ramsey Communications Solutions

Bringing You Cost Effective Solutions For Over 30 Years!

- Service Monitor
- Signal Generators
- Sinad Meter
- Shielded Test Enclosures
- Power Meters
- Preamplifiers
- Portable Scopes
- RF Probes
- LCR Meters
- Digital Multimeters
- Precision PC Antennas
- Active Antennas
- Specialized Antennas
- Broadcast FM Products

ramsey electronics inc.

www.ramseytest.com

COM3010 Communications Service Monitor

THE VALUE PACKED SERVICE MONITOR WITH BUILT-IN PERFORMANCE!

- ✔ 100kHz to 1.0GHz, Full Duplex!
- ✔ Built-in Power Meter & 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 Lithium Ion Battery Packs

Full Duplex, Loaded With Features...At A Sensible Price!

THE HISTORY

In 1986 we introduced the COM3 Communications Service Monitor. Rivaling the performance and features of communications service monitors selling for $10K and more, the COM3 broke the $2,000 price barrier! For the very first time Ramsey Electronics made it economically possible for every service vehicle to have their own service monitor! From 1986 until 2003 the Ramsey COM3 became THE STANDARD for low cost, performance packed service monitors with over 5,000 of them put into operation throughout the 2-way radio, pager, and other communications industries.

That legacy continues today with the Ramsey COM3010. The COM3010 is our brand new, full duplex service monitor designed from the ground up to give you the best features available at a price that can't be beat! We asked the owners of those 5,000 COM3's what they would like to see in a brand new Service Monitor. We took a long hard look at the competitive units available and came up with the best of both worlds! The COM3010 provides some of the greatest features available in a service monitor today, at a fraction of the cost of the competition.

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! And of course, battery operation is standard to make field use a breeze!

BUILT-IN POWER METER

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.

BUILT-IN FREQUENCY COUNTER

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!

SELF CALIBRATING RSSI METER

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.

RECEIVER SINAD METER

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.

HAND HELD SCOPE OPTION

Sure you can see the zoomed mode displays across the room, but some people just want a scope display. We took the novel approach that simply made sense...do you want to spend a lot for a service monitor with a scope or do you want to spend a little for a service monitor with a scope? Plug in the optional 10MHz hand held scope directly to the monitor port on the COM3010 and there's your scope! Perfect to check for distortion, noise and audio quality. Oh, by the way, it's portable, can be used as a stand-alone scope with direct DVM readouts for dBm, dBV, DC, and True RMS! Sounds pretty logical doesn't it! Especially at a transmitter site where you may need a separate scope!

DETAILED 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 in 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, ± .5dB (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:	± 0.1ppm standard
RF Output Level:	-140dBm to 0dBm in 0.1dBm steps
Level Accuracy:	± 1dB, 500kHz to 1GHz, ±2dB 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:	±75kHz max in 0.1Hz steps
FM Bandwidth:	0.1Hz - 75kHz
Accuracy:	± 0.1ppm (inherently tied to reference frequency)
AM Modulation:	0 - 75% in 1% steps to -100dBm, 0-50% to -140dBm
AM Bandwidth:	10Hz - 10kHz
Accuracy:	± 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 ±.75kHz default deviation, variable from .1Hz to 2kHz deviation
DPL Encode:	±750Hz, all supported codes

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 6kHz 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 ±10kHz, 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, (± 750Hz 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:	Professional swivel 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)

HAND HELD SCOPE OPTION

Max Sample Rate:	10MHz (2MHz single shot)
Max Input Bandwidth:	2MHz (-3dB at 50mV, 1V & 20V/Div x 1 setting)
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:	64 x 128 pixel, white backlit
Signal Storage:	256 samples with 2 memories, max 125 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:	0.2us 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
Power Requirement:	9V, 500mA adapter provided
Batteries: (not included)	5 AA Alkaline batteries or 5 AA NiMH rechargable batteries
Battery Life:	Up to 20 hours with AA Alkaline
Operating Temperature:	0° to 50° C (32° to 122° F)
Dimensions:	4.13" x 7.95" x 1.38" (105mm x 220mm x 35mm)
Weight:	14 oz (395g) less batteries
Accessories Provided:	Foam lined carrying case, COM3010 interface cable, standard scope probes, AC power supply, user's manual

Optional Accessories:	BP3010	Additional Li-Ion battery pack (max 3)
	CC3010	Black padded Cordura carrying case

COM3010	**Full Duplex Communications Service Monitor, 100kHz - 1.0GHz, with One 1-Hour Li-Ion Battery Pack**	**$3995.00**
BP3010	**Additional Li-Ion Battery Pack, Extends Battery Operation By One Hour (Maximum 3 Packs)**	**$59.95**
CC3010	**Matching Black Padded Cordura Carrying Case With Strap**	**$129.95**

RSG1000B RF Signal Generator

PERFORMANCE, VALUE, RELIABILITY, ALL THE WAY TO 1.1 GHz!

- ✔ *100 kHz to 1,100 MHz Continuous!*
- ✔ *10 Hz Continuous Tuning!*
- ✔ *AM & FM Modulation, Internal and External!*
- ✔ *90 User Setup Memories!*
- ✔ *RS232 Interface*
- ✔ *Lightweight*

EXCELLENT VALUE & PERFORMANCE!

The RSG1000B has been designed to fill the need for a basic RF signal generator for design, development, and testing. We've included the performance and features you need every day, and priced it to let you equip every bench in your shop or classroom. Standard features include 90 set-up memories, and an RS232 interface that supports polled readings plus download and upload of all setup memories. Perfect for your bench, yet small enough for use on the road. Whether you are looking for a general purpose instrument or an agile source as a local oscillator, the RSG1000B is your cost effective answer.

HIGHLY ACCURATE AND STABLE!

Frequency synthesis is referenced to an internal 0.1 ppm 50 MHz timebase. This timebase is STANDARD equipment with the RSG1000B! Output level is calibrated to greater than ±1dB for signals over 500 KHz.

EASY TO USE!

The display is a bright blue VFD you can read from across the room, and displays all operating parameters. A numeric membrane keypad enables direct entry of all values. All functions are accessible without using a "shift" or second function key for real ease of use. We have also incorporated a "smart knob" which has analog feel, but is intelligently enabled when entering or changing parameters in any field. The RSG1000B is truly the common-sense RF signal generator!

COST EFFECTIVE SOLUTION!

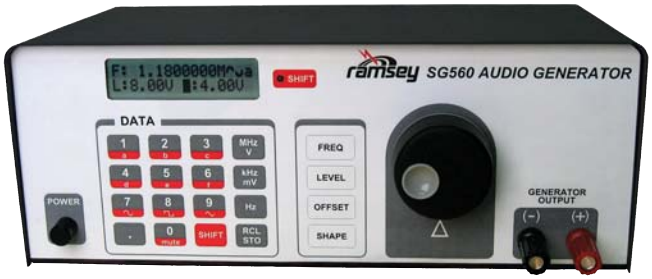
We encourage you to compare the RSG1000B to any of the "other guys". Take a close look and compare your needs and performance to the dollars you will spend. You'll see immediately that the RSG1000B offers the best cost-performance value available today. As one of our satisfied customers stated, "With the RSG1000B I get 90% of the performance of a $20,000 RF generator for 10% of the price; it's really a no brainer". It's no wonder hundreds and hundreds of RSG's have found their way to test and service benches around the world!

Technical Specifications *(at 0 dBm output level)*

Frequency Range:	100 KHz to 1100.00000 MHz
Resolution:	10 Hz continuous tuning, 100 Hz above 1000 MHz
Oscillator Frequency:	50 MHz TCXO
Oscillator Stability:	±0.1 ppm from 15°C to 35°C
Harmonics:	-30 dBc typical, 1 MHz–1100 MHz
Non-Harmonics:	-50 dBc typical
Residual FM:	5 Hz typical, 0.3 to 3 KHz detection BW
Residual AM:	-60 dBc (>10 KHz from carrier) 0.3 to 3 KHz detection BW
Output Level:	-130 to +10 dBm (50 Ohms); Resolution: 0.1 dB
Level Accuracy:	±1 dB (>500 KHz)
Level Units:	dBm, dBmV, mV, dBµV, µV
Reverse Power Protect:	25 watts, 50 VDC
Leakage:	1 µV (2 turn loop, 1 inch diameter, 1 inch distance)
Frequency Modulation	
Range:	0–99.9 KHz in 0.1 KHz steps
Accuracy:	±5% of scale
Freq. Response:	50 Hz to 25 KHz
Max. Deviation:	99.9 KHz; except 250 to 500 MHz, 50 KHz
Amplitude Modulation	
Depth:	0–75% in 1% steps <0 dBm
Distortion:	Less than 5%
Accuracy:	±5%
Freq. Response:	50 Hz to 15 KHz
Modulation Sources:	Internal 1 KHz derived from reference. External – 600 ohm impedance with level LEDs to indicate correct 1 Volt p-p input level
Front Panel:	Sealed membrane with audio acknowledgment
Display:	Two line, vacuum fluorescent display
RS-232:	RS-232 interface provides polled readout plus downloading and uploading of all front panel setups
Memory:	90 full front panel set-ups. 9 series of 10 memories each. 10 year retention
External Timebase Input:	10 MHz, 1 Volt p-p
Power Requirements:	90 to 230 VAC ±10%, 50/60 Hz
Dimensions:	12"w x 6"h x 12"d
Weight:	11 lbs.

RSG1000B **RF Signal Generator, 100 KHz to 1,100 MHz, 0.1ppm Stability** **$1,995.00**

SG560WT Audio/RF Signal Generator



DC TO 5 MHz IN 0.1 Hz STEPS!

- ✔ 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

Thousands of our SG550 signal generators found homes on both hobbyist and professional benches around the world. It covered 1Hz to 50KHz with the stability, accuracy, and price that everyone loved. Now we are proud to announce the next generation, the SG560 Signal Generator!

To begin with we increased the frequency range all the way up to 5MHz and all the way down to 0Hz (yes, we mean zero...or DC!) continuously in 0.1Hz steps across the entire range!

Next we increased the output level to go up to 10V peak to peak in sine wave, square wave, or triangle wave forms. You can also provide a DC offset to the output allowing you to create a wide variety of signals for testing and experimenting. Recreate TTL, 4000 series logic levels, low voltage logic levels, AC waveforms with a DC component, or just plain AC signals.

The SG560 contains a 10 bit DDS and filtering for a low noise, accurate low distortion output. The output stage utilizes the latest technology in digital modems and high power, high bandwidth DSL modems and is capable of a direct output of 2.5W! You can even generate carrier signals in the AM band for testing AM receivers and circuits.

SPECIFICATIONS

Frequency Range:	0.0Hz 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

A jumper option for zero ohm output impedance allows for true output terminal metering. But watch out, 2.5 watts is enough to damage incorrectly connected circuits!

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 new generation SG560 fits the bill... and a whole lot more!

SG560WT **Audio/RF Signal Generator, 0.0 Hz to 5 MHz** **$329.95**

SM1WT SINAD Meter

ALIGN THAT RECEIVER...QUICK!

- ✔ Make Reliable Sensitivity Checks on 2-Way Radios, Monitors & Scanners
- ✔ Just Connect It To a Speaker or Audio Point and You're Done!

Having trouble aligning that receiver for the best sensitivity? Not sure if it meets spec? A SINAD meter is the answer, and the SM1WT is the solution! Just like the built-in SINAD measurement feature on our COM3010 service monitor, the SM1WT is a sinad meter that's dependable, easy-to-use, and priced right.

And, this hard working unit has been designed with the latest in digital technology, so there's no drift, tuned circuits, or touchy adjustments. Precise operation is assured through the use of crystal controlled filters and monolithic AGC circuitry with over 50 dB of dynamic range. Our wide range input allows solid readings, from the speaker leads all the way to that deep-down hidden discriminator test point. And, our exclusive "Level OK" LED tells you when the signal is locked for dependable readings. It's a no-brainer using the SM1WT. Just connect it to the speaker - or any audio point, and you're done! That's all there is to a perfect receiver alignment and test! Plus our manual explains SINAD measurements so you can be an expert in minutes! Now anyone can make reliable sensitivity checks on all receivers, 2-way radios, monitors, and scanners the easy SM1 way. 12 VAC wall adapter included. Case size 9 5/8"W x 3 3/4"H x 6"D.

SM1WT **SINAD Meter With Power Supply** **$99.95**

STE Shielded Test Enclosures

RF TIGHT TESTING... MADE EASY!

- ✔ Wireless Device Testing
- ✔ Perfect for 802.11a, b, g
- ✔ Cellular, PCS, GSM 3G Testing
- ✔ Bluetooth®, RFID, ZigBee Testing
- ✔ Wide Variety of I/O Options
- ✔ Super Isolation Up To 18GHZ!
- ✔ RF Radiating Test Fixture Models For Absolute Repeat-ability Testing!
- ✔ Stock Models To Fit Your Custom Applications!

Trust YOUR RF Testing To Our Proven Patented Design!

THE RF SCREEN ROOM ON YOUR BENCH!

In 1997 Ramsey took the technician out of the large expensive shielded screen room and put his hands and eyes into a portable benchtop RF Shielded Test Enclosure. With thousands placed in service worldwide the patented STE technology became the standard for efficient and cost effective RF isolation testing. That legacy has continued with a wide variety of STE's to suit every RF test application, and size requirements you have today. Our exclusive double lip gasket technology assures an RF tight seal each and every time. Steady-hold hinges maintain the opening at any location and prevent gasket compression due to prolonged closure pressure when not in use. Our STE2800 and STE3800 STE's feature our RTF Radiating Test Fixture with a built-in broadband antenna to properly test wireless telephones with guaranteed repeatability. All of the STE's feature a wide variety of available I/O connection and interface options and RF filtered feed-throughs. All available to fit your custom requirements with the pricing and delivery of a stock unit!

STE2200

The "Portable Test Box" or STE2200 evolved from its big brother the STE3000B. Designed specifically for TDMA, CDMA, AMPS, PCS, GSM and other small communication devices, it is constructed to the same precision-machined tolerances as our patented STE3000B to maintain an exceptionally well shielded environment. Heavy duty, rugged .090 and .125 aluminum is used throughout and our double lip double high performance gaskets are used at all joint locations assuring a reliable RF tight closure. Oversized hinges and latches are used to provide a physically tight seal every time. RF absorbent foam lines the interior to provide a typical RF attenuation of -90dB @ 3GHz! Perfect for 2.4GHz testing. Input/output connections and options can be configured to match your needs.

STE2800

Designed around the STE2200, we took the task of repeatability testing of TDMA, CDMA, AMPS, PCS and GMS phones, and other wireless communications to a new level! For more than a decade Ramsey's RTF Radiating Test Fixture was the standard in pager testing and alignment. Now, designed specifically for such communications devices, the RTF has a built-in embedded antenna to cover 800 MHz to 8 GHz.

A heavy duty universal clamp system allows any phone to be securely clamped into position for testing. Once clamped in, the flat coupling response, together with the high RF Isolation factor, gives you guaranteed repeatability testing. Phone to phone, the measurements will be exact, and will be taken under the identical conditions. A Type-N connector is provided standard on the STE2800 for the RTF antenna connection. Other I/O connector options may be ordered separately.

STE3000B

The RF Test Enclosure that started it all! How do you troubleshoot, tune, align, and test a device in an RF free and interference free environment? Well, up until now you had to invest in a very expensive RF screen room. Our patented STE3000B brought that technology right down to your bench, and the cost all the way down to affordable!

Now you can work and see inside the box, rather than inside an expensive screen room. Working access is made possible with our custom designed silver impregnated, ultra fine mesh gloves. These gloves offer an RF tight seal to the box yet give you excellent manual dexterity and hands on access to devices under test. Once the cover is closed, a large RF tight viewing window overlooks the entire working area that is illuminated with built-in noise free incandescent lighting. It doesn't get much easier than that! All I/O connections and options are milled into a removable 304 stainless steel panel to allow for future changes. Simply choose the I/O's and interfaces you require when ordering, and the STE3000B will be custom designed to your spec. Sounds too good to be true? We thought so too; that's why we have a patent on it!

STE Shielded Test Enclosures

STE3300

Designed from the ground up to be functional, fast, and convenient for the design, production, testing, and maintenance of wireless LAN, Bluetooth, and other microwave frequency applications. Durability is assured because the STE3300 is constructed of rugged .090 and .125 aluminum with dual heavy-duty latches.

Unmatched RF isolation is achieved by the use of the two rows of high performance flexible RF gaskets. The entire interior is lined with RF absorbent foam that provides 24dB reflective attenuation to eliminate nulls and hotspots. The inside working space is large enough to test your devices as a complete system or use multiple enclosures to eliminate interference between work stations. A large variety of connector options are available for specific customer applications. All connectors are milled into a removable 304 stainless steel panel to allow for future requirements when needed.

STE3500

Designed specifically for Wireless Communications circuit board production testing where there is a need for a large footprint for isolating oversized boards and minimal height to allow for easy device placement. The lid opens automatically using the internally mounted dual precision air pistons once the dual heavy duty latches are released.

Construction meets the same standards as our popular STE3300 and incorporates the same double gasketed lid to provide the highest attenuation factor at the best value. The I/O panel is located close to the bottom of the rear panel to keep the cabling as close to the device under test as possible. All connectors are milled into a removable 304 stainless steel panel to allow for future requirements when needed.

STE3800

If you are looking for the ultimate enclosure for TDMA, CDMA, AMPS, PCS, GMS, P2T, PDA, and other wireless communications devices the STE3800 is the enclosure for you. The STE3800 is configured with a built-in Ramsey RTF Radiating Test Fixture to give you flawless go/no-go testing with guaranteed repeatability.

It is designed around the STE3300 to give you a whopping 5½"H x 15¼"W x 9¼"D inside working space. The RTF provides a broadband coupling response from 800 MHz all the way up to 8 GHz. The heavy duty universal clamp system positions and holds the device under test in an exact position that can easily be duplicated for repeatability. Because frequent tests require the operator to visually inspect the device display (cell phone, PCS phone, etc.), the STE3800 features a large RF tight viewing window that overlooks the entire working area. The entire display and any indicators, LED's etc. located on the device can easily be seen throughout the test process!

Double thickness 24dB RF absorbent foam lines the entire work area for a flat response. As with the STE3300, double row RF gaskets are used to provide RF isolation up to -90dB at 4GHz. A Type-N female connector is provided standard for the RTF antenna connection, and is located on the removable 304 stainless steel I/O panel that can be custom configured with any available I/O options.

STE4400

High performance RF test enclosure specifically engineered for the production floor! Designed to the same exacting specifications of the STE3300, the STE4400 offers a unique swing-down front door opening for easy device placement and removal. Easily accommodates a laptop computer to fit any test application.

Extra deep work space accommodates the largest devices. Like the STE3300, your custom I/O configuration is milled into a removable 304 stainless steel panel to allow for future requirements when needed, giving you off the shelf delivery of your custom order!

STE5000

The STE 5000 enclosure represents a breakthrough in RF shielded enclosure design and value. The enclosure is roomy enough to hold even 19" rack sized instruments and provides -110dB of shielding, enabling one to test anywhere in your facility!

The box is constructed of type 304 stainless steel and lined with microwave absorbent foam. Our unique double lip gasketed closure maintains maximum shielding while allowing a full 24" X 18" opening. Heavy-duty hinges and latches plus interior bracing insures the physical integrity of the enclosure. RF attenuation is -110 dB at 1GHz, and -80dB at 18GHz! A 3.5" x 6" precision machined removable 304 stainless steel panel has been integrated into the design of the enclosure. Also available with our exclusive RF Tight illuminated viewing window in the STE5100.

YOU NAME IT...

AMPS, CDMA, TDMA, PCS, GSM, 3G, RFID, PDA, ZigBee, Bluetooth®, 802.11a, 802.11b, 802.11g, PCMCIA, USB, QNC, WiFi, WiMAX, WLAN, P2T, Flex®, Reflex®, POCSAG, Golay...

WE'VE GOT YOU ISOLATED!

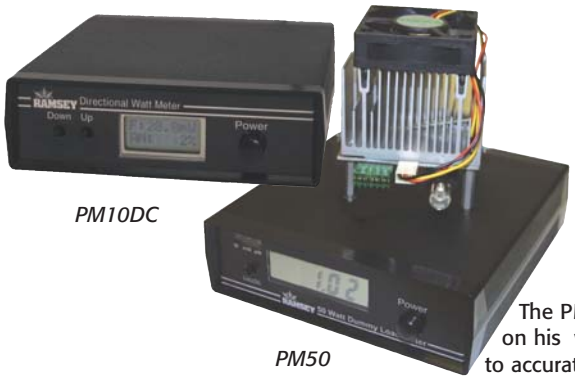
	MODEL	DESCRIPTION	CONNECTORS	ISOLATION	DIMENSIONS	PRICE
	STE2200	• RF absorbent foam liner • Exclusive double lip RF tight gasket • Easy release handle • Steady-hold hinge • Designed for compact devices	None provided standard. Custom configured, see options below.	-100dB @ 1GHz -90dB @ 3GHz -80dB @ 6GHz	4½"H x 7¼"W x 9¾"D 3¼"H x 6"W x 8½" D *(Nom. Inside Dimensions)*	$439.00
	STE2800	• Integral RF radiating test fixture (RTF) • Flat Coupling Factor 800MHz - 8 GHz • Provides absolute repeatability testing • Exclusive double lip RF tight gasket • RF absorbent foam liner • Easy release handle • Steady-hold hinge	Type-N to built-in RTF antenna provided standard. Additional connectors available, see options below.	-100dB @ 1GHz -90dB @ 3GHz -80dB @ 6GHz	4½"H x 7¼"W x 9¾"D 3¼"H x 6"W x 8½" D *(Nom. Inside Dimensions Above RTF)*	$959.00
	STE3000B	• RF absorbent foam liner • Exclusive double lip RF tight gasket • Universal I/O connector interface plate • RF tight "hands-on" silver mesh gloves • RF tight illuminated viewing window • Gas filled cover strut • Designed for hands-on adjustment and alignment of devices	6 pole filtered 120VAC AC outlet strip; 4 pole filtered barrier strip feedthrough. Custom configured, see options below	-90dB @ 1GHz -90dB @ 3GHz -80dB @ 6GHz	12¾"H x 18"W x 12"D 8"H x 16¾"W x 10½"D *(Nom. Inside Dimensions)*	$1,095.00
	STE3300	• RF absorbent foam liner • Exclusive double lip RF tight gasket • Universal I/O connecter interface plate • Easy release latch system • Steady-hold hinge system • Designed to test complete systems	None provided standard. Custom configured, see options below	-90dB @ 2GHz -90dB @ 4GHz -80dB @ 6GHz	9¾"H x 18"W x 12"D 8¼"H x 16¾"W x 10¾"D *(Nom. Inside Dimensions)*	$829.00
	STE3500	• RF absorbent foam liner • Exclusive double lip RF tight gasket • Universal I/O connecter interface plate • Easy release latch system • Dual gas filled cover struts • Designed to test complete systems	None provided standard. Custom configured, see options below	-90dB @ 2GHz -90dB @ 4GHz -80dB @ 6GHz	9"H x 22"W x 17"D 8½"H x 18¾"W x 15¾"D *(Nom. Inside Dimensions)*	$1,095.00
	STE3800	• Integral RF radiating test fixture (RTF) • Flat Coupling Factor 800MHz - 8 GHz • Provides absolute repeatability testing • RF tight illuminated viewing window to see device displays and indicators • 1.1" RF absorbent foam liner for a flatter response • Exclusive double lip RF tight gasket • Universal I/O connecter interface plate	Type-N to built-in RTF antenna provided standard. Additional connectors available, see options below.	-90dB @ 2GHz -90dB @ 4GHz -80dB @ 6GHz	9¾"H x 18"W x 12"D 5½"H x 15¼"W x 9¼"D *(Nom. Inside Dimensions Above RTF)*	$2,595.00
	STE4400	• RF absorbent foam liner • Exclusive double lip RF tight gasket • Universal I/O connector interface plate • Large hinge-down front door • Designed for your own test fixtures	None provided standard. Custom configured, see options below	-90dB @ 2GHz -90dB @ 4GHz -80dB @ 6GHz	15½"H x 22½"W x 19"D 14¼"H x 21¼" x 17½"D *(Nom. Inside Dimensions)*	$1,595.00
	STE5000	• Designed for full size and rack mounted equipment testing • RF absorbent foam liner • Exclusive double lip RF tight gasket • Universal I/O connector interface plate • Large sturdy stainless construction	None provided standard. Additional options below	-110dB @ 1GHz -100dB @ 3GHz -95dB @ 6GHz -80dB @ 18GHz	19"H x 25"W x 25"D 17½"H x 23½"W x 23½"D *(Nom. Inside Dimensions)*	$3,495.00
	STE5100	• RF tight illuminated viewing window to see device displays and indicators • Large sturdy stainless construction • Designed for full size and rack mounted equipment testing with visual displays • Exclusive double lip RF tight gasket • Universal I/O connector interface plate	None provided standard. Additional options below	-110dB @ 1GHz -100dB @ 3GHz -95dB @ 6GHz -80dB @ 18GHz	19"H x 25"W x 25"D 17½"H x 23½"W x 23½"D *(Nom. Inside Dimensions)*	$3,995.00

CUSTOM CONFIGURATION OPTIONS

Note: RF Isolation specs are measured at 1M with terminated RF feedthrough coaxial connectors installed. Actual isolation & attenuation can be affected by adding additional filtered and non-filtered connectors. Check with Ramsey for specific connector specifications

RF FEEDTHROUGH:	*BNC, TNC, SMA, SMB, UHF, Type-N*
FIBER OPTIC:	*Fiber optic bulkhead feedthrough*
DUST COVERS:	*Dust cover caps with security chains available for all RF feedthrough connectors*
RF FILTERED DATA:	*DB9 (100pF), DB9 (1000pF), DB15 (820pF), DB15 (1000pF), DB25 (1000pF), DB37 (1000pF) RJ45/DB9 Filtered, RJ11/DB9 Filtered, USB/DB9 Filtered*
POWER CONNECTIONS:	*4-Pole filtered power strip, 6-Pole filtered power strip, surge protected power strips*
VENTILATION OPTIONS:	*Dual side mounted RF filtered vents with single filtered exhaust muffin fan*
RF SAFETY INHIBIT OPTION:	*Provides RF relay to automatically switch circuit to internal load when cover is opened*
RF ABSORBENT FOAM:	*Standard ½" thick RF absorbent foam liner provides 24 dB attenuation. 1.1" thick foam is standard on the STE3800 and available as an option to provide a flatter response*
FIBER TRANSCEIVER:	*Opticom USB 2.0 Fiber Transceiver System available for devices up to 480 Mb/s.*

PM10/50 Power Meters



PM10DC

PM50

ACCURATELY MEASURE RF POWER LEVELS!

- ✔ **Broadband: PM50 10 kHz to 450 MHz ± 0.5dB, 10kHz to 500 MHz ± 2dB; PM10DC: 50 kHz to 250 MHz ± 1.5dB**
- ✔ **High Dynamic Range: Better than 77dB!!**
- ✔ **Power Handling: Up to 50 Watts Continuous Maximum; PM10DC Low Insertion Loss, Less than 0.1dB**
- ✔ **Readings Auto-Range and Are Displayed In Watts/dBm/Etc**

The PM line of digital power meters is what every RF lab technician or micro-broadcaster needs on his workbench. Until now, power meters of this capability cost thousands! Imagine being able to accurately measure RF power from almost any signal source - and with the PM10, be able to tune and match antennas! Once you use one, you will wonder how you ever did without it! And if you are a micro-broadcaster, the PM10DC will allow you to squeeze every drop of signal out of your transmitter into a perfectly matched antenna for maximum range!

The PM50 includes a 50 watt, 50 ohm dummy load allowing you to tune your transmitter off air without causing interference. An intelligent speed controlled fan adjusts cooling of the load according to power measured! Extremely wide power range allows continuous measurement from an amazing 1µWatt to 50Watts, all without any manual range switching or setting - that's over 77dB! And accuracy is an astounding ± 0.5dB over the entire specified frequency range!

The PM10DC is a directional coupler power meter allowing measurement of both forward and reverse power. This is very useful for tuning antennas and checking the entire transmission system. You can easily see the amount of power going out from the transmitter and the amount of power being reflected back from a mismatched antenna. Trim your antenna for maximum efficiency! Extreme dynamic range allows you to get meaningful measurements even with transmitters of less than 1mW of power or up to 50 watts! A powerful processor calculates and displays forward and reverse power, VSWR, dB of directionality, AM percent modulation, peak power, and average power. Try doing that with any other power meter for less than a thousand bucks! So which meter do you need? Use the PM50 if you need to test transmitters off-air or into a good 50 ohm dummy load. And the PM10DC is just the ticket for tuning antennas and checking your entire transmitting system. Both units include the matching case & knob set and power adapter. Case size 5"W x 1½"H x 5¼"D.

PM10DCWT	**Power Meter/Directional Coupler With Power Supply**	**$164.95**
PM50WT	**Power Meter/Dummy Load With Power Supply**	**$154.95**

PR2 Broadband Preamplifier

INCREASE YOUR FRONT END SENSITIVITY!

- ✔ **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 Impedance**
- ✔ **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? The PR2 broadband preamp is the answer to all these needs as well as many others.

You can use the PR2 anywhere a high gain, low noise amp is called for; digging out those weak shortwave signals or putting new life into that scanner radio – especially at 800 MHz. 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 (believe it or not the connector lead length is the limiting factor!).

Customers tell us that the PR2 outperforms professional lab units by the "Big Boys" that go for hundreds of dollars more. The PR2 is the ideal general purpose RF amp that you'll wonder how you got along without. Runs on 12 VAC/DC or 120 VAC using the included wall adapter. Size: 4" x 2" x 1".

PR2	**Broadband Preamp**	**$69.95**

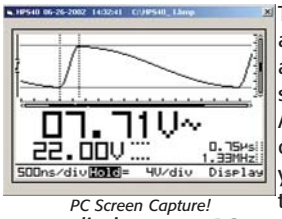
HPS Portable Oscilloscope With DVM Readout

YOUR OWN PERSONAL HAND HELD SCOPE!

- ✔ Digital Waveform & Measurement Display!
- ✔ 10MHz & 40MHz Sample Rates
- ✔ Backlit LCD Display
- ✔ RS232 Output (40MHz Model Only)
- ✔ Custom Case Included

We've all seen different models of portable scopes, meters, and scope/meters. We've also seen the price tag! Unless you were a field tech with a good sized test equipment budget, they were out of the question. These Velleman "Personal Scopes" have changed all that, and put a hand held digital scope within reach of the hobbyist, student, and technician! As I'm writing this catalog copy, I personally remember when I shelled out a couple thousand dollars for my first Scope Meter! And now you can buy one of these for several hundred dollars...with more features besides!

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! Now, 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 DVM readout for dBm, dBV, DC, and True RMS! Frequency readout is also displayed on the screen through markers. Plus, the scopes have two memories for digital signal storage! That's right, we said it's a storage scope!



PC Screen Capture!

The HPS40 also includes an RS232 serial output! At the push of a button you can capture the screen display to any PC connected to the serial port.

The scopes run on 5 standard AA Alkaline batteries (not included) which provide up to 20 hours of use. Rechargable AA NiMH batteries can be used in place of standard Alkaline batteries and will be automatically charged with the optional AC power adapter.

SPECIFICATIONS

	HPS10SE	HPS40
Max Sample Rate:	10MHz (2MHz single shot)	40MHz (10MHz single shot)
Max Input Bandwidth:	2MHz (-3dB at 50mV, 1V & 20V/Div x 1 setting)	5MHz (-3dB at 5mV/div to 12MHz at 1V & 20V/div)
Input Impedance:	1M ohm, 20pf standard scope probes	1M ohm, 20pf standard scope probes
Input Coupling:	DC, AC, and ground (zero reference)	DC, AC, and ground (zero reference)
Vert Resolution:	8 bit, ±1 bit linearity	8 bit, ±1 bit linearity
Trigger Modes:	Run, normal, once, roll mode for 1s/div and slower timebase	Run, normal, once, roll mode for 1s/div and slower timebase
LCD Graphics:	64 x 128 pixel, white backlit	112 x 192 pixel, white backlit
Signal Storage:	256 samples with 2 memories, max 125 visible samples, 256 using X shift	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)	-73dB to +40dB, ±0.5dB accuracy (0dBm=0.775V at 600 ohm)
dBV Measurement:	-75dB to +38dB, ±0.5dB accuracy (0dBV=1V)	-75dB to +38dB, ±0.5dB accuracy (0dBV=1V)
True RMS Measurement:	.1mV to 80V, ±2.5% accuracy	.1mV to 80V, ±2.5% accuracy
P/P AC Range:	0.1mV to 160V, ±2.0% accuracy	0.1mV to 160V, ±2.0% accuracy
Timebase Ranges:	0.2us to 1hr/div, 32 steps	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	5mV to 20V/div at time 1, 50mV to 200V/div at times 10, 12 steps
Probe Calibration Output:	2KHz/5Vpp approx	2KHz/5Vpp approx
RS232 Output:	None	Plug-in to DB9 serial cable provided. Push button to PC computer bitmap display
Power Requirement:	9V, 500mA adapter provided	9V, 500mA adapter provided
Batteries (not included)	5 AA Alkaline batteries or 5 AA NiMH rechargable batteries	5 AA Alkaline batteries or 5 AA NiMH rechargable batteries
Battery Life:	Up to 20 hours with AA Alkaline	Up to 20 hours with AA Alkaline
Operating Temperature:	0° to 50° C (32° to 122° F)	0° to 50° C (32° to 122° F)
Dimensions:	4.13" x 7.95" x 1.38" (105mm x 220mm x 35mm)	4.13" x 7.95" x 1.38" (105mm x 220mm x 35mm)
Weight:	14 oz (395g) less batteries	16 oz (450g) less batteries
Accessories Provided:	Foam lined carrying case, standard scope probes, user's manual	Foam lined carrying case, standard scope probes, DB9 RS232 cable, user's manual

Each scope comes with a custom foam lined, high impact carrying case, set of high quality scope probes, and a comprehensive user's manual. The HPS40 also includes an RS232 interface cable for PC connectivity. If you're working with electronic circuits, automotive applications, audio and stereo applications or any other type of electronic applications, the Personal Scope is for you...at a price that can't be beat!

HPS10SE	**Personal Scope, 10MHz, Case and Probes**	**$229.95**
HPS40	**Personal Scope, 40MHz, Case, Probes, and RS232 Output**	**$299.95**
PS28	**110VAC to 9VDC Power Supply for HPS Scopes**	**$9.95**

RF1 RF Probe

MEASURE RF WITH A VOM!

- ✔ Use With Any DMM or VOM to Measure RF!
- ✔ Low Cost RF Measurement
- ✔ Can Also Be Used As a Field Strength Meter!

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 not 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, and includes 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**	**$22.95**

DMM240 LCR-Temperature Meter

✔ Temperature Probe Included

Display:	3½ Digit, 2000 Count
DC Volt:	0-20V ±2%
Ohm:	0-20/200 ohm/2/20/200/2000K ohm/20/200/2000M ohm ±0.3%
Cap:	0-200P/2/20/200nF/2/20µF ±2%/200µF to 200mF ±3%
Ind:	0-200µH/2m/20m/200mH/2H/20H±5%
Temp:	-20-500C ±2% 500C-750C ±3%
Freq:	Autoranging up to 15MHz ±0.1%
Cont:	Audible buzzer, diode test function
Over:	24VDC/24VAC Overload Protection 10A Fused Protection
hFE:	Test Function

MEASURE RESISTANCE, CAPACITANCE, INDUCTANCE & TEMPERATURE!

The DMM240 handheld LCR meter will measure resistance from 20 to 2000M Ohms in nine ranges. It will also measure capacitance from 200pF to 200mF and inductance from 2µH to 20H and much more.

It has a 3½ digit, 2000 count display. Meter Capacitance in 8 Ranges, Max & Data Hold Feature, and Autoranging Frequency to 15MHz. Comes complete with temperature probe, standard probes, and holster style case.

DMM240 **LCR & Temperature Meter** **$99.95**

DVM850BL Compact DMM With Data Hold

PERFECT FOR YOUR TOOL BOX!

✔ Backlit Display

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. Plus a built-in continuity test provides an audible buzzer for eyes-off testing. The oversized 3½ 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!

Display:	3½ Digit LCD, backlit, 45 x 18mm Data hold
DC Volt:	200mV/2/20/200/1000V ±2%
DC Amp:	200u/2m/20m/10A
AC Volt:	200/600V
Ohms:	200/2K/20K/200K/2M ohm, Continuity buzzer, hFE & diode test
Size:	68mm x 138mm x 30mm
Battery:	Standard 9V, included

DVM850BL **Compact Multimeter With Data Hold** **$14.95**

DVM890 DMM With Temp, Capacitance, & Frequency

✔ 30 Ranges

Display:	3½ Digit LCD, 31 x 61 mm
DC Volt:	200mV/2/20/200/1000V ±0.5%
DC Amp:	2m/20m/200m/20A ±0.8%
AC Volt:	2/20/200/700V ±0.8%
AC Amp:	20m/200m/20A ±0.8%
Ohms:	200/2K/20K/200K/2M/20M/200M ohm, ±0.8% Continuity buzzer
Cap:	2000pf/20nf/200nf/2uf/20uf ±2.5%
Freq:	20KHz ±1.0%
Temp:	-50°C to 1000°C ±0.75% Continuity buzzer, hFE & diode test
Size:	88mm x 170mm x 38mm
Battery:	Standard 9V, included

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 20KHz, and temperature all the way up to 1000°C. 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. Sounds too good to be true for 40 bucks? We thought so too! That's why they're here! Comes complete with a professional rubber holster, standard test probes, temperature test probe, user's manual, and battery.

DVM890 **Multimeter With Temp, Capacitance & Frequency** **39.95**

DVM345DI Dual Display DMM With RS232 Output

DIGITAL READOUT, ANALOG BARGRAPH, PLUS RS232!

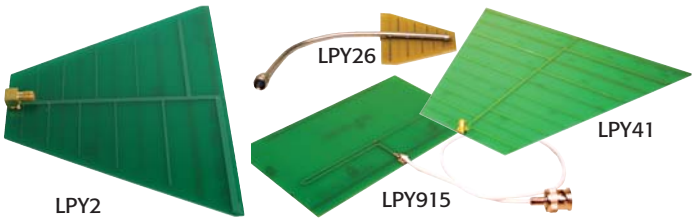
✔ RS232 Output to Your PC!
✔ Manual/Auto Range
✔ Backlit Dual Display

We gave you an inexpensive pocket DMM above 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 3¾ digit digital display with a 38 segment analog bargraph. Selectable backlight and data display hold features are also included. Plug in the provided DB9 serial cable to your PC, load the included software, and you're off and running with a remote control digital multimeter from your PC! Includes standard test probes, temperature test probes, professional rubber holster, RS232 cable, installed 9V battery, Windows software CD, all in a neat travel case.

Display:	3¾ Digit LCD, backlit,38 segment analog bar graph, with data hold
DC Volt:	4/40/400/1000V ±0.5%
DC Amp:	4mA/400mA/10A ±1.2%
AC Volt:	4/40/400/750V ±1.2%
AC Amp:	4ma/400ma/10A ±1.5%
Ohms:	2400/4k/40k/400k/4m/40m ohm ±1.2% Continuity buzzer, diode test, hFE test
Cap:	4nf/400nf ±4.0%
Temp:	0-400°C, 401 to 750°C ±3.0%
RS232:	DB9 serial with Windows software
Size:	78mm x 186mm x 35mm
Battery:	Standard 9V, included

DVM345DI **Dual Display Multimeter With RS232 Output** **$84.95**

LPY Precision PC Board Antennas



BROADBAND AND NO TUNING!

- ✔ Small Thin Size with Excellent Performance
- ✔ Very Directional—Ideal for Transmission or Reception Use
- ✔ No Tuning Needed!
- ✔ Rugged FR-4 Construction

This series of Log Periodic and Yagi PCB Antennas allow you to cover the entire spectrum from 400 MHz to 6.0 GHz! If you want to get the maximum performance out of your UHF to low frequency microwave wireless system, one of these antennas is the answer! Their directional property "compresses" the signal into a powerful 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 newest PCB antenna is our Quad Patch array designed to operate in the 2.4 GHz band. This antenna uses the latest "patch" antenna technology to give you the best performance. Then we give you gain, by providing an array of 4 separate 2.4 GHz patch antennas on one PCB, properly coupled to give you a whopping 11-12 dBi of forward gain off the flat surface of the PCB! This patch antenna is perfect for WiFi, ATV Beacons, and other 2,400 to 2,480 MHz applications. The antenna is preassembled with a 6" feed line of .141" Teflon hardline terminated with a standard SMA male connector. Standard adaptors and jumpers can be used to interface with your specific application.

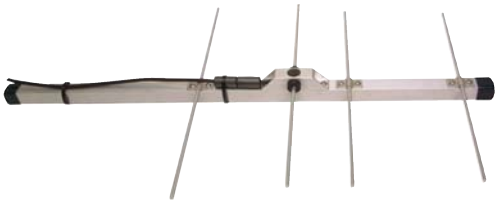
The Log Periodic models LPY41 (400-1,000 MHz, SMA-female), LPY2 (900-2,600 MHz, SMA female), and the LPY26 (2,100-11,000 MHz, SMA-male) easily interface to your system via the provided connectors. The wide bandwidth characteristics of the Log Periodic design ensure total reliability within their respective ranges.

The Yagi model LPY915 (915 MHz, BNC-male) 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!

Whether Patch, Yagi, or Log Periodic, if your application requires gain and directivity, our PCB antennas will fit the bill!

LPY41	**Logi Log Periodic PCB Antenna, 400-1,000 MHz**	**$39.95**
LPY2	**Logi Log Periodic PCB Antenna, 900-2,600 MHz**	**$34.95**
LPY26	**Logi Log Periodic PCB Antenna, 2.1-11.0 GHz**	**$34.95**
LPY915	**Directional Yagi PCB Antenna, 915 MHz**	**$29.95**
LPY244	**Quad Patch PCB Antanna, 2,400-2,480 MHz**	**$34.95**

High Performance Yagi Antennas



COST EFFECTIVE COMMERCIAL QUALITY!

- ✔ Construction That's Rugged and Simple!
- ✔ Fully Waterproof and Sealed Feedpoint!
- ✔ Cut Elements During Assembly To Match Your Exact Frequency
- ✔ Heavy Duty Aluminum Construction

Joe Reisert, WIJR, probably the best known VHF'er, has entered into the antenna business with a killer line of Yagis. Joe sent us a couple of antennas to check out and were we impressed! We've got some pretty decent HP test gear here at the plant and measuring his antennas was a delight. Talk about a match at 50 ohms impedance; even our $1800 EMI antenna couldn't come close to one of Joe's antennas.

Model	Elements	Gain	F/B Ratio	Length	Frequency
140-3	3	5 dB min	20 dB min	3 ft	140 - 300 MHz
400-4	4	7 dB min	15 dB min	2 ft	300 - 500 MHz
918-4	4	7 dB min	14 dB min	1.2 ft	902 -928 MHz

Construction is rugged and simple. Joe wisely made the feed point fully watertight and sealed the coax right into it - no more antennas that go flaky when the weather's bad. Another nice feature is the ferrite sleeve balun, most often left out on other antennas. You'll find no coax radiation with this Yagi. In short, these are the finest 3 and 4 element Yagis on the market!

1403	**Yagi Antenna, 140-300 MHz**	**$79.95**
4004	**Yagi Antenna, 300-500 MHz**	**$79.95**
9184	**Yagi Antenna, 902-928 MHz**	**$109.95**

SM100 Signal Magnet Active Antenna

PULLS IN SIGNALS WITHOUT THE NOISE!

- ✔ Outstanding Results from 500 kHz to 15 MHz
- ✔ Hi-Q Ferrite Rod Antenna with Faraday Shield
- ✔ Removes Electrical and Static Noise!

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 powerline crud, fluorescent lamp buzz and light dimmer hash. Plus it's very directional, able to null strong stations on the same or nearby frequencies! The ferrite rod antenna is an active varactor tuned antenna that's Faraday shielded - it only responds to the magnetic field and leaves the noise out!

Designed to cover any frequency within X ranges from 500 kHz up to 15 MHz, it works great for WWV time base receivers, SWL receivers, and other monitor applications throughout the band. Works indoors or out, contained in rugged PVC pipe with a single "F" coax cable connector. Operates with up to 500 feet of coax cable (you supply) between antenna assembly and control box which measures 5" x 5 ¼" x 1½". The antenna is 9 1/2" x 9" long, L-Shaped 1" PVC pipe with end caps. Operates on 12VDC with included AC adaptor.

SM100WT	**Signal Magnet Noise Reduction Antenna Package, Tuned for AM Broadcast Band**	**$134.95**
SM100BWT	**Signal Magnet Noise Reduction Antenna Package, Tuned for 1.6MHz to 4.5MHz**	**$134.95**
SM100CWT	**Signal Magnet Noise Reduction Antenna Package, Tuned for 4.5MHz to 6.5MHz**	**$134.95**
SM100DWT	**Signal Magnet Noise Reduction Antenna Package, Tuned for 6.5MHz to 1500MHz**	**$134.95**

WA10 Telescopic Whip Antenna

SWIVEL BNC MOUNT FOR ANY APPLICATION!

- ✔ High Quality with BNC Connection
- ✔ Covers VHF and UHF Bands

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**

TM100 Tru-Match FM Broadcast Antenna

RUGGED PVC CONSTRUCTION!

- ✔ Matches 50 or 75 Ohm Systems
- ✔ Tunable over 88-108 MHz

We've been besieged with calls asking us where to get a good quality FM Broadcast antenna. Remember, matching your antenna to your transmitter is the single most important link in your transmitter setup - and a good antenna and match are the secret to getting maximum range. When we say "match" we mean electrical impedance match... if the proper impedances are not maintained between transmitter and antenna, power is reflected away from the antenna and back into the transmitter! This can cause the final amplifier stage to be damaged and can cause poor range. Perfect for low power transmitters and FM broadcast band receivers. Maximum transmit power is 25 watts. Input connector is a standard "F" connector. Requires assembly to your specific frequency.

TM100	**Tru-Match FM Broadcast Antenna, 25 Watts Maximum Power**	**$14.95**

FMA200 5/8 Wave Colinear Vertical FM Antenna

200 WATT POWER RATING!

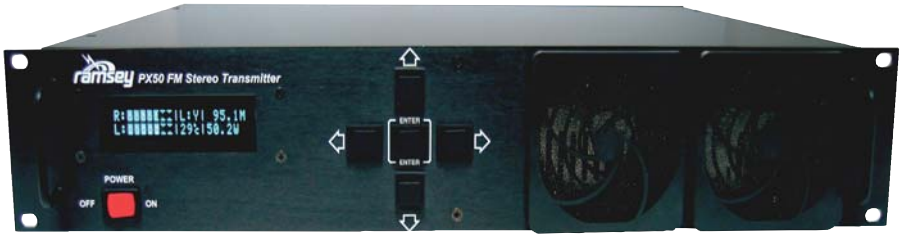
- ✔ 5/8 Wave Provides Maximum Range
- ✔ 3.4dB Gain Effectively Doubles Your Power!
- ✔ Field Tunable For a Perfect Match

This rugged omnidirectional ground plane design is our most popular antenna. The 5/8 wave design keeps your signal low to the horizon and not uselessly radiating up into space. 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 to the horizon - and that's exactly what this Colinear antenna does!

Super easy to assemble and mounts to any common antenna mast. Has the common SO-239 style connector to match a PL-259 coax connector available anywhere. Easy to assemble and tune to your exact operating frequency between 88-108 MHz. Overall height is 7' 7" and has a maximum power rating of 200 watts.

FMA200	**5/8 Wave Colinear FM Broadcast Antenna, 200 Watt Power Rating**	**$129.95**

PX50 50W LPFM Stereo Transmitter



- ✔ 50W RF Output, Continuous Duty
- ✔ FCC Certified, Parts 2, 73, 74
- ✔ Automatic Monitoring
- ✔ Automatic VSWR Protection
- ✔ Automatic Temperature Protection
- ✔ Digital Display of All Parameters

STAY ON-THE-AIR WITH THE PX50!

General Display (Default)

RF Frequency

Audio Levels

RF Output Power

Antenna System VSWR

Stereo/Mono Mode

Internal Temperature

Station ID

VCO Deviation Levels

Option Display

Audio Levels

Controls Locked/Unlocked

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. And we even listened to people using competitive equipment telling us what they really wanted!

What did we hear? You wanted an ultra-reliable transmitter that had 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.

And 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!

Operation of the PX50 is simple and intuitive via the front panel navigation switch matrix. All functions, controls, and status are displayed on the 2 line by 20 character vacuum fluorescent display. Simple navigational controls and displays are provided for:

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. In short, 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 simpler!

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)

PX50 Professional 50 Watt LPFM Broadcast Stereo Transmitter **$1995.00**

PXB50 50W LPFM Stereo Radio Station In-A-Box

- ✔ 50W RF Output, Continuous Duty Transmitter
- ✔ FCC Certified, Parts 2, 73, 74
- ✔ Integrated Professional Cuing CD Player
- ✔ Integrated Professional Cuing Cassette Player
- ✔ Integrated 4 Channel Mic-Line Mixer
- ✔ Professional Quality Microphone & Cable
- ✔ Omnidirectional 3dB Gain Antenna & Coax
- ✔ All Installed, Prewired, and Ready To Go!

YES, WE SAID STATION-IN-A-BOX!

One of the most requested FM broadcast products over the past year has been a "radio station in a box". At first we laughed. What did they mean... in a box? Then as the requests came pouring in, we found out! Overseas customers, as well as some of the new LPFM licensees have a need to quickly "get on the air" at temporary locations or in the interim to their installed studio/transmitter setup. A number of overseas customers also had to originate short term programming from various remote origination sites for disaster preparedness broadcasts! Well, here you go... a radio station in a box!

First we took our state of the art PX50 FM Stereo Transmitter and installed it in an impact resistant, rack mount travel case. Then we added the Superscope PAC750 integrated mixer/cassette deck/CD deck. We prewired them, then added a professional microphone and some cables. Finally, we included our 3.4 dB gain omnidirectional FM Broadcast antenna with 100 feet of matching low loss coaxial cable. There you go, a complete radio station, ready to plug in, and be on the air!

Just imagine: Show up, open up the case, plug in the AC power, temporarily mount the antenna, connect the coax, and you're all set! The applications are endless! From live remotes to station backup transmitters, our "Station In A Box" is your solution! *(Note: The end user is responsible for complying with all FCC rules & regulations within the US, or any regulations of their respective governing body).*

PX50 FM STEREO TRANSMITTER

Complete 50 Watt Synthesized FM Stereo transmitter. See page 14 for full details and specifications.

PAC750 INTEGRATED AUDIO SYSTEM

A complete, integrated, professional audio system. Includes an input audio mixer, cassette deck, CD player, with full audio and cueing controls. For complete specifications, visit www.ramseyelectronics.com.

FMA200 OMNIDIRECTIONAL VERTICAL ANTENNA

This 5/8 Wave omnidirectional antenna gives you 3.4 dB gain over a unity gain antenna. That's more than twice the effective radiated power. That will give you the maximum punch from your temporary location. See page 13 for full details and specifications. Quick, on-the-spot assembly specifically for your operating frequency. Easy to mount on any mast, tower, or building. Some customers have even mounted them on the roof of their van, and have operated the station from inside the van!

We include 100 feet of low loss LMR-400 coaxial cable, with connectors pre-installed to get you on the air quick. For complete details on this and other FM broadcast antennas visit www.ramseyelectronics.com.

PROFESSIONAL MICROPHONE, STAND, AND CABLES

Professional handheld dynamic microphone, 25' professional XLR microphone cable, and a matching desk stand.

ALL INSTALLED AND PREWIRED IN A HIGH IMPACT RACK MOUNTED ROAD CASE!!!

PXB50 Professional 50 Watt LPFM Stereo Radio Station In-A-Box $3995.00

RAMSEY ELECTRONICS, INC.
590 Fishers Station Drive
Victor NY USA
(585) 924-4560 (585) 924-4555 FAX
www.ramseytest.com

Call Or Visit Today!

www.ramseytest.com

800-446-2295

585-924-4560

When You DON'T Have A Fortune To Spend On A New Service Monitor...

Ramsey COM3010

- ✔ 100kHz - 1.0GHz, Full Duplex!
- ✔ ±0.1ppm Frequency Accuracy!
- ✔ Built-in Power Meter & Load!
- ✔ Built-In Frequency Counter!
- ✔ Built-In Sweep Generator!
- ✔ Built-In SINAD Meter!
- ✔ Built-In Calibrated RSSI Meter!
- ✔ Built-In RS232 Control
- ✔ Built-In Lithium Ion Battery Pack

How's $3995 Sound!

See Page 2

THE SERVICE MONITOR... THAT SIMPLY MAKES SENSE!

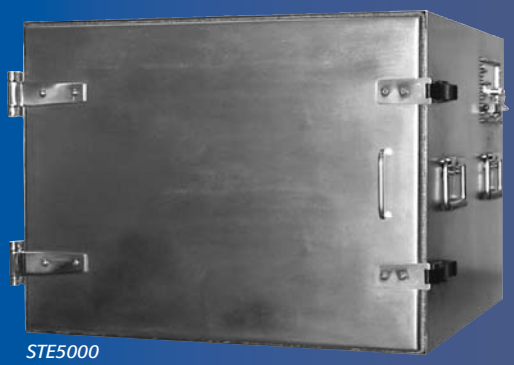
RF Signal Generator 100 kHz to 1,100 MHz!

See Page 4

- ✔ 100 kHz to 1,100 MHz!
- ✔ ±0.1ppm Frequency Accuracy!
- ✔ 10 Hz Continuous Tuning
- ✔ AM & FM Modulation
- ✔ 90 User Setup Memories
- ✔ RS232 Interface

Only $1995

PERFORMANCE WITH VALUE!



STE5000

STE3000B

STE3300

RF Shielded Test Enclosures

Custom Configured for YOUR RF Testing!

STE2200

STE4400

RAMSEY ELECTRONICS INC.
590 Fishers Station Drive
Victor, New York 14564
Phone (585) 924-4560

TRUST YOUR RF TESTING TO OUR PATENTED DESIGN!

- ✔ Wireless Device Testing!
- ✔ Perfect for 802.11a, b, g
- ✔ Cellular, PCS, GSM Testing
- ✔ Bluetooth, RFID, 3G Testing
- ✔ Wide Variety of I/O Options
- ✔ Super Isolation Up To 18GHZ!
- ✔ Stock Models To Fit Your Custom Applications!

See Page 6