, and it works great!)

SOL5N Solar Vehicle Trickle Charger, Factory Assembled & Tested

\$32.95

## Symmetric 1A Power Supply

- ✓ Plus & minus 1.2V to 24VDC!
- ✓ Thermal protection
- ✓ Just add a transformer & heatsink

**Low Cost, Easy to Build!**



The K8042 is a great little symmetric power supply designed to provide  $\pm 1.2$  to 24VDC regulated at 1A. Perfect for amplifiers, op-amps, and other applications requiring a nice-regulated  $\pm$ DC source. The circuit provides short circuit and thermal protection.

Just provide a suitable power transformer or AC source (up to 24V) and heatsink and you're all set. Features LED status indicators. Board measures 3.1" x 2" x .9" From Velleman.

K8042 Symmetric 1A PS Kit

KIT

\$15.95

## Regulated 1A Power Supply

- ✓ 1.5 to 35VDC at one amp!
- ✓ LM317 regulator circuit
- ✓ Current and thermal overload protection

**1 Amp Up To 35 Volts!**



If you're looking for a small power supply regulator and don't want to build it up from scratch, the K1823 is just for you! Designed around the LM317 regulator, it will provide a variable regulated output between 1.5 and 35VDC. Continuous output current is conservatively rated at 1A with a maximum output current of 1.5A. Maximum input voltage is 40VDC for rated output. Both current and thermal overload protection is provided by the LM317. Heatsink is not included and is required for maximum rated output. Board measures 2.1" x 2.1". From Velleman.

K1823 1A Power Supply Board Kit

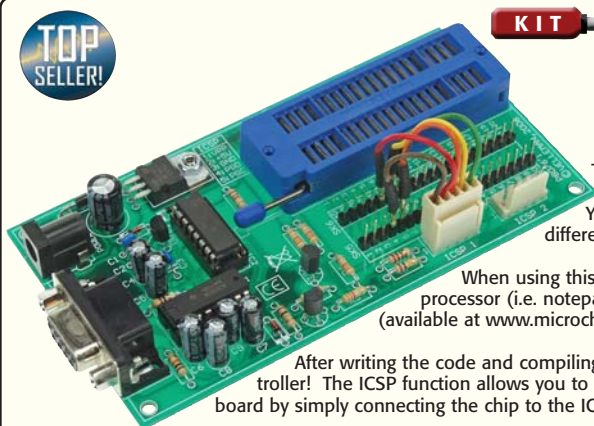
KIT

\$12.95





TOP  
SELLER!



KIT

Wired & Tested

## Program Your Own Flash Microcontrollers!

This multifunctional programmer for PIC microcontrollers will let you take advantage of their flexibility. You can reprogram them up to 1000 times to perform different functions, upgrade device firmware, or just play!

When using this programmer, code can be created in any ASCII word processor (i.e. notepad) or using Microchip's MPLAB development package (available at [www.microchip.com](http://www.microchip.com)).

After writing the code and compiling, your code can be written directly to the microcontroller! The ICSP function allows you to reprogram controllers still in-use/powerd by another board by simply connecting the chip to the ICSP bus on the programmer!

## PIC Programmer Board

- ✓ Configurable 40 pin ZIF socket!
- ✓ Supports multiple PIC controllers!
- ✓ DB9 serial interface for PC's!
- ✓ Includes PICprog2006 software!

SPECIFICATIONS	
Supported Controllers:	PIC10F200, PIC12C508A, PIC12CE518, PIC12F629, PIC12F675, PIC16F54, PIC16F84A, PIC16F870, PIC16F871, PIC16F872, PIC16F873, PIC16F874, PIC16F876, PIC16F877, PIC16F627, PIC16F627A, PIC16F628, PIC16F628A, PIC16F648A, PIC16F630, PIC16F676, PIC18F2550, etc.
Serial Connection:	DB9
Power supply:	12-15VDC, 300mA
Dimensions:	5.23" x 2.57" x .79"

All the software you need to get started is included and with a basic knowledge of ASM and this kit, the possibilities are endless! To get more hands-on training and experience with PIC controllers, check out the K8048 programmer and experimenters board above, it gives you all the programming capabilities plus extra onboard experimentation capabilities. From Velleman. *Note: this product requires a standard RS232 serial connection, and is NOT compatible with some USB to RS232 serial adaptors or converters.*

K8076	PIC Programmer Board Kit	\$47.95
VM134	PIC Programmer Board, Factory Assembled & Tested	\$74.95
AC125	110VAC Power Supply	\$9.95

## PIC Programmer & Experimenter

KIT

Wired & Tested

- ✓ Supports 8, 14, 18, & 28 pin PICs
- ✓ Includes a PIC16F627 Microcontroller!
- ✓ On-board programming switches and LEDs!
- ✓ Software included!

## Don't Just Program Them... Learn All About Them!

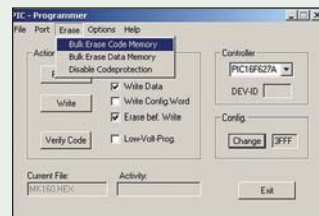
Unlike the stand-alone programmer K8076 above, this programmer also acts as an advanced experimenters board for PIC microcontrollers. Separate 8, 14, 18, and 28 pin sockets accommodate a wide variety of controllers. This eliminates the need for patching a universal ZIF socket.

SPECIFICATIONS	
Supported Controllers:	PIC12F629, PIC12F675, PIC16C83, PIC16CR83, PIC16F83, PIC16C84, PIC16CR84, PIC16F84, PIC16F84A, PIC16F870, PIC16F871, PIC16F872, PIC16F873, PIC16F873A, PIC16F874, PIC16F874A, PIC16F876, PIC16F876A, PIC16F877(A) (ICSP only), PIC16F627, PIC16F627A, PIC16F628, PIC16F628A, PIC16F648A, PICF630, PIC16F676, PIC16F818, PIC16F819, etc.
Serial Connection:	DB9
Power supply:	12-15VDC, 300mA
Dimensions:	5.75" x 4" x .79"

In addition, programming switches and LED status and feedback indicators help you with your programming, so there's no need to move the PIC to another board to test it. This makes the K8048 a great teaching tool for PIC programming. Also includes a standard PIC 16F627 PIC to experiment with over and over again!

Code can be created in any ASCII word processor (i.e. notepad) or using Microchip's MPLAB development package (available at [www.microchip.com](http://www.microchip.com)). After writing and compiling, your code can be written directly to the microcontroller! The ICSP function allows you to reprogram controllers still in-use/powerd by another board by simply connecting the chip to the ICSP bus on the programmer!

All the software you need to get started is included, and with a basic knowledge of ASM and this kit, the possibilities are endless! Check out the screen shot of the included software, which is compatible with Win95/98/ME/NT/2K/and XP. If you are looking for a quick PIC microcontroller programmer only, without the advanced experimenter features, check out the K8076 below. From Velleman. *Note: this product requires a standard RS232 serial connection, and is NOT compatible with some USB to RS232 serial adaptors or converters.*



K8048	PIC Programmer & Experimenters Board Kit	\$34.95
VM111	PIC Programmer & Experimenters Board, Factory Assembled & Tested	\$69.95
AC125	110VAC Power Supply	\$9.95

Wired & Tested



## Integrate PIC Micros Without Building The Hardware!

This "cute" little module is designed for the hobbyist that would like to control their project or application with a custom PIC microcontroller but really doesn't want to build the hardware associated with it, whether it be the lack of time, ability... or both! The module (which is less than 3" x 3") is self enclosed, factory assembled and tested, and ready for your integration into your application. It even includes a PIC16F630 micro on board!

It features 4 buffered voltage sensing inputs from 5-24VDC at 47K. Output wise, it provides 4 NPN open collector outputs plus a relay output. The relay can be directly driven by an output and provides NO/NC contacts rated at 2 amps.

Besides the built-in relay, the module also contains dual LED indicators for power supply and relay operation as well as an on-board buzzer for programmable audible indication. A 13 pin plug-in Euroblock style connector is also provided for easy connection and removal to your application or circuit. The socket mounted on-board PIC can be removed for programming with the K8076, VM134, or any other suitable programmer. It can also be programmed in-circuit via the plug-in programming connector. If you are looking to integrate PIC controlled functions to your application and just don't have the time to build up the circuit, this module is for you! Does not include software development tools or assemblers (normally these are provided with the PIC programmers and experimenters). Factory assembled and tested for immediate use. From Velleman.

## PIC-PLC Application Mini Module

- ✓ 9 Free programmable I/O's!
- ✓ Includes a PIC 16F630 microcontroller!
- ✓ On-board buzzer and LED for signal indication!
- ✓ Includes an on-board 2A relay!

SPECIFICATIONS	
Power Supply:	12VDC unregulated, 100mA
Inputs:	(4) voltage sensing inputs, 5-24VDC
Outputs:	(4) NPN transistor outputs, open collector, sink outputs
Output Relay:	12V driven from outputs, NO/NC contacts rated at 2A
MCU Speed:	Fixed 4MHz internal oscillator
Dimensions:	3.15" x 2.75" x .98"

VM142	PIC-PLC Application Mini Module, Factory Assembled & Tested	\$52.95
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KIT

Wired &amp; Tested

Learn How USB Works...  
Then Put It To Work!

TOP  
SELLER!

## USB Experimenter's Interface Board

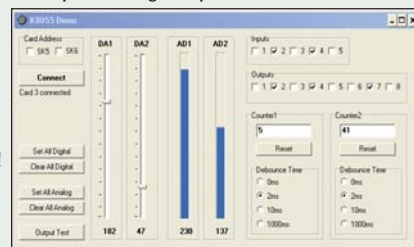
- ✓ 5 digital input channels!
- ✓ 8 digital output channels!
- ✓ 2 analog inputs and outputs!
- ✓ Diagnostic software & DLL included!

Not so long ago the universal answer for external control from a PC was the serial port. It was easy, it was simple, and you really couldn't mess anything up! Then came parallel port outputs for higher speed connections and transfers. What came next? The "Universal Serial Bus" or USB.

Everything has gone to USB connections due to the speed, reliability, and plug and play simplicity. In fact, go to an office store and try to find a printer with a parallel port these days! They call those Legacy products... and legacy technology!

Well it's time to get hands-on experience developing USB interfaces! This board provides everything needed. All communication routines are contained in a Dynamic Link Library (DLL) that is provided along with Windows based diagnostic software.

You can also write custom Windows applications in Delphi Visual Basic, C++, or any other 32-bit Windows development tool that supports calls to a DLL. A variety of inputs and outputs are provided that are controlled and monitored with the diagnostic software. Learn USB the fun way, and watch it work! From Velleman. (No dreaded blue screen of death with this one!)



**SPECIFICATIONS**  
0=ground; 1=open, on board test buttons  
Attenuation and amplification, internal test  
Open collector, 50V/100mA, LED indication  
0-5V at 1K $\Omega$  PWM 0-100% open collector  
20ms per command  
Through USB, 70mA approx.  
Diagnostic Windows software with DLL  
Pentium class or higher, USB1.0 or higher,  
Win98SE, WinME, Win2K, XP  
Dimensions:  
5.7" x 3" x .8"

K8055  
VM110

USB Experimenter's Interface Board Kit  
USB Experimenter's Interface Board, Factory Assembled & Tested

\$49.95  
\$82.95

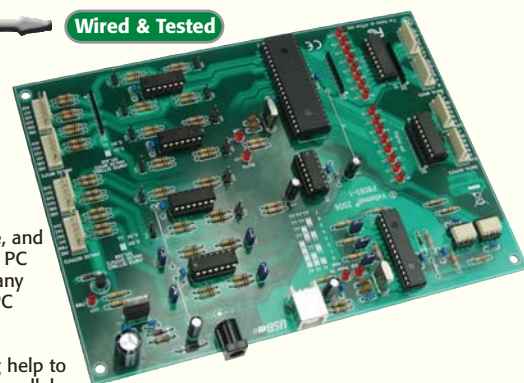
## Extended USB Experimenter's Interface Board

KIT

Wired &amp; Tested

- ✓ 33 total inputs and outputs!
- ✓ Digital, analog, & PWM
- ✓ Isolated computer connection!
- ✓ Communications routines!
- ✓ 0-10V or 0-5V selection per input/output
- ✓ Includes diagnostic and testing software
- ✓ Advanced features

Go To The Next Level Of  
USB Experimenting!



**SPECIFICATIONS**  
8 analog 10 bit inputs: 0-5 or 0-5V at 20k $\Omega$ m  
8 analog 8 bit outputs: 0-5 or 0-10V at 47  $\Omega$ m  
8 digital inputs: Open collector, gnd=0, LED indication  
8 digital outputs: Open collector, 50V/100mA, LED indication  
1 PWM output: 0-100% open collector, 40V/100mA, LED  
General response time: 4ms per command  
USB port: USB1.1 and USB2.0 compatible  
USB cable: Included A-B  
USB power: 60mA, up to 8 cards to one PC  
External power: 12VDC at 300mA (not included)  
Software: Diagnostic Windows software with DLL  
PC Requirements: Pentium class or higher, USB1.1 or 2.0, Win98SE, WinME, Win2K, XP, Vista  
Dimensions: 2.7" x 5.6" x 0.8"

This interface board is the big brother of the K8055 above, and is packed with even more features, making it the ultimate PC interface tool for hobbyists. The ability to control almost any device imaginable and get real-time feedback from your PC means virtually unlimited possibilities!

The high throughput possible with this board will be a big help to anyone working with bandwidth limitations of serial and parallel port interfaces, and since the USB is handled in hardware, communication between your computer and the device generates very little CPU overhead!

Like the K8055, all communication routines are contained in a Dynamic Link Library (DLL) that is provided along with Windows based diagnostic software. You can also write custom Windows applications in Delphi Visual Basic, C++, or any other 32-bit Windows development tool that supports calls to a DLL. This advanced interface has a total of 33 inputs and outputs that include both digital and analog inputs and outputs as well as one PWM output.

Connection between the interface board and your computer is galvanically-optically isolated so damage to the computer is impossible. This provides an even greater level of secure implementation. Get ready to take your USB development to the next level. From Velleman.

K8061  
VM140

Extended USB Experimenter's Interface Board Kit  
Extended USB Experimenter's Interface Board, Factory Assembled & Tested

\$149.95  
\$169.95



KIT

Add A High Tech Display To  
Your Own Project!

## Programmable Message Board

- ✓ Includes backlit LCD display!
- ✓ Serial interface!
- ✓ 8 inputs!
- ✓ Non-volatile EEPROM memory!
- ✓ No programming skills needed!

### DISPLAY MODES

1. Display the status of all inputs simultaneously
2. Display all active inputs
3. Display active input with highest priority
4. Display text messages in a "tickertape" display

If you have never experimented or used an LCD message display, this kit is for you! You can use this as a stand-alone display that is remotely programmed or as an integral display for one of your own projects! With a very nice supertwist backlit 16 character LCD display, you can provide alphanumeric displays in four display modes.

There are 8 separate inputs and each input accepts dry contacts, open collectors or logic levels. The non-volatile EEPROM memory can store up to 9 sixteen character messages! A default message can be displayed to signal that no inputs are active. RS232 interface is based on 2400/N/8/1 with no handshaking to make for a simple interface.

Message transfer software is available online to transfer messages from your PC to the message board. Messages can be recalled by a simple pushbutton. This is the perfect kit to get your hands dirty with alphanumeric displays and their control circuits. It's fun, you learn, and you have a really great display when it's built!

Board measures 4.9" x 2.9" x 1.2". If you're looking for a really nice finished display, order the custom case/bezel kit. From Velleman.

K8045  
B8045

Programmable LCD Message Board Kit  
Custom Enclosure With Matching Bezel

\$49.95  
\$29.95





## Easy To Learn 130 In 1 Electronics Lab

- ✓ No prior knowledge of electronics needed!
- ✓ Solderless connections for safe assembly
- ✓ Build 130 different circuits and see them work!
- ✓ Includes a comprehensive instruction & theory manual written for the youngest novice to understand!

**A Great Start To Electronics...  
With 130 Separate Projects!**

For over three decades, Ramsey has provided educational hobby kits that give thousands and thousands of kids their start in electronics. We've searched and searched for an Electronics Lab specifically designed to teach the youngest experimenter the fun and excitement of electronics.

The PL130 does just that! Learn the basics and theory of electronics the fun way while building 130+ projects that you actually see working when you're done! The detailed 162 page instruction manual covers the hows and whys of every circuit, theory, parts identification, and description. We've looked at a lot of these kits and have turned them down because of the documentation. This one is a winner!

**LOTS OF PROJECTS? YOU BET! Check them out!**

Electronic Woodpecker  
The Chirping Bird  
Electronic Cat  
Sonic Fish Caller  
Machine Gun Pulse Oscillator  
Electronic Motorcycle  
Two-Tone Patrol Car Siren  
Electronic Siren  
Electronic Metronome  
Electronic Grandfather Clock  
Light-Controlled Electronic Harp  
Horror Movie Sound Effects  
Strobe Light  
Rapid LED Display Switching (Persistence Vision Test)  
Capacitor Discharge/High Voltage Generator  
Capacitors in Series and Parallel  
Resistors in Series and Parallel  
Light Dimmer  
Transistor Switcher  
Transistor Circuit Action  
Sound Amplifier  
Flip-Flop Multivibrator with LED Display  
Seven-Segment LED Digital Display Circuit  
Basic LED Display  
Transistor Control Switching of the LED Display  
Transistor, CDS Cell and LED Display Circuit  
Diode-Transistor Logic AND with LED Display  
DTL OR Circuit with LED Display  
DTL NAND Circuit with LED Display  
DTL Exclusive OR Circuit  
Transistor NOR Circuit with LED Display  
Transistor Flip-Flop Circuit  
Transistor Toggle Flip-Flop  
Transistor-Transistor Logic Buffer Gate  
TTL Inverter Gate  
TTL AND Gate  
TTL OR Gate  
TTL Exclusive OR Gate  
TTL NOR Gate  
TTL Three-Input AND Gate  
TTL AND Enable Circuit  
TTL OR Enable Circuit  
TTL NAND Enable Circuit  
TTL R-S Flip-Flop

Toggle Flip-Flop Circuit Made from NAND Gate  
TTL Line Selector  
TTL Data Selector  
TTL Astable Multivibrator  
TTL Tone Generator  
Winking LEDs  
A One-Shot TTL  
Transistor Timer with TTL  
Buzzin' LED  
Son of Buzzin' LED  
Set/Reset Buzzer 1  
Set/Reset Buzzer 2  
Sound Machine  
Big Mouth  
Shot in the Dark  
Variable R-C Oscillator  
Oscillator with Turn-Off Delay  
Temperature-Sensitive Audio Oscillator  
Two-Transistor, Directly Connected Oscillator  
Push/Pull Square Wave Oscillator  
Pencil Lead Organ  
LED Strobe Light  
Electronic Organ  
Daylight Early Bird  
Intermittent Alarm Generator  
Comparator  
Basic Increase in DC Voltage  
Constant-Current Source  
Integrating Circuit  
Schmitt Trigger Circuit  
Noninverting Two-Power Supply Amplifier  
Inverting Two-Power Supply Amplifier  
Noninverting Single-Power Supply Amplifier  
Two-Power Supply Differential Amplifier  
Tone Mixing Amplifier  
Power Amplifier Using Operational Amplifier  
Voltage Controlled Oscillator Circuit  
Operational Amplifier Buzzer  
Burglar Alarm  
Hand-Operated Sweep Oscillator  
Falling Bomb Sound  
Emergency Siren  
First Aid Siren

Musical Tempo Generator  
Operational Amplifier Winking LED  
LED Flashing Light  
Two-LED Winker  
One Shot Light  
LED Initials  
Wake Up Siren  
Voice-Activated LED  
Logic Tester  
Alternating Current Sound  
Light Control Sound Circuit  
Sound Alarm Circuit  
Study Timer  
Kitchen Timer  
Three-Input AND Gate Using Operational Amplifier  
Voice Level Meter  
Power-On Reset Circuit  
Delayed Timer  
Pulse Frequency Doubler  
White Noise Generator  
DC-DC Converter with Operational Amplifier  
Code Practice Oscillator with Tone Control  
Crystal Set Radio (Simple-Diode Radio)  
Two-Transistor Radio  
Wireless Code Transmitter  
AM Radio Station  
Operational Amplifier Radio  
Aural Continuity Tester  
Conductivity Tester  
Transistor Checker  
Sinewave Audio Oscillator  
Low Distortion Sinewave Oscillator  
Twin-T Audio Oscillator  
Pulse Oscillator Tone Generator  
Audio Signal Tracer  
Radio Frequency Signal Tracer  
Square Wave Audio Oscillator  
Sawtooth Wave Oscillator  
Rain Detector  
Water Level Buzzer with Operational Amplifier  
Metal Detector  
Water Level Alarm  
Three-Step Water Level Indicator

**KIT**

**TOP  
SELLER!**



Start today and learn the exciting world of electronics with this excellent starter learning lab. Just imagine, build an electronic metronome, a light dimmer, a voice actuated LED light! Or go back in time and learn all about how radio started by building yourself a Crystal Set radio... or take it one step forward and build an actual radio station!

For more advanced Electronics Labs, check out the following:

- PL200 200 In One Electronics Lab
- PL300 300 In One Electronics Lab
- PL500 500 In One Electronics Lab

This 130 In One Lab is a perfect start to a great new hobby in electronics, whether it's for you, your kids, or your friends. The 130 electronics projects are sure to excite the "student" young or old. And if it is even your first experience with electronics, the comprehensive training manual will guide you through each project, and explain exactly how and why it works! If you have a budding electronics hobbyist in your family, the 130-In-One lab is the perfect starter!



KIT

### 200 New Projects In A New Super Fun-To- Use Package!

It's back and even better! The new 200 in 1 learning lab contains 200 fun and exciting projects to spark the interest of anyone wanting to explore electronics... young or old!

The exclusive front panel contains a built-in speaker, earphone, meter, 7-segment LED digital display, two controls and more to make the finished projects fun to use. Now you can build your own AM broadcast station, burglar alarm, telegraph, sound effects, radios, and other interesting circuits that give you hands-on fun when done!

The unique front operating panel and special projects make this the popular choice for entry level learning labs. Requires 6 standard AA batteries, not included.

## Super-Fun 200 In 1 Electronics Lab

- ✓ Build 200 very special and super-fun projects!
- ✓ Front panel speaker, meter, controls, and more!
- ✓ No tools required!
- ✓ Comprehensive instruction & theory manual!

### Includes the following super-fun learning projects:

#### Surprise and Game Projects

Wheel of Fortune  
The Noisy Light  
Electronic Candle  
Rain Detector  
Ear splitter  
Pencil Lead Organ  
The Electric Human  
The Electrosonic Human  
Electric Birthday Cake  
Quick Draw  
Quick Draw II  
Electronic Safecracking  
UFO Invasion  
Tug of War  
Shot in the Dark  
Burglar Alarm  
SOS Alert  
Target Range  
"Catch" the Eight  
Marching LEDs  
Turn Signal Flasher  
Leapin' LEDs!  
Lights Out

#### Back to the Basics

Light Telegraph  
Frontier Telegraph  
Introducing the Resistor  
Parallel Resistors  
Secret Resistance  
A Variable Resistor  
Capacitors in Series and Parallel  
The Electronic Gas Tank  
Discharge Timer  
Light Dimmer  
The Quick Capacitor  
Electronic Timer  
Capacitors and Oscillators  
A Variable Capacitor  
Resistors and Capacitors Together  
Resistors and Capacitors Together II  
Meet the Diode  
Voltage Drop  
Voltage Regulator  
LED - A Special Diode  
How a Transformer Works  
A Chopper Circuit  
An AC Simulator  
Electronic Buzzer  
Photometer  
Electronic Jigsaw Puzzle  
Night Light  
The Light Switch  
Electronic Elephant  
Capital Letter Displays

Small Letter Displays  
Numeric Displays  
Meet the Transistor  
Transistors as Switches  
Electricity from Sound  
Electric Money

#### Electronic "Building Blocks"

A Push-Pull Amplifier  
Understanding Oscillators  
A Push-Pull Oscillator  
An Inverter Circuit  
Meet the OR Circuit  
Introducing the AND Gate  
Using the NOR Gate  
Meet the NAND Gate  
How a Multivibrator Works  
A "One-Shot" Multivibrator  
An R-S Flip-Flop

#### Putting Electronics to Work

Sound Scooper  
Liquid Conductivity Tester  
Super-Sensitive Photometer  
Motion Detector  
Two-Tone Buzzer  
Variable Capacitor Oscillator  
Variable RC Oscillator  
Electronic Metronome  
Door Alarm  
Frequency Shift Oscillator  
Code Practice Unit  
Light/Sound Code Practice Unit  
Strobe Light  
Noisy Strobe Light  
CdS-Controlled Oscillator  
Shot in the Dark II  
Does Money Talk?

#### Radio Circuits

"Crystal Set" Radio  
"Funny" Transistor Radio  
One Transistor Radio  
Spark Gap Transmitter  
Morse Code Transmitter  
Remote Water Level Detector  
AM Broadcaster

#### Sonic Zoo and Sound Factory

Basic Audio Oscillator  
Light-Controlled Bird  
Electronic Motorcycle  
Chirping Bird  
Electronic Siren  
Fish Caller  
Plant Growth Stimulator

Electronic Organ  
Electronic Raindrops  
Electronic Cat  
Electronic Bird  
Digital Rhythm  
Sound Machine I  
Sound Machine II  
Sound Machine III

#### Electronic Decision-Makers

Electronic Coin Toss  
Electronic Coin Toss II  
Even or Odd  
Electronic Roulette  
Electronic Dice  
Roulette with Sound  
The Light Fantastic  
ESP Tester  
Close-In

#### A Trip to Digital Land

Three-Input OR Circuit  
Three-Input AND Circuit  
RTL Inverter  
RTL Buffer  
RTL OR Gate  
RTL AND Gate  
DTL OR Gate  
DTL AND Gate  
DTL NOR Gate  
DTL NAND Gate  
DTL Exclusive OR Gate  
TTL Inverter  
TTL Buffer  
TTL OR Gate  
TTL AND Gate  
TTL 3-Input AND Gate  
TTL NOR Gate

#### More Adventures in Digital Land

TTL XOR Gate  
TTL NAND Enable Circuit  
TTL AND Enable Circuit  
TTL OR Enable Circuit  
TTL Line Selector  
TTL Data Selector  
TTL R-S Flip-Flop  
TTL R-S Flip-Flop II  
Transistorized Toggle Flip-Flop  
NAND Toggle Flip-Flop  
J-K Toggle Flip-Flop  
TTL Astable Multivibrator  
TTL J-K Flip-Flop  
TTL D Flip-Flop  
TTL Latch Circuit  
Shift Register

#### Circuits That Count

Basic Counter Circuit  
Synchronous Counter  
Asynchronous Counter  
Counter with Line Decoder  
Divide by 4 Counter  
Divide by 4 Counter with Line Decoder  
How a Line Decoder Works  
Multiple Counter  
Binary Counter with Display  
Divide by 3 Counter with Display  
Divide by 4 Counter with Display

#### Some Silly Circuits

Light or Sound  
Be Your Own Multivibrator  
Anticipation  
Big Mouth!  
Sound Stop  
Multivibrator Switching  
Winking LEDs  
A Phony Counter?  
Alphabet Flasher  
A One-Shot TTL  
Winking LEDs II  
Transistor Timer  
TTL Tone Generator  
Meet the VCO  
Sound Out Timer  
Buzzin' LED  
Son of Buzzin' LED  
Octave Generator  
Crossing Signal  
Digital Timer  
Set / Reset Buzzer I  
Set / Reset Buzzer II  
Set / Reset Buzzer III  
Optical Counter  
LED Sound Meter  
Shot in the Dark III  
Set / Reset Match  
Number Displays

#### Testing and Measuring Circuits

Circuit Continuity Checker  
Acoustic Ohmmeter  
DC Voltmeter  
Voltage Level Detector  
AC Voltmeter  
Audio Signal Generator  
Volume Level Meter  
Capacitance Checker  
Diode Tester  
Transistor Checker

For more advanced Electronics Labs, check out the following:

- PL300 300 In One Electronics Lab
- PL500 500 In One Electronics Lab





KIT

300 Projects  
Plus Theory!

After we introduced our PL130 lab kit we were amazed at the customer response. Hundreds and hundreds were ordered, and re-ordered by everyone you could imagine! From parents for their kids, to grandparents for THEIR kids and grandkids, the response has been the same... "THEY LOVE IT!"

We've expanded our line to include this 300-in-one lab kit! Just like the PL130, this lab includes an incredible 165 page comprehensive manual covering the construction of EACH project and the theory behind it.

Includes **ALL** of the projects in the PL130 **PLUS** THE FOLLOWING PROJECTS:

#### Surprise and Fun

Light-Controlled Bird  
A Transistor Radio  
Sound Scooper  
American Patrol Car Siren  
Digital Roulette  
IC Organ

#### Back to the Basics

Light Telegraph  
Introducing the Resistor  
Parallel Resistor  
Meet the Diode  
The LED-a Special Diode  
The Electronic Gas Tank  
Meet the Transistor  
Transistor as switches  
PNP Transistor Switch  
NPN Transistor Switch  
Delay Light  
Night Light  
Electronic Timer  
Capital Letter Display  
Small Letter Display  
Number Display

#### Electronic "Building Blocks"

An Inverter Circuit  
Meet the OR Gate  
Introducing the AND Gate  
Using the NOR Gate  
Meet the NAND Gate  
How a Multivibrator Works  
A "One-Shot" Multivibrator  
An R-S Flip Flop  
Meet the Oscillator  
Changing Oscillation with Capacitor  
Changing Oscillation with Foreign Substance  
More about Oscillator  
A Push-Pull Oscillator

#### Putting Electronics to Work

CdS Controlled Oscillator  
Frequency Shift Oscillator  
Motion Detector  
Door Alarm  
Rapid LED Display Switching  
Code Practice Unit  
Current Switch  
Two-Tone Buzzer  
Astable Multivibrator  
Monostable Multivibrator  
Code Practice Unit  
The Noisy Light  
Hearing Aid Amplifier  
Light/Sound Code Practice Unit  
Light Controlled Burglar Alarm  
DC-DC Converter  
Count Down Timer  
Transistor Frequency Doubler  
One Transistor Full-Wave Rectifier

#### Radio Circuits

"Crystal Set" Radio

"Funny Transistor" Radio  
Remote Water Level Detector  
IC Radio  
Morse Code Transmitter  
AM Transmitter  
Broadcasting Organ

#### Sonic Zoo and Sound Factory

Plant Growth Stimulator  
Electronic Woodpecker  
Fish Caller  
Electronic Raindrops  
Machine Gun Pulse Detector  
Chirping Bird  
Electronic Bird  
"Horror Movie" Sound Effect  
Sound Machine I  
Sound Machine II  
Multi-Tone Siren  
Digital Rhythm  
Two-IC Electronic Organ

#### Electronic Decision-Makers

Majority Logic Gate  
Electronic Coin Toss  
Electronic Coin Toss II  
Electronic Coin Toss III  
Even or Odd  
Quick Draw Game  
Close-In  
ESP Tester  
The Light Fantastic  
Shooting Game  
Marching LEDs  
Electronic Dice  
Electronic Roulette

#### Operational Amplifier IC Can Do Many Things

Meet the VCO  
Silicon Diode Solar Cell  
Astable Multivibrator Using OP Amplifier  
Pulse Generator  
Experiment of Comparator  
Comparator with Hysteresis  
Constant Current Sources by OP Amplifier  
Non-Inverting Adder  
Touch Switch Using OP Amplifier  
Early Bird  
DC-DC Converter by OP Amplifier  
Inverting Amplifier  
Non-Inverting Amplifier  
Differential Amplifier  
Differential Output Amplifier  
Power Amplifier Using OP Amplifier  
Balanced Transformerless Amplifier  
Three-Stage Differential Amplifier  
VCO Using OP Amplifier  
Voltage Controlled Amplifier  
V-F Converter  
F-V Converter  
Sweep Generator

Multiple-Function IC Project  
Sound Alarm  
Photo Organ  
Vibrato Organ

#### Introducing the Power Amplifier IC

IC Power Amplifier  
IC Power Amplifier II  
Oscillator Using Power Amplifier IC  
CdS Controlled IC Oscillator  
Phase Shift Oscillator  
Intercom  
A Water Service Pipe Sound  
Electronic Klaxon  
Wide Range Audio Frequency Oscillator

#### A Trip to Digital Land

Switching Circuit  
RTL Inverter  
RTL Buffer  
RTL OR Gate  
RTL AND Gate  
Transistor OR Gate  
Transistor AND Gate  
Transistor XOR Gate  
Special NAND Gate  
DTL OR Gate  
DTL AND Gate  
DTL NOR Gate  
DTL NAND Gate  
DTL Exclusive OR Gate  
C-MOS Inverter  
C-MOS Buffer  
C-MOS OR Gate  
C-MOS AND Gate  
C-MOS 3-Input AND Gate  
C-MOS NOR Gate  
C-MOS 4-Input NOR Gate  
C-MOS 4-Input NOR Gate II  
DeMorgan's Theorem  
Experiment of Threshold Voltage  
NAND/NOR and Transistor Switch

#### More Adventures in Digital Land

C-MOS XOR Gate  
C-MOS NAND Enable Circuit  
C-MOS AND Enable Circuit  
C-MOS OR Enable Circuit  
A One-Shot NAND Gate  
C-MOS Line Selector  
C-MOS Data Selector  
C-MOS R-S Flip Flop  
C-MOS Flip Flop II  
Set/Reset Buzzer  
Set/Reset Buzzer II  
Set/Reset Buzzer III  
Transistorized Toggle Flip Flop  
NAND Toggle Flip Flop  
J-K Toggle Flip Flop  
C-MOS Astable Multivibrator  
C-MOS J-K Flip Flop  
C-MOS D Flip Flop

## Complete 300 In 1 Electronics Lab

- ✓ Build 300 exciting electronic projects
- ✓ Solderless connections for safe assembly
- ✓ No tools required!
- ✓ 165 page comprehensive instruction & theory manual!

C-MOS D Flip Flop II  
R-S-T Flip Flop  
T Type Flip Flop  
C-MOS Latch  
Shift Register  
Touch Switch Using NAND Gate  
Half Adder  
D-Latch  
2-Line to 4-Line Decoder  
Multiplier  
Dual 2-Input Multiplexer  
Two-Stage Frequency Divider

#### Circuits That Count

Basic Counter  
Synchronous Counter  
Asynchronous Counter  
Counter with Line Decoder  
Divide by 4 Counter  
Divide by 4 Counter with Line Decoder  
How a Line Decoder Works  
Multiple Counter  
Binary Counter with Display  
Divide by 3 Counter Display  
Divide by 4 Counter Display  
Up/Down Counter  
Down Counter  
Decade Down Counter  
Decade Down Counter with Display  
Presettable Counter  
Hexadecimal Counter  
Octal Counter  
Random Access Display  
Decade Counter  
BCD Counter with Display  
Octal Counter with Line Decoder  
Octal Counter with Display  
Decade Counter with Display  
Decade Counter with Display II

#### Getting Closer to Computers

BCD to 7-Segment Decoder  
Full Adder  
Decimal to Binary Encoder  
Binary to BCD  
Octal to BCD  
Hexadecimal to BCD  
3-Bit Shift Register

#### Amusement in Digital Land

VCO by NOR Gate  
Pulse-Delayed Circuit  
NAND Gate Tone Generator  
Transistor Timer  
Noise-Signal Discriminator  
Pulse Stretcher  
Bidirectional Buffer  
Various Inverters  
Electronic Switch  
Tone Burst Generator  
Digital Timer  
Digital Timer II  
Ten Count Buzzer  
Press First

Target Range  
Catch the Eight  
SOS Alert  
Wheel of Fortune  
Leapin' LEDs

#### Shakehands of Analog and Digital

Pulse Number Modulation Light Dimmer  
Pulse Width Modulation Light Dimmer  
DC-DC Converter Using the C-MOS Oscillator  
Absolute Value Amplifier  
Window Comparator  
Digital Light Dimmer  
A-D Converter  
D-A Converter  
Photometer with Digital Display  
Surprise and Fun Revisited  
Experiment of Electromagnetic Induction  
Electronic Candle  
Constant Current Circuit  
A Phony Counter  
Alphabet Flasher  
Winking LEDs II  
Delayed Timer II  
Crossing Signal  
Octave Generator  
Sound Out Timer  
Sound Stop  
Big Mouth!  
Light or Sound  
Be Your Own Multivibrator  
Anticipation  
Set/Reset Match

#### Testing and Measuring Circuits

Circuit Continuity Checker  
Acoustic Ohmmeter  
Audio Signal Generator  
Temperature-Sensitive Audio Amplifier  
Water Level Detector  
Battery Checker  
IC Oscillator/Component Tester  
Voltage Drop Alarm  
Current Shut-Down Circuit  
Logic Checker  
Logic Checker II  
Temperature Alarm  
Function Generator

For more advanced Electronics Labs, check out the following:

- PL500 500 In One Electronics Lab

For beginners Electronics Labs, check out the following:

- PL130 130 In One Electronics Lab
- PL200 200 In One Electronics Lab

## Advanced 500 In 1 Electronics Lab

KIT

TOP  
SELLER!

- ✓ 152 page starter course manual!
- ✓ 78 page advanced course manual!
- ✓ 140 page programming course manual!
- ✓ Quality hinged case construction

Advanced Learning Courses Plus 500  
Separate Projects!

We went one step beyond our 300-in-one lab kit! Yes, 500-in-one, PLUS comprehensive learning course manuals! Build 500 exciting projects, learn schematics, build and learn both analog and digital circuits, and even get into digital programming. 500 projects, 370 pages of comprehensive course manuals, and LOTS OF FUN! (I'd say a lot more... but I don't have the room! WOW, 500 projects!)

If you're looking for smaller Electronics Labs, check out the following

- PL130 130 In One Electronics Lab
- PL200 200 In One Electronics Lab
- PL300 300 In One Electronics Lab

**Includes ALL of the projects in the PL130... AND  
ALL the projects in the PL300... PLUS  
THE FOLLOWING PROJECTS:**

### Back to the Basics

Capacitors in Series and Parallel

### Electronic "Building Blocks"

Low Distortion Sinewave Oscillator

### Putting Electronics to Work

Strobe Light

Electronic Grandfather Clock

Electronic Metronome

Twin-T Audio Oscillator

Current Switch

Shot in the Dark

Variable R-C Oscillator

Two-Tone Buzzer

Sawtooth Wave Oscillator

### Radio Circuits

Wireless Code Transmitter

### Sonic Zoo and Sound Factory

Two-Tone Patrol Car Siren

Pencil Lead Organ

Electronic Motorcycle

Machine Gun Pulse Detector

Electronic Siren

Electronic Cat

Electronic Organ

### Electronic Decision-Makers

Majority Logic Gate

Electronic Coin Toss

Electronic Coin Toss II

Electronic Coin Toss III

Even or Odd

Quick Draw Game

Close-In

ESP Tester

The Light Fantastic

Shooting Game

Marching LEDs

Electronic Dice

Electronic Roulette

### Operational Amplifier IC Can Do Many Things

Integrating Circuit

Pitch Doubling Circuit

Pitch Doubling Circuit II

Comparator

Schmitt Trigger Circuit

Delayed Timer

Pulse Frequency Doubler

Touch Switch Using OP Amplifier

### Surprise and Fun Revisited

Experiment of Electromagnetic Induction

Winking LEDs

Voice Level Meter

Buzzin' LED

Son of Buzzin' LED

### Testing and Measuring Circuits

Audio Signal Tracer

Metal Detector

Rain Detector

Burglar Alarm

Temperature-Sensitive Audio Amplifier

### Learn Basics More

A Basic of Control Volume

Emitter Follower

Basic Operation of Zener Diode

Zener Voltage Checker

Zener Voltage Checker II

Basic Photo-Transistor Operation

Voltage Drop Circuit by Means of Diodes

Experimentation of Capacitor

Temperature Characteristic

Darlington Circuit (Touch Sensor)

Edge-Trigger Circuit

RC Type Differentiating Circuit

Switch Matrix Circuit

Memory Backup Circuit

Power on Reset Circuit

Constant-Voltage Circuit (Fixed Output)

Constant-Voltage Circuit (Variable Output)

A Rectifier Circuit by Diode Bridge

AGC Circuit Using a Single Transistor

Upper/Lower Limiter Circuit Using OP

Amplifier

Window Comparator II

### Amusement on Sound

Multi-Tone Siren

Digital Rhythm

Two-IC Electronic Organ

A Water Service Pipe Sound

Electronic Klaxon

Sound Machine III

Sound Wave Varying with Light Intensity

Player Organ

Sound of Passing Siren

Light Source Sensing Circuit by Sound

Electronic Piano Circuit

Whistle Generating Circuit

Space Gun

Car Horn

### More Radio Circuits

Morse Code Transmitter

Broadcasting Organ

FM Transmitter (FM Wireless Microphone)

### To The Game World

Quiz Winner Detector

Reflex Nerve Test Game

Shooting Game II

Shot In The Dark II

Sound Quiz

Stop the Seven

High-Power Switch

"Lockout, Mr. Blackbeard!" Game

Russian Roulette

Male Hitting Game

"Janken" Game

Ping-Pong Game

### More Adventures in OP Amplifier Circuits

Voltage Controlled Amplifier

V-F Converter

F-V Converter

F-V Converter II

White Noise Generator

Sweep Generator

Multiple-Function IC Project

Sound Alarm

A Sound of Ripples

Photo Organ

Vibrato Organ

### More About Oscillation

Phase Shift Oscillator

Wide Range Audio Frequency Oscillator

Sawtooth Wave Oscillator II

Three Phase Oscillator

Wien-Bridge Oscillator

Ramp Wave Generator

Digital Sine Wave Generator

Frequency-Variable Sine Wave Generator

Sine Wave Oscillator Using D-A Converter

RC Phase-Shift Oscillator

Two Sine Waves with Different Phases

One-Shot Multivibrator Using IC 555

One-Shot Multivibrator Using J-K Flip-Flop

One-Shot Multivibrator Using OP

Amplifier

Shakehands of Analog and Digital

Pulse Number Modulation Light Dimmer

Pulse Width Modulation Light Dimmer

DC-DC Converter Using the C-MOS

Oscillator

Photometer with Digital Display

Pulse Width Modulation Light Dimmer II

Voltmeter

### Getting Closer to Computer

Full Adder

Decimal to Binary Encoder

Binary to BCD

Octal to BCD

Hexadecimal to BCD

3-Bit Shift Register

BCD-To-Decimal Decoder

More Digital Circuits

4-Input Data Selector

AND/OR Circuit Using OP Amplifier

XOR Using OP Amplifier

Time Sharing Display of LEDs

LED Lighting-Duty Varying Circuit Using

One-Shot Multivibrator

LED Blinking-Cycle Varying Circuit Using

Astable Multivibrator

LCD Static Drive Circuit

LCD Dynamic Drive Circuit

Testing LCD Display Response

LED Drive by 4 Switches

Flashing LED by Preset Number

Digital Timer (1 to 7 Minutes)

Sound Timer

Programmable Timer with Down Counter

### Amusement in Electronic Circuits

Revolving Light

Photo Switch

Door Chime

Visitor Sensing Chime Using Photo-

Transistor

Touch VCO

Sound Tuning Circuit

Crossing-Bell Sound Generator

Turn Indicator

Staircase Light Switching Control Circuit

Pseudo Candle Circuit

Lie Detector

Light Sensing Circuit

Automatic Lighting LED

Sound Sensing LED

Illumination Lamp

Intercom

PIP Sound Interphone

Electronic Volume

Pedestrian Signal

Time Counter

LED Display Counting Up/Down Circuit

An Electronic Pendulum

Staircase Light Switching Control Circuit II

Lamp Brightness Control Circuit

Illumination Circuit with 4-LEDs

A Simulated Car Winkers

### Testing and Measuring Circuits

Battery Checker

Conductivity Tester

Transistor Checker

Three-Step Water Level Indicator

Tachometer

Battery Checker II

Digital Illuminometer

### Software Projects

Light LEDs

Light On/Off LEDs

A Binary Counter-Increment Value by ADD

Instruction

A Binary Counter-Decrement Value by

SUB Instruction

Light LEDs Sequentially with AND

Instruction

Light LEDs Sequentially with OR

Instruction

Turn On and Off LEDs Sequentially with

XOR Instruction

Moving LEDs Light with ROL Instruction

Moving LEDs Light with ROR Instruction

Night Rider's LEDs with ROL/ROR

Instructions (1)

Night Rider's LEDs with ROL/ROR

Instructions (2)

Binary Counter with INC Instruction

Binary Counter with DEC Instruction

Sound Do as Do, Re, Mi

Sound a Series of Musical Scale

Let's Input Data to Program

Hidden Key Triggers Sound and Turns All

LEDs On

Stacked MOV Instructions

Changing Order of LEDs by Switch

A Musical Scale Sound by S1 Key

Arithmetic Addition of Two Binary

Values

Arithmetic Subtraction of Two Binary

Values

Arithmetic Multiplication of Two Binary

Values

Arithmetic Division of Two Binary Values

Displays Number 0 to 9 on 7-Segment

LED (2)

Change Order of Numbers Display on 7-

Segment LED (2)

Switches S1-S4 Light Hex Number On 7-

Seg LED

8-Key Organ

Lighting Spade, Diamond, Heart, and

Club on the LCDs Display (Basic)

Lighting Spade/Heart and Diamond/Club

on the LCDs Display

Lighting Spade, Diamond, Heart, and

Club by Static Drive Circuit

Lighting Spade, Diamond, Heart, and

Club by 1/2 Duty-1/2 Bias Circuit

Lighting Spade/Diamond and Heart/Club

by 1/2 Duty-1/2 Bias Circuit

Lighting Spade/Diamond and Heart/Club

Alternately by 1/2 Duty-1/2 Bias Circuit

Lighting Spade, Diamond, Heart, and

Club by 1/2 Duty-1/2 Bias Circuit

Results of Logical Operations AND, NAND,

OR, and NOR

Results of Logical Operations XOR and





## AM/FM/SW Radio Learning Kits

- ✓ Learn to build your own AM, AM/FM or SW radio!
- ✓ Discover how radios work!
- ✓ Listen to the results!
- ✓ Safe solderless assembly!



As the "Little Brothers" to our Lab Kits, our Radio Learning Kits teach you the fundamentals of modern radio theory and operation, and give you a working radio when you're finished! There's nothing like the feeling of accomplishment when you finish the kit, plug in the battery, and hear it work! Yes, you did it yourself! Our Radio Kits are available in AM Broadcast, AM/FM Broadcast, and AM Shortwave models. Take your pick! All operate on a standard 9V battery.

### AM RADIO

Our AM2 AM Radio kit uses two transistors, 4 resistors and 5 capacitors including a variable capacitor to provide a highly sensitive AM Broadcast Radio. It covers 520 KHz to 1625 KHz and is easy to assemble with safe, solderless connections. The 18 page comprehensive learning and assembly manual covers everything from theory to parts identification and operation.

### AM/FM RADIO

Our AMFM7 AM/FM Radio kit is the next step up from our AM2 kit above. It features the same quality AM radio and adds a factory assembled and aligned FM tuner to cover the 88 MHz to 108 MHz FM broadcast band. Utilizes 2 transistors, 5 resistors, 6 capacitors, 1 diode, and 1 coil to provide reception in either band. The AMFM7 is easy to assemble with safe, solderless connections. The 20 page comprehensive learning and assembly manual covers everything from theory to parts identification and operation.

### AM SHORTWAVE

Our SR3 Dual Band AM Shortwave Radio Kit takes you away from the local AM/FM broadcasters and brings you into the exciting world of Shortwave Radio Listening (SWL)! The preassembled and aligned tuner section adds to the 2 antennas, 4 capacitors, 4 resistors, 1 transistor, and 1 variable capacitor to provide a sensitive Shortwave Radio covering 6 MHz to 8 MHz and 12 MHz to 18 MHz. The SR3 is easy to assemble with safe, solderless connections. The 20 page comprehensive learning and assembly manual covers everything from theory to parts identification and operation. Operates on a standard 9V battery (not included).

AM2	AM Radio Kit With Comprehensive Learning Manual	\$12.95
AM/FM7	AM/FM Radio Kit With Comprehensive Learning Manual	\$14.95
SR3	AM Dual Band Shortwave Radio Kit With Comprehensive Learning Manual	\$14.95



*Start With The Basics...  
And Have Fun Doing It!*

Go back in time and discover how radio was first received! Learn the basics of electric motors including forward and reverse action. Plus, while everyone has heard them, learn exactly how an alarm bell works and then build one yourself! These beginner kits are ideal for the inquisitive mind that wants to know "how and why it works". No previous experience in electricity or electronics is required and all kits use safe, solderless connections.

### CRYSTAL RADIO SET

The crystal radio was invented in 1901. It is still the basis of modern-day radio and communications equipment and lives on in a wide variety of radio systems. Go back in time, and learn how radio detection was first done! Without a battery or power supply, you will hear AM broadcasts with your Crystal Radio Set! They contain few parts yet teach many concepts. The comprehensive 16 page manual covers everything from how it works to why it works, with illustrated assembly instructions. Assembly is easy with solderless connections, and no previous electronic experience is necessary. Relive history with a Crystal Set today!

### MOTOR ACTION KIT

Learn the basics of an electric motor with our MA1 Motor Action Kit. Learn what makes motors spin, how to control forward and reverse in a motor, and then build one that works! Includes a fan blade and a color disk to learn how to mix color with a spinning disk! This is a great kit for the kids and for the beginner to learn just what makes the world go round! Easy assembly with solderless connections. Requires two AA batteries (not included).

### BELL ACTION KIT

Ding-a-ling... is that a bell? Yep, we've all heard them but do you know exactly how they work? Our BA1 Bell Action Kit is a perfect learning kit for the beginner or the curious! Learn what makes an electronic alarm bell ring, explore how electromagnetism is used, and how you can change the ringing characteristics of a bell! This kit is fun and safe, using solderless connections. Requires two AA batteries (not included).

CS2	Crystal Radio Kit	\$9.95
MA1	Motor Action Kit	\$9.95
BA1	Bell Action Kit	\$8.95

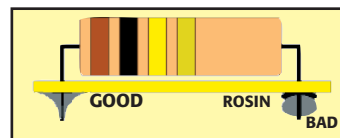
## Entry Level Learning Kits

- ✓ Learn the basics of electronics and electricity!
- ✓ Discover how to listen to AM radio without a battery!
- ✓ Understand and build a working motor!
- ✓ Learn how and why alarm bells work... and build one!

## RAMSEY'S TEN COMMANDMENTS OF GOOD PC-BOARD SOLDERING

1. If the soldering iron tip is covered with burned rosin, it can't heat your connection very well.
2. If you heat only the wire and not the wire and PC trace together, a cold, bad connection is likely.
3. If your soldering tip is big enough to bridge two adjoining connections, it probably will!
4. Dirty, grubby solder will contribute to dirty, grubby connections.
5. Any use of acid core (plumbers!) solder in electronics work will destroy everything... DON'T USE IT!
6. A connection in a large area of PC-board copper requires more heat than one pin of an IC.
7. If your connection looks dull or brittle, it's no good.
8. If your connection looks like a ball instead of a shiny cone, it's no good.
9. Thin fresh shiny rosin core solder is easier to use for PC-board work than thicker "hardware store" solder.
10. Pre-tin any stranded wires leading in and out of your PC-board kit project. It will prevent problems later!

Through Hole Soldering



Surface Mount Soldering





## Volcano Lab

- ✓ Make your own Volcano!
- ✓ Includes light and sound effects!
- ✓ Many activities

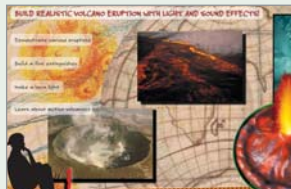
### Get In Touch With Nature!

Definitely smaller in magnitude than Pompeii but this fun lab will allow you to create your own volcano complete with light and sound effects!

Understand nature's most powerful and awesome display of force. Make an erupting volcano with impressive effects. Trace the development of volcanoes and produce different types of eruptions. Other activities include making a fire extinguisher, making a lava light, chocolate lava, and much more! (Now I want some chocolate lava cake!) From Power Tech.

EDUCM011 Volcano Lab Kit

\$22.95



## Ecology Lab

- ✓ Explore today's concerns!
- ✓ Understand the how's and why's!
- ✓ Over 150 ecology experiments

### Understand Our World!

From the greenhouse effect to holes in our ozone layer, this lab will guide you through the issues facing our world and what we can do to help.

With over 150 experiments, you learn about how a thermometer is built, the greenhouse effect, ice crystals, calorie calculations, how plants make oxygen, CO<sub>2</sub> is heavier than air, barometers, the weather in a casserole, spore prints from fungi, testing acid rain, bacteria in the air, biodegradability issues, smoke, and a lot more. From Power Tech.

EDU8650 Ecology Lab Kit

\$26.95



## CD Electrolab

- ✓ Computer graphics lessons!
- ✓ "CAD" circuit design!
- ✓ Includes console & parts

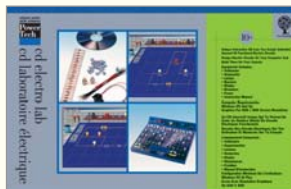
### Design With Your PC!

Wow, who would have thought that a basic learning lab kit would include "CAD" circuit design? This not only provides the convenience of computer aided design but makes it easy to understand circuit theory.

The unique interactive CD program lets you create an endless number of functional electric circuits right on your computer. Once the design is complete, you build them on the console with the supplied parts! Includes a voltmeter, ammeter, lamps, buzzers, diodes, resistors, and fuses. Comprehensive learning manual covers the design and construction of all circuits. Requires Windows XP or newer. No soldering required. From Power Tech.

EDU8150 CD ElectroLab Kit

\$34.95



## Energy Lab

- ✓ Learn all about energy sources!
- ✓ Build your own power plants!
- ✓ Over 200 activities

### Learn The Creation Of Energy!

With this learning kit you will learn and experiment with the common modes of energy creation! Over 200 energy related activities are included with this lab such as making a windmill, the steam wheel, the electric motor, the on/off switch, how to light a light bulb, making your own battery, solar powered motors, lightning, the propeller, and more.

You will even illuminate an LED with electricity you produce! The detailed learning and assembly manual guides you through each energy experiment and its related test procedures. Experiments are safe and no soldering is required. From Power Tech.

EDU8950 Energy Learning Lab Kit

\$34.95



## Solar Lab

- ✓ Learn & harness solar power!
- ✓ Watch it work in front of your eyes
- ✓ Over 150 activities included

### Harness The Power Of The Sun!

This kit continues the educational and learning aspects of technology with the introduction of Solar Power!

Learn how to harness and conserve energy from the sun and auxiliary light sources. Activities include a solar furnace, stroboscope, moire patterns, electronic thermometer, photosynthesis, solar energy mobiles, producing electricity components, DC electric motor, solar cells, galvanometer, solar water heater and more! From Power Tech.

EDU8405 Solar Learning Lab Kit

\$29.95



## Physics Lab

- ✓ Have fun with physics!
- ✓ Understand nature's basic laws!
- ✓ Includes over 250 activities

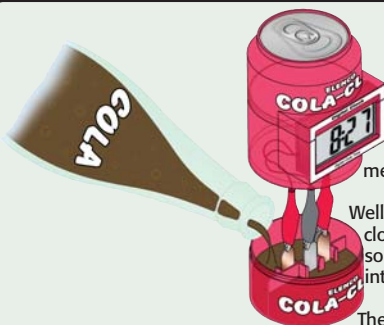
### Yes, Physics Can Be Fun!

This Physics learning lab takes you into nature's basic laws in a fun and exciting way certain to spark curiosity!

Like all Power Tech labs, the comprehensive guide takes you through more than 250 physics activities. These include air and gasses, pumps, siphons, Bernoulli's principle, specific gravity, water pressure, forces and motion, simple machines, sound waves, light and shadows, heat transfer magnetism, electric motors, and a lot more. From Power Tech.

EDU8200 Physics Learning Lab Kit

\$27.95



KIT

### It's The Real... Time!

I know, you saw the header line "Cola Clock" and wondered to yourself... exactly what are they up to now? What could they possibly mean by a "Cola Clock"??

Well, that pretty much says it! We have always been into really neat things and this one is no exception! First off, you have a neat digital clock and a very unique stand that resembles a cola can. And why would that be? This educational kit actually uses your favorite Cola soda drink as the power source! The bottom compartment is the "cola battery section"; all you need to do is pour a small amount of soda into the compartment and it creates a chemical reaction just like a battery does! Voila! The digital clock comes on and runs!

The full color manual shows you how batteries work with a chemical reaction similar to your Cola Clock. All parts are easily identified and the clock is easy to assemble. Learn about batteries and have a lot of fun doing it. Your family, friends, and teachers won't believe their eyes, plus you have a real working clock to see when it's time to go to the dentist! (Now we can add this application to the old one about cleaning rust from chrome bumpers!)

FUN285

Cola Clock Kit

## Cola Powered Digital Clock

- ✓ Uses cola soda drink as the power source!
- ✓ Powers a real digital clock!
- ✓ Doesn't rot your teeth!

\$17.95

## "You'll always get top notch technical support from Ramsey!"

Here at Ramsey, we are very dedicated to customer service and response. In the interest of fast, comprehensive, and accurate service, feel free to contact the factory directly with your questions and requests. Please call our toll-free support number at 866-446-0809 so you can speak in real-time, to service, and tech support personnel for a prompt and immediate answer to your questions!







## Auto-Turning Frog Robot

- ✓ Two sets of Gear Motors (unassembled)
- ✓ Moves when detecting sound

### Perfect for the Future Engineer!

Once this interesting robot kit has been soldered together, the fun begins! When it detects sounds, it will move and repeat the following steps sequentially: Start (move forward), Stop, Left Turn, Stop, Right Turn, Stop. These kits are a great way to introduce students to electronics and give them an interesting novelty once they are done. Comes complete with detailed instructions. A great class project for beginners! Recommended for ages 12 & up. Power Source: Mechanical - Two "AA" batteries (not included) Electronic - 9V Battery (not included). Measures 3.5 x 4.9 x 3.9"



KSR2 Auto-Turning Frog Robot Kit **KIT** \$23.95

## "Scarab" Robot

- ✓ No soldering required, all mechanical assembly
- ✓ Five-switch hardwired control unit
- ✓ Includes two sets of distinct legs

### This Scarab Won't Eat Your Plants!

This scarab beetle-inspired robot uses 2 touch sensors to detect obstacles. When its sensitive antennae detect something blocking its path, the scarab will first step back, and then automatically execute a two-step maneuver to skirt the obstacle. The maneuver is a combination of "left turn", "right turn", "reverse" or "stop" and the robot can also be configured with different sets of movements! Powered by 4 AAA batteries (not included). Measures 6.9 x 5.7 x 3.3"



KSR5 Scarab Robot Kit **KIT** \$34.95

## Super Chemistry Lab

- ✓ Kitchen chemistry fun!
- ✓ 100 fun activities!
- ✓ From electricity to magnetism

### Your Kitchen Is Your Lab!

What a great place for youngsters to learn the basics of chemistry... their kitchen! And mom and dad will enjoy the fun too!

Over 100 kitchen activities relating to chemistry to keep your imagination wandering with excitement! Includes such fun activities as balloon tricks, gas canoe, making a geyser, cleaning old coins, cola volcano, removing an egg's shell without touching it, making invisible ink, cheese, finding iron in cereal and many more! From Power Tech.

EDU8350 Super Chemistry Lab Kit **KIT** \$24.95



## Deluxe Solar Kit

- ✓ Includes 8 solar panels
- ✓ Comprehensive training manual included
- ✓ Starts at the beginning of solar power technology

### Put The Sun To Work!

A great hands-on educational kit to learn exactly how Solar Energy works. Provides a neat bank of solar cells and all the related experiment materials to put the energy to work.

A unique solar cell "unit" provides a bank of solar cells that provide three independent 1.5VDC sources of power. Jumper connections with EZ connections are provided to wire up any of your experiments. Includes a motor, lamp, buzzer, tools, optical disks, and other accessories. You can easily learn how to make a solar circuit and how to increase/decrease voltage or current using series and parallel circuits.

You will be amazed when you produce power to run your small radio, calculator, cassette player and more!

SK40 Solar Deluxe Educational Kit **KIT** \$17.95



## "Escape" Robot

- ✓ Artificial Intelligence!
- ✓ Detects and avoids obstacles
- ✓ Includes two sets of distinct legs

### Escape From Boredom!

The Escape Robot Kit uses basic artificial intelligence to navigate, and it never fails to find its way out of a maze! Using three IR emitting diodes and one IR receiving module, it sends and receives signals to detect obstacles in its path. The Escape Robot's built-in microprocessor enables it to "think" on its own: it gathers and processes information on its environment! The Escape Robot crawls around on 6 legs, and even comes with another set of differently designed legs that move in their own unique way. Powered by 4 AAA batteries (not included). Measures 5.5 x 5.9 x 3.9"



KSR4 Escape Robot Kit **KIT** \$34.95

## "Ladybug" Robot

- ✓ No soldering required, all mechanical assembly
- ✓ Five-switch hardwired control unit
- ✓ Includes two sets of distinct legs

### Buggin' Out!

The Ladybug Robot walks on 6 legs and uses infrared emitting diodes for "eyes" in order to avoid obstacles. The bot will walk straight ahead until it "sees" an obstacle. Then, it automatically makes a left turn and goes along its merry way!

Let it loose and watch it wander! Comes complete with detailed instructions. Powered by 4 AAA batteries (not included). Measures 4.7 x 5.9 x 3.3" (feelers length: 1.6")



KSR6 Ladybug Robot Kit **KIT** \$29.95

## Telephone Kit

- ✓ See-through case!
- ✓ Detailed training course included!
- ✓ Full featured tone/pulse phone

### Learn How You Make That Call!

A very popular learning kit for young and old...or for anyone in between that uses a telephone and wants to know how they work!

The full-featured push button electronic telephone is housed in a transparent case to see the inner workings. Features pulse/tone dialing, automatic redial, ringer on/off, and neon bulbs that light up when it rings! A complete training course is included with detailed theory, assembly and testing sections. Can be desk or wall mounted. Soldering is required. From AmeriKit.



AK700 Telephone Kit **KIT** \$23.95

## Radio Controlled Car

- ✓ 7 remote control functions!
- ✓ Includes remote control!
- ✓ Full color assembly manual

### Build It From The Ground Up!

One of the neatest and most exciting learning kits for the kids! You will be building the Turbo King R/C speedster from the ground up, ending up with a super fast car!

The detailed theory, assembly, and testing manual guides you through basic transmitters, receivers, and electronic switching theories. You'll also learn about gears, motors, integrated circuits, and printed circuit boards! You will construct each segment, explore the circuitry used, and test and troubleshoot it.

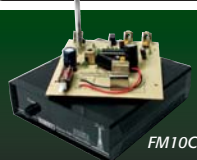
The end result? Turbo King with 7 remote functions, flashing top light and a full feature remote control! Electronics runs on a standard 9VDC battery and mechanics run on 4 standard AA batteries, not included. From AmeriKit. (What a fun way to learn electronics and R/C cars at the same time!)



AK870 R/C Car Kit **KIT** \$29.95

## Learn How AM & FM Transmitters Work!

Learn the theory of AM and FM broadcast transmitters the easy way, and then have a fun with your very own station! Check them out on page 6!



FM10C



AM1C



## Practical Soldering Kit

- ✓ Learn soldering and PC boards!
- ✓ Includes practice exercises!
- ✓ Comprehensive training manual

*Learn To Solder!*

This is a beginner's project specifically designed to teach you the fundamentals of soldering and working with printed circuit boards.

Like any skill, good soldering requires practice as well as an understanding of the principles involved. You will become familiar with PC boards, the how's and why's of soldering, components, component installation, and troubleshooting soldering problems (including solder bridges!) Project runs on a standard 9VDC battery, not included.

TOP  
SELLER!



SP1A Practical Soldering Kit

KIT

\$9.95

## Practical Solder & Parts Kit

- ✓ Learn soldering, boards, and components!
- ✓ Learn color codes!
- ✓ Comprehensive course and exam included

*Learn Soldering & Components!*

Not only will you learn soldering and desoldering but you will also learn component identification and color codes.

With 163 solder points, you will learn and practice standard soldering, close tolerance soldering, tack soldering and desoldering. Plus you will learn component identification and complete color codes. Even includes a color code calculator! Plus you'll learn voltage and resistance analysis in circuits. Comprehensive manual includes written and visual exams. Project runs on a standard 9VDC battery, not included.

TOP  
SELLER!



SP3B Practical Soldering & Parts Kit

KIT

\$9.95

## Practical Fiber Optics Voice & Data Kit

- ✓ Send voice over fiber optic cable!
- ✓ Includes transmitter, receiver, and fiber optic cable!
- ✓ Learn the theory and exactly how it works!
- ✓ Fiber length can be extended

Have an adventure with Fiber Optics and learn at the same time! At one time, fiber optics technology was just used for those cute little holiday trees you see at the stores. Then they realized that fiber can be used for communications and data transmission without the problems or line loss of conventional copper wires. Today fiber networks carry the bulk of the telephone, CATV and broadcast television programs. They are quickly replacing land lines, microwave, and satellite communications. Just like SMT, fiber optic technology is the wave of the future!

While this project and course will not build you a nationwide fiber communications network, you WILL learn the basics of fiber optics and its use in telecommunications. The learning kit includes a transmitter board, receiver board, fiber optic cable, and a comprehensive learning course. The transmitter converts an audio signal into a light signal. The receiver accepts the light and converts it back into an electrical signal. You will learn how the converted signal is then reshaped into the proper form to be heard.

Fiber optic cable, its protective covering, and connectors to attach the cable to the transmitter and receiver are also included. PC board soldering is required. The transmitter and receivers both utilize a standard 9VDC battery, not included. FO25 is a great project kit to learn about Fiber Optics (*there, I spelled Fiber the way I like it!*)

FO30K Fiber Optics Voice & Data Learning Kit  
FOC20 Fiber Optic Cable, 1,000µm (sold by the foot)

\$20.95  
\$.85/ft

KIT

*Fiber Optics, Used For More  
Than Holiday Decorations!*



KIT

*Learn & Practice SMT  
Component Soldering!*

TOP  
SELLER!

## Practical SMT Soldering Course

- ✓ Learn all about those tiny little parts!
- ✓ Develop and practice your SMT soldering skills!
- ✓ Includes SMT training sessions
- ✓ End up with a neat "Decision Maker" project

Surface Mount Technology (SMT) has become a way of life for electronics. Virtually all new high tech products utilize SMT design and components. Even our latest Ramsey kits include various SMT components. There are two problems with SMT: First, the parts are extremely small, at times the size of a pin head! Therefore, you need to have the proper tools, not only to hold them and solder them, but to see them! (Check out the tools section for help!) Secondly, unlike "through hole" parts, SMT components are soldered directly on the surface of the PC board (hence the name SMT!). This is an entirely new method of soldering and it takes practice to get it right. Trust me, I've created a number of solder bridges myself when I first started soldering SMT components!

Taking this course and practicing on the neat little kit will prepare you for the future in electronics. Includes the PC board, all the SMT and other components required, and a comprehensive training course covering all aspects of SMT soldering, desoldering, removing, and component placement. The finished project is a neat little "Decision Maker" that includes 6 flashing SMT LEDs, complete with a professional overlay panel. The finished Decision Maker runs on a standard 9VDC battery, not included. (*Hey, I mentioned that I created solder bridges when I first soldered SMT... now I can't even see them without my reading glasses!*)

SM200K Practical SMT Soldering Course

\$22.95



## WELCOME TO THE WORLD OF SURFACE MOUNT COMPONENTS

Welcome to the latest innovation in electronics: **Surface Mount Technology**, or **SMT**. Just as the transistor revolutionized the amount of space required to construct electronic circuits, the advent of surface mount components has further "shrunk" the dimensions of the space needed for modern day circuits. These "chip" components are commonly used in everything from camcorders to high speed computers. They are also used in a number of Ramsey Kits!

While the components may look strange at first (where are the leads?!) rest assured that they are not too difficult to install. You'll want to have some special equipment to solder these parts, nothing fancy or expensive, just things you'll want to have handy before beginning. A small pair of tweezers and good eye to hand coordination are necessary for proper SMT assembly. A magnifying lens is a MUST to check solder connections! And of course, a soldering iron.

A friendly warning for you: don't pull out your trusty soldering gun for surface mount projects as the gun generates too much heat for the tiny solder "tabs" on the component ends. A standard pencil type iron will work just fine. SMT parts are also identified differently than standard components so you'll want to familiarize yourself with what's what and who's who in the world of these tiny components. And while you may not be interested in working with them now... you will be forced to at some point since nowadays many manufacturers are making parts only in SMT packages! (*Now I'm thinking back at the good old 5U4 vacuum tubes I used to use in kits... quickly replaced with a couple 1N2071 diodes! Wonder if anyone knows what the "getter" is? No it's not the guy you send to get your lunch!*)

For the perfect surface mount installation helpers, check out the OptiVisor magnifiers and assorted tweezers in the Tools section!



OptiVisor Magnifiers  
(See page 71)



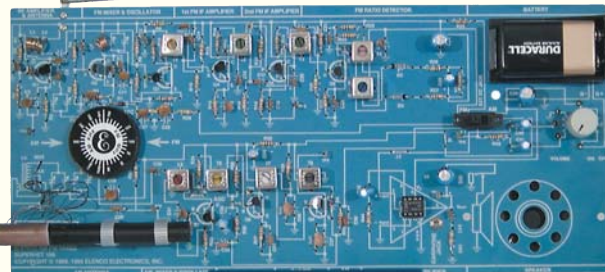
Magnifier Tweezers  
(See page 71)



Non-Conductive Tweezers  
(See page 72)







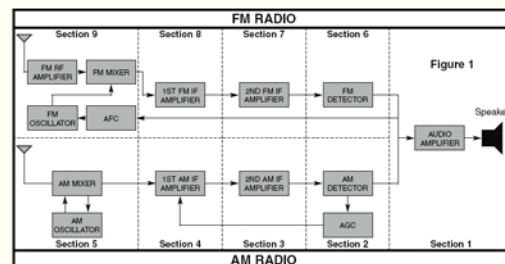
## AM/FM Integrated Circuit Radio & Training Course

KIT



Learn & Build A Superhet IC  
Based AM/FM Radio Receiver!

- ✓ Learn all about AM/FM radio design & theory!
- ✓ Build a high performance radio with an IC!
- ✓ Step-by-step assembly and test procedures
- ✓ Great for student projects



### LEARN ALL ABOUT AM/FM AND IC THEORY!

This Superhet 108 AM/FM Radio Kit is a "superheterodyne" receiver of the standard AM (amplitude modulation) and FM (frequency modulation) broadcast frequencies. The unique design of this kit allows you to place the part over its corresponding symbol in the schematic drawing on the surface of the PC board during assembly. This technique maximizes the learning process while keeping the chance of an assembly error at a minimum. The latest IC design is used to bring you up to speed with today's technology. These specific kits are available in both AM and AM/FM radios.

### HI-TECH CIRCUIT DESIGN!

The unique design of the Superhet 108 includes an integrated circuit (IC), 9 transistors, 4 diodes, and other related resistors, capacitors, coils, and misc. parts. Because good soldering practices are important, a soldering guide is also provided as well as a component color code and pictorial identification chart. The radio kit includes a hi-tech blue PC board with the schematic printed on the top surface. The manuals are easy to understand without any previous electronics experience.

### LEARN WHILE BUILDING!

The actual assembly is broken down into 9 sections. The theory of operation for each section, or stage, should be read before the assembly is started. This will provide the student with an understanding of what that stage has been designed to accomplish and how it actually works. After each assembly you will be instructed to make certain tests and measurements to prove that each section is functioning properly. If a test fails to produce the proper results, a troubleshooting guide is provided to help you correct the problem. Each radio PC board has been designed so that no cabinet or enclosure is necessary. A special molded plastic base provides the necessary support to use the radio in any location, properly displaying the work achievement of the student or builder! After all of the stages have been built and tested, a final alignment procedure is provided to peak the performance of the receiver and maximize the Superhet 108's reception capabilities. Runs on a standard 9VDC battery, not included.

AMFM108K

AM/FM Integrated Circuit Radio Kit And Training Course

\$34.95



### Integrated Circuit (IC)

Function: noun

A tiny complex of electronic components and their connections that is produced in or on a small slice of material such as silicon.  
(More from the "need to know" department here at Ramsey!)

**WIN!**  
**Monthly!**

OUR 7TH YEAR OF GIVEAWAYS!

Register with your E-Mail address to win MONTHLY drawings for equipment valued up to \$300 or more! Each month we award a value package to one lucky person!

**Next month...**  
**IT COULD BE YOU!**



[www.ramseykits.com/win](http://www.ramseykits.com/win)

### TERMS AND CONDITIONS, AKA: THE FINE PRINT!

All of this is printed on saddlestitched envelope/order form, but just in case someone boosted it from this catalog, here it is...again!

**Payment** – Check, money order, and credit card (MC, VISA, American Express, Discover) are all accepted. If paying by credit card, please include the full card number, CVV2 number, and the expiration date. If you are paying by credit card, you must provide the billing address exactly as it appears on your credit card statement.

**Sales Tax** – NY residents must add appropriate sales tax unless a signed resale certificate accompanies your order.

**Prices** – Prices shown are those in effect at the time of publication. We work to hold prices firm, however prices are subject to change without notice. Current prices will prevail at the time an order is placed. Visit [www.ramseykits.com](http://www.ramseykits.com) for any last minute updates!

### Shipping –

**Continental U.S. customers** – We normally ship via UPS or USPS depending on the size and value of the order. If we are shipping via UPS you must provide a physical address, as UPS will not deliver to P.O. Boxes. Add \$7.95 for shipping, handling, and insurance on all orders. Premium 3rd day, 2nd day, Overnight, Overnight AM, and Overnight Saturday shipping is available. CALL 800-446-2295 FOR CURRENT RATES.

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**Overseas customers** – There are many shipping options, PLEASE CALL 800-446-2295 FOR CURRENT INFORMATION AND RATES.

**Oversized & Heavy** – Items designated as Oversized & Heavy require additional shipping charges, PLEASE CALL 800-446-2295 FOR CURRENT INFORMATION AND RATES.

**Returns** – Examine (do not build) any kit for up to 10 days. If not completely satisfied, return in the original packaging for a full refund. Kits that are partially built cannot be returned or refunded. Wired and tested items can also be returned if in their original packaging, suitable for resale within 10 days. Returns received after 10 days will be subject to a restocking fee.

**Manual Preview** – Looking at a kit and want to review it more closely? Our manual preview policy lets you purchase most of our manuals for \$5.00 (a few are more). Purchase price of the manual will be credited against your future associated kit purchase. You can also download most manuals (excluding the schematic!) at no charge from [www.ramseykits.com](http://www.ramseykits.com).





## OBDII CarChip Pro Vehicle Data Logger

- ✓ Monitor complete vehicle performance to save gas!
- ✓ Stores up to 300 hours of trip details!
- ✓ Monitor and check for emission issues to help the environment!
- ✓ View and reset engine diagnostic trouble codes and "check engine" lights!
- ✓ Record extreme acceleration and braking!
- ✓ Audible alarms with user-set thresholds for speed, acceleration and braking!
- ✓ Automatic accident log records the last 20 seconds before impact!
- ✓ Simple USB connection to retrieve all stored data
- ✓ Detailed intuitive software is included to review and clear all diagnostic codes, build reports, and export data into spreadsheets or other applications.

Wired & Tested

TOP  
SELLER!



Record speed every second of every trip, keep your car in peak condition, teach your kids safe driving habits... and **SAVE GAS** while you're doing it!



There couldn't be a better time to look into this tiny little OBDII vehicle data logger for your car! It can seriously help your car's performance, teach and enforce good driving habits, help with the environment, and put a good size dent in your fuel costs! Those are some pretty incredible results for a 99 buck part!

What is it you ask? I'm sure by now you've see your repair shop "plug-in" their test set to check your vehicle status. Likewise with annual inspections. The diagnostic connector in your vehicle is called the OBDII port and it is always located on the driver's side of the passenger compartment near the center console. It provides access to a lot of data from the vehicle's ECU (Electronic Control Unit). The OBDII connector is standardized and was made mandatory in 1996 for all cars sold in the US.

The CarChip Pro is an incredible little plug-in data logger that stores and records up to 300 hours of trip details! Just plug it into your OBDII connector and it starts logging time and date for each trip, distance traveled, speed, idle time, hard and extreme accelerations and brakings, and engine diagnostic trouble codes status. Plus you can choose up to 4 additional parameters to log, including RPM, throttle position, engine load, fuel pressure, fuel system status, short term fuel trim, long term fuel trim, battery voltage, timing advance, coolant temperature, air flow rate, intake air temperature, intake manifold pressure, and oxygen sensor! Plus, on top of all that, there is an automatic accident log that stores and records all critical data 20 seconds before any impact! Yep, it's like the black box in the airplanes!

Can it get any better than that? You bet! You know that annoying "check engine light" (multifunction indicator light) that comes on? You will be able to read the diagnostic trouble codes (DTC's) get the status, date, and time of each trouble code, and reset the light!

	Start Time	Duration	Distance Miles	Maximum Speed MPH	Time in Top Speed Band	Brakes Hard Extreme	Accelerations Hard Extreme	Driver	Vehicle
Trip 1	10/9/2007 11:39 AM	0:42:46	22.0	72	0:00:00	1 0 2	0	Mike	Dodge Magnum
Trip 2	10/9/2007 1:22 PM	0:09:02	2.3	40	0:00:00	0 0 1	0	Mike	Dodge Magnum
Trip 3	10/9/2007 1:33 PM	0:23:29	12.5	65	0:00:00	1 0 1	0	Mike	Dodge Magnum
Trip 4	10/9/2007 2:34 PM	0:15:36	13.3	66	0:00:00	0 0 1	0	Mike	Dodge Magnum
Trip 5	10/9/2007 7:23 PM	0:06:06	3.6	60	0:00:00	1 0 3	0	Mike	Dodge Magnum
Trip 6	10/9/2007 7:35 PM	0:03:04	2.0	74	0:00:00	1 0 2	0	Mike	Dodge Magnum
Trip 7	10/10/2007 8:01 AM	0:03:56	1.8	49	0:00:00	1 0 0	0	Mike	Dodge Magnum
Trip 8	10/10/2007 7:40 PM	0:02:48	0.6	35	0:00:00	0 0 0	0	Mike	Dodge Magnum
Trip 9	10/10/2007 8:15 PM	0:03:44	2.0	50	0:00:00	1 0 1	0	Mike	Dodge Magnum
Trip 10	10/11/2007 8:23 AM	0:03:32	1.8	49	0:00:00	0 0 0	0	Mike	Dodge Magnum
Trip 11	10/11/2007 8:54 AM	0:05:28	1.9	53	0:00:00	1 0 2	0	Mike	Dodge Magnum
Trip 12	10/11/2007 10:22 AM	0:03:26	1.9	56	0:00:00	1 0 0	0	Mike	Dodge Magnum
Trip 13	10/11/2007 7:51 PM	0:03:38	1.9	52	0:00:00	0 0 2	0	Mike	Dodge Magnum
Trip 14	10/12/2007 8:16 AM	0:03:54	1.8	52	0:00:00	1 0 0	0	Mike	Dodge Magnum
Trip 15	10/12/2007 11:57 AM	0:07:43	2.3	52	0:00:00	1 0 0	0	Mike	Dodge Magnum
Trip 16	10/12/2007 12:48 PM	0:10:42	3.0	63	0:00:00	0 0 1	0	Mike	Dodge Magnum
Trip 17	10/12/2007 1:02 PM	0:03:38	1.8	60	0:00:00	0 0 0	1	Mike	Dodge Magnum

To access the data, you don't have to bring a laptop or computer to your car, you simply pull the CarChip Pro, and take it to your PC! With the included software and a simple USB connection you can easily view all of this graphically on your computer screen, giving you a moment-by-moment picture of how you (or your employees or kids!) are driving! You can also set thresholds and alarms for speed, acceleration and braking, as well as view the number of times those thresholds were exceeded! Alarms are in the form of an audible beep inside the car! Comprehensive reports are available to view, store, and even copy to spreadsheets and text documents for further analysis.

The CarChip Pro includes the CarChip Pro plug-in data logger, software, USB cable, and detailed instructions. Requires a PC compatible with USB. From Davis Instruments. (One of my kids asked to borrow the Magnum Hemi, he didn't know it had one of these in it, read the data when it was returned... no more borrowing that vehicle! See the Summary!)

8226

Davis OBDII CarChip Pro

\$99.95



Motor vehicle crashes are the number one killer of teenagers and young adults.

Don't wait for a speeding ticket—or worse—to find out how your teen is driving. You can't be with your teens on every trip they take. But CarChip Pro can.

Use CarChip Pro to set up your own graduated licensing program. Designate the number of driving hours and specific performance required for advancement to the next level. Review speed, accelerations, and decelerations for each trip, with quick starts and hard brakings highlighted in red. All the information you need is just a mouse-click away.

As your teens improve, lift restrictions as a reward, or reinstate them if they need more practice.

And just in case your teen is tempted to sneak in a few rides without CarChip Pro, the unit will log the time and date every time it is disconnected.

Bill originally installed CarChip Pro to troubleshoot the check engine light, only to find out that someone had been driving at high speeds through the local residential neighborhoods. One father-son talk later, and the kid was busted!

Old spark plugs can reduce fuel economy by 30%; a faulty oxygen sensor by 40%.

Save money and time by keeping your car in peak running condition. CarChip Pro can help by detecting malfunctions early and taking the guesswork out of diagnosing problems.

CarChip Pro records data from the car's computer control sensors every few seconds, on each and every trip. With CarChip Pro, you can log any 4 out of 23 possible engine parameters, all of which can affect operation, emissions, and fuel economy.

If your car's check engine light comes on, use the software to view the trouble code, its description, and the freeze-frame sensor readings. You'll have the information you need to diagnose and fix the problem. And, CarChip Pro will even let you turn the check engine light off when you're done!

Using CarChip Pro, Henry discovered that his coolant temperature was running low. After replacing the engine's thermostat, Henry found that his average fuel economy went up—saving hundreds of dollars a year!

50% of the emissions from late-model vehicles are due to malfunctions.

A smoothly running engine not only saves money, it also helps save the environment. Your car's check engine light comes on whenever emissions exceed 1½ times the federal standards for that model-year.

But don't wait for the check engine light to come on. When there's a malfunction in your car's sensors, the engine burns more gas and exhausts more pollutants. With CarChip Pro, you can keep an eye on selected engine parameters—so you'll always know whether or not your car is running cleanly.

For example, you can tell how efficient your catalytic converter is by keeping an eye on oxygen sensor voltage. Replacing a bad converter can reduce hydrocarbon emissions by 33% or more.

After repeated failed smog checks, David replaced his oxygen sensor—again! Too bad David didn't have CarChip Pro. He would have known about the faulty sensor sooner, saving hundreds of dollars in unnecessary repairs.

A single at-fault accident can raise insurance premiums dramatically.

Not at fault? CarChip Pro can give you the information you need to settle a contested insurance claim. Most cars sold today are equipped with "black boxes." But there's no simple way for you to access the information they record.

CarChip Pro puts this information into your hands, instead of the hands of the automaker or some big insurance company. Whenever there's an accident, CarChip Pro automatically logs the last critical 20 seconds of speed.

You can also see when the brakes were applied. And, if you're monitoring throttle position, you'll see that, too. But don't wait for an accident. By showing exactly how your car is being driven, CarChip Pro can help convince drivers to change their habits. Or it just might be an eye-opener for yourself!

After the radar gun tagged his car, Duncan went to traffic court to fight the ticket. Armed with CarChip Pro's printouts showing the exact speeds he was driving, he convinced an initially skeptical judge to dismiss the ticket.





TOP  
SELLER!

KIT



As Seen on CBS's  
Ghost Whisperer!

## Tri-Field "Sci-Fi" 3-Way Meter

- ✓ SEE RF, electric, and magnetic fields!
- ✓ Watch the magnetic field of the earth!
- ✓ Sense different magnetic poles!
- ✓ Detect RF transmitter fields
- ✓ Runs on 6 VDC

We realize you can't "beam down" to the surface of the planet, but you CAN have our Tri-Field Meter to detect and sense the fields around you! This really neat project actually senses and detects magnetic fields, RF fields, and electric fields! Even Mr. Spock would like this one!

The TFM3 has three separate field sensors that are user selectable to provide a really cool readout on two Sci-Fi styled LED bar-graphs! Utilizing the latest technology, including Hall Effect sensors, you can walk around your house and actually "SEE" these fields around you! You will be amazed at what you see. How sensitive is it? Well, you can see the magnetic field of the earth... THAT'S sensitive! Also detect radiation from monitors, TV's, electrical discharge, and RF emissions.

You will have fun finding and learning about these fields! Runs on 6VDC (4 AA batteries, not included). Includes a stylish matching case that will impress even the most fussy Klingons! Live long and prosper! (Our project engineer told me I could detect static in my hairbrush several feet away... But I don't have any hair!!!)

TFM3C

Tri-Field Meter Kit With Case

\$74.95

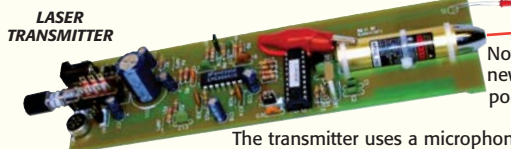
## Laser Beam Audio Communicator

KIT

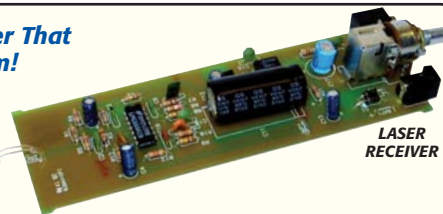
Send Audio Over That  
Laser Beam!

- ✓ Modulated at more than 16kHz for excellent voice audio fidelity
- ✓ Uses standard pocket laser module for 1/4 mile maximum range (included)
- ✓ Each kit includes one transmitter and one receiver
- ✓ Includes microphone and digital AGC circuit for full audio range control

TOP  
SELLER!



Now you can talk to your friends over one of the most secure long-distance transmission types available, a laser beam! Our new laser beam communicator allows you to talk with pretty good fidelity to your friends up to 1/4 mile away just using a pocket laser pointer.



LASER  
RECEIVER

The transmitter uses a microphone or external audio to modulate a laser beam on and off at a rate of more than 16kHz so the audio fidelity is much better than that of a telephone. A telephone is limited to 3kHz, but the LBC6K is limited to 6kHz. The receiver includes filtering to remove the 16kHz carrier and leave behind the high quality audio, and then boost its level for use with earphones. To improve the fidelity of the system, the transmitter employs audio AGC on the microphone to boost weak audio, and reduce loud audio so that the listener never misses a word.

Each kit includes a transmitter, receiver, and pocket laser pointer. This gives you a complete one-way audio path. If you need full duplex, or two way, buy two at the special price! Receiver and transmitter are designed to fit in two pieces of 2" PVC pipe for easy mounting and alignment. Each runs on a standard 9V battery, DC adapter or AC adapter (not included). Audio output drives a standard personal stereo headset. Your friends will be amazed when they see you talking over that red laser beam! (My kids built a couple of these and were really amazed! But then they asked me why they couldn't see their voice change the laser beam light... I told them "Um... ask your Mom!")

LBC6K Laser Beam Communicator Kit (Includes Receiver, Transmitter and Pocket Laser Pointer)  
LBC6K2 TWO Laser Beam Communicator Kits, for Duplex or Two-Way Audio (Save \$10.00!)

\$54.95

\$99.95



KIT

Voice Over An IR Beam!

## Infrared Light Beam Communicator

- ✓ Send your voice over light - even through windows!
- ✓ 30' to 1/4 mile range!
- ✓ Receiver drives a speaker or earphone!

Transmits a modulated infrared light beam up to 30 feet without lenses, up to 1/4 mile using simple lenses. Since the beam is modulated with a 30 KHz carrier (like AM radio) there is no effect from 60 Hz hum that is produced by indoor lighting. Easily transmits through windows - ideal for "bugs" or listening to IR television remote controls. The transmitter can use any type of mic and is very sensitive. The receiver employs an IR PIN diode detector and there is enough power to drive any loudspeaker or earphone.

The PC board is cleverly "scored" so you can easily separate the Transmit and Receive sections so they can be used individually to transmit at one location and receive at another. Units run on 9 to 12 VDC and will use a standard 9V battery. The LB56 has been a popular kit for years and makes a great science fair project to show how you can send audio over Infrared! Custom case set measures 5"W x 1 1/2"H x 5 1/4"D.

LB56C

Infrared Light Beam Communicator Kit With Case

\$34.95

## Speedy Personal Speed Radar Gun

KIT

TOP  
SELLER!

- ✓ Direct readout in miles/hour, kilometers/hour or feet/second
- ✓ 1/8 mile range for average car-sized object
- ✓ Earphone output to hear actual Doppler shift
- ✓ The nation's #1 science fair project!

YOU Be The Cop!  
How Fast Was HE Going!

Here's a kit that's not only a ton of fun for everyone, but is useful too! This low cost microwave radar uses the same principle found in police units costing thousands more. You'll turn heads when you clock cars, planes, runners, boats, horses, bikes, races, or virtually any large object that moves.

Speed readout is on two LED displays which can be set accurately (better than 1%) to show MPH, kilometers-per-hour, or even feet-per-second. An earphone output allows you to hear the actual Doppler frequency shift of moving objects - the theory upon which all radars operate.

Uses two 13 oz. coffee or juice cans for antenna (not included)... so start drinking! Antenna unit can be remotely placed up to 300 feet away. The SG7 is easy and informative to build, with a detailed manual that not only carefully guides you to a finished unit but also tells you the hows and whys of Doppler radar. Even though the kit employs microwave circuitry no exotic tuning is needed. All critical sections are PCB stripline and calibration is as easy as pointing the SG7 at a fluorescent lamp! Your Speedy kit includes a deluxe black ABS plastic case with SPEEDY graphics for a neat professional look. Operates on 12 VDC. Electronics case: 3 5/8" x 5 3/4" x 1 1/8". (Yes, the coffee needs to be in cans!)



SG7 Speedy Personal Speed Radar Gun Kit  
AC125 110VAC Power Adapter

\$69.95

\$9.95



## 200 kV Van de Graaff Generator

- ✓ 200,000 volt potential!
- ✓ Sparks up to 5"!
- ✓ Operates in high humidity!
- ✓ Available kit or assembled & tested

Wired &amp; Tested

KIT

*Dazzle Them With Huge Sparks!  
Make Their Hair Stand Up On End!*

Create your own lightning with these time-tested devices that have delighted students for decades! Named after the inventor Van de Graaff, a physicist who built the first generator in 1929 at Princeton University. This machine produces low-amperage static electricity that can be "shocking" but perfectly safe. Two different pulleys with 2 neoprene belts inside a 1 3/4" plastic column create and carry a static charge up to the 7" polished aluminum collector globe. You can draw out this static charge in a burst of lightning, sparks, or you can even set each hair on your head on end! It's an incredible display!

The entire unit is 18" tall, runs on 110VAC, and includes a ground clip for discharge wands. Our comprehensive instruction book tells you how to raise hair, produce lightning and electric wind, experiment with St. Elmo's fire or electrostatic attraction and repulsion. For a stunning display, use the matching "discharge wand" with your VG200 and watch the sparks fly between the two globes!

If you're looking for a really neat experience and want to learn the basics at the same time, the Van deGraaff generator kit is for you. If you can't wait to build it and just want to have a ball with the sparks, we even offer it factory assembled and tested! Your choice! If 200 kV isn't enough zap for you, check out our VG400 below! (So we got these in, our techs set one up, and they called me to make my hair stand up on end....wait, my hair fell out when I was 22!)

VG200W  
Discharge  
Wand

VG200 200 kV Van deGraaff Generator Kit  
VG200WT Factory Assembled & Tested VG200  
VG200W Matching Discharge Wand, 1.3' Rod

\$129.95  
\$139.95  
\$69.95



Wired &amp; Tested

*When 200,000 Volts...  
Just Isn't Enough!*

## 400 kV Van de Graaff Generator

- ✓ Super high output, 400,000 volt potential!
- ✓ Generates sparks up to 12"!
- ✓ Heavy duty construction throughout
- ✓ Factory assembled & tested

What's the matter, our 200 kV Van deGraaff doesn't have enough "stooch" for you? You want even more of your hair to stand straight up? You want foot long sparks? Well, for you die-hard shock fans, here you go; how does 400 kV sound? Just like its little brother the VG200, it can create lightning and make hair literally stand up on end! The VG400 produces up to 400,000 volts with special neoprene belts inside a 3" diameter transparent butyrate column to carry the 10 microamp charge up to the whopping 13" polished aluminum globe! It proudly stands 35.5" tall with a very heavy metal base for rock stable operation.

The foolproof brush assembly never needs adjustment to guarantee flawless operation... and lots of sparks! The VG400 runs on 110VA and includes a power cord, on/off switch, and a grounding terminal for discharge wands. Just like the VG200, we include a comprehensive instruction book that nicely describes all the experiments and displays you can produce.

If you really want to put on a show use the heavy duty matching VG400W discharge wand and watch the action between them! Grounded to the VG400WT the sparks really fly! It's incredible and produces a fantastic display! The high power VG400 is available factory assembled and tested only to assure you perfect and safe operation. When you receive it, just plug it in and you'll have a hair-raising experience... we guarantee it! If you have a hankering to safely play around with 400,000 volts, check out this high-power Van deGraaff generator!

VG400WT 400 kV Van deGraaf Generator, Factory Assembled & Tested  
VG400W Matching Discharge Wand, 2.6' Rod

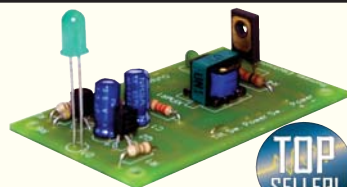
\$469.95  
\$72.95



VG400W  
Discharge  
Wand

## Tickle-Stick Shocker

- ✓ Shocking but harmless fun!
- ✓ You'll let go quick
- ✓ Teasing LED indicator!



*Get The Shock Of Your Life!*

Tickle or stimulator - take your pick... once you grab it, you'll let go quick!! Mount this little kit plus a secret switch - like a mercury tilt switch - in an ingenious can or box and watch the fun. Adding a bright ribbon bow is remarkably effective at baiting the unwary! The kit has a pulsing 80 volt tickle output and a mischievous blinking LED. And who can resist a blinking light!

Great fun for your desk, workbench, or coffee table... "Hey, I told you not to touch!". Runs on 3-6 VDC battery power (not included). This kit has become a fixture at our Hamfest displays, providing us, and others who are in the know, hours of fun! Measures 1 1/2" x 3/4" x 2 1/2".

TS4 Tickle Stick Kit

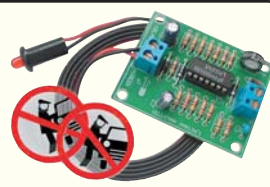
KIT

\$12.95

## Car Alarm Simulator

- ✓ Activates automatically when engine is off!
- ✓ Easy to install, just two wires!
- ✓ Adjustable sensitivity!
- ✓ Includes pre-wired LED holder and labels!

*Keep Them Away From Your Car!*



When car thieves are scoping out prospective targets, sometimes all it takes is the appearance of an alarm system to deter them... and its certainly a heck of a lot cheaper than the real thing! With this nifty kit you can put your own "dummy" alarm together to save yourself some cash, and maybe your car in the process!

This little kit gives you a realistic-looking flashing LED sequence that simulates the appearance of an active car alarm system! For added convenience, it also hooks directly into your cars electrical system to automatically enable the alarm simulation when you shut your engine off! Give yourself a little extra insurance with this affordable kit from Velleman!

MK126 Car Alarm Simulator Kit

KIT

\$7.95

## Classic Table Tennis Video Game

- ✓ Build the classic game that started it all!
- ✓ 2-player head to head mode!
- ✓ Single player with 4 levels!
- ✓ RCA video and audio outputs!

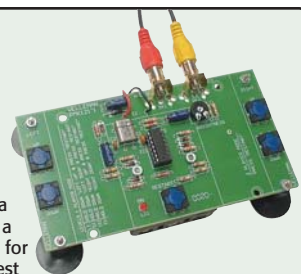
*Go Back In Time, After You Build It!*

Today, videogames are a 10 billion dollar industry, generating even more revenue than the Hollywood film business, but it all started in 1972 with a simple table tennis simulation that soon found its way into bars, and later homes, all over the country! Now with the MK121 you can put together a fun kit that harkens back to the early days of gaming! Once complete, you can plug this kit directly into your TV for a fun retro gaming experience for the whole family! Control the paddles with one of four movement buttons, and your score is displayed on screen! Test your soldering skills then test your ping-pong skills! Powered by 3 AA batteries (not included). Measures 2.9" x 5.5". From Velleman.

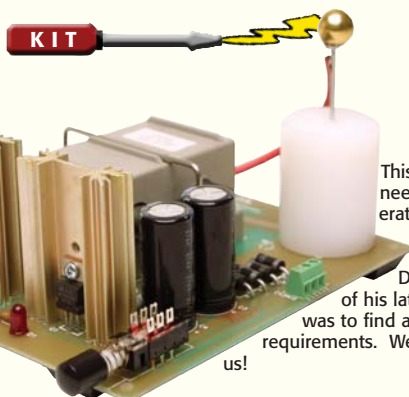
MK121 Table Tennis Video Game Kit

KIT

\$17.95







### Shocking Results... Literally!

This new kit was conceived by one of our engineers that likes to play with things that can generate large, loud sparks, and other frightening devices.

During the process of looking for parts for one of his latest experiments he discovered how difficult it was to find a high voltage transformer that met his requirements. Well, we had a super unit designed expressly for us!

This is one heck of a neat kit! It really serves no purpose other than producing stunning lighting displays, drawing big sparks, scaring the neighbors and performing lots of high voltage experiments. But sometimes that's a great purpose for a kit!

In the picture to the right we took a regular clear "Decora" style light bulb and connected it to the PG13. WOW! A storm of sparks, light tracers and plasma filled the bulb! Holding your hand on the bulb doesn't hurt a bit and you can control the discharge!

It can also be used for powering other experiments... let your imagination be your guide! The high voltage at the terminal won't electrocute you, so it's relatively safe, but it can burn you, so use caution. Can also be run from 5-24VDC so the output voltage can be directly adjusted by simply adjusting the input voltage! This is for advanced experimenters only and not for the faint of heart! (Unless you buy the ECG Kit, then it's OK!)

## Spark Generating HV Plasma Generator

- ✓ Generate 2" sparks to a handheld screwdriver!
- ✓ Light fluorescent tubes without wires!
- ✓ Build your own Plasma Balls!
- ✓ Generates up to 25kV @ 20 KHz from a solid state circuit!



PG13  
PS21

Plasma Generator Kit  
16VAC Output Power Adapter

\$64.95  
\$19.95

## Air Blasting Ion Generator

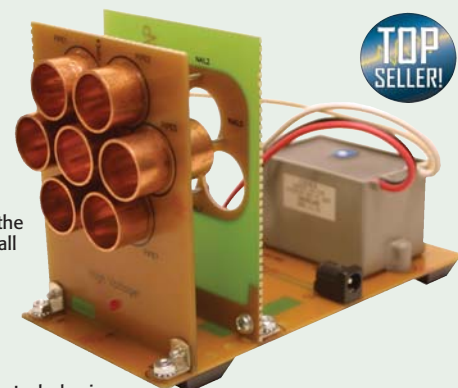
- ✓ Generate negative ions along with a blast of fresh air without any noise!
- ✓ Generates a steady state DC voltage at a constant current, not pulsed!
- ✓ Generates 7.5kV DC negative, 400uA. That's a lot of ions!

### Generate A Breath Of Fresh Air!

This nifty kit includes a pre-made high voltage ion generator potted for your protection, and probably the best one available for the price. It also includes a neat experiment called an "ion wind generator". This generator works great for pollution removal in small areas (like after grandpa gets done in the bathroom!) and moves the air through the filter simply by the force of ion repulsion!

No fan blades, no noise, just swiftly moving, charged air! Gee, have we heard of this technology on a boatload of air cleaner infomercials lately? It's amazing when you get this built and actually feel the air flow and smell the very special clean ion smell. The first engineering prototype quickly went into the Ramsey employee restroom!

Learn how modern spacecraft use ions to accelerate through space and why ion engines are ideal for long-distance space travel. Includes ion power supply, 7 ion wind tubes, and mounting hardware for the ion wind generator. Runs on 12-15VDC at 500mA. (Caution...do not grab the output of the transformer, all the ions may be sucked out of your body! And don't you just hate it when that happens!)



IG7  
AC125

Ion Generator Kit  
110VAC Power Adapter

\$64.95  
\$9.95



Wired & Tested



Check Your  
Own Heart &  
Stay Healthy!

## Electrocardiogram ECG Heart Monitor

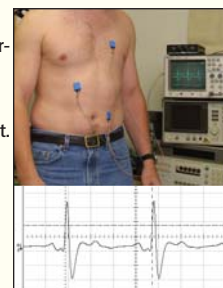
- ✓ Visible and audible display of your heart rhythm
- ✓ Re-usable sensors included; just like visiting the lab at the hospital!
- ✓ Bright LED "Beat" indicator for easy viewing
- ✓ Monitor output for professional display on your oscilloscope
- ✓ Simple and safe 9V battery operation

One of the main reasons we designed the ECG1 was to answer a long running debate here in the engineering department. We wired up the "Boss" and finally confirmed he does not have a heart! Use the ECG1 to astound your physician with your knowledge of ECG/EKG systems.

Enjoy learning about the inner workings of the heart while at the same time covering the stage-by-stage electronic circuit theory used in the kit to monitor it. The three probe wire pick-ups allow for easy application and experimentation without the cumbersome harness normally associated with ECG monitors.

The documentation with ECG1 covers everything from the circuit description of the kit to the circuit description of the heart! Multiple "beat" indicators include a bright front panel LED that flashes with the actions of the heart, an adjustable level audio speaker output supporting mono or stereo hook-ups, and a monitor output to view the traditional style ECG/EKG waveforms you see on Gray's Anatomy... or in the ER!

The fully adjustable gain control on the front panel allows the user to custom tune the differential signal picked up by the probes giving you a perfect reading every time! Includes the matching custom case set shown and operates on a standard 9VDC battery (not included). This is NOT a medical device; it is intended for hobbyist usage only. If you experience any symptoms, seek medical help immediately! (Editors note: This kit is not intended for catalog editors and webmasters of Ramsey Electronics; it's just way too late for us!)



ECG1C  
ECG1WT  
ECGP10

Electrocardiogram Heart Monitor Kit With Case  
Factory Assembled & Tested ECG1 With Case And Power Supply  
Set of 10 Replacement Reusable Probe Patches

\$44.95  
\$89.95  
\$7.95



## COM3010 Communications Service Monitor

- ✓ 100 kHz to 1.0 GHz frequency range, full duplex!
- ✓ Built-in power meter & 100 watt dummy load!
- ✓ Built-in frequency counter!
- ✓ Built-in sweep generator
- ✓ Built-in SINAD meter
- ✓ Built-in calibrated RSSI meter
- ✓ Built-in RS232 control
- ✓ Built-in Li-Ion battery packs, up to 3 hours operation

**Full Duplex, Loaded With Features... At A Sensible Price!  
The Service Monitor That Simply Makes Sense!**

### THE RIGHT CHOICE!

The COM3010 is a full featured communications service monitor engineered and designed to provide highly accurate measurement and monitoring of communications equipment from 100kHz to 1.0GHz with 0.1ppm accuracy. Full duplex design enables independent and separate measurement and testing of transmitter and receiver circuits simultaneously making it the ideal service monitor for the radio technology of today...and tomorrow!

All functions are selected with simple commands and selections on the Elastomeric touch keypad and are displayed on high contrast dual vacuum fluorescent graphical displays. For those on-site measurements, all graphical displays can be "zoomed" to full size to see them across the room! Of course, battery operation is standard to make field use a breeze!

### BUILT-IN POWER METER, FREQUENCY COUNTER, AND A LOT MORE!

Perfect for the two way radio user. Simply key the transmitter while the radio is connected to the generator output for an instantaneous reading of RF output power in either watts or dBm. Yes, we said key the radio into the generator output! The COM3010 incorporates automatic reverse power protection rated at 100 watts with a built-in dummy load. No more burned up pads, no separate wattmeter, and no more worries.

Not sure of the radio frequency? Don't want to plug it into a programmer to interrogate the memory? Even worse, don't want to take it apart to look at the channel elements or crystals? No problem, just key the transmitter. The built-in frequency counter will display the frequency! Counter range is 100kHz to 1.0GHz!

### AUTOMATIC SINAD AND RSSI MEASUREMENTS!

Working on a receiver? Check the true SINAD sensitivity of the receiver with the built-in SINAD meter. Also provides audio loop-back for the equipment being tested. A separate SINAD meter is no longer required! It gets even better! A calibrated Receive Signal Strength Indicator meter makes the COM3010 perfect for testing filter designs and performance as well as cable characteristics.

Such tests are made simple with the availability of user memories. 100 groups of 100 memories allow the storage of a large number of test setups for quick and easy retrieval. See detailed specifications below. *(In my previous life I was the first to buy a Cushman CE3 and CE5 for two-way use... If these were only available then I never would have had to change all those small light bulbs in the dials... all the time, and again, and again!)*

### SPECIFICATIONS

#### FEATURES

Display: 2 vacuum fluorescent graphical displays, 16x140 pixels  
 Memories: 100 sequences of 100 registers plus system memories  
 Sweep Features: Linear, octave, and decade of up to 10,000 points  
 Scanner Mode: Allows scanning through a sequence of 100 stores  
 SINAD Meter: Displays reading from -30dB to 0dB of SINAD  
 Freq. Counter: Measures frequency error to 1 Hz. Three counter modes  
 Battery Meter: Displays charge left in batteries  
 Reverse Protection: Generator output protected, switches into 100W internal load and automatically displays power in dBm or watts  
 Power Meter: Displays power from +23dBm to +50dBm,  $\pm .5$ dB (200mW-100W)  
 Attenuator Output: -30dB sample port from load for external equipment  
 RSSI Meter: 80dB of range on receiver side, -40dBm to -120dBm  
 Warranty: One-year parts and labor with extended Ramsey Technical Support and dedicated COM3010 user forum access

#### GENERATE MODE

Frequency: 100kHz to 1.0GHz in 1Hz steps  
 Freq. Accuracy:  $\pm 0.1$ ppm standard  
 RF Output Level: -140dBm to 0dBm in 0.1dBm steps  
 Level Accuracy:  $\pm 1$ dB, 500kHz to 1GHz,  $\pm 2$ dB 100kHz to 500kHz  
 Units: dBm, uV, mV  
 Leakage: Better than 1uV, 2 turn loop, 1" diameter at 1"  
 Spurious Harmonics: -30dBc typical  
 Non-harmonics: -50dBc typical  
 FM Modulation:  $\pm 75$ kHz max in 0.1Hz steps  
 FM Bandwidth: 0.1Hz - 75kHz  
 Accuracy:  $\pm 0.1$ ppm (inherently tied to reference frequency)  
 AM Modulation: 0 - 75% in 1% steps to -100dBm, 0-50% to -140dBm  
 AM Bandwidth: 10Hz - 10kHz  
 Accuracy:  $\pm 5\%$   
 Distortion: Less than 5%  
 Modulation Internal: 0.1Hz - 3kHz  
 Modulation External: 0.1Hz - 3kHz digital and analog selectable, auto leveling.  
 CTS Encode: 0.1Hz to 999.9Hz at  $\pm 75$ kHz default deviation, variable from .1Hz to 2.5kHz deviation  
 DPL Encode:  $\pm 500$ Hz, Variable from 0.1Hz to 2kHz  
 Two Tone Paging: 0.1Hz - 3kHz, group, voice, tone, battery save modes

#### RECEIVE MODE

Frequency: 100kHz to 1.0GHz in 10Hz steps  
 Sensitivity: Less than 2uV below 512MHz  
 Less than 3uV above 512MHz  
 FM Demod: 0 - 6kHz, 0 - 4kHz  
 AM Demod: 0-100%  
 CTS Decode: In AF frequency count  
 Frequency Error: 0-1MHz, two methods of bargraph and count  
 AF Demod output: 1Vp-p for 5kHz deviation  
 Gates: 0.1 sec, 1 sec

#### FREQUENCY COUNTER

Frequency Range: 100kHz - 1GHz  
 Low Band Sensitivity: Less than 10mV under 70MHz, 1Hz and 10Hz resolutions  
 High Band Sensitivity: Less than 10mV, 70MHz - 1GHz, 10Hz and 100Hz resolutions with divide by ten prescaler  
 IF Frequency: Receiver sensitivity, range limited to bandwidth of current set receiver frequency  $\pm 10$ kHz, 1Hz, and 10Hz resolutions

#### AUDIO COUNTER

Frequency Range: 60Hz - 3000Hz  
 Gates: 10 Sec variable gate for 1 sec quick updates  
 Sensitivity: 35mV at demod audio, ( $\pm 750$ Hz deviation)

#### GENERAL

Receiver input: Has diode protection and fused components  
 Controls: Elastomeric keypad  
 Dummy Load: 100W 30dB feed-through attenuator with sample port on rear, 25% duty cycle full power  
 RS232 Control: Serial interface provides external function control and automated calibration  
 Primary power: 100-240VAC, .6A, 50/60Hz; built in Li-Ion battery  
 Stand: Standard push to lock handle/stand  
 Case Color: Mist gray epoxy powder coat  
 Supplied Accessories: 110VAC EIA cord, BNC-BNC test cable, whip antenna, one BP3010 Li-Ion battery  
 Dimensions: 6" H x 11.9375" W x 14.75" D (152.4mm H x 303.31mm W x 374.65mm D)  
 Weight: 14 lbs (6.5kg)

COM3010  
BP3010  
CC3010

Communications Service Monitor, 100kHz-1GHz  
 Additional Li-Ion Battery Pack, Extends Operation by 1 Hour Approx (Max 3 Packs Total)  
 Matching Black Padded Cordura Carrying Case With Strap

\$3995.00  
\$89.95  
\$129.95





## Audio/RF DDS Signal Generator

- ✓ DDS and SMT technology!
- ✓ Frequency range 0 Hz to 5 MHz with 0.1Hz resolution!
- ✓ 0 to 10V peak to peak output level
- ✓ Sine, Square, or Triangle waveform output!
- ✓ Non-volatile memory
- ✓ Factory assembled and tested

Wired & Tested



*The Super Signal Generator...  
DC To 5 MHz In 0.1 Hz Steps!*



### SPECIFICATIONS

Frequency Range:	0.0 Hz to 5 MHz
Frequency Resolution:	0.1 Hz
Stability:	±15 ppm
Output Amplitude:	0 to 10 Vp-p
Amplitude Resolution:	10 mV
Amplitude Accuracy:	±0.1 dB from 0 to 3 MHz +0.1 to -1.5 dB from 3 to 5 MHz
Output Waveforms:	Sine, Square, Triangle
Output Impedance:	50 ohm, 25 ohm, 0 ohm (current limited) internally selectable
DC Offset:	0.0 V to 5.0 VDC
Offset Resolution:	10 mV
Display:	High contrast LCD
Entry Method:	Direct entry numeric keypad, incremental rotary encoder
Memory:	6 non-volatile memory locations
Power Requirements:	8 to 16 VDC @ 600mA max. 110VAC power adapter included
Dimensions:	9.625" W x 3.625" H x 5.875" D 244.4mm W x 92mm H x 149.2 mm D

### THE ULTIMATE AUDIO SIG GEN...TO 5 MHz!

The SG560 is more than an audio generator. It is also a signal generator that produces AC signals with DC coupling at the output jacks like a digital signal generator. The versatility of the SG560 will allow you to recreate many basic signals used in testing situations.

The SG560 allows you to generate square waves, sine waves, and triangle waves of any frequency from 0 Hz to 5 MHz in 0.1 Hz steps. The frequency accuracy is tied to a crystal reference with an accuracy of ±15ppm over its full temperature range. You can also step the frequency at any arbitrary increment. For example a step of 37.5kHz can be entered and the dial or shift arrows can be used to step the frequency up and down by this amount.

The SG560 uses a robust output stage for the final driver. It is derived from DSL modems and is essentially a high power opamp. The opamp is capable of delivering 2.5W to a load before going into protective shut-down. It is being used in a differential fashion which means that any common mode noise is cancelled on the output. The output voltage can swing from 10V peak to peak with a 5V DC offset without clipping. For a negative DC voltage output, swap the polarity of the cables attached to the jacks.

The SG560 allows digital entry of the output level with a resolution of 10mV. For example, if you enter 5.55, the SG560 will generate a 5.55V peak to peak waveform at the jacks. The SG560 has an additional option which allows the user to set the output impedance. It can be 50 ohms, 25 ohms, or 0 ohms impedance at the output jacks. With a 50 ohm output impedance a 50 ohm load will drop the output signal level by 1/2 of the output jacks. The 25 ohm output setting can help when driving a capacitive load; the 0 ohm setting should never be

the value entered. With 0 ohms a 50 ohm load will not drop the level at all. The 25 ohm output setting can help when driving a capacitive load; the 0 ohm setting should never be used with this type of load.

### ADVANCED FEATURES!

A DC offset may be entered; this is added (or subtracted if the jack connections are reversed) to the AC signal. Rather than the output AC waveform being centered on 0VDC, a set DC voltage can be added to your signal. This allows the performance of tests that are not possible with a basic audio signal generator. For example, a small circuit can be powered by the DC offset as long as it requires less than 2.5W of power and AC signals can be used to check for noise or EMI immunity. The DC offset can also be used to recreate digital signals in the square wave mode. For example, to create TTL square waves, enter 5V for the level and 2.5V for the offset. This will create the 5V (digital '1') and the 0V (digital '0') levels needed for testing and clocking digital circuits. With a signal range of up to 10V peak to peak and 5V of offset, even old 4000 series CMOS signal levels can be recreated!

Additionally the SG560 contains 6 non-volatile memory units which save the full system settings: frequency, level, shape, and offset. This allows you to frequency hop or use the memories to "script" repair, testing, and alignment procedures.

### EXTREMELY RELIABLE!

Surface mount technology is used throughout the SG560 making it extremely reliable and accurate. Frequency is entered directly on the sealed membrane keyboard and adjusted with a precision rotary encoder with an oversized knob. Both frequency and output level are displayed on a high contrast, two-line LCD display. The SG560 operates on 8 to 16VDC and includes a standard 110VAC power adapter. Because of the surface mount design the SG560 is only available factory wired and tested. If you are looking for a lab quality signal generator at a super price, the SG560 fits the bill... and a whole lot more!

SG560WT

Audio/RF Signal Generator, Factory Assembled & Tested

\$329.95



Wired & Tested

*Measure RF With A  
Standard VOM!*

The RF1 is a very sensitive RF detector probe that connects to any digital multimeter and provides a DC voltage output from weak RF signals. This allows very easy tracing of low level RF signals that a counter can't pick up. Wide frequency coverage of 100 KHz to over 1000 MHz lets you track down most any problem in transmitter chains, receiver stages, or even complex PLLs.

Uses exotic, low barrier microwave detector diodes to give exceptional sensitivity which can see signals down to microwatt levels! A great low cost way of checking for RF. Fully assembled and tested, with standard banana plugs for use with any standard VOM, DMM or voltmeter. If you need to measure RF and don't want to spend big bucks, here you go!!

RF1

RF Sniff-It Probe, Assembled & Tested

\$27.95

## Broadband RF Preamplifier

- ✓ Broadband from 1 MHz to 1000 MHz, usable to 2000 MHz!
- ✓ Low noise figure, less than 2.5dB
- ✓ Improves AM, FM, VHF TV, UHF TV, and HF reception. 50 - 75 ohm imp.
- ✓ Over 25 dB Gain with up to 100 mW of power output!

Ever wish you could "perk-up" your counter or scanner to read weak signals? Or how about boosting that cable TV run to drive sets throughout the house or maybe preamping that TV antenna to bring in that blacked out football game from a distant city? The PR2 broadband preamp is the answer to all these needs as well as many others!

Since the PR2 has such a high compression point of almost 100 milliwatts, you can even use it to boost the power of small, micro transmitters! Microwave MMIC chips from NEC Japan enable the PR2 to have gain up to 2 GHz although we only spec the PR2 to 1 GHz. Runs on 12 VAC/DC or 120 VAC using the included wall adapter. Size: 4" x 2" x 1".

PR2

Broadband Preamp, Factory Assembled & Tested

\$69.95

Wired & Tested

*Broadband, Low Noise...  
And 25dB Gain!*



## 40 MHz Personal Oscilloscope USB

- ✓ Digital waveform & measurement display!
- ✓ Ultra-fast full auto set up
- ✓ High resolution 192x112 backlit LCD display
- ✓ Galvanically isolated USB output for PC

### THE LATEST GENERATION PORTABLE STORAGE SCOPE!

The latest and most versatile portable oscilloscope on the market is here! The Velleman HPS50 is designed to make using your oscilloscope anywhere you need it easier than ever before. You can now fit the ultimate troubleshooting tool in the palm of your hand! The HPS50 features an ultra fast full auto set up option that lets you analyze incoming signals and set up the scope automatically with the touch of a button.

SPECIFICATIONS	
Sampling Rate	40MHz
Analog Bandwidth	12MHz
Time Base	50ns to 1 hour/div in 34 steps
Sensitivity	.1mV
Display Modes	Normal screen view Wide screen with DVM Normal screen with large DVM Wide screen with large DVM
Power Supply	Li-ion battery: 7.4V/1050mAh (Included)
Weight	15.52oz.
Dimensions	4.3 x 6.9 x 1.6"
Included Accessories	Charging Adaptor, insulated probe x1/x10, USB Cable

**HPS50** 40MHz Personal Scope w/USB  
**PSU03RUSA** AC Adapter

**\$299.95**  
**\$12.95**

*You'll Wonder How You've Ever  
Gotten Along Without It!*

Wired & Tested

New For  
2010



### BUILT-IN DVM AND USB INTERFACE!

The adjustable trigger level means you can easily filter noise and avoid false triggers. It also boasts X and Y position signal shift, and audio power calculation (rms and peak) in 2, 4, 8, 16 & 32 ohm, dBm, dBV, DC, rms ...measurements! Plus signal markers for voltage and time, frequency readout (through markers), a recorder function (roll mode), two memories for signal storage... and more! Multiple screen modes let you choose the ideal display for your application, and the USB connection lets you transfer data in realtime as well as copy bitmap images of waveforms directly to your computer! With ease-of-use and specs like these, you'll wonder how you got along without the HPS50!

Wired & Tested

New For  
2010



SPECIFICATIONS	
Sampling Rate	10MHz
Analog Bandwidth	Up to 2MHz
Time Base	200ns to 1 hour/div in 32 steps
Sensitivity	.1mV
LCD	128 x 64 pixels / high-contrast
Power Supply	5 x 1.5V AAA Batteries or Nicd/NiMH (not included) Includes Battery charging Circuit Optional AC Adapter: 9V/300mA (PSU3RUSA)
Dimensions	155x100x45mm / 6.10 x 3.9 x 1.78"
Weight	395g / .87lbs
Included Accessories	Insulated safety probe, user manual, RS232 Cable

**PPS10** 10MHz Handheld Personal Scope w/RS232, Assembled & Tested  
**PSU03RUSA** AC Adapter

**\$179.95**  
**\$12.95**

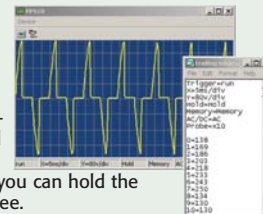
*Your Own Personal  
Handheld Scope!*

### SMALL ENOUGH FOR YOUR TOOL KIT

The PPS10 scope from Velleman is a breakthrough in portable scope technology - in more ways than one! The ultimate package for convenient handheld measurement and testing is here! The first thing you'll notice about the PPS10 is the intuitive and innovative control scheme. Using the thumbstick, you can hold the scope in one hand and still access all its functions, leaving your other hand free.

### IT DOES IT ALL!

The PPS10 also has everything you need in a portable scope, including Trigger mode (run, normal, once, roll, slope +/-), X and Y position shift, audio power calculation (rms and peak), signal markers for voltage and time, frequency readout (through markers), recorder function (roll mode), signal storage (2 memories), and more! Take measurements in dBm, dBV, DC, and rms, then connect to your PC for easy data storage. The perfect solution for the hobbyist or the professional on the move! From Velleman.



## 40 MHz Portable Digital Oscilloscope

- ✓ Digital waveform & measurement display!
- ✓ 40 MHz sample rate
- ✓ Backlit LCD display

This is the original Velleman "Personal Scope" that put a handheld digital scope within reach of the hobbyist, student, and technician! With today's technology, merely measuring voltage isn't enough. Whether you're an auto mechanic looking for electrical noise, working with audio equipment, or a student working on lab projects, a scope is a must! Instead of carrying around a digital multimeter you can actually have your own personal scope at about the same price! And besides a scope the display has a DVM readout for dBm, dBV, DC, and True RMS! Frequency readout is also displayed on the screen through markers. Runs on 5 standard AA Alkaline batteries (not included) which provide up to 20 hours of use. Rechargeable AA NiMH batteries can be used in place of standard Alkaline batteries and will be automatically charged with the included AC power supply adapter and charger. The HPS40 includes an RS232 interface cable for PC connectivity. A simple serial DB9 RS232 connection to your PC provides you with a high resolution bitmap display of your screen at the touch of a button! Perfect for recording measurement results. Windows based software is included.

We all carry a DMM in our tool boxes and would be lost without it. After all, how could you possibly measure voltage, current, and continuity in every-day service calls. Well, take it one step further, and have your own personal storage scope in your tool box, ready to tackle those "difficult" problems. If you're working with electronic circuits, automotive applications, audio and stereo applications or any other type of electronic applications, the Personal Scope belongs in YOUR toolbox, at a price that can't be beat! (Editors note, I carry one of these in my tool box and it is the handiest thing in there! From audio hum to DC measurements, I'm always the guy that can find it... and then they assume the same guy can fix it... grrrrrrr!)

*Professional Handheld Testing at Your Fingertips!*

Wired & Tested

### SPECIFICATIONS

Max Sample Rate:	40MHz (10MHz single shot)
Max Input Bandwidth:	5MHz (-3dB at 5mV/div to 12MHz at 1V & 20V/div)
Input Impedance:	1M ohm, 20pf standard scope probes
Input Coupling:	DC, AC, and ground (zero reference)
Vert Resolution:	8 bit, ±1 bit linearity
Trigger Modes:	Run, normal, once, roll mode for 1s/div and slower timebase
LCD Graphics:	112 x 192 pixel, white backlit
Signal Storage:	256 samples with 2 memories, max 179 visible samples, 256 using X shift
dBm Measurement:	-73dB to +40dB, ±0.5dB accuracy (0dBm=0.775V at 600 ohm)
dBV Measurement:	-75dB to +38dB, ±0.5dB accuracy (0dBV=1V)
True RMS Measurement:	.1mV to 80V, ±2.5% accuracy
P/P AC Range:	0.1mV to 160V, ±2.0% accuracy
Timebase Ranges:	50ns to 1hr/div, 32 steps
Input Sensitivity Range:	5mV to 20V/div at time 1, 50mV to 200V/div at times 10, 12 steps
Probe Calibration Output:	2KHz/5Vpp approx



**HPS40** Personal Scope, 40MHz, Case, Probes, Power Supply, RS232 Out, Assembled & Tested  
**PS28** 9VDC Power Supply, 500mA

**\$289.95**  
**\$9.95**





Wired & Tested

*The Next Step In  
Function Generators!*



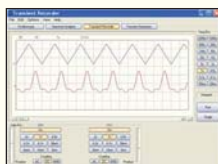
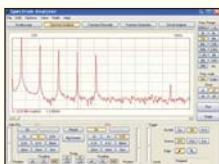
The PCGU1000 is the latest and greatest in function generators! Imagine a digital function generator that harnesses the power of your PC to bring you a great combination of affordability and versatility... well it's here! It's got everything you need in a function generator and more. Low sine wave distortion, TTL-level synchronization output, automated wave sequence generation via file or RS232 input, and lots more! All these great features are packed into a space-saving and stylish design that won't clutter up your desk and is a great companion to the PCSU1000 USB scope (see page 66).

Not only does the PCGU1000 include preset standard waveforms for sine, square and triangle waves, but it also comes with a powerful custom signal wave editor to create your own waveforms! The possibilities are endless! How does it work? The signal waves are created in your PC and then produced by the function generator via DDS (Direct Digital Wave Synthesis)! Combine this with crystal-based stability and you get rock solid results every time! The included software gives you plenty of options, and lets you create extended bode plots with the use of one of Velleman's PC scope series (like the PCSU1000). For even greater control, the windows DLL is included to give you all the freedom you need to build your own custom software.

The PCGU1000 features 2 equal outputs and a TTL sync output, and will deliver output voltage of 1mVtt up to 10Vtt at 600 ohms. All the outputs are galvanically separated from the PC in order to avoid measuring problems. Power supply included. From Velleman Instruments.

System Requirements:

- ✓ IBM compatible PC
- ✓ Windows™ 98SE, ME, 2000, XP, Vista
- ✓ SVGA display card (min. 800x600)
- ✓ Mouse
- ✓ Free USB port
- ✓ CD Rom drive



**2MHz USB PC Function Generator**

- ✓ 0.1Hz to 2MHz frequency range
- ✓ Crystal-based for stability
- ✓ Low sine wave distortion
- ✓ 50MHz sample rate
- ✓ With internal 40 dB attenuator (output divided by 100)
- ✓ Direct digital wave synthesis (DDS) stores up to 8192 waveform points

**SPECIFICATIONS**

Frequency Range:	from 0.01Hz to 2MHz
Standard Waveforms:	Sine, square, triangle
Predefined Library Waveforms Included:	Noise, sweep, and more
Sweep Frequency Range:	0.0001Hz to 25MHz
Sweep Time:	1ms to 10 hours
Noise Mode Bandwidth:	25MHz
Amplitude Range:	100mVpp to 10Vpp @ 1KHz// 600ohm load / 0V offset
Frequency Setting Resolution:	0.01%
Amplitude resolution:	0.4% of full scale
Offset:	from 0 to -5V or +5V max. (resolution 0.4% of full scale)
Vertical resolution:	8 bits (0.4% of full scale)
Sample rate:	50MHz
Typical sine wave distortion (THD):	< 0.08%
Output impedance:	2 x 50ohm
Power supply:	standard 9V DC adapter, 600mA (included)
Dimensions:	55 x 190 x 200mm

PCGU1000 2MHz USB Function Generator

\$199.95

**USB 2 Channel PC Scope & Analyzer**

Wired & Tested

*The Next Generation  
Of Scopes & Analyzers!*

- ✓ Scope, Spectrum analyzer, & transient recorder!
- ✓ 0.15mV resolution!
- ✓ 1GHz sampling frequency!
- ✓ Runs on USB power, no external power supply needed!

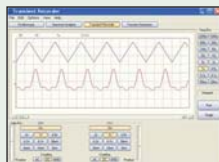
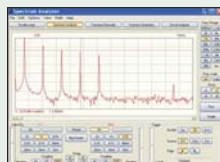
This versatile and powerful "scope" harnesses the power of your pc or laptop to drive its software, eliminating the need for bulky stand-alone oscilloscopes, analyzers, and transient recorders! Just attach it to your laptop for easy troubleshooting readings in the field, or set it up on your workbench at home or the office.

Powerful software is included along with a DLL giving you the ability to create customized applications to meet any additional needs! Its highly sensitive display resolution, down to 0.15mV, combined with a high bandwidth and a sampling frequency of up to 1GHz give this unit all the power you need. The USB connection makes this unit a snap to set-up, no external power required! In the field, measurements using a laptop computer have never been this easy, and the readings are automatically stored for your future analysis and comparison.

There are many advantages to using a PC based oscilloscope, including custom software, larger/high resolution/color display, lower cost, easy data export, and networking/storage functions. Take advantage of your PC and the convenience of this feature-packed multifunction scope. Includes two 60MHz professional scope probes, USB cable, software and comprehensive manual. Requires Windows 98SE or newer OS that supports USB. Compatible with USB1.1 or USB2.0. From Velleman Instruments.



GENERAL		OSCILLOSCOPE	SPECTRUM ANALYZER	TRANSIENT RECORDER
Inputs:	2 channels, 1 trigger input	Timebase:	Frequency range:	Time scale:
Input impedance:	1Mohm, 30pF	Trigger source:		max. recording time:
Bandwidth:	DC to 60MHz ±3dB	Trigger edge:		Storage:
Max input:	30V AC or DC	Trigger level:	Operating principle:	Storage time:
Input coupling:	DC, AC, and ground	Step interpolation:		
Power supply:	USB power, 500mA	Markers for:	FFT resolution:	max. number of samples:
PC compatibility:	Win98SE or newer	Input range :	FFT input channel:	min. number of samples:
	800x600 minimum resolution, 1024x768 recommended	Input sensitivity:	Additional feature:	Markers for:
			Markers for:	Modes:
USB port:	USB 1.1 or 2.0	Readouts:		
Includes:	Scope, two 60MHz scope probes, USB cable, software CD, manual	Recording length:		
Dimensions:	8.2" x 2.2" x 7"	Real time sampling freq:		
		Sampling freq for rep. sig:		



PCSU1000 USB 2 Channel PC Scope & Analyzer, Factory Assembled & Tested

\$369.95



Wired &amp; Tested

## Multimeter With Temperature, Capacitance, & Frequency



SPECIFICATIONS	
Display:	3 1/2 Digit LCD, 31 x 61 mm
DC Volt:	200mV/2/20/200/1000V $\pm 0.5\%$
DC Amp:	2m/20m/200m/20A $\pm 0.8\%$
AC Volt:	2/20/200/700V $\pm 0.8\%$
AC Amp:	20m/200m/20A $\pm 0.8\%$
Ohms:	200/2K/20K/200K/2M/20M/200M ohm, $\pm 0.8\%$
	Continuity buzzer
Cap:	2000pf/20nf/200nf/2uf/20uf $\pm 2.5\%$
Freq:	20KHz $\pm 1.0\%$
Temp:	-50°C to 1000°C $\pm 0.75\%$
	Continuity buzzer, hFE & diode test
Size:	88mm x 170mm x 38mm
Battery:	Standard 9V, included



- ✓ 30 ranges
- ✓ Temperature range: -50°C to 1000°C
- ✓ Capacitance range: 2000pf - 20uf
- ✓ Diode, transistor, & continuity test
- ✓ Overload protection
- ✓ Includes temperature probe

*This is NOT Your Ordinary DMM!*

Great for the technician, builder, hobbyist, or auto mechanic, this little DMM is not your typical digital multimeter! Measures DC Volts and AC Volts at 10M ohm impedance. Measures DC and AC current, resistance up to 200M ohm and it doesn't stop there! It also measures capacitance up to 20uF, frequency up to 20 KHz, and temperature all the way up to 1000°C with the included K-type thermocouple.

Of course, it also includes a dedicated transistor socket for NPN and PNP transistor testing, auto power off to save batteries, audible continuity and diode testing, and an oversized display. Sound too good to be true for 40 bucks?

DVM890F

Multimeter With Temp, Capacitance &amp; Frequency

\$34.95

## Compact Multimeter With Data Hold

- ✓ Backlit display
- ✓ Display Hold
- ✓ Auto polarity
- ✓ Diode, transistor, & continuity test

*Perfect For Your Tool Box!*

If you're looking for a nice little DMM to keep in your tool box, this one's for you! Small and inexpensive, yet packed with great functions and features. Has all the normal ranges of a pocket DMM plus a plug-in transistor tester socket for quick transistor testing. A built-in continuity test provides an audible buzzer for eyes-off testing.

The oversized 3 1/2 digit display has a selectable backlight feature which illuminates the display in the dark. Besides all this, there is a professional "data hold" feature to hold and store a reading. Also features a high impact rubber holster just like the big boys! Includes a great set of test probes and even has the 9V battery installed. All this for under \$20! (*That's why there's one in my tool box!*)

DVM850BL

Compact Multimeter With Data Hold

\$12.95



Wired &amp; Tested

## Multimeter With Temperature, Capacitance, Frequency, & Data Hold

*The Latest and Greatest DMM!*

- ✓ 30 ranges
- ✓ Low-battery indication, overload protection and automatic deactivation
- ✓ Diode, transistor, & continuity tests
- ✓ Includes temperature probe, leads, battery and holster

New for 2008, Velleman has streamlined their DMM offerings with some great new models! The DVM8264 includes all the features you could ask for in a multimeter and more, at a rock bottom price!

Automatic low-battery indication, automatic deactivation, data hold, and the most robust overload protection of any DMM around! Audible continuity alarm lets you check circuits quickly and easily, and the large .7" LCD display is backlight for trouble-free operation under any lighting conditions!

The DVM8264 weighs in at only 12oz including the 9VDC battery! (*Not to mention it's the longest title head in the entire catalog!*)

SPECIFICATIONS	
Display:	.7" LCD
DC Volt:	200mV/2/20/200/1000V $\pm 0.5\%$
DC Amp:	20m/200m/10A $\pm 1.5\%$
AC Volt:	2/20/200/750V $\pm 0.8\%$
AC Amp:	2m/200m/10A $\pm 1\%$
Ohms:	200/2K/20K/200K/2M/20M/200M ohm, $\pm 0.8\%$
	Continuity buzzer
Cap:	20n/200n/2μ/20μF $\pm 4\%$
Freq:	200KHz $\pm 1.5\%$
Temp:	-20°C to 1000°C $\pm 5\%$
	Continuity buzzer, hFE & diode test
Size:	7.5" x 3.3" x 2.2"
Battery:	Standard 9V, included

DVM8264

Multimeter With Temp, Capacitance &amp; Frequency

\$39.95

## Dual Display DMM With RS232 Output

- ✓ RS232 output to your PC!
- ✓ Manual/auto range
- ✓ Temperature range
- ✓ Capacitance range
- ✓ Diode, transistor & continuity
- ✓ Analog bar graph
- ✓ Full 3 3/4 digit display

*Digital Readout, Analog Bargraph, PLUS RS232 Output!*

We gave you an inexpensive pocket DMM for under 20 bucks... Then we gave you a super multi-purpose professional multimeter that measured virtually everything for 40 bucks... What's next you ask? You won't believe it!

Everything PLUS RS232 serial data output for connection to your PC! That's right, now you can measure, control, and store your DMM and its readings on a graphical display on your PC!

Features both auto and manual ranging with a large 3 3/4 digit display with a 38 segment analog bargraph. RS232 connection requires a standard serial port on a PC. Includes all software, cable, probes, battery, and case.

DVM345DI Dual Display Multimeter With RS232 Output

Wired &amp; Tested

SPECIFICATIONS	
Display:	3 3/4 Digit LCD, backlight, 38 segment analog bar graph, with data hold
DC Volt:	4/40/400/1000V $\pm 0.5\%$
DC Amp:	4mA/400mA/10A $\pm 1.2\%$
AC Volt:	4/40/400/750V $\pm 1.2\%$
AC Amp:	4mA/400mA/10A $\pm 1.5\%$
Ohms:	2400/4k/40k/400k/4m/40m ohm $\pm 1.2\%$
	Continuity buzzer, diode test, hFE test
Cap:	4nf/400nf $\pm 4.0\%$
Temp:	0-400°C, 401 to 750°C $\pm 3.0\%$
RS232:	DB9 serial with Windows software
Size:	78mm x 186mm x 35mm
Battery:	Standard 9V, included



\$74.95



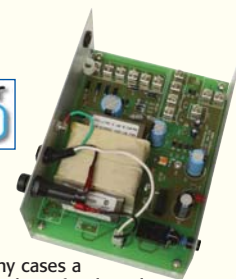


## Vintage Radio Battery Eliminator Power Supply

- ✓ Powers virtually all antique battery-powered radios
- ✓ Easy connections to your equipment!
- ✓ Runs on both 120VAC at 50Hz or 240VAC at 60Hz

*Bring Your Classic  
Battery-Powered Radios  
Back From the Dead!*

New For  
**2010**



Collectors come across great deals antique battery-powered radios, but how to power them? Many classic radios operated on batteries only, and in many cases a series of three batteries for each radio were required! The A battery provided power to the filament of a vacuum tube, the B battery provided the plate voltage for the tube, and the C battery provided bias to the control grid of the tube. The new ABCE1 Battery Eliminator gives you an easy way to replace all these batteries with a simple household AC power connection (choose between 120VAC or 240VAC with a simple jumper selector) and resurrect your vintage antique radios! The ABCE1 provides all the required operating voltages, and all supplies are isolated from each other and input line voltage. This allows easy interconnection for virtually any required configuration. All output voltages can be connected using convenient screw terminals, making hooking up your equipment a snap! For added protection, the input line is fused for 1A with an externally accessible fuse. A power on indicator LED is located next to the front panel power switch.

The ABCE1 is housed in a sturdy, fully enclosed, 3"x5"x7", aluminum case and weighs only 2.75lbs. (Before you ask, you wouldn't believe what just the custom transformer costs!)

ABCE1 Vintage Radio Battery Eliminator Kit

### SPECIFICATIONS

- "A" Filament Supply: Adjustable from 1.25VDC to 6.5VDC @ 2.5A max \*  
"B" Plate Supply: 22VDC, 45VDC, 67VDC, 90VDC, 135VDC fixed outputs @ maximum of 60ma total for all loads.  
"C" Bias Supply: -3VDC, -4.5VDC, -9VDC, -22VDC fixed outputs @ maximum of 20ma total for all loads.

\* The "A" filament supply + voltage is bonded to the AC input line equipment ground.

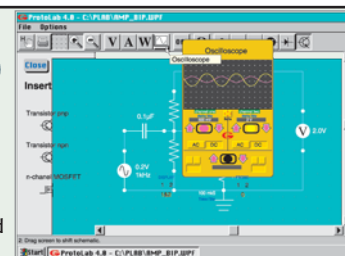
\$199.95

## Protolab Circuit & Test PC Simulator

- ✓ Simulate a circuit BEFORE building it!
- ✓ Simple computer interface and operation!
- ✓ Loads of sample circuits to simulate!
- ✓ Great learning tool for engineers!
- ✓ Professional CAD features at a hobbyist price!

*Create And Test That Circuit...  
WITHOUT Building It!*

TOP  
SELLER!



Easily use PC interface. Easily create AC & DC circuits moments after installation with ProtoLab's easy "click and drag" component placement and on-line help. You choose from a complete list of active and passive components, all of which are included. Once built, you can test and analyze your circuit with five virtual instruments (also included).

ProtoLab 4.0 is designed to work as a simulated prototyping lab. Insert components on a grid (similar to a breadboard) then test the circuit using the appropriate test instrument from the tool bar. ProtoLab's prototyping grid area is extensive and can handle a vast array of active and passive components.

ProtoLab's predesigned circuit library includes: MOSFET & transistor amplifiers, bridges, sinewave oscillators, squarewave oscillators, phase shift oscillators, current mirrors, integrators, differentiators, transistor & MOSFET monostables, LC oscillators, tuned collector amplifiers, LC tuned circuits, power supplies, and voltage stabilizers.

Components include wires, junctions, grounds, resistors, capacitors, inductors, DC voltage sources, AC voltage sources, DC current sources, AC current sources, diodes, zener diodes, transistors, and MOSFETs. Including: Voltmeter, ammeter, wattmeter, oscilloscope, and ohmmeter. Requires PC (Not Mac!)

PLAB4 Protolab 4.0 Test Simulator Software

\$49.95



KIT

Wired & Tested  
(Export Only)

*Let The Logger Recorder Sit  
There And Monitor The Circuit!*

## 4 Channel USB Logger Recorder

- ✓ Record DC signals or slow moving signals over a long period of time!
- ✓ USB and software controlled from your PC!
- ✓ On screen markers for time and voltage!
- ✓ 4 channel logging and recording!

For those involved with troubleshooting circuits, you know that intermittent problems are a nightmare! How can you sit there for hours and wait for a fault or a voltage high, or as they are called... an abnormal event! Well, that problem is solved with this small computer controlled logger recorder!

The recorder consists of the hardware interface that gives you 4 DC coupled input channels. You can connect each one of these channels to suspect areas of the circuit and the voltage will be recorded over a period of time. The input impedance is 1M so it won't load down the circuit. Now comes the fun part... the interface is computer controlled by a standard USB connection on your PC or laptop!

Recording software is included that really puts the device to the test. Once installed, you will have both analog trace displays and DVM readout displays of all 4 channels. The software includes min/max sample holds for the DVM, storage and recall of all screens (in color or course!), automatic recording options, screen markers, and a whole lot more. Besides the software package, you also get the DLL so you can develop your own custom software if desired!

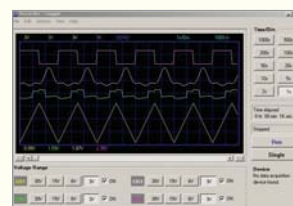
You get everything you need with this kit: USB cable, PC-LAB2000 software, and enclosure. Compatible with PCs equipped with USB 1.1 or later. The complete package is also available in a factory assembled and tested version. From Velleman.

### INTERFACE SPECIFICATIONS

- USB connected and powered
- four DC coupled input channels
- input resistance: 1Mohm
- maximum samples per second: 100
- four input ranges: 3V / 6V / 15V and 30V
- sensitivity: 10mV
- accuracy:  $\pm 3\%$  of full scale
- maximum input: 30V DC
- power and recording/diagnostic LED

### SOFTWARE SPECIFICATIONS

- analogue trace or digital DVM readout
- 4 simultaneous channels recording
- minimum / maximum sample hold function for DVM from 1 sec to 1000 sec per division
- storage and recall of screens (full color) or data
- automatic recording option for long time recordings on screen markers for time and voltage
- DLL included for own development



K8047  
PCS10

4 Channel USB Logger Recorder Kit  
4 Channel USB Logger Recorder, Factory Assembled & Tested

\$54.95  
\$74.95



Wired &amp; Tested

### Put A Lab Quality Supply On YOUR Bench!

There's nothing handier than a decent variable DC power supply for the bench. Now you can have a professional lab quality regulated DC supply on a hobbyist budget!

This supply provides a continuously variable DC output of 0-15 volts with a continuously variable DC current limiter up to 3 amps! Dual easy to read backlit displays are provided for both voltage and current. The power supply has low voltage and current ripple for an extremely clean output to power your projects.

Outputs are brought out to standard IEC1010 connectors to allow easy connections to your favorite test probes or clip leads. Besides current regulated, the output is also fuse protected.

PS1503SBU

0-15 VDC 3A DC Lab Power Supply

## 0-15 VDC 3A Lab Power Supply

- ✓ Variable output, 0-15VDC!
- ✓ Variable current limit up to 3A!
- ✓ Precise backlit LCD displays

#### SPECIFICATIONS

Output voltage:	0-15VDC, adjustable
Output current:	0-3A, adjustable limit
Ripple voltage:	100mV
Ripple current:	5mA
Input power:	110/120VAC, 60Hz
Output connections:	IEC1010 universal
Protection:	Current limit and fuse
Dimensions:	8 7/16" x 6 3/4" x 3 3/4"
Weight:	7.75 lbs
Case:	Heavy duty steel, gray/white

\$77.95

## Analog Sound Level Meter

- ✓ Measures 50 to 126 dB!
- ✓ 7 separate ranges!
- ✓ ±2dB accuracy!

#### SPECIFICATIONS

Range:	up to 126dB
Positions:	60, 70, 80, 90, 100, 110, 120dB
Load impedance:	1kohm min.
Distortion:	Less than 2% at 1kHz, 0.5V
Microphone:	electret condenser microphone, omnidirectional
Precision:	± 2dB at 144dB
Weighting:	A or C
Response:	slow or fast
Output signal:	max. 1V deviation at 1kHz for the entire range
Power supply:	1 9V battery (included)
Battery test:	OK indication between 7 and 10.5V
Battery life:	110 operating hours (alkaline batteries)
Dimensions:	6.3" x 2.4" x 1.7"
Weight:	6.5oz

### So, How Loud Is It... Really!

So you're at a concert and you want to know exactly how loud it is... You're at work and you're wondering if the ambient noise is below the safe level... You're really wacked out and you want to know if a jet engine at 10 feet really exceeds the threshold of pain... This little analog sound level meter is for you!

It uses A and C weighting filters to accurately simulate the actual listening capability of the human ear! The easy-to-read analog display allows for accurate measurement of environmental noise across a wide range (50 to 126dB).

Useful to measure sound levels in industrial and office settings, traffic/noise reduction studies, or to ensure your noise generation is in compliance with local ordinances. This meter features an omnidirectional condenser microphone with +/- 2dB precision at 144dB. Over 100 hours of operation from one 9V battery (included). From Velleman. (Also helpful in proving to your landlord exactly how annoying the tenants upstairs are!)



AVM2050

Analog Sound Level Meter

\$34.95

Wired &amp; Tested

### Digital Precision Accuracy... Yet Affordable!



When you have to go the next step up from the inexpensive AVM2050 analog meter, here you go! Designed for industrial and professional use to meet or exceed IEC651 type 2 standards.

Great for measuring sound levels when you need that extra digital precision, whether its industrial or office, an official survey, or you just want to make sure you are in compliance with local ordinances. This digital meter will give you high quality readings anywhere in the 30-130dB range.

The digital max hold and data hold display features will come in handy when logging your readings for compliance reports. Don't be fooled by its small ergonomic design, the DVM805 is a high quality meter designed for the most stringent applications. Includes A and C frequency weighting, fast and slow time response, and .1dB of resolution. Powered by one 9V battery (included), from Velleman. (Now, if he still doesn't believe it, you can even peak hold the noise from upstairs and show the landlord!)

DVM805

Precision Digital Sound Level Meter

## Digital Sound Level Meter

- ✓ Measures 30 to 130 dB!
- ✓ ±1.5dB accuracy!
- ✓ Precise digital readout!

#### SPECIFICATIONS

Level range:	low: 30-100dB, high: 60-130dB
Accuracy:	±1.5dB 94dB @1kHz
Frequency range:	31.5Hz to 8kHz
Frequency weighting:	A, C
Time weighting:	fast, slow
Power supply:	1 x 9V battery (6LR61, included)
Operating temperature:	0°C ~ +40°C (Less than 80% RH)
Storage temperature:	-10°C ~ +60°C (Greater than 70% RH)
Dimensions:	8.27 x 2.17 x 1.26"
Weight:	8.11oz

\$109.95

## Prototype Design Breadboards

- ✓ Color coded design for easy breadboarding!
- ✓ Guaranteed for 5,000 insertions!
- ✓ Aluminum ground plates for high speed and low noise designs!
- ✓ Additional jumper wire kit available

If you're looking for prototype breadboards for your design and engineering projects, we've got you covered! These breadboards are the highest quality design that are guaranteed for 5,000 wire and component lead insertions!

Each block is a premium non-warping design with non-conductive self adhesive backing. Aluminum ground plates are used to provide the best prototyping of high speed and high frequency designs while maintaining low noise. Each breadboard has an easy to read color coded letter/number matrix to make tie point connection a breeze. Designed for components and wire jumpers with 20-29 AWG (0.3-0.8mm) wire leads.

The WBU206 is mounted on an aluminum back plane with rubber bench top rubber feet. 4 coded binding posts are provided for power or signal connections of your choice. 3 terminal strips, 5 bus strips, 2,390 tie points are included and provide a breadboarding area of 6.9" x 5.8".

Its smaller brother, the WBU202 breadboard block, consists of 1 terminal strip, 2 bus strips, 830 tie points, and provides a breadboarding area of 6.5" x 2.1". Order jumper wire kit WJW70 that includes 140 various jumper wire pieces in 5 different sizes. Each jumper is color coded and insulated with preformed ends.

WBU202  
WBU206  
WJW70

Prototype Breadboard, 1 Terminal Strip, 2 Bus Strips, 830 Tie Points  
Prototype Breadboard, 3 Terminal Strip, 5 Bus Strips, 2,390 Tie Points  
Jumper Wire Kit, 140 Pieces

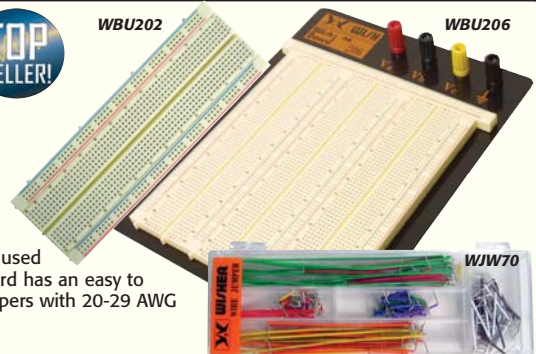
\$8.95  
\$29.95  
\$6.95

### Prototype it without Soldering!



WBU202

WBU206







## Cable Polarity Checker



- ✓ Checks continuity & polarity!
- ✓ Auto power off!
- ✓ Pushbutton operation!

### Which Way Should It Go?



We've all been there. You're running speaker wires through your house and you don't know which wire is which for polarity. Well, this neat little kit takes care of it! Simply hook up the remote board to one end and the main board to the other end. LEDs show you opens, shorts, polarity OK, and polarity reversed!

It's that simple! A lot of uses besides speaker cables, think about it! Runs on a standard 9V battery (not included). Features auto power-off for long battery life. Main board measures 2.2" x 1.6" while the remote board measures 1.6" x .3". From Velleman.

MK132

Cable Polarity Checker Kit

\$8.95

## Audio Signal Generator

- ✓ Quick and easy signal generator!
- ✓ Sine, triangle, square, and integrator signals!
- ✓ Standard 1kHz signal
- ✓ Adjustable output level
- ✓ Simple 9V battery operation

### The Quick Answer That Works Great!



If you've ever worked on amplifier circuits, troubleshooting them is nearly impossible without a signal generator to inject a signal to the input of a stage or device in a circuit. There are expensive lab quality signal generators out there that work very well. But this little generator gets the job done at less than a fraction of the price!

A quick and easy generator provides approximately 1kHz fixed waves with output adjustable from 0 to 100mVrms. Choose sine wave, triangle wave, square wave, or integrator. Powered by a standard 9V battery (not included). Measures 2.2" x 1.6". From Velleman.

MK105 Audio Signal Generator Kit

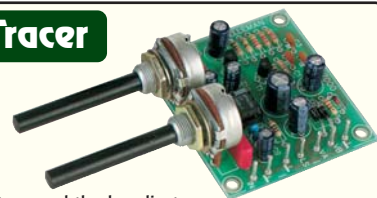


\$6.95

## Signal Generator & Tracer

- ✓ Audio generator and tracer!
- ✓ Adjustable output!
- ✓ Adjustable gain sensitivity!

### Generate AND Trace!



This little circuit is the ultimate troubleshooter... and the handiest thing to have around on your bench! It makes it a breeze to inject a signal into any amplifier in repair to trace the circuit. Likewise, it makes it easy to trace a signal to hear it in a speaker!

The generator portion generates a 1kHz tone with an output impedance of 1.5K ohm. The output level is adjustable from 0-2.5Vrms. The tracer is a high gain amplifier that has an input impedance of 50K ohm with a gain of 40dB! It has an adjustable sensitivity from 3.5mV to 10Vrms. It can also be used as a stand-alone monitor amp. Audio output is half a watt into an 8 ohm speaker. Runs on 7-9VAC or 9-12VDC. Measures 2.4" x 2.1". From Velleman.

K7000 Signal Generator & Tracer Kit



\$21.95



### The Handiest Light You Will Ever Have!



Flex your kit building skills with this quick and easy little kit, and you'll be rewarded with a super-cool high-powered LED flashlight that is small enough to fit on your keychain! With 2 extra bright high-power white LEDs this little kit packs a punch! Use it to find elusive keyholes in the dark, or anytime you need to brighten up the situation. This kit also boasts a built-in strobe light effect in case you need to draw attention to yourself fast! Use it in case of emergencies or simply to annoy co-workers. Efficient operation means ultra-long battery life, up to 10 hours of continuous operation on a single 12V battery! (a V23GA or compatible battery, not included.) To further conserve power, the unit features auto-battery timer shutoff, and a red warning LED when the battery gets low! Dimensions: 2.4" x 1.6" x 0.6" Weight: 1.1oz. (with battery). From Velleman.

MK143

Bright LED Keychain Light Kit

\$12.95

## Professional Audio Cable Tester

- ✓ Tests virtually all audio cables!
- ✓ Tests each conductor!
- ✓ LED and buzzer continuity test function!
- ✓ 9-way selector switch for cable types
- ✓ Runs on standard 9V battery
- ✓ Built-in battery check
- ✓ Extremely rugged metal case resists field abuse

Wired & Tested

### Solve A Lot Of Problems... And Put Away Your Multimeter!



Audio cables, man if there was only a standard! It used to be a breeze, XLR for professional balanced audio, 1/4" for mono audio and headphones, and RCA for line level unbalanced audio. Technology changes, and so did connector types!

Jack	Speakon®	Phono
1=Sleeve 2=Tip 3=Ring four remove	1=1 2=+1 3=-2 4=+2	1=Screen 2=Hot
1/4" TS Mono to 1/4" Mono	1/4" TRS to 1/4" TRS	
1 Sleeve 2 Tip 3 Ring	1 Sleeve, 3 Ring 2 Tip 1 Sleeve, 3 Ring (Shorted with sleeve)	1 Sleeve 2 Tip 1 Sleeve, 3 Ring
XLR Balanced to XLR Balanced	XLR Unbalanced to XLR Unbalanced	
Pin 1 Pin 2 Pin 3	Pin 1 Pin 2 Pin 3	Pin 1, Pin 3 Pin 2 Pin 1, Pin 3
1/4" TS Mono to XLR Unbalanced	1/4" TRS to XLR Balanced	
1 Sleeve 2 Tip 3 Ring	Pin 1, Pin 3 Pin 2 Pin 1, Pin 3 (Shorted with sleeve)	1 Sleeve 2 Tip 3 Ring

The days of standard zip cord for speakers is gone, 1/4" headphone jacks are rare, balanced audio has to plug into unbalanced audio and vice versa, and then of course there are DIN plugs, Speakon® connectors, and various other connectors! It may never end, but this handy audio cable tester will make sure your connections are proper every time!

Testing a cable is a breeze! Plug one end of it into the appropriate jack on the left side of the test box. Plug the other end of the cable into the other appropriate jack on the right side. Then select the rotary switch to "1" to test the connection of pin-1 of the cable. If a green LED lights there is a good connection of pin-1 with a yellow LED lighting above the connector used on the right side. No LED's indicate an open or floating pin-1.

Continue the same procedure by selecting "2" for pin-2, etc. until all contacts have been checked. If the Ground LED illuminates there is a connection from the selected pin to ground/shield/chassis. Two banana jacks are also provided to check test probes, AND to use the box as a continuity tester for other cables. Test probes are included! Runs on a standard 9V battery. Measures 7.5" x 3.5" x 1.5". From Velleman.

VTTEST15

Audio Cable Tester

\$44.95



Wired &amp; Tested

**We Just Made  
Space On Your Bench!**

Anyone who has worked with electronics knows the hassle of dealing with various bulky devices needed to get the job done. This brand new 3-in-1 lab kit gives you the most commonly required tools in one amazing compact package!

Great for your home bench where there's just so much space to go around! For the school or technical institute that needs to equip multiple benches with the basics, the 3-in-1 lab can't be beat! Not only for size and efficiency, but for cost as well!

Take a close look! On the left is a multi-function 3 1/2 digit digital multimeter. Its large backlit LCD display can be seen from anywhere on your bench while you're working. The DMM also features built-in transistor, diode, and continuity testing, data hold, and audible alarm. A great DMM that any bench could benefit from.

Next up, the regulated lab DC power supply. Switch selectable ranges of 3V, 4.5V, 6V, 7.5V, 9V, and 12V provide a continuous duty current of 1.5 amps with a 2 amp peak! Features both overload protection and overload indication. Full size color coded binding posts are provided front and center for connection to your project under test.

To the right we have a high quality temperature regulated soldering station. One would think there's not much to say about a soldering station, but that's not the case here. The 24V low voltage iron features an isolated ceramic 48 watt temperature controlled element. Front panel control gives you variable tip temperature control from 150°C to 450°C (300°F to 840°F) and LED indication of power-on and heating-on. A pull-out tip cleaning sponge is conveniently located right up front. Unlike stand alone soldering irons, a protected iron holder/stand is attached to give you a convenient place to store the iron without the possibility of burning yourself! It gets even better... this soldering station is RoHS or Lead-Free compatible! What does that mean? Lead-Free solder requires a higher melting and flow point and requires the soldering station to maintain that temperature throughout the soldering task. Just set it for the higher temperature (typically 350 to 400°C) and this station is designed to maintain that temperature. Replacement tips and irons are also available.

DIGITAL MULTIMETER	SPECIFICATIONS	SOLDERING STATION
<ul style="list-style-type: none"> <li>• 3 1/2 digit backlit LCD</li> <li>• Automatic polarity indication</li> <li>• DC voltage: 200mV to 600V in 5 steps</li> <li>• AC voltage: 200V and 600V</li> <li>• DC current: 200µA to 10A in 5 steps</li> <li>• Resistance test: 200 ohm to 2Mohm</li> <li>• Diode, transistor and continuity test</li> <li>• Data-hold function and buzzer</li> <li>• Input power: 9V battery, included</li> </ul>	<b>REGULATED POWER SUPPLY</b> <ul style="list-style-type: none"> <li>• Selectable output voltages: 3, 4.5, 6, 7.5, 9, 12 VDC</li> <li>• Output: 1.5A (2A peak)</li> <li>• LED overload indication</li> <li>• Output on/off switch</li> <li>• Very low ripple</li> <li>• LED power indication</li> <li>• Input power: 110VAC, isolated power supply</li> </ul>	<ul style="list-style-type: none"> <li>• Low-voltage iron: 24V ceramic 48W heating element with temperature sensor</li> <li>• Temperature range: 150-450°C</li> <li>• Lead-free soldering possible</li> <li>• Sponge and spare bit included</li> <li>• Input power: 110VAC, isolated power supply</li> </ul>

It gets even better! Although the 3-in-1 lab is a multi-function unit, each component is electrically isolated and utilizes a separate power supply, for the ultimate in safety, circuit protection, and reliability! The DMM features its own battery supply to keep it totally isolated from the AC supply!

What's included? The 3-in-1 lab, high quality test probes for the DMM, 9V battery for the DMM, solder sponge, spare solder tip, AC power cable, and a comprehensive user manual. It simply includes everything you need to get started! From Velleman Instruments.

<b>LAB1U</b>	<b>3-in-1 Multifunction Lab, Factory Assembled &amp; Tested</b>	<b>\$129.95</b>
<b>BITC10N1</b>	<b>Replacement Solder Tip, 1.6mm Round</b>	<b>\$2.95</b>
<b>BITC10N2</b>	<b>Replacement Solder Tip, .8mm Round</b>	<b>\$2.95</b>
<b>BITC10N3</b>	<b>Replacement Solder Tip, 3.0mm Slant Edge</b>	<b>\$2.95</b>
<b>BITC10N4</b>	<b>Replacement Solder Tip, 2.0mm Slant Edge Pointed</b>	<b>\$2.95</b>
<b>LAB1SCS</b>	<b>Replacement Plug-In Soldering Iron Unit</b>	<b>\$13.95</b>

## Temperature Controlled Soldering Station & Fume Extractor

- ✓ **Integral fume extractor quickly removes smoke and fumes.**
- ✓ **Built-in high efficiency, low noise brushless exhaust fan**
- ✓ **Easy to replace activated carbon filter absorbs noxious flux and lead fumes**
- ✓ **Variable electronic temperature controlled soldering station attached**
- ✓ **Ergonomic mini-handle soldering iron**
- ✓ **ESD safe, insulated ceramic heater, spike free zero voltage switching**
- ✓ **All-in-one extremely convenient package, ready to use on your bench**

**Automatic Fume  
Extraction At  
EVERY Work  
Station!**

We've all sat at the bench and soldered some quick circuits. We have also sat at the bench and worked on a big project, soldering for hours at a time, not thinking twice about the fumes. The big culprit is the rosin core center in electronic solder. This flux is an integral part of the soldering process to prepare the work surface and the components being soldered.

Without getting overly technical, flux is composed of rosin-resin and mixed with an activator (halogen organic agent) that, as the temperature increases, generates noxious components such as salicylic acid and pinene commonly seen as smoke rising from the work area. High content ratios of resin generate phenol (C6H5OH) and the activators can emit hydrogen chloride (HCL) and other compounds. This is stuff you really don't want to constantly breathe while you're soldering! Not only do you not want to but there are occupational hazard standards controlling the permissible amounts of such compounds in the work area. The 456DLX can not only save you and your health from the fumes, but help you meet these standards!

Designed for use on the factory floor, in R&D, and by hobbyists in their homes, the 456DLX provides an economical, space saving, and super efficient method to eliminate the hazard of solder fumes. It also improves the work place by eliminating headaches, nausea and eye irritations often associated with exposure to these fumes. A high performance fan together with an easy to replace activated carbon filter does a super job. The activated carbon has a surface area of 1250 m square/gram and the total weight of the filter is 500 grams/meter square. The dust collection efficiency of the filter is 30% while the carbon filter can absorb up to 30% of its carbon weight in noxious components. In other words, it works! When we looked for an ideal solution we were extremely conscious of limited bench space. Therefore, the fume extractor couldn't take up much more space than the soldering station we were using. The answer was simple...have both units in one! The 456DLX features a variable electronic temperature controlled soldering station built right in!

Variable control gives you a wide temperature of 500-800° F. The iron has a new ergonomic mini-handle for comfort and ease. Comes complete with a precision 1/32" soldering tip. Additional interchangeable tips are available in a variety of sizes. That's right, put your old soldering station or soldering iron away and use just one product for both soldering and fume extraction.

A protected iron holder and sponge tip cleaner are also attached to the side of the station making it the perfect all-in-one soldering tool. If you're looking to control the hazardous fumes of soldering, looking for a super high quality temperature controlled soldering station, and staying on a budget, the 456DLX is for you! From Xytronic. (You will be amazed when you see the fumes from each solder connection get sucked away from your face!)

<b>456DLX</b>	<b>Temperature Controlled Soldering Station/Fume Extractor Station</b>	<b>\$109.95</b>
<b>98804</b>	<b>Replacement Interchangeable Tip, 1/32" For 456DLX and 137ESD</b>	<b>\$7.95</b>
<b>98805</b>	<b>Replacement Interchangeable Tip, 1/64" For 456DLX and 137ESD</b>	<b>\$7.95</b>
<b>98806</b>	<b>Replacement Interchangeable Tip, 1/16" For 456DLX and 137ESD</b>	<b>\$7.95</b>
<b>98807</b>	<b>Replacement Interchangeable Tip, 5mm Right Angle Chisel For 456DLX and 137ESD</b>	<b>\$9.95</b>







## Variable Temperature Soldering Station

- ✓ Variable temperature controlled!
- ✓ 5 to 40 Watt
- ✓ Built-in holder and tip cleaner
- ✓ Interchangeable tips

*Don't Damage Your Board...  
Control The Temperature!*

Here's the ideal entry level soldering station for building your Ramsey kit - and for your bench! Made by Weller, the leader for decades in electronic soldering equipment. The WLC100 is the perfect soldering station for the professional or serious hobbyist who requires higher performance than a standard soldering iron but doesn't want to pay a fortune! The WLC100 soldering station provides variable power from 5 to 40 watts for precise tip temperature control.

Just like the expensive industrial soldering stations! A built-in holder and tip cleaning sponge are included. A pre-tinned 1/8" screwdriver tip comes with the station. If you're looking for quality on a shoestring budget, the WLC100 is for you! Operates on 120VAC, 60Hz. From Weller.



**WLC100** Weller Soldering Station, 5-40 Watt Temperature Controlled

ST2	3/32" Screwdriver Tip	\$54.95
ST3	1/8" Screwdriver Tip	\$6.95
ST4	3/16" Screwdriver Tip	\$6.95
ST6	1/32" SMT Screwdriver Tip	\$6.95

## Technician's Solder

- ✓ Standard Electronics 60/40 blend!
- ✓ Lead-Free RoHS 96.5/3/.5 blend
- ✓ .032" diameter, 1 pound spool

Whether it's for building your new kit or just for your bench, this is the perfect solder. Don't destroy your kit investment by using the wrong solder or solder with low quality flux core. This solder is made exclusively for electronic applications by one of the leading manufacturers. The size is perfect for board soldering, thru-hole, SMT and more. Available standard or RoHS lead-free compliant. Lead-free is 96.5%TN, 3%AG, .5%CU (not just TN/CU!). 1 lb spools.

RTS12	60/40 Electronics Solder, 1 Pound	\$39.95
RTS16	96.5/3/.5 RoHS Lead-Free Solder, 1 Pound	\$59.95



## Solder Sucker

- ✓ Eliminate PC board damage!
- ✓ Cleans out holes with ease!

For 5 bucks, this will probably be the most valuable tool you've ever bought! Even the most experienced solderer has problems removing components from PC boards without one! One hand loading and one hand operation. Just heat up the joint, place the special tip over the joint, and squeeze the trigger. Solder is sucked right from the board and even plated-through holes! It's that easy!

SS01	Solder Sucker	\$4.95
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## Helping Hands & Magnifier

- ✓ Built-in magnifier!!
- ✓ Alligator clip holders grip anything!

So you're trying to hold that small board, while holding the transistor you're trying to solder in, and holding the soldering iron, and holding the solder. Wait a minute, that's 4 hands! Not a problem! Just clip the board, junction or component you're working on onto the bench holder, swivel it wherever you want it, and go to work! What, you can't see? It even has a built-in magnifier!

HH3	Helping Hands & Magnifier	\$8.95
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## Panavise Bench Vise

- ✓ Holds PC boards at any angle!
- ✓ Heavy duty weighted base!

Trying to solder and unsolder tiny components on small boards can be a challenge for even the most experienced. Here's a gem of a handy vise that is very sturdy and has the flexibility to hold boards at virtually any angle. The heavy base holds even the largest boards without being attached to a bench. Includes 2 7/8" jaws and a large base/parts tray with lockable flex joints.

RTS13	Panavise Bench Vise	\$44.95
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## Bench Gooseneck Magnifier

- ✓ 3 1/2" magnifier!
- ✓ 19" flexible gooseneck!

When you're working with small surface mount components (SMT) there's nothing like a stronger set of eyes! Well we found the perfect, and incredibly economical solution! This large 3 1/2" magnifier is attached to a 19" gooseneck that stays right where you put it. And that is usually between your eyes and the PC board you're soldering! Heavy duty cast bench clamp mounts to any bench, desk, or counter top.

VTMG5	Bench Gooseneck Magnifier	\$7.95
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## Magnifier Tweezers

- ✓ The perfect 2-in-1 tool for SMT!
- ✓ Great for your tool box!

When working with SMT components a good pair of tweezers is a must. And as you know, a good magnifier is also a must. So what do you keep in your tool box to solve THAT problem? Simple, this super handy combination tweezers and magnifier!

The 1" magnifier is mounted on a slick 2 1/2" chrome handle with a fold-out precision tweezers. Focal point for the magnifier is matched to the tweezers point for easy use.

VTMG7	Magnifier Tweezers	\$3.95
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VisorLight

OptiLoupe

OptiVisor

*See Those Small Parts...  
With Ease!*

## OptiVisor Headband Magnifiers

- ✓ See those tiny parts with ease!
- ✓ Professional quality
- ✓ Add-on light and swivel eye loupe
- ✓ A must-have for SMT components!



Probably the handiest helper you can have for working with small electronic parts. When you need to see a close-up view, simply flip the visor down. When done, flip it back up! Fits over your standard glasses. Made in the USA by Donegan Optical and available in 2.5x or 3.5x diopter power.

Additional 2.5x flip up OptiLoupe attaches to one side to provide an additional 2.5x magnification for those really hard to see items! Left in the dark? No problem, the VisorLight clamps to the OptiVisor to provide 6,000 candlepower of Xenon light (operates on 2 standard AA batteries (not included) in a battery pack that can either be headband or belt-clip mounted. (I'm over 40, and therefore...these are the greatest things ever invented!)

RTS26	OptiVisor 2.5x Headband Magnifier	\$38.95
RTS25	OptiVisor 3.5x Headband Magnifier	\$39.95
RTS24	OptiLoupe Additional 2.5x Flip Up Screw-On Eye Loupe For OptiVisor	\$9.95
RTS23	VisorLight For OptiVisor, 10" Cord For Headband Mounting	\$22.95
RTS22	VisorLight For OptiVisor, 42" Cord For Belt-Clip Mounting	\$22.95



### Working With SMT? Protect Those Components!

We've discussed tweezers and magnifiers while working with SMT components. Working with some highly sensitive components, our engineers asked for some ESD safe tweezers. We looked, we found, and now that they're all set, here they are for you! This set of 4 non-conductive tweezers are perfect for any static sensitive devices you may be working on. And...they are priced right! (These are way beyond Top Sellers! Even beyond way beyond!)

VTTWSET2

Non-Conductive Tweezers Set

\$3.95

## Magnetic "Pick-Up" Tool

- ✓ Screwdriver-style handle
- ✓ Extends to 16"
- ✓ Pick up those dropped parts!



We've all been there: you drop something through a grating, in a small crack, etc. You strain and stretch but your prize is just out of reach! Well strain no more true believer, here is your solution!

This handy tool stretches out to approximately 16" and is tipped with a powerful magnet, allowing you to retrieve your lost metal items! (Remember that MacGyver episode where he magnetized a metal pole to retrieve some lost keys when they fell through a sewer grate?!)

900017

Magnetic Pick-Up Tool

\$3.95

## 5" Precision Flush Cutters

- ✓ Micro tips for precision cutting!
- ✓ Copper: 16 AWG
- ✓ Get those hard-to-reach leads!
- ✓ Ergonomic cushioned grips



Normally I wouldn't spend much time writing up a 6 buck pair of dikes, but these are an incredible bang for the buck! When working with PC Boards it's not only important to have a pair of cutters that are sharp, but that cut flush to the edge. Extremely narrow tip reaches into highly restrictive areas and cuts cleanly every time! Features ergonomic green cushioned grips for easy cutting. These are durable enough for a long life of cutting! (Compare to the \$45 name brand!)

200071

5" Precision Flush Cutters

\$5.95

## Student Tool Kit

- ✓ Great for Tech School!
- ✓ Easy-to-carry case!
- ✓ All the basics!

This tool kit has all the basic tools for working with electronics. Great for students or beginning hobbyists!

Includes cutter, pliers, tweezers, IC extractor, utility knife, brush, desoldering pump, hex key wrench set, soldering iron, 3 Phillips screwdrivers, and 3 slotted screwdrivers! All this in an attractive and handy zippered case! And most important, unlike the junk tools found in dollar stores, these are high quality! (the screwdrivers don't strip out!)

500016

Student Tool Kit

\$54.95

## 33 Piece Security Bit Set

- ✓ 33 pieces total!
- ✓ The most popular formats!
- ✓ 5 different types of security bits!
- ✓ Handy case included!

**The Handy Bit Set...  
Perfect For Your Tool Box!**

We've all run into them. Those special little screw heads that you can't remove! They are frequently used in electronic equipment to keep you out of it!

Now with this 33 piece set of bits your headaches are gone! Includes standard 1/4" driver bits for secure torx/star, secure hex, secure tri-wing, secure fork and secure four wing, in all common sizes.

Includes a handy carrying case to keep your bits in order. (Now you can remove those "special" screws they don't want you to!)



VTBT5

33 Piece Security Bit Set

\$7.95

## 4 Piece Pick Set

- ✓ Stainless steel
- ✓ Durable construction
- ✓ Easy-grip textured handles



The pick is the most ignored tool in the tool box until you need it, then it's worth its weight in gold! For general electronics they are ideal for separating wires, removing small fuses and "O" rings as well as retrieving washers and loose parts too small to pick up with fingers. But it just starts there! These ultra-sharp picks are perfect for working on PC boards, whether it's scraping off the mask, cleaning out holes, and even cutting traces! Includes one straight tip, one curved tip, and two different angles of hook tips. (These are for circuit boards, electronics, etc. and not for use on your teeth... unless you're Orin Scrivello and have a rather large plant that eats people!)

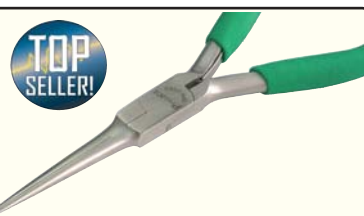
900205

4 Piece Pick Set

\$5.95

## Needle-Nosed Pliers

- ✓ Extra-thin tapered nose
- ✓ Cushioned grip handles
- ✓ Great for SMT
- ✓ Extra fine tips



Are you working with wires, PC boards or components and need a really good grip? These pliers will get the job done, even if it's inside a very tight opening! The extremely narrow and thin nose close tight throughout their length. The ultra-thin tip is perfect for working with SMT components. Cushioned green grips mean easy handling and comfort. (The perfect companion to a nice pair of dikes!)

100042

Needle-Nosed Pliers

\$4.95

## Computer Service Tool Kit

- ✓ Includes most computer service tools!
- ✓ Everything you need
- ✓ Zippered carrying case

This tool kit is specifically designed for general electronics as well as computer maintenance! And as we all know, there's nothing more frustrating than pulling a PC apart and not having the proper tools handy!

Includes 5" diagonal cutter, 5" long-nose, multi-crimp tool, tweezers, IC extractor/insertor, soldering iron, desoldering braid, solder, assorted screwdrivers, 8-bit pack, and much more. Tools are high quality and not the duds found in discount stores!

500003

Computer Service Tool Kit

\$52.95



## 100 Piece Security Bit Set

- ✓ Expanded security bit selection!
- ✓ All common standard bits!
- ✓ 2 bit holders and 2 extensions!

With the extreme popularity of the VTBT5 33 piece kit, we went one step further! This set contains 100 pieces and includes all the security bits in the VTBT5 kit and a lot more! Includes the following:

- |                         |                                   |
|-------------------------|-----------------------------------|
| • Phillips bits         | • Clutch bits                     |
| • Pozzi bits            | • Fractional hex bits             |
| • Square bits           | • Dodecagonal star bits           |
| • Flat bits             | • Metric hex with center bits     |
| • Antenna remover bits  | • Fractional hex with center bits |
| • Star bits             | • Wing nut driver                 |
| • Tri-wing bits         | • Socket bit holder               |
| • Star with center bits | • Magnetic bit holder             |
| • Four-wing bits        | • 1" extension                    |
| • Metric hex bits       | • 2" extension                    |



All bits are chrome vanadium construction for long life, and include a very handy custom case. (This 100 piece set took over Top Seller from the 33 piece set!)

VTBT11

100 Piece Security Bit Set

\$12.95





## High-Res Weatherproof "Lipstick" Cameras

- ✓ Three models: Color Super EX-View, B&W Hi-Res, or B&W Super-HAD
- ✓ Small lipstick design
- ✓ Universal swivel mounting bracket
- ✓ Weatherproof, suitable for outdoor use!
- ✓ Simple plug-in connections

Wired & Tested

### Welcome To The Super Resolution Department!

Looking for the highest quality "lipstick" or "bullet" cameras but don't want to pay a fortune? These are the cameras for you! All feature Sony manufactured CCD sensors for the highest quality and reliability.



	CCD340	CCD341	CCD342
Format:	NTSC Color	EIA B&W	EIA B&W
Pick-up element:	Sony 1/3" EX-View	Sony 1/3"	Sony 1/3" HAD
Number of pixels:	768x494	512x492	768-494
Resolution:	480 TV lines	420 TV lines	600 TV lines
Min. Illumination:	0.05 Lux	0.1 Lux	0.2 Lux
S/N ratio:	>50dB (AGC off)	>46dB (AGC off)	>48dB (AGC off)
Electronic shutter:	1/60 - 1/100,000	1/60 - 1/100,000	1/60 - 1/100,000
Impedance:	75 ohm	75 ohm	75 ohm
Lens:	3.6mm	3.6mm	3.6mm
Connectors:	BNC/Power	BNC/Power	BNC/Power
Power:	DC 12V/130mA	DC 12V/120mA	DC 12V/120mA
Dimensions:	3" L x 0.8 "H	3" L x 0.8 "H	3" L x 0.8 "H

The Sony EX-View color CCD sensor in the CCD340 provides the highest resolution and sensitivity available. Formerly only available in larger and much more expensive cameras, the EX-View is perfect when you want the finest picture quality possible. Great for medical coverage, precision inspection, or detailed surveillance use.

The standard B&W sensor in the CCD341 provides an above-average 420 lines of resolution. This is great for general purpose use and actually exceeds the resolution of the typical low cost black & white surveillance camera.

The CCD342 is a super-high resolution Black & White camera designed with a Sony CCD Super HAD sensor that provides 600 TV lines of resolution. This is perfect where exacting fine detail is required and color is not necessary. Yes, we said 600 lines!

All cameras feature a waterproof housing and a universal swivel mount. Video is brought out to a BNC female and power is brought out to a standard 2.1mm female connector. If you're looking for high quality and performance but don't want to pay a fortune, these are for you!

CCD340	Color Super Hi-Res Lipstick Camera, EX-View CCD Sensor	\$189.95
CCD341	B&W Hi-Res Lipstick Camera, Sony CCD Sensor	\$69.95
CCD342	B&W Super Hi-Res Lipstick Camera, Sony Super-HAD Sensor	\$99.95
AC125	110VAC Power Supply	\$9.95

CCD308



## Waterproof Color & B&W Bullet Cameras with Built-In IR Illumination!



Yes...We said **COLOR Plus Automatic IR Illumination!**

Wired & Tested

- ✓ Day & night monitoring! CCD color image automatically changed into B/W image in the dark!
- ✓ High output built-in IR illumination for B&W nighttime use
- ✓ Weatherproof black anodized aluminum housing for outdoor use
- ✓ Fool-proof interfaces...BNC video & power

Talk about the best of both worlds! High quality COLOR video camera, PLUS nighttime B&W video camera, PLUS built-in high output IR Illumination, PLUS auto mode switching... all in one unit!

You've seen bullet cameras before, but never like this! Yes, it's a high quality color CCD camera during the day, but once the light level falls below minimum requirements it automatically changes to an IR B&W camera, and turns on the built-in TEN IR illuminating LED's to see in the dark! Now you don't have to sacrifice color operation because you need total darkness coverage at night. You can have both in one camera!

That's not all! Just look at the case. Jet black solid aluminum case that's WATERPROOF to IP57 standards! Yes, that includes temporary complete immersion in water! That means you can mount it outdoors without one of those expensive environmental housings! And that saves a LOT of money!

All angle, built-in swivel mount provides you with any mounting configuration you may need. Connections are simple. No solder connections needed; the waterproof cable terminates video with a professional BNC female connector and provides a standard 2.1mm DC power connector. Simply plug it in!

It only gets better... Take the same camera and with a mere switch closure get 2X digital zoom! That's right, our CCD321 also includes 2X digital zoom and we even provide a high quality push button switch for it! You'll be amazed; set up the camera for your wide angle view and with a flip of the switch you have 2X! The switch is operated at the cable end, not at the camera! Don't need color but want the same high-end housing and built-in IR Illumination in a Hi Resolution B&W unit? No problem! Use the CCD308 (I set one of these up for our webcam, pushed the button, and saw one of our people sleeping at the bench... and it wasn't even Friday... or Monday!)

	CCD309	CCD308
Pick-up element:	1/4"	Sony 1/3"
Number of pixels:	512 x 492	542 x 492
Resolution:	350 TV lines	420 TV lines
Min. illumination:	0.0 Lux	0.0 Lux
S/N ratio:	46dB	46dB
Electronic shutter:	1/60 to 1/100,000	1/60 to 1/100,000
Load Impedance:	75 ohm	75 ohm
Standard board lens:	3.6mm, F2.0	6mm F1.8
Power:	DC 12V 150mA	DC 12V 180mA
Dimensions:	2.0" W x 3.2" L	2.0" W x 3.2" L

CCD309	Waterproof Color Bullet Camera with Built-in Auto Switching IR Illumination	\$169.95
CCD308	Waterproof B&W Bullet Camera with Built-in Auto Switching IR Illumination	\$109.95
CCD321	Waterproof Color Bullet Camera with Built-in Auto Switching IR Illumination, 2X Remote Zoom	\$199.95
AC125	110VAC Power Supply	\$9.95

## VHF TV Transmitter

- ✓ Transmits on Channel 2-6
- ✓ Broadcast your VCR, DVD player, or CCTV camera throughout your house
- ✓ Learn TV theory while building!
- ✓ Extremely popular TV starter kit!



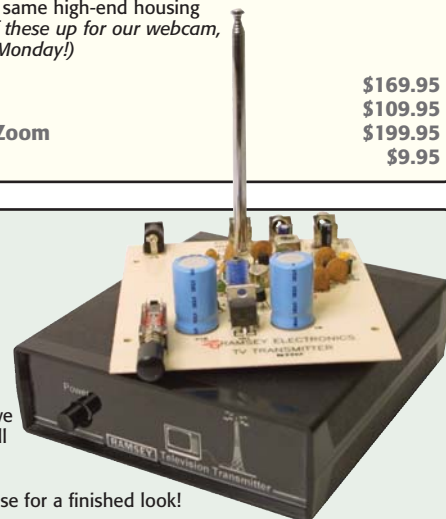
KIT

### Learn How A TV Transmitter Works!

This great little kit allows you to send any audio and video source (like a VCR or TV camera) to any TV set for up to 300 feet. Have your own TV station with YOU playing producer and YOUR selection of programming! And, the nice feature of this kit is that you'll learn just how a TV transmitter works; we explain every part of the circuit from A to Z.

Tunable to any TV channel 2 - 6, runs on 12 VDC, and accepts standard audio and video signals. Includes an attractive custom case for a finished look! Case measures 5"W x 1 1/2"H x 5 1/4"D.

TV6C	VHF TV Transmitter Kit With Case	\$39.95
AC125	110VAC Power Supply	\$9.95





Wired &amp; Tested

*The Size Of A Quarter?  
You Bet!*

Perfect video transmission from a transmitter you can hide under a quarter and only as thick as a stack of four pennies! Transmits color or B&W with fantastic quality - almost like a direct wire connection to any TV tuned to cable channel 59. Crystal controlled for no frequency drift with performance equal to law enforcement models that cost hundreds more!

## The Cubes! Mini Video Transmitters

- ✓ Crystal clear transmission
- ✓ Transmits on CATV channel 59
- ✓ Ultra small for ANY application!

C2000  
C2001

Cube Video Transmitter, Factory Assembled & Tested  
High Power Cube Video Transmitter, Factory Assembled & Tested

\$39.95  
\$69.95

## Infrared (IR) Camera Illuminator

- ✓ Allows you to "See In The Dark"!
- ✓ Amazing illumination!
- ✓ Works with B&W CCD camera
- ✓ Operates on 12VDC

*Don't Let Darkness  
Dim Your View!*

Imagine being able to see in total darkness! Well, while you can't, virtually any black & white CCD camera can... with a little help from some invisible infrared light! It's easy with our IR1 Infrared Illuminator! A huge array of 24 high intensity infrared LEDs illuminate a good size area so the camera "thinks" it's daylight!

There's nothing magical about it; CCD sensors are sensitive to IR light that you can't see so to the camera the area seems lit perfectly! The illumination provided is about the same as you would expect from a very bright wide beam flashlight. The illuminator runs on 12-15VDC and is built on a convenient PCB ready to install wherever you need it.

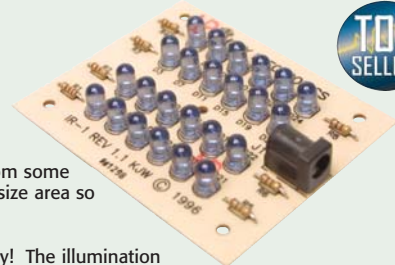
One of the neatest things about IR illumination is that it's invisible to the human eye. The illumination will not be detected and can be easily disguised! Order our AC125 power adapter for a simple plug-in connection. Board measures 3" x 2.25".

IR1  
AC125

IR Illuminator Kit  
110VAC Power Supply

\$29.95  
\$9.95

KIT

TOP  
SELLER!

*Don't Miss A Beat...  
Watch 4 Cameras At Once!*

Now you can monitor up to four video cameras or other video sources on one video monitor. The AVS10 will sequentially switch between inputs one through four automatically and display the output on a video monitor. Perfect for multiple video camera installations, stores, household surveillance systems, and more.

It has (4) RCA inputs for video input and one RCA output connector, so you can use standard consumer video cables. Variable front panel timing control allows you to change the viewing time for each sequential view. Change it from fast to slow depending on your requirements! If you see a view you need to study you can manually select that input for constant monitoring. Case measures 5"W x 1 1/2"H x 5 1/4"D. (If you don't want to build it or need full motion quad split monitoring, see the slick little switcher below!)

AVS10C  
AC125

Automatic Video Sequencer Kit With Case  
110VAC Power Supply

KIT

\$44.95  
\$9.95

## Automatic Sequential Video Switcher

- ✓ Automatic switching of 4 video sources
- ✓ Variable speed
- ✓ Manual camera selection

## Computer VGA-to-Analog Video Converter

- ✓ Display video from PC, laptop, or Mac
- ✓ Plug & Play operation with your computer
- ✓ Requires no additional software or power supply
- ✓ Supports NTSC & PAL Video Formats
- ✓ Support composite video out and S-Video out
- ✓ Support resolution from 640x 480 to 1024 x 768
- ✓ One Year Limited Warranty

*Your Computer Screen  
On Your TV!*

Wired &amp; Tested



How many times have you wanted to plug your computer into a standard TV, video monitor, or video projector only to find the computer has no video output! So then you go to the monitor or projector and find out it has no VGA input on it either! It's frustrating at best! This little converter solves the problem and does it with flying colors!

This tiny one-piece converter does it all with no additional software. Connections are simple. Just plug in a VGA cable to your PC, laptop, or Mac. If you wish to continue to use your computer monitor, connect the VGA output to it. Then decide how you'd like to connect your video monitor or projector. You have the choice of standard composite video (yellow RCA input) or S-Video (multi-pin input). Connect the video output of the converter to the monitor, and you're done! It's that simple! The converter supports both NTSC and PAL video formats. You can power the device with a USB cable to your PC or the included power supply.

### SPECIFICATIONS

Video Format	NTSC & PAL
Power Supply	5V USB cable power or included power supply
Dimensions	63mm x 114mm x 23mm
Display Modes	640 x 480 / 800 x 600 / 1024 x 768 / 1280 x 1024
Max External Monitor Res:	1280 x 1024
FCC / IC Approved	Yes
Minimum Requirements	Microsoft Windows 95/98/2000/XP, Apple MacOS 7.1 or later, compatible with USB port and VGA output
Input:	VGA, USB for power
Output:	VGA, composite video, S-Video
Weight	115g/4.05oz

Operating system wise, the device is Plug & Play and will automatically be detected. Once you have it plugged in, simply touch the menu switch on the device to bring up a detailed menu on your screen. Functions include horizontal size, vertical size, brightness, contrast, hue, saturation, focus, sharpness, and menu background color. In addition, there are left, right, up, and down buttons on the keypad to allow you position the display on your screen.

The converter INCLUDES all the video, S-Video, USB cable for power, VGA cable, and external power supply. From Videocomm. (In my days, I had to buy a \$5,000 scan converter to do this!)

PCTV2000

Computer VGA-to-Analog NTSC Video Converter

\$72.95





## Davis Vantage Pro2 Weather Stations

- ✓ Frequency hopping spread spectrum radio communications!
- ✓ Wireless range up to 1,000 feet!
- ✓ Also available cabled for a wireless-free installation
- ✓ Rain collector, temperature and humidity sensors and anemometer in one package!
- ✓ Weatherlink and data logger for easy PC and web server interface!
- ✓ Displays UV index with optional sensor
- ✓ Displays solar radiation with optional sensor
- ✓ Displays leaf wetness with optional sensor
- ✓ Displays soil moisture with optional soil moisture sensor
- ✓ Add multiple temperature sensors for different locations
- ✓ Wireless repeaters available to extend communications beyond a mile!
- ✓ Compass shows wind speed and dominant wind direction
- ✓ Graphs last 24 hours, days, or months of readings, highs and lows, with over 80 graphs to display!
- ✓ Forecast icons let you now whether to expect sun, partial sun, clouds, rain, or snow



*When Weather Is Important To You...  
Rely On The Equipment The Professional's Use!*

### THE LEADER IN WEATHER TECHNOLOGY!

Davis Instruments, the leader in affordable high-quality weather technology, is proud to introduce the first weather station in its price range to use frequency hopping spread spectrum radio to transmit and receive data up to 1000' (300 m) line of sight. That's over three football fields in length and three times farther than competing wireless weather stations!

### PACKED WITH FEATURES!

The Davis Vantage Pro2 offers a full range of features, including forecasting, on-screen graphing, and more! Quick view icons show the forecast at a glance: sunny, partly sunny, cloudy, rain or snow, and a moving ticker-tape display gives more details. The integrated sensor suite combines rain collector, temperature and humidity sensors, and anemometer into one package-making setup easier than ever while improving performance and reliability. For improved accuracy, temperature and humidity sensors are housed inside a radiation shield. The shield protects against solar radiation and other sources of radiated and reflected heat.

### TONS OF OPTIONS!

Unlike the common consumer weather stations found at the discount stores, a wide variety of add-ons are available for expanded functionality, logging, and reporting! It's a simple concept... If you don't care if the weather information you see is accurate and dependable, those bargain-basement weather stations will do you just fine if hit and miss forecasting is what you're looking for. But when accuracy and dependability counts, there is no better solution than the Vantage Pro2. Whether you're a farmer whose entire livelihood depends on forecasting the weather, a meteorologist, science teacher, TV station, or just a serious weather enthusiast, the Vantage Pro2 has you covered...you can depend on it! See the following pages for sensors and accessories designed to tailor your station to your exact needs.

View current data or highs and lows for up to 24 different days, months, or years.

Inside compass rose, view wind direction to 1° resolution. Or view wind speed.

Compass rose with 16 points shows current and dominant wind direction

Set over 70 alarms for multiple functions simultaneously.

Graphs last 24 hours, days, or months of readings as well as highs and lows. View over 80 graphs including additional analysis of temperature, rain, rain rate, wind, and barometric pressure. All without a computer!

Ticker-tape display shows expanded forecast details and additional information on current conditions. Over 100 different messages!

View monthly or yearly rainfall, rain rate, evapotranspiration, or intensity of solar radiation.

Wireless stations use frequency hopping spread spectrum radio. You'll get three times the transmission distance, improved reception through multiple walls, and greater immunity from rF interference.

Five-position trend arrow shows whether barometric pressure is rising, falling, or stable.

Fixed display area shows the most important weather variables at all times.

Variable display area lets you pick between:

- Inside or additional temperatures or soil moisture
- Inside or additional humidity, UV index, or leaf wetness
- Wind chill, dew point, or two different heat indices

Plus and minus keys simplify data entry.

Use arrow keys to scroll through data on graph or view highs and lows over time.

6152	Davis Vantage Pro2, Wireless Weather Station, Complete with Wireless Sensor Suite	\$534.95
6152C	Davis Vantage Pro2, Cabled Weather Station, Complete with Cabled Sensor Suite	\$444.95
6162	Davis Vantage Pro2, Wireless Weather Station With UV & Solar Radiation Sensors, Complete With All Sensors	\$894.95
6162C	Davis Vantage Pro2, Cabled Weather Station With UV & Solar Radiation Sensors, Complete With All Sensors	\$804.95

Find out what the weather is at Ramsey headquarters, and check out our full line of weather products and accessories at [www.ramseykits.com/weather](http://www.ramseykits.com/weather)



## Additional Receiver

An additional receiver/display unit allows you to view data from a Wireless Vantage Pro2 in additional locations throughout your home or office. It can also be used with Wireless Temperature, Temperature/Humidity, or Leaf Wetness & Soil Moisture/Temperature station.

Requires an existing Vantage Pro2 Weather Station (6152/6152C/6162) or a separate Integrated Sensor Suite (6322).



**6312 Additional Receiver for Vantage Pro2**

**\$264.95**

## Integrated Sensor Suite

For use with Weather Envoy as a stand-alone computer interface or with a separate Receiver (6312). Includes the same sensors that come with the complete Vantage Pro2 system.

Includes a rain collector, temperature and humidity sensors, and anemometer in one package! For improved accuracy, temperature and humidity sensors are housed inside a radiation shield. The shield protects against solar radiation and other sources of radiated and reflected heat.

Requires Weather Envoy (6316/6316C) or Wireless Receiver (6312).



**6322 Wireless Integrated Sensor Suite**

**\$291.95**

**6322C Cabled Integrated Sensor Suite**

**\$246.95**

## Leaf Wetness Sensor

Use this handy sensor to monitor the level of surface moisture on foliage, with range from 0 (completely dry) to 15 (saturated).

Add up to 2 sensors to a single Wireless Leaf & Soil Moisture/Temperature Station. Includes 40' (12m) cable.

Requires Vantage Pro2 Weather Station (6512/6512C) and Leaf & Soil Moisture/Temperature Station (6345).



**6420 Leaf Wetness Sensor**

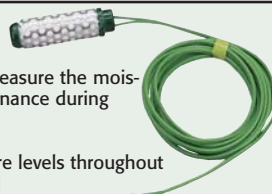
**\$111.95**

## Soil Moisture Sensor

The soil moisture sensor uses electrical resistance to measure the moisture level of the soil. Does not require periodic maintenance during the growing season.

Simply bury at the desired depth, then monitor moisture levels throughout the season. Add up to 4 sensors to a single Leaf & Soil Moisture/Temperature Station. Includes 15' (4.6m) cable.

Requires Vantage Pro2 Weather Station (6512/6512C) and Leaf & Soil Moisture/Temperature Station (6345).



**6440 Soil Moisture Sensor**

**\$48.95**

## Weatherlink PC Data Logger

For the ultimate in weather monitoring, add WeatherLink to your Vantage Pro or Pro2. The data logger fits neatly into the weather station console or Weather Envoy, storing weather data even when it's not connected to your PC. Later, download the data and use the software to create graphs, generate summaries, HTML, web displays and a whole lot more! **Visit our live weather site at [www.ramseykits.com/weather](http://www.ramseykits.com/weather) to see it in action!**

When using the Weatherlink system in conjunction with a PC, you'll have access to:

### EXPANDED REPORTING

- ✓ See current conditions at a glance on the instant weather bulletin. Graph data on a daily, weekly, or yearly basis. Or view multiple weather variables at the same time to see their relationships.
- ✓ Create Weather Watcher Reports in NOAA National Climatic Data Center Format.
- ✓ View special reports on heating degree days, cooling degree days, and fuel-oil demand. With optional sensors, see reports on evapotranspiration, leaf wetness, soil moisture, soil temperature, sunburn risk for each skin type, and solar energy.

### EASY SHARING OF YOUR WEATHER DATA

- ✓ Help the National Weather Service develop improved weather prediction models by submitting your data to the Citizen Weather Observer Program via APRS or the Internet.
- ✓ Create your own weather website or post weather conditions to a LAN using the included HTML templates. Upload other files (such as images from a webcam) along with your weather data.
- ✓ Participate in The GLOBE Program, an international weather-related science program for students from elementary through high school, supported by NASA and NSF.

Includes software on CD, data logger, and 8' (2.4 M) cable to connect the data logger to your computer. Choose a logging interval of 1, 5, 10, 15, 30, 60, or 120 minutes. Depending on the logging interval, store up to six months of data before downloading. Requires Vantage Pro2 Weather Station (6512/6512C) or Weather Envoy (6316/6316C). Check out the new WeatherLink IP on the following page, where you simply connect your weather station to an ethernet cable and your weather is instantly available on the web!

**6510USB**

**Davis Weatherlink Data Logger and Software (USB Connection)**

**\$147.95**

**6510SER**

**Davis Weatherlink Data Logger and Software (Serial Connection)**

**\$147.95**

## Weather Envoy

Receive data from a wireless Vantage Pro2 or Integrated Sensor Suite and post it to your computer without a console! When used along with a WeatherLink data logger and software package, Weather Envoy will collect and store data from the outdoor sensors. Both the wireless and cabled versions include an AC-power adapter. Requires: Vantage Pro2 Weather Station (6152/6152C) or Integrated Sensor Suite (6322/6322C) to receive data, and a Weatherlink data logger (6510USB/6510SER) to view data. (Visit our weather site at [www.ramseykits.com/weather](http://www.ramseykits.com/weather) for live weather using the Envoy!)

**6316 Wireless Weather Envoy**

**\$174.95**

**6316C Cabled Weather Envoy**

**\$147.95**



## Anemometer Transmitter Kit

This Anemometer Kit allows you to locate the anemometer independently from the rain collector, up to 300m away from the console/receiver! For even longer distances, you can add one or more wireless repeaters.

Great for tower and mountain sites! Kit includes transmitter inside weather-resistant shelter, solar panel, mounting hardware, and battery.

Requires Vantage Pro2 Weather Station (6512).



**6332 Anemometer Transmitter Kit**

**\$174.95**

## Additional Wireless Temp Station

Battery powered station includes stainless steel temperature probe with 12' (3.6 m) cable, transmitter and battery inside weather-resistant shelter, and mounting hardware. Lithium battery lasts up to one year under normal conditions.

Data from up to eight stations may be viewed on a single Vantage Pro2 Console/Receiver (sold separately). Or, for a complete set of weather data, use with a Wireless Vantage Pro2 or Vantage Pro2 Plus. (You can add up to seven Wireless Temperature Stations to either of these.) Requires Vantage Pro2 (6512) Weather Station.



**6372 Additional Wireless Temperature Station**

**\$174.95**

## Temperature Probe

Multi-purpose temperature probe with 2-1/2" (64 mm)-long stainless steel housing.

Use to measure temperature of air, soil, or water. Add up to four probes to a single Leaf & Soil Moisture/Temperature Station. Includes 15' (4.6 m) direct-burial cable.

Requires Vantage Pro2 Weather Station (6512/6512C).



**6470 Temperature Probe**

**\$44.95**







New For  
2010



*The Latest  
Upgrade to the  
Groundbreaking  
Zoom H4 Recorder!*

## Zoom H4N 4-Track Portable Recorder

- ✓ Fits in the palm of your hand!
- ✓ Records up to 24-bit/96kHz uncompressed digital audio!
- ✓ Direct-to-MP3 recording up to 320kbps!
- ✓ Two built-in studio-quality X/Y pattern condenser mics for stereo recording
- ✓ Two combination XLR-1/4" input jacks with phantom power
- ✓ Onboard effects including compression, limiting, and mic modeling
- ✓ Use any size SD or SDHC memory card up to 32GB
- ✓ USB interface allows you to back up to your computer, or record directly using the H4 as an audio interface!
- ✓ Built in reference speaker
- ✓ Includes 1GB SD card, windscreen, mic clip adapter, AC Adapter, protective case, and Cubase LE software

### A PRO-QUALITY MOBILE FIELD STEREO RECORDER - AT AN AFFORDABLE PRICE!

The Zoom H4N Handy Digital Recorder fits in your palm and is great for recording practically anything you need! Live musical performances, interviews, podcasts, meetings, classes, seminars, whatever! With the H4N you can record full uncompressed 24-bit/96 kHz digital audio or if you're low on SD card space, use the built-in MP3 compression!

### IT'S ABOUT THE MICROPHONES!

With two studio-quality electret condenser microphones built in and configured in a unique X/Y pattern for true stereo recording, the H4N is ready to put your listeners in the audience! However, if you'd rather use your own mics, the H4N has you covered there too, with two combination XLR-1/4" input jacks with phantom power. The H4N is loaded with onboard studio effects such as compression, limiting and mic modeling. A mini-headphone jack lets you monitor the sound you're capturing in real-time.

### DID WE MENTION IT'S ALSO A 4-TRACK RECORDER?!

Unlike other field recorders, the H4N also has a 4-track recording mode for easy-to-use mobile multi-track recording. Use the H4N to get your ideas recorded anytime, anywhere, with ease! The H4N will also render 4-track audio with CD quality, 16-bit/44.1 kHz resolution. Songwriters and musicians can use the combination XLR-1/4" high-impedance phone inputs for vocals, guitars, bass or keyboards. Also onboard are Zoom's excellent guitar and bass amplifier modeling effects.... accurately reproducing the sounds of the most famous guitar amps ever made!

### AND AN AUDIO INTERFACE!

Recording directly to your computer has never been easier than with the Zoom H4N Handy Recorder. The H4N is the only portable digital recorder that also serves as your USB audio interface, allowing direct recording of instruments and vocals to your computer! If you don't already have a DAW (Digital Audio Workstation), don't worry! Every H4N comes bundled with Cubase LE, the perfect 48-Track Digital Audio Workstation for easy editing, mixing and mastering of your recordings on either Windows or Mac!

The new, digitally controlled, high-quality preamplifier renders audio so precise, it'll sound like you recorded in a world-class studio. This new preamp means you can make recording level adjustments on the fly. Automatic level setting function is also built in to optimize the level quickly as the situation requires.

The H4N provides four hours of continuous recording operation from 2 AA batteries, or up to 11 hours in the new extended stamina mode. Of course you can also plug in with the included AC adapter for uninterrupted power as long as you need it. The large 1.9" display LCD is back-lit, providing you full control in any lighting conditions (like the back of a dark club!). USB cable, windshield cover and tripod adapter are all included! For more detailed information visit our pro audio website at [www.ramseyaudio.com](http://www.ramseyaudio.com).

H4N

Professional 4-Track Portable Recorder

\$298.95

## Zoom H2 Handy Recorder

- ✓ W-XY mic patterns with 4 mic capsules and signal processing allows Front 90° Super Cardioid, Rear 120° Cardioid, and 360° polar patterns
- ✓ Built-in USB 2.0 interface for data storage and audio interface
- ✓ Records in WAV 96kHz/48kHz/44.1kHz at 16-bit or 24-bit, MP3 to 320kbps and Variable Bit Rate (VBR) data formats
- ✓ Time Stamp and Track Marker functions in broadcast WAV Format
- ✓ 512MB SD memory card included
- ✓ Accommodates up to 32GB SD memory cards
- ✓ Auto Gain Control (AGC) for pristine recordings
- ✓ Auto Start function means you're always ready to record
- ✓ Low-cut filter eliminates wind noise
- ✓ On-board chromatic guitar/bass tuner
- ✓ Powered external mic input
- ✓ 4 Hours of operation on two AA batteries

### FOUR MICROPHONES FOR PERFECT STEREO IMAGING!

The H2 is the ONLY portable recorder on the market with 4 mic capsules onboard, giving it 360° recording capabilities! You can record from the front of the H2 at 90° or from the rear at 120° or record 360° to 48kHz/24-bit and drop it straight into full 5.1 Surround - the H2 makes it easy! The H2 also features a powered 1/8" jack for plugging in an external stereo mic if required.

### MANAGING AND STORING YOUR AUDIO MADE EASY!

1/8" stereo and headphone outputs mean you can play your recordings back straight from the unit anywhere and the USB interface makes it a snap to transfer your audio directly to your PC or Mac for further editing, sharing, etc. The H2 can also function as a USB microphone plugged directly into your computer using any standard recording software! Included with your H2 is a 512MB SD card, and thanks to the latest firmware update, the H2 can now accept SD cards up to 32GB! What does that mean for you? Try 8 hours of 96kHz audio, 24 hours of CD quality 44.1kHz audio, or 272(!) hours of high-quality MP3 audio!

### VERSATILITY AND POWER!

That's all it takes to start recording! The H2 is a remarkably robust device that is incredibly easy to use. One button recording, gain controls on the side, and an intuitive user interface means you can always capture the moment. Set your levels, push record and go. It's that simple. Or use the Auto Start and Auto Gain Control functions to ensure complete capture at the right level. If you need to fine-tune your levels on the fly, we made it easy with gain control buttons on the front panel. Each H2 comes standard with all the accessories you need: 512MB SD card, mic clip adapter, AC adapter, tripod stand, a set of earbuds, 1/8" stereo to RCA cable, and USB cable! For more detailed information visit our pro audio website at [www.ramseyaudio.com](http://www.ramseyaudio.com).

*The Perfect  
Recorder To  
Keep With You  
Just In Case!*



### THE NEW GENERATION OF PORTABLE RECORDING DEVICES IS HERE!

It's a simple idea: provide brilliant stereo recording in an easy-to-use, ultra-portable device. Now everyone can record pristine audio in an infinite variety of applications. From seminars and conferences to electronic news gathering (ENG) and podcasting to musical performances, songwriting sessions and rehearsals, the H2 provides amazing recording quality. No matter what kind of music you perform or instrument you play, the H2 can effortlessly record it in high-quality stereo.

H2

Professional Portable Recorder

\$178.95



New For  
2010

**The ONLY Handheld Video Unit With Built-in High-Quality Stereo Sound!**

### AWESOME STEREO AUDIO MAKES YOUR VIDEOS COME ALIVE!

The Q3 uses the same microphone capsules as the industry-leading H4N Handy Recorder (previous page) and is perfect for recording anything where great audio and video are a must. From live musical performances and rehearsals, interviews, conferences to video podcasts, journalism, education, recitals, weddings or sports, the Q3's pristine audio quality takes your videos to another level.

Designed with everything you need to make your movies right out of the box, the Q3 includes HandyShare software for editing, and a 2GB SD card for up to 1 hour of video recording time. And the Q3 will also accept up to 32GB SDHC cards for a staggering 16 hours of moviemaking!

When your shoot is complete, the Q3's cleverly designed USB cable lets you upload your movies to your computer. Then use HandyShare to edit and share them on your favorite websites including YouTube, Facebook and MySpace. Or, plug in the included TV cable and watch your videos on television.



With its high-quality, MPEG-4 SP video format at 30 frames per second, the Q3 renders crystal-clear video at 640 x 480 (DVD Quality!) resolution. And the Q3's large, 2.4" LCD screen with a resolution of 320 x 240 makes viewing easy on the go. Its display also includes audio meters so you can quickly set and monitor your levels as you shoot.

### TRUE STEREO SOUND WITH ADJUSTABLE RECORDING DEPTH OF FOCUS!

The Q3 has two condenser mics on-board, engineered in the same X/Y pattern that gives recording pros the best stereo recording possible. Arranged with the right and left mics on the same axis, this design ensures that the mics are always an equal distance from the sound source for perfect localization without phase shifting. The result is a great sounding recording with natural depth and highly accurate stereo imaging every time... all at the touch of a button.



The Q3's X/Y microphones are directional, so you can "focus" the mics on your sound source like an "audio zoom" function. Use the onboard audio meters to set the gain to Low, High or Auto so you can record in very loud or very soft environments. Or use the Q3's Auto Record Level function to automatically set the appropriate recording levels for the situation! Shoot your video with the confidence that the Q3 is capturing great audio at the absolute best level possible. We can't fit all the awesome features of the Q3 in this catalog, so make sure to visit [www.ramseyaudio.com](http://www.ramseyaudio.com) for more info!

Q3 Portable Video Recorder

\$248.95

## Tascam Mini Portable Digital Recorder

- ✓ Built-in high-quality stereo electret condenser microphones
- ✓ 3.5mm Stereo Mic Input
- ✓ 3.5mm Stereo Line Input and Output
- ✓ Switchable Low Cut Filter, Analog Limiter and Auto Gain Setting on Input
- ✓ Writes WAV files at 44.1 or 48kHz, 16 or 24-bit
- ✓ MP3 File Recording from 32kbps to 320 kbps
- ✓ Variable-Speed Audition Function Slows Down Music Without Changing the Pitch
- ✓ Records to SD or SD-HC Card Media
- ✓ 2GB SD Card Included

TASCAM's DR-07 brings portable digital recording to an even smaller, more affordable package. A pair of highly-sensitive built in mics captures a wide stereo image, recording in either MP3 or 16/24-bit WAV format. The DR-07 is powered by AA batteries and it transfers files to a computer using a high-speed USB 2.0 connection. The versatile recorder even includes a windscreens, tripod stand mount and 2GB SD card to start recording right away.

Musicians will appreciate the playback functions of the DR-07, including the ability to loop MP3s and slow them down without changing the pitch. External microphones and sources can be recorded through the mic/line input, and the recorder offers analog limiting, low cut and auto gain setting for great-sounding recordings, the compact DR-07 is all you need. Visit [www.ramseyaudio.com](http://www.ramseyaudio.com) for more details.

DR07 Tascam Portable Digital Recorder  
PSP520 AC Charger

\$169.95  
\$24.95



New For  
2010

New For  
2010



## Tascam Advanced Portable Digital Recorder

- ✓ Four microphones - Stereo Cardioid and Omni Condenser Mics
- ✓ 44.1k to 96k sampling rates for WAV file recording
- ✓ MP3 and WAV file Recording and Playback
- ✓ High-performance microphone preamp with 60dB of gain
- ✓ Premium AKM Audio4Pro™ A/D converters with over 100dB signal to noise ratio
- ✓ 3.5mm Line Inputs and Outputs
- ✓ Low Cut Filter, Analog Limiter and Auto Gain Control
- ✓ Built-in Speaker
- ✓ Runs on Rechargeable Li-Ion Battery or AA Batteries

The rugged TASCAM DR-100 offers high-end recording features to musicians and engineers who demand more from their portable recorder. It features four built-in microphones, two cardioid and two omnidirectional, with analog limiting and filtering for great-sounding recordings. A pair of XLR microphone inputs with phantom power welcomes pro-grade condenser microphones, and line in and out connectors are also provided.

The DR-100 includes a rechargeable Lithium-ion battery, but can also be powered by AA batteries or an optional AC adapter. A built-in speaker allows for instant playback, and the metal enclosure includes a tripod mounting hole for recording flexibility. A wireless remote control is also included for remotely starting the recording. Visit [www.ramseyaudio.com](http://www.ramseyaudio.com) for more details.

DR100 Tascam Portable Digital Recorder  
PSP520 AC Charger  
BPL2 Spare/Replacement Li-Ion Battery Pack

\$428.95  
\$24.95  
\$41.95





New For  
2010



### 16 Channels At Your Fingertips!

Introducing TASCAM's premiere multi-channel interface! The US2000 is a 16 input, 4 output, USB interface that fits in only one rackspace. It features eight XLR mic inputs with phantom power, plenty of inputs to record even large bands or drumsets. An additional six balanced 1/4" line inputs are provided for synths, amp modelers and effects processors. Stereo S/PDIF digital inputs and outputs bring the total to 16 inputs that can be recorded simultaneously.

The US2000 transmits your instruments at up to 96kHz/24-bit audio quality over a high-speed USB 2.0 connection to your computer. To keep track of all of your inputs and outputs, the US2000 boasts a bright and easy-to-read meter bridge made up of 100 LEDs. Connections are hidden on the rear panel, with the exception of a pair of combo jacks on the front for easy access.

Included with the US2000 is a copy of Cubase LE4 from Steinberg. This full-featured recording software captures up to 48 tracks of audio with another 64 MIDI tracks. You can edit your tracks to perfection using a variety of modes and tools. Automated mixing is included to create the perfect master. Cubase LE4 supports VST effect and instrument plug-ins, and comes preloaded with a cool assortment of plug-ins. Unlike many "demo" versions of recording software, TASCAM's copy of Cubase LE4 can record 16 channels at a time so you can take full advantage of all the inputs on the US2000! Step up to the ultimate in compact, great sounding interfacing with the US2000. Visit [www.ramseyaudio.com](http://www.ramseyaudio.com) for more details.

US2000

Tascam Professional USB Audio Interface

\$498.95

## Portable USB Audio Interfaces

- ✓ Available in stereo or 4-channel versions
- ✓ (2) XLR microphone inputs with phantom power
- ✓ (2) 1/4" balanced line inputs
- ✓ Switchable guitar level input
- ✓ 1/4" stereo headphone output
- ✓ MIDI input and output
- ✓ Up to 96kHz/24-bit audio resolution
- ✓ Zero-latency hardware monitoring
- ✓ Mac and Windows drivers included
- ✓ Steinberg Cubase LE4 48-track recording software included
- ✓ Aluminum case construction

### The Best Portable USB Audio Interfaces On The Market... Just Got Better!

We are proud to offer the next generation of TASCAM's best-selling audio interfaces: the US122 MKII and US144 MKII USB 2.0 Audio/MIDI Interfaces are here! The US-122 MKII features improved audio performance along with a new, eye-catching compact designs. The US-144 MKII includes all these improvements, plus has S/PDIF digital audio I/O for a total of four channels of pristine 96kHz/24-bit audio. Both boast USB 2.0 transfer speeds for low-latency performance while connected to your Mac or Windows computers.

Zero-latency monitoring lets you record without the delay going to a computer and back! MIDI input and output jacks allow connection of synths and drum machines. For monitoring, you can connect the interface to monitors through the line output or use your headphones with the front-mounted stereo 1/4" jack. Separate controls for line and headphone out means you don't need to switch off your monitors to work in headphones! These units also make great portable interfaces because of their heavy metal construction and solid case that is truly built for "on-the-road" use! Visit [www.ramseyaudio.com](http://www.ramseyaudio.com) for more details. (One of these belongs in everybody's gig bag!)

New For  
2010



US122MKII

US144MKII

US122MKII  
US144MKII

Tascam Stereo USB Audio Interface  
Tascam 4-Channel USB Audio Interface

\$128.95  
\$148.95



New For  
2010

When You Need a  
Solid USB Interface, But  
Don't Want to Pay  
Through the Nose!

## Affordable USB Interface

- ✓ Bus-powered USB 2.0 audio interface
- ✓ XLR or 1/4" microphone input
- ✓ RCA line inputs switchable to RIAA phono inputs with ground lug
- ✓ 1/8" stereo headphone output
- ✓ 48kHz/16-bit audio resolution
- ✓ Zero-latency hardware monitoring
- ✓ Audacity recording software included
- ✓ Solid Aluminum case construction

TASCAM's US100 breaks the price barrier for great-quality recording into your computer! The microphone input captures great-sounding performances, or you can plug in your guitar or bass directly into the instrument-level input. Stereo line inputs can be switched to RIAA phono level for digitizing your vinyl collection from your favorite turntable. The USB 2.0 connection guarantees playback without hiccups on your Mac or Windows computer, and the compact aluminum construction withstands the hazards of the road, studio or dorm room.

The US-100 records in stereo at CD-quality 48kHz/16-bit resolution and includes a free copy of Audacity software to get you started. An XLR or 1/4" microphone input is provided, as well as unbalanced stereo line ins and outs. Step up to TASCAM quality without breaking the bank with the US100! (But the banks are already broke!)

US100

Tascam USB Audio Interface

\$98.95



New For  
2010

*The Culmination of 30 Years of  
Portable Recording Experience!*

## Digital PortaStudio 8-Track Recorder

- ✓ 2-track simultaneous recording
- ✓ (2) XLR microphone inputs with phantom power
- ✓ (2) 1/4" line inputs, one switchable to guitar level for direct recording
- ✓ 1/4" footswitch input and Autopunch features for punch-in recording
- ✓ RCA line outputs
- ✓ Stereo reverb effect on send/return path
- ✓ Level, Pan and 2-band EQ controls per channel
- ✓ Records to SD or SDHC Card media, up to 32GB supported
- ✓ USB 2.0 connection to computer for backup and track/mixdown export
- ✓ Built-in stereo electret condenser microphones
- ✓ Backlit LCD display

Take your recording to the next level with the DP008, a portable 8-track recorder for all musicians. TASCAM's DP008 is an eight-track recorder that captures CD-quality audio, two tracks at a time. You can use built-in microphones to grab ideas, plug condenser mics into the XLR inputs or plug a guitar directly in to lay tracks. There's even a metronome and chromatic tuner built-in for tight-sounding tracks! The DP008 also allows you to digitally bounce tracks to make room for more, and recording is stress free thanks to features like onboard editing and quick undo.

Each track on the DP008 has its own row of knobs for level, pan and effects, just like our classic cassette Portastudios of the past. The effects knob sends to a built-in stereo reverb processor with hall, room, stage and other effects. Each track also has EQ to tailor the sound for your mix. When your song is complete, mix it to a dedicated stereo track while riding levels and flipping pan as much as you want. You can export your mix, or even individual tracks, as a WAV or MP3 file.

TASCAM invented the home recording studio with the original cassette Portastudio. The DP008 takes the ease-of-use of those classic songwriting tools and adds portability, digital sound quality, effects and mixdown to bring home recording into the 21st century. Simplify your recording workflow, check out the DP008! Visit [www.ramseyaudio.com](http://www.ramseyaudio.com) for details.

DP008

Tascam Digital PortaStudio

\$298.95

## Digital PocketStudio 4-Track Recorder

- ✓ Four-track digital multitrack recording
- ✓ CD-quality 44.1kHz/16-bit WAV recording
- ✓ Records to SD and SDHC cards (1GB card included)
- ✓ Autopunch, repeat and record undo
- ✓ Dedicated stereo mixdown track

New For  
2010

*Packed With Features, Still Fits In Your Pocket!*

If you're familiar with home recording, you've probably used or know someone who has used one of TASCAM's many classic multi-track cassette-based Portastudios. For 30 years TASCAM has been putting affordable, easy-to-use recording technology into the hands of professionals and amateurs alike. Now, a truly worthy successor to that legacy is here! The DP004 Digital Pocketstudio takes all the best features of the classic cassette-based Portastudios and puts them in an even smaller package, with perfect digital sound quality.



Unlike some devices where features and levels must accessed via clumsy lists of menus, the Portastudio has four tracks and gives you physical knobs for level and panning of each one. You can record two inputs simultaneously through the onboard condenser microphone, two unbalanced 1/4" mic/line inputs or you can switch the inputs to guitar levels. You'll have enough room for about an hour of audio on the included 1GB SD, but the DP004 can accommodate SD and SDHC (High Capacity) cards up to 32GB, so you will always have plenty of recording time!

You can build your arrangements with up to four tracks, and the DP004 also gives you the ability to bounce tracks to combine them for extra overdubs. You can fix problems with the easy autopunch feature, and edit tracks right on the unit. The track editor also includes an undo function in case of any mistakes. Mixing is built into the Digital Pocketstudio - once you set your levels and pans, you can record your mix onto a dedicated stereo master track. You can also transfer your tracks and mixes straight to your computer via high speed USB 2.0 for CD burning and/or sharing online.

The DP004 is powered by 4 AA batteries, which provide over 8 hours of continuous recording or playback. You can also use the optional AC power adapter. Despite its go-anywhere compact design (smaller than a paperback book!) the DP-004 is simple enough for students, and powerful enough for songwriters and musicians. A great tool for anyone who wants to keep their recording process creative and fun! Dimensions: 6.1" W x 1.3" H x 4.2" D, Weight: 2.8oz. Visit [www.ramseyaudio.com](http://www.ramseyaudio.com) for more details.

DP004

Tascam Digital PocketStudio

\$198.95



New For  
2010

## Track Pack X2 Recording Studio Bundle

- ✓ US122MKII high quality stereo USB audio interface
- ✓ TM-78 Electret Condenser Microphone
- ✓ Cubase LE4 48-Track recording software w/MIDI sequencing
- ✓ MIDI in and out
- ✓ 96kHz/24-bit audio resolution
- ✓ Mac and Windows drivers included (compatible with Mac OS X Snow Leopard)

*Everything You Need to Go Digital - Quickly and Easily!*

Welcome to the world of digital audio production! You'll be ready to record any-and-everything right away with the TrackPack X2 bundle from TASCAM! It has all the tools you need at one low price! The core of the TrackPack X2 is the new US122MKII audio interface. It boasts dual XLR inputs with phantom power, two analog line inputs (1 switchable to high-impedance, perfect for guitar or bass input), and MIDI in/out, and it plugs directly into your computer via high-speed USB 2.0 and allows you to record two tracks at once, with zero latency!

Next up in the pack we have the TM-78 Electret Condenser microphone, a professional XLR output mic that is great for vocals or mic'ing up instruments. The mic comes with a cable and a tabletop stand. And of course you can't record without software, that's why the TrackPack X2 comes with a copy of Cubase LE4, a 48-Track recording suite for digital mixing! It's packed with features like a wide variety of plug-ins, automation, notation layout, and more! So what are you waiting for? Get the TrackPack X2 and get recording!

TRACKPACKX2

Tascam Track Pack X2 Recording Pack

\$198.95





## Tascam 24-Track 24-Bit Portastudio

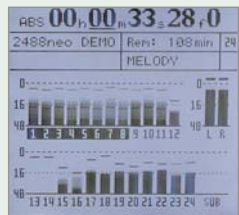
- ✓ Mastering effects including multiband compression, EQ and noise shaping for pro-sounding CD mixes
- ✓ 24-track / 24-bit recorder (44.1kHz)!
- ✓ 250 "virtual" tracks available per song!
- ✓ 36-channel mixer!
- ✓ 80GB internal hard drive, CD-R/RW drive!
- ✓ 3-band EQ on 24 channels, 8-inputs, tone generator and stereo bus with high and low sweepable shelving bands and full parametric mid band
- ✓ Three aux sends on all channels except the effects return
- ✓ Loop effect provides reverb, delay, chorus and more on an aux send and return
- ✓ Assignable guitar multi-effects processor for distortion, chorus, delay, flange and more
- ✓ Up to eight assignable dynamics processors for compression during recording or mixdown
- ✓ Dedicated stereo compressor on the stereo output
- ✓ Eight inputs: 4 XLR with phantom power double as W" mic/line inputs, plus four dedicated W" mic/line inputs
- ✓ Twenty 45mm faders including master fader
- ✓ LCD display for viewing meters and edit parameters
- ✓ CD-RW drive to record Red Book CDs, import/ export WAV files and backup hard drive
- ✓ 64-voice general MIDI sound module
- ✓ Standard MIDI File player
- ✓ High-speed USB 2.0 jack connects to PC or Mac® for data back up and SMF/WAV file transfer



*The Ultimate In Home Studio Recording...  
Taking You To The Next Level!*

### MEGA BUCK QUALITY IS NOW AFFORDABLE!

If you're serious about the quality of your recordings, but don't want to spend a ludicrous amount of money, the new Tascam 2488NEO is the perfect solution. 24 tracks is the industry standard for professional studios, and a few years ago a studio of this quality would have cost in the \$1M range! Now you can bring the same high quality studio editing and mixing into your home studio for a tiny fraction of that amount! The brand-new 2488NEO expands on the success of the 2488 series by doubling the hard drive space, adding an all-new higher quality LCD-Display, new guitar effects, and even better CD mastering!



### TRUE PROFESSIONAL SPECIFICATIONS!

By far the most affordable 24-track recording and mixing workstation ever made, the 2488NEO is the only model within three times its price range that can truly run 24 tracks at 24-bits / 44.1kHz. Eight simultaneously recordable inputs to XLR and 1/4", twenty physical faders for the mixdown channels, and each channel has 3-band EQ and built-in effects processors. With the 2488NEO you can record up to 250 "spare" or "virtual" tracks per song! This is perfect to store different vocal versions, different bass versions, separate guitar takes, and any possible components of the song. Pick the best "takes" from the virtual tracks and simply assign them to your playback tracks! Varispeed operation provides +/-6% pitch control and Slow Speed Audition that allows you to rehearse tricky lead lines, etc. at a lower speed but the same pitch! Each mixer channel is equipped with phase reversal, pad, basic three-band EQ (high and low shelves, plus a fully parametric mid-band), three aux sends, and an insert point (to accommodate an in-line effect or dynamics processor).

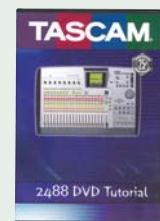
### BUILT-IN MIDI GENERATOR AND LIBRARY!

The 2488NEO also incorporates a 16-part, 64-voice General MIDI tone generator, complete with an onboard Standard MIDI File player and metronome. This enables MIDI files to be loaded and used as backing tracks, for example. Hundreds of built-in MIDI backing tracks and drum kits are included, so no need to go digging through that pile of old CDs when you need to whip up a demo! Full-featured editing, including cut/copy/paste/loop, is built-in and gives you DAW-like flexibility for building that next hit recording. All editing functions are highly intuitive for amateurs and pros alike! Relocate verses or solos with ease and speed. All editing is non-destructive, with a comprehensive multiple undo function in case you screw it up!

### HDD AND CD-R/RW INCLUDED!

A built-in 80GB internal hard drive gives the user space for twenty to thirty 24 track songs and virtual tracks for comping vocals and multiple takes. 80GB also gives you plenty of room for your stored MIDI library, working tracks, and imported files. In addition, a USB2.0 port is provided for backup to a PC or Mac.

And for the final mix, the 2488NEO improves on previous models in the 2488 line by giving you a brand new full suite of pro-quality mastering effects. Once your tracks are mastered, the built-in CD-RW drive can turn your 2-track master mixdown into a Red Book CD. That means you can have your entire production path in one device! If you want the best of both worlds - a portable, compact workstation, and the creative power of 24, 24-bit digital tracks - look no further. Measures 21.5W" x 14D" x 5.7H". Operates on 110VAC. 220VAC/50Hz available as a special order. Visit [www.ramseyaudio.com](http://www.ramseyaudio.com) for more details.



Tutorial DVD  
Available!

## Stanton USB Digital Turntables

- ✓ Two professional quality models available
- ✓ Includes Audiophile-quality Stanton 500.v3 cartridge
- ✓ USB interface for PC or MAC
- ✓ Pitch control
- ✓ Includes Cakewalk Pyro Audio Creator LE music and sound editing software



T55USB



T92USB

**Bring Your Classic Vinyl Into the Digital Age...  
As It Was Meant To Be!**

As music technology continues to march head-on into the digital era many of us are left staring at shelves full of classic albums wondering what to do with all that vinyl. Even devoted vinyl enthusiasts know that the format has its downsides: lack of portability, dust, dirt, scratches, and worst of all, the unavoidable degradation that LPs undergo during normal playback. Unless you're a millionaire with a zero friction, zero mass, and zero record wear laser turntable, every time you play your vinyl the grooves of the record are being worn down slightly, leading to ever worsening quality! The solution? Archive your vinyl in perfect and lossless digital files, preserving the physical media for your collection.

But then comes the next dilemma for the true vinyl audiophile... I don't want to subject my classic vinyl collection to further damage and degradation when converting them to digital! It would certainly seem like the classic Kobayashi Maru scenario, Jim! The Stanton T55USB and T92USB Turntables are the perfect choice to preserve all your classic vinyl forever! And unlike the "low-end" units (USB record players!) you see advertised in Sunday magazines and airline magazines, your vinyl will be reproduced flawlessly just as it was intended to be!

The T92USB is a professional-quality turntable that features a high-torque direct drive motor for maximum stability, and its packed with performance features. A static balanced S-Shape tone arm with a low weight and tracking force to reduce record wear while still providing the reproduction you'd expect from your vinyl collection. It's got built-in DSP with key lock for controlling tempo without affecting pitch, and lots more features that pro DJs demand. The T55USB is a rock solid and reliable user-friendly belt-drive turntable. The straight tone arm on the T55USB means superior tracking, and it's affordable price means it appeals to both consumers and DJ's. Both turntables provide the perfect balance between classic professional performance and modern technology, and feature an extremely stable and stylish aluminum base that keeps the turntable solid and level just like your original. A custom slip mat and dust cover are also included. When you use these turntables you will truly feel like you're back in the 70's with your audiophile system!

Electronically is where this beauty really introduces your vinyl to the digital age! A standard USB output is provided to connect to any USB compatible computer. Once connected it will simply be recognized without any proprietary software. But that's just the beginning... Once connected to your PC there is no need to purchase additional software. The T90USB comes bundled with Cakewalk Pyro Audio Creator LE which makes converting vinyl to digital a simple task for even the least computer-savvy! You can record each side of the record in one pass then go back to clean up pops and scratches and automatically separate the tracks, all with an intuitive and user-friendly interface! Once done, save the file in any format you desire and you truly end up with a better copy than the original! Hard to believe? You've removed the scratches and pops, and saved it as a lossless file, you be the judge! Just imagine your entire collection could fit on one plug-in external hard drive... or two, one for backup! And that's something you can't do with your vinyl!

Whether you're looking for a safe and proper way to archive your vinyl collection, simply haven't repaired or replaced your classic turntable from the past, or are a DJ or broadcaster looking for the latest and the greatest, the T55 and T92USB will meet your needs! For more information visit our pro audio site at [www.ramseyaudio.com](http://www.ramseyaudio.com). (When these came in I took the first one home, and archived all my vinyl, and it now sits proudly with my system. Unfortunately my relatives saw it, and now I have boxes of Lawrence Welk LP's in the basement waiting!)



### SPECIFICATIONS

	T92USB	T55USB
<b>Turntable Section</b>		
Frequency Response	30 Hz to 20 kHz +/- 2 dB/ RIAA filter	20 Hz to 20 kHz +/-1dB
THD+N	Less than 0.03% at 1 kHz	Less than 0.01% at 1 kHz
S/N Ratio: Line	Less than -65 dB	Less than -65 dB
Digital Output (SPDIF)	0.5Vp-p (Load 75 ohms)	
Type	3-speed full manual	2-speed full manual
Motor	8 pole, 3 phase, brushless DC motor	
Speeds	33 1/3 and 45rpm and 78 rpm	33 1/3 and 45rpm
Wow and Flutter	Less than 0.15% WRMS (JIS WTD) with 33 1/3 rpm	Less than 0.2% WRMS (JIS WTD) with 33 1/3 rpm
Pitch Controls	±8%, ±12%	±0%
Starting Torque	More than 1.6 kgf.cm	
Starting Time	Less than 1 sec with 33 1/3 rpm	Less than 1 sec with 33 1/3 rpm
Braking Time	Less than 1 sec with 33 1/3 rpm	Less than 1 sec with 33 1/3 rpm
Braking System	Electronic Brake	
Pitch Bend	±6%	
Time for Speed Change	Less than 1 sec with 33 1/3 rpm Less than 1 sec from 45 to 33 1/3 rpm Less than 1 sec from 33 1/3 to 78 rpm	Less than 1 sec with 33 1/3 rpm Less than 1 sec from 45 to 33 1/3 rpm
Audio Output	Phono/Line output	Phono output
USB Function	A/D,D/A 16BIT 44.1KHz or 48KHz USB selectable	A/D,D/A 16BIT 44.1KHz or 48KHz USB Selectable
Computer interface:	USB 1.1 compliant, Windows or Mac OSX	USB 1.1 compliant, WINDOWS XP or Mac OSX
<b>Tone Arm Section</b>	<b>Measurement</b>	
Tone arm type	Static balanced S-Shape tonearm for lower distortion and reduced record-wear	Static balanced straight shaped tone arm with cardan's suspension
Effective Arm Length	230.5mm	191mm
Tracking Force Range	0-3g	0-4g
Applicable Cartridge Weight	3-4g	6-10g

T92USB  
T55USB

Stanton Professional USB To Digital Turntable Package  
Stanton Professional USB To Digital Turntable Package

\$298.95  
\$198.95





## Dynamic Hand Held Microphone

- ✓ Cardioid pickup pattern!
- ✓ Dual-stage windscreen!
- ✓ 18' XLR Cable
- ✓ Includes hard-shell case

A handheld dynamic mic that excels in both live and recording applications, the R21S is equipped with a linear frequency response for superior reproduction! It's high-quality design withstands high SPL, making it excellent for micing loud guitar amps and drums. A tight cardioid pattern reduces feedback and a shock-mounted element minimizes handling noise and gives additional protection. Rugged, road-ready construction includes an anti-dent ring around the windscreen for extra protection

against accidents! Includes a custom hard shell case, mic clip with Euro adapter, and an 18' pro grade XLR microphone cable! That's right, for less than 30 bucks, you get it all! You can't go wrong with the 21S!

SAR21S Samson Dynamic Microphone

\$28.95



*The Cost Effective Mic...  
That Sounds GREAT!*

SASDIR



SASDIRPLUS

The only direct box you will ever need! The S-Direct provides the facility for direct audio insertion to a mixer or recorder. You can connect all kinds of signals with the S-Direct, including guitars, keyboards, signal processors, even high-powered speaker output from an amplifier! You can also tap off the signal from a guitar or bass and pass it to the onstage amp without affecting the original sound, eliminating the need to mic guitar amps. The S-Direct is also very useful for connecting unbalanced signals from sources like signal DJ and sub-mixers, effects processors, and keyboards to a main PA or recording mixer. The S-Direct has a power supply so you can rely on an even frequency response on any audio you connect, regardless of output impedance! *(I learned a long time ago... have a few of these in your gig bag, guitar case, or trunk!)*

### ALSO AVAILABLE IN THE DIRECT PLUS!

The S-Direct Plus offers all the features of the original S-Direct but in stereo! It's like having two direct boxes in one and is the perfect solution for instruments with multiple outputs such as keyboards. *(OK, actually I keep a Plus in my trunk!)*

SASDIR Samson Mini-Direct Box  
SASDIRPLUS Samson Mini-Direct Box Plus

\$28.95

\$38.95

## Audio Mini-Direct Boxes

- ✓ Switchable input level handles instrument and speaker levels
- ✓ 48V Phantom power or 9V operation with auto battery shut-off
- ✓ Switchable ground lift
- ✓ 1/4" Link output

## Mini Headphone Amp

- ✓ Four 1/4" stereo headphone outputs
- ✓ Individual volume control for each output
- ✓ Stereo 1/4" input
- ✓ Includes 18V AC adapter



Once again, the Mini series has the solution to another common problem! One headphone or monitor jack, more than one person. Enough said! The S-Amp delivers high quality headphone amplification to 4 separate headphone jacks, complete with independent gain controls. Providing high power levels and superb fidelity, the S-Amp is also ruggedly built with large rubber bumper feet for shock protection. Includes 18V AC adapter. You need to keep one of these in your gig bag!

SASAMP Samson Mini-Headphone Amp

\$48.95

## Mini RCA/XLR Bump Box

- ✓ +4dBu to -10dBV audio level converters
- ✓ Stereo RCA unbalanced and XLR balanced inputs with level controls
- ✓ RCA -10dBV stereo outputs
- ✓ XLR +4dBu stereo outputs



This bump-box is a great problem solver for interfacing and level matching between consumer and pro-level audio equipment! Murphy's Law, if you have a balanced XLR plug, it will need to go into an unbalanced RCA input... or vice versa. Always a problem until now! This mini bump box quickly and easily converts RCA (-10dBV) unbalanced to XLR balanced (+4dBu) in either direction! Level controls for both are included to properly match the audio levels. The S-Convert is small enough to fit anywhere, but built tough for portability! Includes 18V AC Adapter. *(I keep these in my trunk too!)*

SASCON

Samson Mini S-Convert Bump Box

\$48.95

## Mini Audio Mixer

- ✓ 5 channel audio mixer
- ✓ XLR Balanced mic input with level control with phantom power
- ✓ RCA stereo inputs with level control
- ✓ 1/4" instrument line inputs with level control
- ✓ RCA plus 1/4" TRS outputs
- ✓ Includes 18V AC adapter



The S-Mix is a compact 5-channel mixer packed with high-end features! Its design includes high quality, low noise op-amps for added headroom and cleaner signals. Features XLR mic input with phantom power, two RCA unbalanced inputs, two 1/4" TRS line inputs, and both 1/4" TRS and RCA outputs. The S-Mix also comes in a rugged aluminum chassis with large rubber shock feet. When you have to put a gig together fast, there is no better solution!

SASMIX Samson Mini-Mixer

\$48.95

## Mini Phantom Power

- ✓ 2-channels
- ✓ 2 Balanced XLR mic inputs
- ✓ 2 Balanced XLR and 1/4" mic outputs
- ✓ Includes AC adapter



An awesome ultra-compact portable phantom power supply! One often forgets that condenser mics need phantom power and that not all mixers provide it! No problem with S-Phantom! Just put it in line with your mics and you're all set. Includes 18V AC adapter.

SASPHANT

Samson Mini-Phantom Power Supply

\$48.95

## Portable USB Condenser Microphone

- ✓ Perfect for recording music, podcasting, and field recording!
- ✓ Makes iChat, VoIP, and webcasting sound like a studio origination!
- ✓ Large 19mm Diaphragm
- ✓ 20Hz to 18 kHz pressure gradient condenser element
- ✓ Plug and play PC and Mac compatibility without any drivers!
- ✓ Selectable cardioid or omnidirectional polar pattern
- ✓ Built-in headphone output

Go Mic is perfect for recording music, podcasts or field recording, but its range of functionality extends beyond typical USB microphones. Ideal for voice recognition software, iChat, web casting and even Voice over Internet Protocol (VoIP), Go Mic is the ideal solution for recording on the go. Because of its custom, compact design, the Go Mic can clip right onto your laptop or sit unobtrusively on your desk. Plug and play operation also means it's completely compatible with a Mac OS or Windows, with no drivers required. High-quality components and meticulous engineering ensure the Go Mic offers remarkably clear, professional audio reproduction. Thanks to its switchable cardioid and omni polar patterns, you can pick whichever pattern is more appropriate for your specific situation. Use the tightly focused cardioid pickup pattern when recording a podcast, acoustic guitar or vocals. Or use the omnidirectional pattern to capture the entire room, whether you're jamming with your band, webcasting with a group or conducting an online meeting with multiple members in a single location. Plus, with a frequency response of 20Hz - 18kHz and a resolution of 16-bit/44.1kHz, you can be sure you're getting professional audio specs in a compact, multi-purpose design. Includes USB cable, cable clip, mic stand adapter and zipper carrying pouch.

SAGOMIC Samson Go Mic Portable USB Condenser Microphone

\$58.95

New For  
2010

*Make Your Field Recordings  
Sound Like Studio Recordings!*



## USB Studio Mic & Interface

- ✓ Adjustable up to 6 feet in height!
- ✓ Universal 1 3/8" diameter adapter fits virtually all PA speakers!
- ✓ Road-ready steel construction!
- ✓ 55 pound capacity per stand!

### Studio Quality With A Built-In Mixer!

The G-Track is a total solution capable of taking you from your musical inspiration to your finished tracks. It's the world's first USB condenser microphone with a built-in audio interface and mixer, allowing simultaneous input of vocals and guitar, bass, or keyboard while also providing monitoring through an on board headphone output.



The G-Track allows you to record vocals like a standard USB mic, or two mono instruments through the line/instrument input, or a mix of one mono instrument and vocal. Now singers can directly record vocals and instruments quickly and easily with one device! And its ease of use and portability allows you to take it anywhere inspiration may strike you. SASPO4 shock mount not included, see below.

**SAGM1U Samson G-Track USB Studio Mic \$148.95**

## 18' Microphone Cables

- ✓ 18' Low noise cable
- ✓ Heavy-duty black XLR connectors
- ✓ Lifetime manufacturers warranty



Standard XLR mic cables are the things that you can never have enough of! When shopping around you will find a lot of them out there with all the cute adjectives attached meaning they are very special. Well, these are professional quality 18' mic cables, with high quality black anodized compression strain-relieved connectors. They are great, of the highest quality, and bundled in packages of three. You can't go wrong!

**SAMC18 Samson 18' Microphone Cable, 3 Pack \$26.95**

## Microphone Shock Mount

- ✓ Fits condenser microphones
- ✓ Standard boom or mic stand thread mount
- ✓ Eliminates noise from floor, stand bumps and more!



A good shockmount is an invaluable tool that will save you lots of time redoing botched takes or trying to edit out microphone bumps in post-production, while adding extra professionalism to your live productions! When a microphone picks up an audio signal, it's also picking up mechanical noise and vibrations through the mic stand. Even tiny vibrations can cause issues, but these high-quality Spider-Mounts will eliminate these vibrations for the most natural sound possible!

Great for broadcast talent as well as studio mastering. Order SASP1 for the C01, C01U, C03, C03U, CL7, and CL8 mics. Order the SASP04 exclusively for the highly popular G track GM1U USB microphone. Standard thread.

**SASP01 Samson Microphone Shock Mount \$29.95**  
**SASP04 Samson Microphone Shock Mount \$29.95**

## Desktop Microphone Stand

- ✓ Holds any standard mic or mic clip
- ✓ Fixed 5" stand height
- ✓ Heavy weighted metal base
- ✓ Attractive and durable flat black color



One would think there isn't much to say about a standard desk stand. Well, one would be wrong! This desk stand is extremely heavy duty for the largest desk mics. No more worrying about it tipping over, it's heavy! The standard 5" height terminates in a standard thread to accept any microphone base or mic clip. The entire finish is an attractive matte black that's non-reflective on camera!

**SAMD5 Samson Desktop Microphone Stand \$19.95**

## Boom Mic Value Pack

- ✓ Everything you need for boom setup!
- ✓ Mic, boom, mic, cable, and case!
- ✓ Professional Q7 dynamic mic

If you're starting from scratch or just need to add a mic setup to your existing equipment, the Q7 Value Pack just can't be beat! First off, you get the professional Q7 hand held dynamic mic. Then all the goodies are added, including the pro boom mic stand, matching mic clip, a 25' pro grade XLR mic cable, and a matching gig bag to carry it all. Makes it easy to have your entire stage or studio boom ready to setup at a moments notice. And yes, you get all this at a price that simply can't be beat!



**SAQ7VP Samson Boom Value Pack \$118.95**

## 30' Pro Speaker Cables

- ✓ Heavy-duty 14 gauge wire oxygen free
- ✓ Speakon™ and 1/4" connectors
- ✓ 30 feet of cable
- ✓ Lifetime warranty



Highest quality professional quality speaker cables for easy and simple connection to your equipment. Perfect for studio connections and on the road gig setups. The cables feature oxygen free 14 gauge copper wire and are factory terminated in your choice of Speakon™ connectors, 1/4" connectors, or one of each. All cables are 30'.

**SATSS30 Speaker cable, Speakon™ to Speakon™ Connectors \$48.95**  
**SATSQ30 Speaker cable, 1/4" to 1/4" Connectors \$24.95**  
**SATST30 Speaker cable, 1/4" to Speakon™ Connectors \$43.95**

## Condenser Mic Windscreen

- ✓ Durable black foam construction
- ✓ Greatly reduces wind and p-popping noise
- ✓ Fits C01, C01U, C03, C03U, CL7 and other similar styled mics



Get rid of excess and unwanted noise by protecting your mics with these affordable windscreens! Especially useful for outdoor situations to eliminate wind noise. Also helps to reduce p-popping. Fits the condenser mics listed, as well as other microphones of equivalent size and shape.

**SAWS03 Samson Condenser Mic Windscreen \$9.95**

## Dynamic Mic Windscreens

- ✓ Greatly reduce wind and p-popping noise
- ✓ Fits most dynamic style handheld mics
- ✓ Durable black foam construction



Great general replacement (or new if you never had any!) windscreens for the typical dynamic hand held microphones. Fits most models.

Great for wind noise reduction and to reduce p-popping. Black durable foam matches any mic. Comes in a handy pack of 5.

**SAWS1 Samson Handheld Mic Windscreens, 5 Pack \$12.95**

## Headset Mic Windscreens

- ✓ Greatly reduce wind and p-popping noise
- ✓ Fits most headset attached boom boom
- ✓ Durable foam construction



A great thing to have extras of! This general purpose windscreen fits most headset worn boom mics. Great for wind noise reduction and to reduce p-popping from such close-worn headset mics. Black durable foam matches any mic. Comes in a handy pack of 5.

**SAWS5E Samson Headset Mic Windscreens, 5 Pack \$12.95**

## Microphone Value Pack

- ✓ Mic stand, dynamic mic, and cable!
- ✓ The complete package, ready to setup!
- ✓ Professional R21 dynamic mic

The VP1 makes it easy to get started and saves you the trouble of getting separate components! It includes the professional R21 dynamic handheld microphone, mic clip with Euro adapter, a telescoping tripod based microphone stand, and a 25' pro grade XLR microphone cable. Everything you need to get set up! This combination really puts the value in value pack! If you're looking for a boom mic stand, check out the Q7VP value pack. It includes the famous Q7 dynamic microphone plus a boom mic stand and case. Either way, if you're looking for value in microphones, these packs are the way to go!



**SAVP1 Samson Microphone Value Pack \$58.95**

## Microphone Pop Filter

- ✓ Nylon mesh screen prevents vocal popping and sibilance
- ✓ Universal mic stand mounting bracket
- ✓ Flexible metal gooseneck



This high-quality pop filter will help you sound your best! Controlling popping P's and sizzling S's before the sound hits the mic maximizes vocal quality in musical recordings and talk radio/podcasting broadcasts. When pops and hisses in speech occur, they can cause some serious clipping issues. The high quality nylon mesh screen of the PS01 blocks out these sounds, and the result is cleaner and better sounding vocals! Clamps to your mic stand, and the gooseneck Pop Filter easily swivels up in front of your mic. You've seen the Pro's use them in the studio, why don't you?!

**SAPS01 Samson Pop Filter \$24.95**





# Looking For Pro Audio Equipment?



***We've Got It!***

Ramsey Electronics is a stocking dealer for the leading manufacturers of professional audio products. From Tascam, Teac, Denon, Furman, Marantz, Allen & Heath, Samson, Shure, Zoom, Galaxy, Sennheiser, Audio-Technica, SKB, Gator, Hartke, Rolls, and everything in-between, we have the latest equipment at the greatest prices around.

In addition, any of our Pro Audio equipment can be integrated into our PXB series FM Stereo Radio Stations making customization a breeze without any delivery delays!

For additional information or to request a full-line Pro Audio catalog, visit [www.ramseyaudio.com](http://www.ramseyaudio.com) or call us at 800-446-2295.

**Visit [www.ramseyaudio.com](http://www.ramseyaudio.com) For Complete Information!**





## PXB5006 50W FM "Station-In-A-Box"

- ✓ 50W RF output continuous duty transmitter!
- ✓ Professional 5-input stereo audio mixer!
- ✓ CD, CD-R, CD-RW, MP3 disc playback!
- ✓ CD-R audio record!
- ✓ Cassette playback and record!
- ✓ Includes 2 dynamic microphones, stands and cables!
- ✓ Includes 3.4dB gain omnidirectional antenna and cable!
- ✓ FCC Certified under parts 2, 73, and 74
- ✓ Meets or exceeds FCC 47CFR Parts 15.107(b), 15.109(b)
- ✓ Available in domestic 110VAC or export 220VAC versions
- ✓ All installed, prewired, and tested in a compact 14" high, 6 rack unit road case

### The Compact 50 Watt FM Stereo Radio Station Designed For Rapid Deployment!

#### YES... A COMPLETE STATION IN-A-BOX!

LPFM and FM licensees, often need a way to quickly "get on-the-air" at either temporary field locations or in the interim to their installed studio transmitter locations. Municipal, government, and military users frequently need to get a radio station "up quick" to originate short term programming from various remote origination sites for disaster preparedness broadcasts! No matter what the application is, the PXB series of "Radio Stations in a Box" have proven to be the winner worldwide!

In fact, a number of PXB's were immediately deployed to the Hurricane Katrina areas to broadcast instructions and disaster relief information! Hundreds of PXB's have also been deployed to international locations worldwide. Radio stations are put on-the-air in minutes rather than days and when time is critical, that makes all the difference.



Each PXB is factory prewired and tested, and ready to go on-the-air the moment it is received! The compact PXB5006D1 is specifically designed for standard domestic use, or other locations where the primary power is 110/120VAC, 60Hz. If you are looking for an export version designed for 230VAC, 50Hz overseas use, order the PXB5006E1.

#### THE LATEST EQUIPMENT AVAILABLE, READY TO GO!

We know your station needs to be deployed quickly, and often in areas not exactly environmentally friendly to electronic equipment. When we design our PXB series of stations, our first criteria is reliability under the harshest conditions. Only equipment proven to withstand such an environment is utilized. From there it gets even more difficult!

We need to select the latest and most advanced equipment available, but it needs to be user friendly so the average non-technical or non-broadcast person can operate it! Once that fine balance is met, the equipment is tested and burned-in at full power to assure the reliability you need. You end up with the latest and the greatest equipment, racked up and ready to plug-in. There is no simpler way to get on-the-air!

#### 50 WATTS OF COOL RUNNING RF POWER!

The heart of the PXB50 series is the popular Ramsey PX50 FM Stereo Transmitter. The third generation transmitter designed around our broadcast customers requests! In short, it is the FM stereo transmitter that will keep you up and running, period! Operation is simple and intuitive via the front panel navigation switch matrix. All controls and status messages are displayed on the 2 line by 20 character vacuum fluorescent display. Automatic protection circuits are designed to keep you on the air, rather than off. And the extremely efficient quiet forced cooling will keep you running in the hottest environments while remaining quiet enough for a local microphone at the transmitter! And of course, the PX50 is FCC Certified under parts 2, 73, 74.

#### CD, MP3, CASSETTE, AUX, AND MULTIPLE MICROPHONE INPUTS!

The PXB5006 is not only your transmitter, but your entire studio... all in an extremely compact 6 rack unit road case! A single half-rack Shure stereo audio mixer gives you instantaneous access to CD/MP3 optical discs, cassette tapes, two microphones, and other auxiliary sources you may have such as your Walkman or MP3 player! The other side half rack space is perfect for a matching Shure wireless microphone package available as an option.

The built-in Tascam CC222SLMKII gives you efficient slot loading playback of audio CD's, CD-R's, CD-RW's, and MP3 data discs. It also provides automatic dual sided cassette playback. You can also record CD-R's with automatic track creation, record cassettes, and automatically dub between the two formats. Both sources can be mixed into your program with the compact Shure mixer.

#### HIGH PERFORMANCE FM ANTENNA SYSTEM!

There are three important factors to achieve maximum range with your FM broadcast system: antenna, antenna, and antenna! It doesn't get any plainer than that. So we include our extremely popular 3.4dB omnidirectional FMA200 antenna with the package.

This antenna can be easily assembled in the field, and is simple to tune to your operating frequency. And with 3.4dB gain, that effectively doubles your transmit power! The antenna is simple to mount to an existing structure, pole, pipe, tower or building. We also include 100 feet of low loss LMR400 feed line with pre-installed matching connectors that makes your antenna installation a breeze.

#### DUAL MICROPHONES, CABLES, STANDS, AND HEADPHONES!

To give your station and your broadcast personnel a great sound we include two professional dynamic hand-held microphones with each PXB package. These microphones feature a great cardioid pickup pattern, an on-off switch, a dual stage windscreen, and a custom hard-shell case. Two professional 18' XLR microphone cables are also included as are two professional weighted desk stands and microphone clips.

Two pair of professional Senheiser stereo headphones are also included, giving you everything you need to get two people on-the-air! If desired, a Shure SLX24SM58 UHF wireless microphone system can be added to the blank half-rack mixer panel without taking up any additional rack space!



Shure SLX24SM58 Option

#### COMPACT RACK ROAD CASE READY TO TRAVEL!

The entire station is assembled and prewired in a compact 6 unit rack case that measures 14H" x 22.5W" x 23D" overall. Lightweight molded polyethylene construction provides great protection for travel and is easily stackable with other similar cases. The cases utilize comfortable recessed side handles for easy transport along with locking front and back covers for added security. All equipment is professional wired, tested, and burned-in to assure the reliability you expect with your station. In short, just plug it in, connect your antenna, and you're on-the-air! **NOTE: ADDITIONAL MILITARY, GOVERNMENT, AGENCY, AND PUBLIC SAFETY MODELS AND POWER RATINGS ARE AVAILABLE TO MEET ANY GLOBAL APPLICATION OR REQUIREMENT. CONTACT THE RAMSEY ELECTRONICS MILITARY AND GOVERNMENT GROUP FOR FURTHER INFORMATION AND PRICING.**



Shure SCM262 Stereo Mixer



Tascam CC222SLMKII CD/MP3/Cassette/CD-R Record Deck

PXB5006D1	Compact PXB Series FM Stereo Transmitter In-A-Box, 110/120VAC, 60Hz Domestic	\$4295.00
PXB5006E1	Compact PXB Series FM Stereo Transmitter In-A-Box, 230VAC, 50Hz Export	\$4495.00
SLX24SM58	Add Shure SLX Half-Rack UHF Synthesized Wireless Mic System With SM58 Handheld Dynamic Microphone	\$599.00





## PXB5012 50W FM "Station-In-A-Box"

- ✓ The big brother to the PXB5006 series!
- ✓ 12 rack unit shock mounted road case!
- ✓ 50W RF output continuous duty transmitter!
- ✓ Furman metered AC line conditioner and protector!
- ✓ Two sources of CD, CD-R, CD-RW, MP3 disc playback!
- ✓ CD-R audio record!
- ✓ Cassette playback and record!
- ✓ Includes 2 dynamic microphones, stands and cables!
- ✓ Includes 3.4dB gain omnidirectional antenna and cable!
- ✓ FCC Certified under parts 2, 73, and 74
- ✓ Meets or exceeds FCC 47CFR Parts 15.107(b), 15.109(b)
- ✓ Available in domestic 110VAC or export 220VAC versions
- ✓ All installed, prewired, and tested in a heavy duty 26" high shock mount road case!

*The Complete 50 Watt FM Stereo Radio Station  
Designed To Survive In The Toughest Environment!*

### THE ULTIMATE STATION FOR THE TOUGHEST ENVIRONMENT!

Whether you're a commercial, private, or municipal broadcaster, there is no easier way to get a temporary or portable station on-the-air than with our small compact PXB5006 series on the preceding page. But when it gets beyond that, it's time for the big boy to step in... the PXB5012 series!

Specifically designed for field deployment anywhere in the world, the PXB5012 has a full compliment of professional broadcast and system components that make the station studio ready, wherever that studio may be. In addition, the entire system is housed in a special shock mounted 12 rack unit road case to withstand the toughest field abuse.

### THE LATEST EQUIPMENT AVAILABLE, READY TO GO!

We know your station needs to be deployed quickly, and often in areas not exactly environmentally friendly to electronic equipment. When we design our PXB series of stations, our first criteria is reliability under the harshest conditions. Only equipment proven to withstand such an environment is utilized. For select models, extended impact protection had to be designed-in using custom shock cases. From there it gets even more difficult! We need to select the latest and most advanced equipment available, but it needs to be user friendly so the average non-technical or non-broadcast person can operate it! Once that fine balance is met, the equipment is tested and burned-in at full power to assure the reliability you need. You end up with the latest and the greatest equipment, racked up and ready to plug-in. There is no simpler way to get on-the-air!



### 50 WATTS OF COOL RUNNING RF POWER!

The heart of the PXB50 series is the popular Ramsey PX50 FM Stereo Transmitter. The third generation transmitter designed around our broadcast customers requests! In short, it is the FM stereo transmitter that will keep you up and running, period! Operation is simple and intuitive via the front panel navigation switch matrix. All controls and status messages are displayed on the 2 line by 20 character vacuum fluorescent display. Automatic protection circuits are designed to keep you on the air, rather than off. And the extremely efficient quiet forced cooling will keep you running in the hottest environments while remaining quiet enough for a local microphone at the transmitter! And of course, the PX50 is FCC Certified under parts 2, 73, 74.

### MULTIPLE CD, CD-R, CD-RW, MP3, CASSETTE, AUX, AND MICROPHONE INPUTS!

Production wise, we took the simplicity of the PXB5006 series to the next level with the PXB5012! We designed it around the Denon professional DNX500 8-channel production mixer. This gives you access 8 matrix assignable program sources, and allows you to cue-up and cross-fade between any source. A professional Tascam CC222SLMKII provides advanced playback of CD, CD-R, CD-RW, MP3, and cassettes, and also provides CD-R and cassette record! Then, to provide an additional optical source, a Tascam CD200 is included giving you the flexibility of crossfading between separate CD, CD-R, CD-RW, and MP3 discs! Needless to say, multiple microphone and aux sources can be mixed/faded between all sources. This includes quick portable sources like MP3 players, Walkmans, and iPods! We took care of extreme physical environment issues with the custom shock mounted road case. To protect the system from the volatile characteristics of temporary or sub-standard power sources a Furman PL Pro DMC professional power conditioner is used to distribute power to all rack equipment. Input voltage is displayed on a convenient front-panel LED display to assist in installation!

### HIGH PERFORMANCE FM ANTENNA SYSTEM!

There are three important factors to achieve maximum range with your FM broadcast system: antenna, antenna, and antenna! It doesn't get any plainer than that. So we include our extremely popular 3.4dB omnidirectional FMA200 antenna with the package. This antenna can be easily assembled in the field, and is simple to tune to your operating frequency. And with 3.4dB gain, that effectively doubles your transmit power! The antenna is simple to mount to an existing structure, pole, pipe, tower or building. We also include 100 feet of low loss LMR400 feed line with pre-installed matching connectors that makes your antenna installation a breeze.

### DUAL MICROPHONES, CABLES, STANDS, AND HEADPHONES!

To give your station and your broadcast personnel a great sound we include two professional dynamic hand-held microphones with each PXB package. These microphones feature a great cardioid pickup pattern, an on-off switch, a dual stage windscreen, and a custom hard-shell case. Two professional 18' XLR microphone cables are also included as are two professional weighted desk stands and microphone clips. Two pair of professional Senheiser stereo headphones are also included, giving you everything you need to get two people on-the-air!

### RUGGED SHOCK MOUNTED ROAD CASE READY TO TRAVEL AND DEPLOY!

The entire station is assembled and prewired in a shock mount 12 unit rack case that measures 26H" x 25.25W" x 23D" overall. The inside rack case is independently isolated from the outside moulded polyethylene road case by rubber shock absorbers keeping it protected from impacts and rough handling. The cases utilize comfortable recessed side handles for easy transport along with locking front and back covers for added security. All equipment is professional wired, tested, and burned-in to assure the reliability you expect with your station. In short, just plug it in, connect your antenna, and you're on-the-air! We also understand that you may require 230VAC 50Hz operation for use overseas. No problem! We offer the PXB5012 series in both 110/120VAC 60Hz and 220/230VAC 50Hz versions. **NOTE: ADDITIONAL MILITARY, GOVERNMENT, AGENCY, AND PUBLIC SAFETY MODELS AND POWER RATINGS ARE AVAILABLE TO MEET ANY GLOBAL APPLICATION OR REQUIREMENT. CONTACT THE RAMSEY ELECTRONICS MILITARY AND GOVERNMENT GROUP FOR FURTHER INFORMATION AND PRICING.**



Denon DNX500 8-Channel Mixer



Tascam CC222SLMKII CD/MP3/Cassette/CD-R Record Deck



Tascam CD200 CD/CD-R/CD-RW/MP3 Player



Furman PL Pro DMC Power Conditioner/Filter/Protector

PXB5012D1S  
PXB5012E1S

Rugged 12 Rack PXB Series FM Stereo Transmitter In-A-Box, 110/120VAC, 60Hz Domestic  
Rugged 12 Rack PXB Series FM Stereo Transmitter In-A-Box, 230VAC, 50Hz Export

\$5495.00  
\$5795.00



## 50 Watt FM Stereo Transmitter

- ✓ 50W RF output, continuous duty!
- ✓ FCC Certified under parts 2, 73, and 74!
- ✓ Automatic monitoring!
- ✓ Automatic VSWR protection!
- ✓ Automatic temperature protection!
- ✓ Automatic battery backup!
- ✓ Digital display of all parameters!
- ✓ Runs on 85 to 264 VAC primary power
- ✓ Super efficient yet quiet forced air cooling!
- ✓ Low profile, only two rack units high



**Get On-The-Air...  
Stay On-The-Air With The PX50!**

### Intuitive Front Panel Monitoring



### WHAT DO YOU WANT IN A TRANSMITTER?

We asked LPFM licensees and users what they really wanted and needed in an FM stereo transmitter. We listened to a lot of current customers already using our very popular PX1 transmitter about features they would like. We even listened to people using competitive equipment telling us what they really wanted!

### WE LISTENED!

What did we hear? You wanted an ultra-reliable transmitter with automatic protection circuits that would keep you on the air rather than shut you down. You asked for constant diagnostics on all critical circuits and functions. You wanted to use it anywhere in the world, regardless of input voltage or frequency plan. You wanted to have automatic battery backup to eliminate costly standby generators. You asked for more power than 35 watts but wanted it to run extremely cool while remaining extremely quiet. You wanted full digital display of all functions, parameters, settings and alarms.

### FCC CERTIFIED!

Because of the confusion with the FCC equipment requirements you wanted an **FCC CERTIFIED** transmitter, not just a verified transmitter. You told us what you wanted... **CONSIDER IT DONE!** The PX50 Professional LPFM transmitter, designed specifically to **YOUR** specs!

### USE IT ANYWHERE IN THE WORLD!

We made the primary input power universal for virtually any location worldwide. Give it anything from 85-264VAC between 47-63Hz, or 120-370VDC and you're all set. It doesn't get much easier than that! You can also run the PX50 primary power from 12-14VDC. You can even provide 12-14VDC from a battery (or vehicle) and have automatic backup in case of a power failure! Your listeners will never miss a beat! Using it out of the country with different frequency plans? No problem, with the 100kHz spacing, you are good to go with the PX50!

### SIMPLE TO INSTALL AND OPERATE!

Operation of the PX50 is simple and intuitive via the front panel navigation switch matrix. All functions, controls, and status messages are displayed on the 2 line by 20 character vacuum fluorescent display. Installation of the PX50 is a breeze. A standard Type-N connection is provided for RF Output. Balanced (XLR) left and right audio inputs are provided to properly interface with any audio source you have. In addition, BNC SCA/Digital/RDS inputs are provided along with a quick disconnect connector for a 12 VDC standby/back-up power input. It's simple! Just connect your audio sources and antenna, power it up, set frequency and power level via the front panel navigation switch matrix, and you're on the air! It doesn't get any easier!

### KEEPS YOU ON THE AIR!

The PX50 constantly monitors all of the critical circuits within the transmitter and makes subtle adjustments to various circuit parameters depending upon frequency, temperature, power, audio level, and deviation - in short, it's like having a station engineer constantly monitoring and adjusting on-the-fly! Automatic VSWR protection automatically reduces power output until the VSWR problem is cleared. Likewise, if the power amplifier temperature exceeds 70°C, the transmitter will reduce power output until it cools down below 60°C. You can set automatic Power Reduction On Error (VSWR & Temperature errors) to 85%, 75%, 50%, 25% or full disable of the set power. Full power is restored when the error is cleared. You can also set the Power Restoration Timer for the error testing time to match your specific site environment. If the error is cleared within this time, the transmitter is restored to full power for unattended operation! Your station stays on the air, and needless trips to your tower site are eliminated!

### GREAT SOUND, ROCK SOLID PERFORMANCE!

An 8 times oversampled stereo generator with true analog filters throughout assures a clean, refreshing sound image while the RF transmitter chain employs generously rated components for headache-free, long life. The result? You stay on the air and sound great while competitive transmitters would shut down!

**NOTE: ADDITIONAL MODELS, POWER RATINGS, AND BROADCAST PRODUCTS ARE AVAILABLE. VISIT [WWW.RAMSEYFM.COM](http://WWW.RAMSEYFM.COM) FOR DETAILS.**

### SPECIFICATIONS

Frequency Range:	87.5 to 108.1 MHz
Primary Power Input:	85-264 VAC, 47-63 Hz; 120-370 VDC
Backup Power Input:	12-14 VDC
Broadcast Modes:	Stereo/Mono + SCA and Digital RDS Inputs.
Bandwidth:	±75 kHz when properly adjusted, auto adjust feature prevents overmodulation.
Separation:	Better than 50 dB (typical 60-70 dB)
Crosstalk:	Better than 50 dB.
Asynchronous:	Better than 60 dB.
THD:	Better than 0.3% with processing.
Audio Inputs:	Standard Balanced Inputs +4 dBu/1.228V rms/3.47 V p-p; -10 to +10 dBm range.
Audio Input Impedance:	22K Ohms
SCA and Digital Inputs:	BNC (50 Ohms)
RF Output:	50W Continuous into a 50 ohm load. Fully adjustable from 1 watt to full power.
Harmonic Suppression:	Better than -81 dBc
Display:	2 lines x 20 characters vacuum fluorescent display.
Controls:	5 navigation controls (Up, Down, Left, Right, Enter)
Cooling:	High CFM Fan, dual filtered front intake, rear exhaust.
Over-Power Protection:	Continuously checks for proper power output to within 5%.
VSWR Protection:	Continuous VSWR monitoring, controlled via Power Reduction On Error and Power Restoration Timer settings.
Over-Temperature Protection:	Auto over-temperature control, 70°C max. fixed, controlled via Power Reduction On Error and Power Restoration Timer settings.
Auto Power Reduction On Error:	Automatically reduces power output to 85%, 75%, 50%, 25% or full disable of set power level.
Auto Power Restoration Timer:	Sets the time interval for automatic error checking to clear reduced power modes and to restore full set power level.
Overmodulation Protection:	Auto control of audio modulation levels, on/off.
Audio Frequency Range:	20 Hz to 16 kHz ±1 dB. Steep "brick wall" 16 kHz low phase shift, low pass filter, down 68 dB @ 19 kHz and above.
Adjustments:	Audio input levels, Modulation Level, Power Level, Frequency (in 100 kHz steps), Stereo/Mono mode, Auto Adjust Modulation mode (On/Off)
Regulatory Approval:	Meets or exceeds FCC 47CFR Parts 15.107(b), 15.109(b); FCC CERTIFIED FCC 47CFR Parts 2, 73, and 74 (ID: PF3PX50)
Dimensions:	Standard 2-unit rack-mount case, 19" wide, 14.25" deep, 3.5" high. (Note: The end user is responsible for complying with all FCC rules & regulations within the US, or any regulations of their respective governing body in regards to the application and use of the PX50).





## POWER ADAPTERS AND POWER SUPPLIES

Power supplies, the one component often taken for granted! They usually come with the equipment, but what happens when they need to be replaced... or you need a second one? Trying to find the direct replacement from the manufacturer is often impossible. Check them out, the handiest selection around!

### AC125 120VAC to 12VDC

- ✓ Input: 120VAC @ 60Hz, 15W
- ✓ Output: 12VDC, 500mA, unregulated
- ✓ Connector: 2.1mm power plug female (C+)
- ✓ For use with most Ramsey kits



AC125 12VDC 500mA Power Adapter

\$9.95

### FMAC 120VAC to 12VDC

- ✓ Input: 120VAC @ 60Hz, 6W
- ✓ Output: 12VDC, 200mA, unregulated
- ✓ Connector: 2.5mm x 12.5mm phone (T+)
- ✓ Uses hard to find connector



FMAC 12VDC 200mA Power Adapter

\$9.95

### PS11 120/240VAC to 15VDC

- ✓ Input: 120-240VAC @ 50/60Hz, .7A
- ✓ Output: 15VDC, 1.6A, 25W, regulated
- ✓ Connector: 2.1mm pwr plug female (C+)
- ✓ Used with Ramsey SGMEVM, FMRMEVM



PS11 15VDC 1.6A Power Supply

\$29.95

### PS21 120VAC to 16VAC

- ✓ Input: 120VAC @ 60Hz, 80W
- ✓ Output: 16VAC, 4A, 64VA, unregulated
- ✓ Connector: 2.1mm pwr plug female (C+)
- ✓ Used with Ramsey PG13



PS21 16VAC 4A Power Adapter

\$19.95

### PS27 120/240VAC to 15VDC

- ✓ Input: 120-240VAC @ 50/60Hz, .5A
- ✓ Output: 15VDC, 1A, regulated
- ✓ Connector: 2.1mm pwr plug female (C+)
- ✓ Used with Ramsey AR2, FM30, FM35



PS27 15VDC 1A Power Supply

\$14.95

### PS28 120VAC to 9VDC

- ✓ Input: 120VAC @ 60Hz, 8.5W
- ✓ Output: 9VDC, 500mA, unregulated
- ✓ Connector: 2.1mm pwr plug female (C+)
- ✓ Used with HPS10SE, HPS40 scopes



PS28 9VDC 500mA Power Adapter

\$9.95

### PS4 120VAC to 15VDC

- ✓ Input: 120VAC @ 60Hz, 22.5W
- ✓ Output: 15VDC, 1A, unregulated
- ✓ Connector: 2.1mm pwr plug female (C+)
- ✓ Used with Ramsey AM25



PS4 15VDC 1A Power Supply

\$17.95

### PWR25 120VAC to 12VAC

- ✓ Input: 120VAC @ 60Hz, 15W
- ✓ Output: 12VAC, 500mA, unregulated
- ✓ Connector: 2.5mm x 11.25mm phone (T+)
- ✓ Used with K2639



PWR25 12VAC 500mA Power Adapter

\$12.95

### SPS18 100/240VAC to 18VDC

- ✓ Input: 100-240VAC @ 50-60Hz, 1A
- ✓ Output: 18VDC, 1.67A, regulated
- ✓ Connector: 2.1mm pwr plug female (C+)
- ✓ For use with the UAM2



SPS18 18VDC 1.67A Switching Power Supply

\$39.95

### SPS183 100-240VAC to 18VDC

- ✓ Input: 100-240VAC @ 50-60Hz, 1A
- ✓ Output: 18VDC, 3.3A, regulated
- ✓ Connector: 2.1mm pwr plug female (C+)
- ✓ For use with the UAM4



SPS183 18VDC 3.3A Switching Power Supply

\$59.95

### PSSMV4U 100/240VAC to 5, 6, 7.5, 9, 12, 15VDC

- ✓ Input: 100-240VAC @ 50/60Hz
- ✓ Output: 5, 6, 7.5, 9, 12, 15VDC, 3.6A max, reg
- ✓ Connector: 2.5mm, 3.5mm, 3 x 1, 3.5 x 1, 4 x 1.5, 5 x 2, 5.5 x 1, 5.5 x 2mm
- ✓ Switchable output voltages and universal assortment for general replacement



PSSMV4U 5-15VDC 28W Compact Switching Power Supply

\$39.95

### PSSMV5U 100/240VAC to 12, 15, 18, 20, 22, 24VDC

- ✓ Input: 100-240VAC, @ 50/60Hz
- ✓ Output: 12, 15, 18, 20, 22, 24VDC, 2.3A max, regulated
- ✓ Connector: 2.5mm mono, 3.5mm mono, 1 x 3, 1.35 x 3.5, .7 x 4, 2.1 x 5, 2.5 x 5.5, 1.5 x 5.5mm
- ✓ For use with notebook computers and personal digital electronic devices, universal output connectors



PSSMV5U 12-24VDC 28W Compact Switching Power Supply

\$39.95

### PSSMV6U 100/240VAC to 15, 16, 18, 19, 20, 22, 24VDC

- ✓ Input: 100-240VAC, @ 50/60Hz
- ✓ Output: 15, 16, 18, 19, 20, VDC, 3.5A
- ✓ Connector: 2.5mm mono, 3.5mm mono, 1 x 3, 1.35 x 3.5, .7 x 4, 2.1 x 5, 2.5 x 5.5, 1.5 x 5.5mm
- ✓ For use with notebook computers and personal digital electronic devices, universal output connectors



PSSMV6U 15-24VDC 70W Regulated Switching Power Supply

\$69.95

### PSSI255 90/264VAC to 12VDC

- ✓ Input: 90-264VAC @ 47/63Hz, 70W
- ✓ Output: 12VDC, 5.8A, regulated
- ✓ Connector: 2.1mm pwr plug female (C+)
- ✓ Great for general purpose 12V high current use



PSSI255 12VDC 70W Compact Switching Adapter

\$54.95

### PSSI839 90/264VAC to 18VDC

- ✓ Input: 90-264VAC @ 47/63Hz, 70W
- ✓ Output: 18VDC, 3.9A, regulated
- ✓ Connector: 2.1mm pwr plug female (C+)
- ✓ For 18V laptops and other 18V high current use



PSSI839 18VDC 70W Compact Switching Power Supply

\$54.95

### PSU03RUSA 110VAC to 3, 4.5, 6, 7.5, 9, 12VDC

- ✓ Input: 110VAC
- ✓ Output: 3, 4.5, 6, 7.5, 9, 12VDC, 300mA max, regulated
- ✓ Connector: 2.5 x 3.5, 2.35 x .75, 3.5 x 1.35, 4 x 1.7, 5 x 2.1, 5.5 x 2.5mm
- ✓ Switchable output voltages and universal assortment for general replacement



PSU03RUSA 300mA Multi-Voltage Power Adapter

\$12.95

## POWER SUPPLIES, VEHICLE ADAPTERS, IPOD ADAPTERS

Looking for a World-Wide power supply you can plug in anywhere? How about that special 5VDC power supply for your MP3 player that uses a USB connector? Need to charge your iPod? And then there's the problem of overseas 230VAC power requirements for use over here or vice versa! We've got you covered!

### PSSMV14U 110/240VAC to 5VDC USB

- ✓ Input: 110-240VAC
- ✓ Output: 5VDC, 750mA, regulated
- ✓ Connector: USB type A
- ✓ Charge your USB accessories without computer!



PSSMV14U 5VDC USB Power Supply

\$12.95

### PSSMV7U 100/240VAC to 5-24VDC

- ✓ Input: 100-240VAC @ 50/60Hz, 36 W
- ✓ Output: 20 Selectable outputs from 5-24VDC in steps 1V, 4.3-1.5A, regulated
- ✓ Connector: 2.5mm mono, 3.5mm mono, 1 x 3, 1.35 x 3.5, 1.7 x 4, 2.1 x 5, 2.5 x 5.5, 1.5 x 5.5mm
- ✓ Switchable output voltages and universal assortment for general replacement



PSSMV7U 5-24VDC 36W Compact Switching Power Supply

\$39.95

### PSSMV8U 100/240VAC to 15, 16, 18, 19, 20VDC

- ✓ Input: 100-240VAC, @ 50/60Hz, 120W
- ✓ Output: 15, 16, 18, 19, 20VDC, 6A regulated
- ✓ Connector: 2.5mm mono, 3.5mm mono, 1 x 3, 1.35 x 3.5, 1.7 x 4, 2.1 x 5, 2.5 x 5.5, 1.5 x 5.5mm
- ✓ Switchable output voltages and universal assortment for general replacement



PSSMV8U 15-24VDC 120W Regulated Switching Power Supply

\$82.95

### PSS1546 90/264VAC to 15VDC

- ✓ Input: 90-264VAC @ 47/63Hz, 70W
- ✓ Output: 15VDC, 4.6A, regulated
- ✓ Connector: 2.1 x 5.5mm
- ✓ Ideal 15VDC OEM replacement power supply



PSS1546 15VDC 70W Compact Switching Power Supply

\$54.95

### PSS2430 90/264VAC to 24VDC

- ✓ Input: 90-264VAC @ 47/63Hz, 70W
- ✓ Output: 24VDC, 3.0A, regulated
- ✓ Connector: 2.1 x 5.5mm
- ✓ Ideal 24VDC OEM replacement power supply



PSS2430 24VDC 70W Compact Switching Power Supply

\$54.95

### PSSMV11U 100/240 VAC, 12/24VDC to 5VDC USB

- ✓ Input: 100-240VAC @ 50Hz, car plug: 12 or 24VDC
- ✓ Output: 5VDC, 500mA, regulated
- ✓ Connector: USB, Mobile phone jacks for Nokia, Sony/Ericsson, Motorola, Siemens, and Samsung
- ✓ For mobile phones, PDAs, MP3 Players, GPS units and other 5VDC portable devices



PSSMV11U 5VDC 3.75W USB Switching Power Supply

\$15.95

### PSSMV10U 110/240VAC to 3, 4.5, 5, 6, 6.5, 7VDC

- ✓ Input: 110-240VAC @ 50/60Hz, 13W
- ✓ Output: 3, 4.5, 5, 6, 6.5, 7VDC, 1900mA, 2.5A max, regulated
- ✓ Connector: 5.5 x 2.5, 5.5 x 2.1, 5.0 x 1, 3.8 x 1.1, 3.5 x 1.4, 2.4 x .75mm
- ✓ Switchable output voltages and universal assortment for general replacement



PSSMV10U 3-7VDC 13W Compact Switching Power Supply

\$24.95

### SPS15U 100/240VAC World-Wide to 15VDC

- ✓ Input: 100-240VAC @ 50/60Hz world-wide!
- ✓ Output: 15VDC, 1A, regulated
- ✓ Connector: 2.1mm pwr plug female (C+)
- ✓ Used with most Ramsey kits for overseas use, great world-wide power supply



SPS15U 15VDC 1A World-Wide Switching Power Supply

\$29.95

### PCMP11U iPod Charger

- ✓ Input: 90-240VAC @ 50-60Hz
- ✓ Output: 5VDC, 500mA
- ✓ Connector: iPod standard dock connector
- ✓ For use with all iPods utilizing the standard dock connector



PCMP11U 5VDC iPod Charger

\$9.95

### PCMP10 iPod & USB Vehicle Charger Adapter

- ✓ Input: 12-24VDC
- ✓ Output: 5VDC, 1A
- ✓ Connector: USB Type A
- ✓ Allows you to charge any personal USB device with direct USB plug-in or your iPod with PCMP13 cable below



PCMP10 5VDC iPod Vehicle Charger Adapter

\$4.95

### PCMP13 USB iPod Dock Cable

- ✓ Input: USB2 Type A
- ✓ Output: iPod standard doc connector
- ✓ Connector: iPod standard dock connector
- ✓ For use with all iPods utilizing the standard dock connector for both charging and data transfer



PCMP13 USB iPod Dock Cable

\$5.95

### PCMP12 USB/Firewire iPod Dock Cable

- ✓ Input: USB2 Type A, Firewire
- ✓ Output: iPod standard doc connector
- ✓ Connector: iPod standard doc connector
- ✓ For use with all iPods utilizing the standard dock connector for both charging and data transfer from both USB and Firewire sources



PCMP12 USB/Firewire iPod Dock Cable

\$8.95

### PSUC45 110VAC to 230VAC Step-Up

- ✓ Input: 110VAC @ 60Hz
- ✓ Output: 230VAC @ 50Hz, 45W
- ✓ Connector: Euro VDE
- ✓ Makes it easy to run your 230VAC equipment with standard 110VAC sources. 45 watts maximum. Use the PSUC100 below for larger loads.



PSUC45 110VAC To 230VAC 45W Step-Up

\$14.95

### PSUC100 110VAC to 230VAC Step-Up

- ✓ Input: 110VAC @ 60Hz
- ✓ Output: 230VAC @ 50Hz, 45W
- ✓ Connector: Euro VDE
- ✓ Makes it easy to run your 230VAC equipment with standard 110VAC sources. 100 watts maximum.



PSUC100 110VAC To 230VAC 100W Step-Up

\$18.95

### GSCRU SIM Card Reader Writer

- ✓ Input: SIM card
- ✓ Output: USB Type A
- ✓ Connector: USB Type A
- ✓ Explore the info on your SIM card, read & edit phone books and save on your PC, write SMS messages



GSCRU SIM Card Reader Writer

\$22.95

### GSCRU1 GSM 2G & 3G Card Reader Writer

- ✓ Input: GSM SIM Cards (2G and 3G)
- ✓ Output: USB Type A
- ✓ Connector: USB Type A
- ✓ Explore the info on your GSM 2G & 3G SIM cards, read, edit, backup phone books & messages, write SMS messages, and save data to your PC



GSCRU1 GSM 2G 3G SIM Card Reader Writer

\$24.95





## CONNECTORS & BETWEEN SERIES ADAPTERS

When you needed a special connector or adapter, is used to be easy to run to the corner parts store to find one. Well... those corner parts stores are few and far between now, and those national chains no longer seem to care too much about parts! Here at Ramsey we try to make it easy, at a great price!

### BNC Male to Type-N Female

- ✓ Popular in-between series adapter!
- ✓ Used for RF connections!
- ✓ Professional quality!
- ✓ Available in single quantities!



CON7001 BNC Male/Type-N Female Adapter \$6.95

### BNC Male to F-Type Female

- ✓ Popular in-between series adapter!
- ✓ Used for RF connections!
- ✓ Professional quality!
- ✓ Available in single quantities!



CON7002 BNC Male/F-Type Female Adapter \$2.45

### BNC Female to RCA Male

- ✓ Popular in-between series adapter!
- ✓ Pro to consumer video adapter!
- ✓ Professional quality!
- ✓ Available in single quantities!



CON7003 BNC Female/RCA Male Adapter \$2.45

### BNC Male to RCA Female

- ✓ Popular in-between series adapter!
- ✓ Consumer to pro video adapter!
- ✓ Professional quality!
- ✓ Available in single quantities!



CON7004 BNC Male/RCA Female Adapter \$2.45

### BNC Female to F-Type Male

- ✓ Popular in-between series adapter!
- ✓ Used with video and rf applications!
- ✓ Professional quality!
- ✓ Available in single quantities!



CON7005 BNC Female/F-Type Male Adapter \$2.45

### BNC Female to UHF Male

- ✓ Popular in-between series adapter!
- ✓ Used with video and RF applications!
- ✓ Professional quality!
- ✓ Available in single quantities!



CON7006 BNC Female/UHF Male Adapter \$2.95

### BNC Female to RCA Female

- ✓ Popular in-between series adapter!
- ✓ Used with pro & consumer video!
- ✓ Professional quality!
- ✓ Available in single quantities!



CON7007 BNC Female/RCA Female Adapter \$2.95

### BNC Male Quick Connector

- ✓ Easy to connect twist on BNC!
- ✓ Suitable for RG58 Coax!
- ✓ No crimper required!
- ✓ Available in single quantities!



CON7008 BNC Male Quick Connect Connector \$1.95

### F-Type Grounding Block

- ✓ Easy way to ground you coax feed!
- ✓ Heavy duty grounding lug!
- ✓ Protect your equipment!
- ✓ Includes mounting screws



380101 F-Type Grounding Block \$1.95

### Laptop Audio Cable

- ✓ 3.5mm stereo to dual RCA!
- ✓ 25' long!
- ✓ Perfect for laptop audio connects!
- ✓ High quality gold connectors!



AC3W25G Laptop Interconnect Audio Cable \$9.95

### UHF Male to F-Type Female

- ✓ Popular in-between series adapter!
- ✓ Used for RF connections!
- ✓ Professional quality!
- ✓ Available in single quantities!



CON7010 UHF Male/F-Type Female Adapter \$3.45

### RCA Male to F-Type Female

- ✓ Popular in-between series adapter!
- ✓ Used for RF, video, & audio!
- ✓ Professional quality!
- ✓ Available in single quantities!



CON7011 RCA Male/F-Type Female Adapter \$1.95

### N-Type Male to UHF Female

- ✓ Popular in-between series adapter!
- ✓ Used for RF connections!
- ✓ Professional quality!
- ✓ Available in single quantities!



CON7012 N-Type Male/UHF Female Adapter \$7.95

### N-Type Female to UHF Male

- ✓ Popular in-between series adapter!
- ✓ Used for RF connections!
- ✓ Professional quality!
- ✓ Available in single quantities!



CON7013 N-Type Female/UHF Male Adapter \$5.95

### N-Type Female "Barrel"

- ✓ Splices together N-Type males!
- ✓ Used for RF connections!
- ✓ Easily extends premade cables!
- ✓ Available in single quantities!



CON7014 Double N-Type Female Adapter \$5.95

### N-Type Male "Barrel"

- ✓ Great to match up/splice connectors!
- ✓ Used for RF connections!
- ✓ Professional quality!
- ✓ Available in single quantities!



CON7015 Double N-Type Male Adapter \$7.95

### UHF Female "Barrel"

- ✓ Splices together UHF males!
- ✓ Used for RF connections!
- ✓ Easily extends premade cables!
- ✓ Available in single quantities!



CON7016 Double UHF Female Adapter \$2.45

### UHF Male "Barrel"

- ✓ Great to match up/splice connectors!
- ✓ Used for RF connections!
- ✓ Professional quality!
- ✓ Available in single quantities!



CON7017 Double UHF Male Adapter \$2.45

### BNC Female "Barrel"

- ✓ Splices together BNC cables!
- ✓ Used for RF & video connections!
- ✓ Easily extends premade cables!
- ✓ Available in single quantities!



CON7018 Double BNC Female Adapter \$2.45

### BNC Male "Barrel"

- ✓ Great to match up/splice connectors!
- ✓ Used for RF & video connections!
- ✓ Professional quality!
- ✓ Available in single quantities!



CON7019 Double BNC Male Adapter \$2.45

### Mini Stereo Male to 1/4" Female Jack

- ✓ Mini 3.5mm stereo male plug
- ✓ 1/4" stereo female jack
- ✓ Great for headphones!
- ✓ Professional quality!



CON8001 Mini Stereo/1/4" Stereo Adapter \$1.95

### 1/4" Stereo Male to Mini Female Jack

- ✓ 1/4" stereo male plug!
- ✓ Mini 3.5mm stereo female jack!
- ✓ Great for headphones!
- ✓ Professional quality!



CON8002 1/4" Stereo/Mini Stereo Adapter \$1.95

### Mini Stereo Male to Dual RCA Jacks

- ✓ Mini 3.5mm stereo male plug!
- ✓ Dual left/right RCA female jacks!
- ✓ Great for line inputs!
- ✓ Professional quality!



CON8003 Mini Stereo/Dual RCA Jacks Adapter \$2.95

### XLR Male to 1/4" Male TRS

- ✓ XLR balanced male to 1/4" male TRS!
- ✓ Not the easiest one to find!
- ✓ Great for pro to consumer audio!
- ✓ Professional quality!



CON8004 XLR Male/1/4" TRS Adapter \$4.95

### XLR Female to 1/4" Male TRS

- ✓ XLR balanced female to 1/4" male TRS!
- ✓ Not the easiest one to find!!
- ✓ Great for pro to consumer audio!
- ✓ Professional quality!



CON8005 XLR Female/1/4" TRS Adapter \$4.95

### XLR Male to 1/4" Female TRS

- ✓ XLR balanced male to 1/4" female TRS!
- ✓ Beyond not the easiest to find!
- ✓ Great for pro to consumer audio!
- ✓ Professional quality!



CON8006 XLR Male/3.5mm Mini Adapter \$4.45

### XLR Female to 1/4" Female TRS

- ✓ XLR balanced female to 1/4" female TRS!
- ✓ Way beyond the impossible to find!
- ✓ Great for pro to consumer audio!
- ✓ Professional quality!



CON8007 XLR Female/3.5mm Mini Adapter \$4.95

### 3.5mm Male Mini Stereo Plug

- ✓ 3.5mm stereo mini plug!
- ✓ Solder connections
- ✓ Handy strain relief cover!
- ✓ Great for consumer audio!



CON8008 3.5mm Mini Stereo Male Plug \$2.45

### 1/4" Male Stereo TRS Plug

- ✓ 1/4" male TRS plug!
- ✓ Solder connections
- ✓ Handy strain relief cover!
- ✓ Great for pro audio equipment!



CON8009 1/4" Male TRS Plug \$1.95

### Banana Male Plugs

- ✓ Great for audio & test equipment!
- ✓ Screw wire connection!
- ✓ Include one pair
- ✓ professional quality!



CON8010 Banana Male Plug Set \$3.95



## HOME THEATRE, HD, VIDEO & AUDIO

Home Theatre interconnect cables are like printer cartridges! You can buy a printer for \$39 but the inkjet cartridges costs \$40 each and you need 3-6 of them! DVD players are \$49 but an HDMI cable for it at the same store is \$80-\$125! Stop the insanity! Stop the markup! Save your money to buy gas!

### HDMI 1.3b Category 2 Cables

- ✓ 100% certified to HDMI standards
- ✓ Supports HDMI 1.3b Category 2 and HDCP compliant
- ✓ Gold plated Type-A to Type-A connectors
- ✓ Data transfer speed 10.2Gbps
- ✓ Heavy duty black flexible cable
- ✓ Available in 6', 12' and 25'



HDMI (High-Definition Multimedia Interface) has become the connection standard for HD. It permits the digital transmission of any video format along with 8 uncompressed audio channels, DTS and other audio formats. These cables are the latest version 1.3b which supports lossless compressed audio streams like Dolby TrueHD and DTS-HD Master Audio. Why pay \$50 to \$150 for an HDMI cable at superstore down the street when you can get these high quality cables for a fraction of the price? Order yours today and save!

288006X	HDMI 1.3b Category 2 Cable, 6'	\$8.95
288012X	HDMI 1.3b Category 2 Cable, 12'	\$12.95
288025X	HDMI 1.3b Category 2 Cable, 25'	\$22.95
120350X	HDMI 1.3b Category 2 Cable, 50'	\$119.95

### HDMI to DVI Digital Video Cable

- ✓ Connect DVI outputs to HDMI inputs
- ✓ Perfect for cable boxes, media PC's, etc.
- ✓ Supports resolutions to 1080p
- ✓ 26 AWG durable flexible cable
- ✓ Gold plated contacts for ultra-reliability



DVI (Digital Visual Interface) is the standardized video connection for digital video devices from flat screen computer monitors to HD televisions and projectors. Unlike HDMI connections, DVI connections only connect digital video and have no audio components present. DVI connectors are typically found on CATV boxes, higher end computer video cards, and media computers. If you have an HD TV with an HDMI input, you can easily connect these devices to obtain the maximum resolution of the TV, typically 1080p! It is of course backwards compatible for lower resolutions. When your Media PC is not located next to your wall mounted HD TV (that would be a trick!) this cable is perfect. Connect this to the TV, run audio (digital, optical, or analog) to your surround system, and you're in like Flint!

HDMIDVI6X	HDMI to DVI Video Cable, 6'	\$19.95
HDMIDVI12X	HDMI to DVI Video Cable, 12'	\$29.95
HDMIDVI25X	HDMI to DVI Video Cable, 25'	\$119.95

### TOSLINK Optical Audio Cable

- ✓ Connect digital audio to your surround system
- ✓ Supports Dolby Digital, DTS, and more
- ✓ Fiber optic transmission, no interference
- ✓ Heavy duty molded construction with caps



TOSLINK optical audio cables are typically used to connect DVD players and digital CATV boxes to your audio system for multi-channel surround sound.

Unlike standard analog left and right connections, optical audio connections carry the full audio stream based on the source and format at 125Mbps. Being optical, the connections are immune to electrical induced interference and noise. Cables are provided with caps to keep the fiber optic end clean for a flawless sound. Just one TOSLINK cable from your DVD player or other digital source will provide up to 7.1 surround! And that's the equivalent of left, right, center, subwoofer, left mid, right mid, left rear, and right rear! That would be a LOT of separate analog audio cables! (Learning time... TOSLINK = TOSHIBA-LINK!)

ADT72X	TOSLINK Optical Audio Cable, 6'	\$10.95
ADT12X	TOSLINK Optical Audio Cable, 12'	\$14.95
HTADT25X	TOSLINK Optical Audio Cable, 25'	\$59.95

### HDMI In-Line Swivel Adapter

- ✓ Reposition the cable for tight rear panel connections
- ✓ Remove strain and damage to the HDMI jack
- ✓ Supports 1.3b up to 1080p and HDCP compliant



The incredible savior to HDMI installations! Allows the HDMI cable to rotate at any angle to plug into your equipment! Fixes the tight installs and saves strain on the equipment HDMI jack!

120750X	HDMI 180° Male/Female Swivel Adapter	\$19.95
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### HDMI to DVI Video Adapter

- ✓ Adapts equipment with DVI outputs to use HDMI
- ✓ Supports resolutions up to 1080p
- ✓ Gold plated contacts for ultra-reliability



If you need to run HDMI cables from a monitor to a device that utilizes DVI connectors, just plug this in, and you're all set. Or, you can use the pre-made HDMI to DVI cables above. Your choice!

120238X	HDMI to DVI Video Adapter	\$13.95
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### Component Video/Audio Cable

- ✓ Connect component video and stereo audio with one cable
- ✓ Compatible with HD 1080i/720p resolution
- ✓ Gold plated precision connectors
- ✓ Heavy duty oxygen free cable
- ✓ Provides maximum noise reduction



Component video connections are used for HD up to 1080i or 720p resolutions as well as standard video. This resolution is frequently used in CATV boxes, satellite receivers, DVD players, and video games. Three separate cables are used for video components Y, Pb, and Pr. Audio is not a part of component video connections, and you normally have to run separate stereo audio cables. This heavy duty cable contains both component video AND stereo audio in one bundled cable making connections a snap! It also makes a very neat installation. Cables are heavy duty oxygen free for the best signal. Get the best, and pay the least!

DV372LRX	Component Video/Stereo Audio Cable, 6'	\$10.95
DV312LRX	Component Video/Stereo Audio Cable, 12'	\$16.95
DV325LRX	Component Video/Stereo Audio Cable, 25'	\$29.95

### Component Video Cable

- ✓ Interconnect devices with component video inputs and outputs
- ✓ Compatible with HD 1080i/720p resolution
- ✓ Gold plated precision connectors
- ✓ Heavy duty oxygen free cables
- ✓ Color coded connectors



If you are connecting video devices via Component inputs and outputs, and are running digital optical or coaxial audio, this is the cable to use. They are identical to the cable above but without the matching stereo audio pair. Component video connections are used for HD up to 1080i or 720p resolutions as well as standard video. This resolution is frequently used in CATV boxes, satellite receivers, DVD players, and video games. Three separate cables are used for video components Y, Pb, and Pr. If you are using digital audio, order Toslink optical cables on this page. Cables are heavy duty oxygen free for the best signal.

DV372X	Component Video Cable, 6'	\$9.95
DV312X	Component Video Cable, 12'	\$14.95
DV325X	Component Video Cable, 25'	\$19.95

### Stereo Audio Cables

- ✓ Heavy duty 20AWG for lower loss
- ✓ Premium oxygen free flexible copper cable
- ✓ 98% braided copper shield
- ✓ Color coded for left/right stereo



Not really sure how you start a detailed write-up on stereo audio cables! There's no better way to say it... these aren't the junk you find hanging on a pegboard at a superstore that also sells groceries! Those are usually light weight "zip cord" with lousy crimped RCA connectors on them, and often the wrong colors! You know the ones! These high quality cables are heavy duty 20 gauge fine stranded with a 98% copper shield. Then a double molded process applies heavy duty connectors which are color coded for stereo left and right. And of course, the connectors are gold plated for highest reliability and lowest signal loss and connectivity problems. Best part, these are prices close to the junky ones in the stores, but are premium quality!

AGP272X	Dual RCA/RCA Audio Cable, 6'	\$8.95
AGP212X	Dual RCA/RCA Audio Cable, 12'	\$12.95
AGP225X	Dual RCA/RCA Audio Cable, 25'	\$19.95

### HDMI In-Line Active Extender

- ✓ Extend HDMI cable runs 100' or more
- ✓ Self powered active circuit regenerates the signal
- ✓ Supports resolutions up to 1080p and HDCP compliant



Another great tool for HDMI installations! Allows the HDMI cable to run an extra 100 feet! The active circuit is self-powered, just plug two HDMI cables in to extend your range with absolutely no quality loss. Also check out the wall outlet below with the built-in extender!

280320X	HDMI In-line Active Extender	\$139.95
---------	------------------------------	----------

### HDMI Home Theatre Wall Plates

- ✓ Dress up your installation using HDMI distribution
- ✓ Passive feed-through or with active HDMI extender
- ✓ Decor style white plate for standard wall mounting



Mount this HDMI wall jack in the wall to give you home theatre a built-in look. Passive feed-through or with extender (see above).

120900X	HDMI Decor Wall Plate, Passive, White	\$31.95
120910X	HDMI Decor Wall Plate With Extender, White	\$129.95





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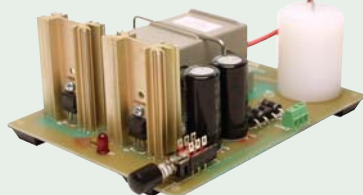
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## OBDII CarChip Pro Data Logger

Just plug it into the OBDII jack under your dash and monitor and log your car's parameters and emissions status! You can even reset the "check engine" light!  
(page 58)

**only \$99.95**



## High Voltage Plasma Generator

Generate 2" sparks to a handheld screwdriver! Light fluorescent tubes with wires! Generates up to 25kV at 20kHz from a solid state circuit and makes great plasma bulbs! (page 61)

**only \$64.95**



## USB Controlled DMX Interface

Control DMX fixtures with your PC via USB! Controls up to 512 DMX channels each with 256 different levels! Includes Light Player software for easy control.  
(page 30)

**from \$67.95**



## 3-In-1 Multifunction Solder Lab

It's a temperature controlled RoHS compatible soldering station, it's a lab power supply, and it's a lab digital multimeter, all in one! Save room on your bench today! (page 70)

**only \$129.95**



## Van de Graaff Generators

A classic from 1929! Impress your friends by generating hair raising high voltage and really impressive sparks and displays.  
(page 60)

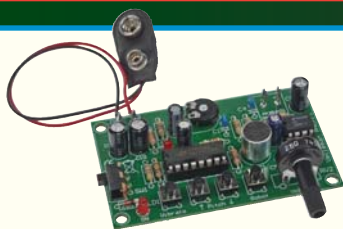
**from \$119.95**



## USB Experimenter's Interface

Get hands-on experience with USB and interface your own applications into your computer with USB connections. 13 digital I/O's and 2 analog I/O's. Includes software. (page 48)

**only \$49.95**



## Digital Voice Changer

Just like the DJ's on the radio use! Alters your natural voice with multiple effects from hi pitch, low pitch, vibrato, and more. Built-in microphone and line level output. (page 17)

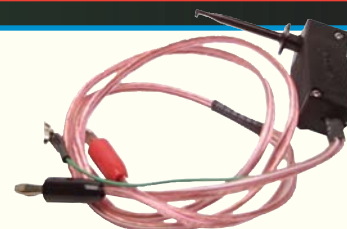
**only \$14.95**



## HDMI HD Cables & Accy's

Why pay \$69 for a HDMI cable on a pegboard hook at the store for a DVD player that cost \$39! Stop the insanity. All HDMI cables are V1.3B with gold plated contacts and connectors. (page 92)

**from \$8.95**



## Sniff-It RF Detector Probe

Very sensitive RF detector probe allows you to measure RF with a standard DMM or VOM! Wide frequency range of 100kHz to over 1GHz allows you to easily trace any signal (page 63)

**from \$27.95**