

Your Test Is Only As Good As The Sum Of Its Parts.

With infinite solutions available from AR, why settle for something inferior?

If you use AR amplifiers, you obviously recognize the importance of quality and reliability. But when you add accessories, that's no time for a weak link.

All it takes is one component in your test set-up that doesn't perform as well as it should, and all your test results become questionable. Why take chances?

AR offers a complete selection of accessories that give you the most reliable results. Many even make testing quicker, more efficient, and more accurate.

We've got probes, software, system controllers, couplers, and more. They're all matched to our amplifiers to make your set-up as easy as possible...and to help you avoid any weak links.



Three-Channel Power Meter Features High-Speed Measurement Capability

Advanced digital signal processing combined with a full line of fast-response diode heads allows the PM2003 to deliver 200 readings per second with one channel, or 100 per second when two channels are used. Two channels at a time can be simultaneously displayed and recorded, the third channel can be easily switched in to be displayed or recorded. The PM2003 measures signals from -70 dBm to +44 dBm (with appropriate powerhead) and can store calibration data for up to four heads in its internal non-volatile memory. Its dynamic range extends to 90dB when diode heads are used.

We offer a family of diode or thermo-couple 50 ohm powerheads with excellent specifications. All are supplied with NIST traceable calibration factors. Each new powerhead is supplied with a Powerhead Data Adapter that has complete calibration data stored right in a built-in EEPROM and a 5' powerhead cable. Please visit our web site for a full listing of available powerheads.

PM2003 Three-Channel Power Meter.

Frequency Range	10 kHz to 40 GHz, powerhead dependent
Power Range	-70 dBm to +44 dBm, powerhead dependent
Measurement Speed:	1 channel: 200 Readings/Sec. 2 channels: 100 Readings/Sec.
Dynamic Range	Up to 90 dB with diode heads, 50 dB with thermocouple heads.
Inputs	Rear panel HEAD connectors and rear panel IEEE488 connector standard.
Outputs	Rear panel PWR/REF connector, 0 dBm, 50 MHz. Rear panel RECORDER BNC connector, 0 to 10V into 1 MΩ. Output impedance is 9.09 kΩ. May be operated into 1 kΩ or 1V fs.

Standard Power Heads (Sensors)	Frequency	Dynamic range (model PM2003)
PH2000A Dual diode.	10 kHz to 8 GHz,	-60 to +20 dBm.
PH2004A Dual diode.	100 kHz to 18 GHz,	-60 to +20 dBm.
PH2010 Dual diode.	30 MHz to 40 GHz,	-70 to +20 dBm.

PSP Series Pulse Power Sensors

The PSP Series Wideband USB pulse power sensors turn your PC or laptop with a standard USB 2.0 port into a pulse power analyzer, without the need for any other instrument.

Power measurements from the PSP Series can be displayed on the PC or can be integrated into a test system with a set of remote commands. A Status LED on the sensor provides indication of the operational state for diagnostic purposes.

The PSP Series power sensors include 6, 18 and 40 GHz models for measurement of wideband modulated and unmodulated signals over a frequency range of 50 MHz up to 40 GHz.

The PSP Series Wideband USB pulse power sensors are supported by both AR's emcware® software and PulsewARe. PulsewARe is a Windows-based software package that provides control and readout of the sensors.

The PSP Series are ideal for radiated immunity, telecommunications and intentional radiator EMC testing, as well as applications in manufacturing, design and research. The design of these products allows for fast, accurate and reliable RF power measurements of a wide range of pulsed, modulated and CW signals.

PSP001-PSP005 Pulse Power Sensors.

Sampling Techniques:	Real-time/Equivalent Time/Statistical Sampling
Continuous Sample Rate:	100 MHz
Effective Sample Rate:	10 GHz
Time Resolution:	100 ps
Statistical Analysis:	Continuous or gated CCDF
Statistical Speed:	100M points/sec
Trigger Sources:	Internal or External TTL
External Trigger in/out:	TTL in (slave) or out (master), SMB connector
Minimum Trigger Width:	10 ns
Maximum Trigger Frequency:	50 MHz
Trigger Jitter:	0.1 ns rms
Trace Acquisition Speed:	100K sweeps/second
Measurement Speed:	100K meas/sec (buffered mode) over USB 800 meas/sec (continuous)
Trigger Modes:	Auto, Normal, Single, Free run
Trigger Arming:	Continuous, Trigger Holdoff, Frame (gap) Holdoff
Remote Connectivity:	USB 2.0, type B connector
Command Protocol:	IVI-C and IVI-Com
Maximum Input Power:	200mW avg, 1W for 1us peak
Size (LxWxH):	145 x 43 x 43 mm (5.7 x 1.7 x 1.7 in)
Weight:	363 grams/0.8 lbs.
Power Consumption:	2.5W max (USB high power device)

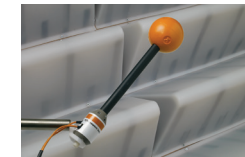
Sensor Model	Frequency Range	Dynamic range
PSP001	50 MHz to 6 GHz	-60 to +20 dBm
PSP002	50 MHz to 18 GHz	-34 to +20 dBm
PSP003	50 MHz to 40 GHz	-34 to +20 dBm
PSP004	50 MHz to 18 GHz	-50 to +20 dBm
PSP005	50 MHz to 40 GHz	-50 to +20 dBm

The World's Most Advanced, Most Complete and Most Rugged Line of EMC Field Monitoring Equipment.

Starprobe® Laser Powered Probes Cover The Broadest Frequency Range – 5 kHz to 60 GHz!

AR has designed and manufactured a highly-advanced line of field monitoring equipment. These E-field laser probes contain an internal microprocessor that enables them to “think” for themselves and adapt to their environment. This provides optimal linearization, temperature compensation, control, and communication functions. And because they're laser powered, you never have to replace or recharge batteries. Ruggedized antenna cones and fiberoptic cables provide unequalled reliability.

The Most Advanced Laser Powered E-Field Probes on the Planet



Field Probes	Starprobe® 1 (Model FL7030)	Starprobe® 2 (Model FL7006)	Starprobe® 3 (Model FL7040)	Starprobe® 4 (Model PL7004)*	Starprobe® 5 (Model FL7060)	Starprobe® 6 (Model FL7218)
Sensor Type	Electric (E) field	Electric (E) field	Electric (E) field	Electric (E) field Relative Flatness (field aligned with sensor axes): ±2.5 dB, 800 MHz-3 GHz ±3.0 dB, 3-3.6 GHz	Electric (E) field	Electric (E) field
Frequency	5 kHz-30 MHz	100 kHz-6 GHz	2 MHz-40 GHz	800 MHz-3.6 GHz	2 MHz-60 GHz	2 MHz-18 GHz
Probe Use	CW	CW	CW	Pulse	CW	CW
Amplitude Accuracy (field aligned with sensor axes)	±1.0 dB, 10 MHz with calibration factors applied: (typical expanded measurement uncertainty - 95% confidence interval) 0.8 dB, 5 kHz-30 MHz	±1.0 dB, 10 MHz with calibration factors applied: (typical expanded measurement uncertainty - 95% confidence interval) 0.8 dB, 100 kHz-1 GHz 1.4 dB, 1 GHz-6 GHz	±1.0 dB, 10 MHz with calibration factors applied: (typical expanded measurement uncertainty - 95% confidence interval) 0.8 dB, 2 MHz-1 GHz 1.4 dB, 1 GHz-40 GHz	±1.5 dB, 1 GHz with calibration factors applied: (typical expanded measurement uncertainty - 95% confidence interval) 0.8 dB, 800 MHz-1 GHz 1.4 dB, 1-3.6 GHz	±1.0 dB, 10 MHz with calibration factors applied: (typical expanded measurement uncertainty - 95% confidence interval) 0.95 dB, 2 MHz-1 GHz 1.5 dB, 1 GHz-60 GHz	±1.0 dB, 10 MHz with calibration factors applied: (typical expanded measurement uncertainty - 95% confidence interval) 0.8 dB, 2 MHz-1 GHz 1.4 dB, 1 GHz-18 GHz
Response Time/Sampling Rate (through FI7000)	20 msec/up to 50 samples per second, USB and GPIB only	20 msec/up to 50 samples per second, USB and GPIB only	20 msec/up to 50 samples per second, USB and GPIB only	20 msec/up to 50 samples per second, USB and GPIB only	20 msec/up to 50 samples per second, USB and GPIB only	20 msec/up to 50 samples per second, USB and GPIB only
Isotropic Deviation (measured at the ortho angle)	±0.5 dB, 10 MHz ±0.5 dB, 5 kHz-30 MHz typ.	±0.5 dB, 10 MHz ±0.5 dB, 0.5 MHz-2 GHz typ.	±0.5 dB, 10 MHz ±1.5 dB, 2 MHz-40 GHz typ.	±1 dB at 1 GHz (for improved accuracy this probe should be used with a single axis aligned with the e-field being measured)	±0.5 dB, 10 MHz ±1.5 dB, 2 MHz-60 GHz typ.	±0.5 dB, 10 MHz ±1.5 dB, 2 MHz-18 GHz typ.
Sensitivity	1.5-300 V/m	0.5-800 V/m, 100 kHz-1 GHz 0.5-600 V/m, 1-4 GHz 0.7-800 V/m, 4-6 GHz	2-1000 V/m	80-800 V/m Pulse width: 1 to 100 microseconds Pulse period: up to 5 milliseconds between pulses (greater than 200 Hz pulse rate) Pulse duty: 0.02% to 2% Pulse measurement variation (over range of pulse width, period, and duty relative to a 10 microsecond pulse width and 1 millisecond pulse period, 1 kHz pulse rate, 1% duty): +0.5 dB/-1.0 dB (typ.)	2-1000 V/m	2-1000 V/m
Linearity	(1.5-300 V/m) ±0.5dB and +0.9V/m	(0.5-800 V/m) ±0.5dB and ±0.3V/m	(2-1000 V/m) ±0.5dB	(80-800 V/m) ±0.5dB	(2-1000 V/m) ±0.5 dB	(2-1000 V/m) ±0.5 dB
Temperature Stability	±0.5 dB over operating temperature range	±0.5 dB over operating temperature range	±0.5 dB over operating temperature range	±0.5 dB over operating temperature range	±0.5 dB over operating temperature range	±0.5 dB over operating temperature range
Damage Level	1000 V/m continuous field	1000 V/m continuous field	1200 V/m CW	1200 V/m CW	1200 V/m continuous field	1200 V/m CW
Ranges	Single	Single	Single	Single	Single	Single
Data Returned from Probe	X, Y, Z axes, and composite	X, Y, Z axes, and composite	X, Y, Z axes, and composite	X, Y, Z axes, and composite	X, Y, Z axes, and composite	X, Y, Z axes, and composite
Power Requirement	Laser powered from FI7000 interface	Laser powered from FI7000 interface	Laser powered from FI7000 interface	Laser powered from FI7000 interface	Laser powered from FI7000 interface	Laser powered from FI7000 interface
Dimensions	5.7 x 5.7 x 5.7 cm (2.25 x 2.25 x 2.25 in.) 2.92 cm (1.15 in.) DIA spherical housing 3.18 cm (1.25 in.) sensor Radome per axes	5.7 x 5.7 x 5.7 cm (2.25 x 2.25 x 2.25 in.) 2.92 cm (1.15 in.) DIA spherical housing 3.18 cm (1.25 in.) sensor Radome per axes	27.8 x 6.5 x 6.5 cm (10.9 x 2.6 x 2.6 in.) 65 mm Probe head diameter	5.7 x 5.7 x 5.7 cm (2.25 x 2.25 x 2.25 in.) 2.92 cm (1.15 in.) DIA spherical housing 3.18 cm (1.25 in.) sensor Radome per axes	27.8 x 6.5 x 6.5 cm (10.9 x 2.6 x 2.6 in.) 65 mm Probe head diameter	27.8 x 6.5 x 6.5 cm (10.9 x 2.6 x 2.6 in.) 65 mm Probe head diameter
Weight	62.5 g (2.2 oz)	62.5 g (2.2 oz)	150 g (5.3 oz)	62.5 g (2.2 oz)	150 g (5.3 oz)	150 g (5.3 oz)
Operating Temperature Range	10-40°C (50-104°F) @ 5-95% RH non-condensing	10-40°C (50-104°F) @ 5-95% RH non-condensing	10-40°C (50-104°F) @ 5-95% RH non-condensing	10-40°C (50-104°F) @ 5-95% RH non-condensing	10-40°C (50-104°F) @ 5-95% RH non-condensing	10-40°C (50-104°F) @ 5-95% RH non-condensing

* The model PL7004 is the only commercial pulsed E-Field probe approved by name in the new Ford-EMCCS2009 specification

FI7000 Probe Interface

Provides both power and a serial communication with the FL7000 and PL7000 series probes. An additional, low-level loop back fiber optic connection is used to sense unexpected disconnect of laser driven fibers to ensure usersafe laser operation.

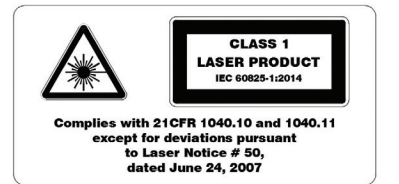
The FI7000 can be used with the FM7004A field monitor or a PC by direct communication using the USB, GPIB, or RS-232 interfaces. All FL7000 and PL7000 series probes require the FI7000 probe interface.

All AR Laser Probes kits Include:

- 10 meter fiber optic cable set
- Accredited calibration report



Model FI7000



Complies with 21CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice # 50, dated June 24, 2007



Starmonitor® Field Monitor

Model FM7004A is an E- and H- field control center that offers monitoring and display capabilities for immunity-test environments for up to 4 field probes or field analyzers. Exceptionally precise with auto-recognition to adapt to laser or battery-powered probes. The unit allows field-strength measurement at up to four probe locations simultaneously with results displayed on a backlit color touch LCD.

The FM7004A has the ability to internally apply correction factors to field probe readings. Up to 6 tables of correction factors containing up to 30 different frequency points can be stored in the FM7004A. From the menu-controlled front panel, call up composite field readings or choose readings from each axis of a three-axis probe.

The FM7004A field monitor provides four digital interfaces (USB, GPIB, RS-232 and Ethernet) and a highly readable, user configurable touch LCD display. Menu options are at your disposal. Communication from the chamber to the FM7004A is through fiberoptic cables.

Virtual Field Monitor.

AR's VM7000 Virtual Field Monitor Software converts your computer into a field monitor. It can simultaneously control and operate any combination of 7000 series field probes or field analyzers. The VM7000 provides a graphical user interface that allows effortless control of all probe functions, while clearly displaying probe data and status.

With this system, your computer becomes a direct connection for up to 9 simultaneous field probes, and also acts as a complete control center. From the computer screen you may enable and disable the individual axes of all probes at once, or of just one specific probe. Over-range, battery voltage, and temperature status can be displayed for continued and proper field monitoring. Field strength data can be displayed in a number of ways, and readings from all modes can be data logged.

The VM7000 runs under the Windows 7, 8 and 10 operating systems.

Main Menu		
CH2	FP7018	V/m
108.54		
99.31 X		
42.37 Y		
11.05 Z		
Freq Cor: 10.000MHz		
Channel	Display	System
Freq Cor	Search	

Main Menu			
Min	V/m	Max	V/m
17.43		120.57	
Average		V/m	
100.57		CH1 X Y Z	
		CH2 X Y Z	
		CH3 X Y Z	
		CH4 X Y Z	
Freq Cor: 10.000MHz			
Channel	Display	System	Freq Cor
Search			

Main Menu				
CH1	FL7030	V/m	CH2	FP7018
31.93		350.39		
14.92 X		350.04 X		
15.27 Y		3.75 Y		
23.74 Z		15.20 Z		
CH3	FL7006	V/m	CH4	FL7040
2.70		190.85		
0.78 X		10.08 X		
1.07 Y		19.80 Y		
2.35 Z		189.55 Z		
Freq Cor: 10.000MHz				
Channel	Display	System	Freq Cor	Search

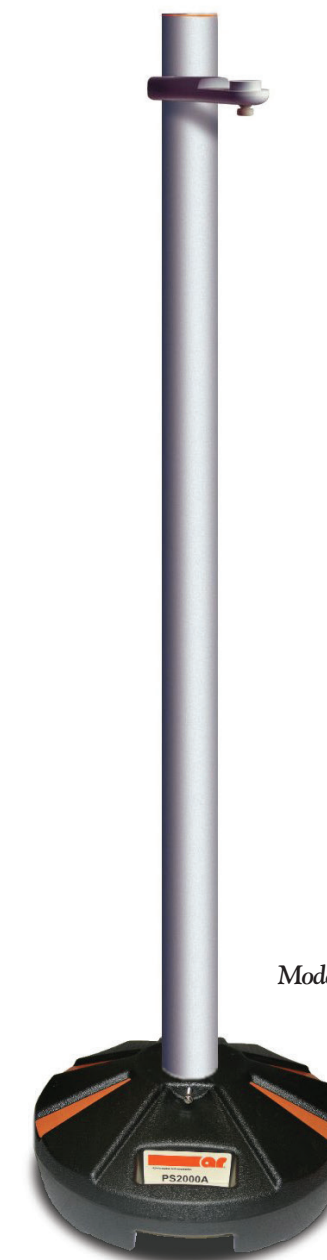
AR Field Monitors can display single channel, multichannel, minimum/maximum and average field strength data

Clamps, Cables and Everything You Need To Do The Job Right.

PS2000A Probe Stand
Adjustable to 7.5 ft. Also includes one CL2000 clamp.

CL2000 Probe Clamp
Extra clamp for PS2000A probe stand.

Fiberoptic Cable Sets
Available in 10, 20, 50, 100 meters.



Model PS2000A

emcware® for Automated EMC Testing

emcware® by AR RF/Microwave Instrumentation provides automated Electromagnetic Compatibility (EMC) testing and report generation. It makes testing quick, easy, and extremely accurate, and it's ideal for all types of users from corporate to professional test laboratories. This user-friendly software package features conducted immunity, radiated susceptibility, conducted emissions and radiated emissions tests.

Equipment Management

The Equipment List Manager is a built-in tool that allows equipment to be entered one time and then accessed from all tests. The Equipment Manager also keeps track of calibration dates and can warn the user when the calibration date of a specific piece of equipment is approaching.

EUT Monitoring

Now you can achieve complete EUT monitoring and control by using custom equipment (in conjunction with dynamic link library [dll's] files) or an NI DAQ card. It makes everything easier.

Instrument Drivers

An extensive equipment driver library is installed with the software. Drivers can also be created and imported by the user in the form of dynamic link library (dll's) files. The software can communicate with equipment through GPIB, RS-232 and USB remote interfaces.

Signal Routing

Automatic signal routing can be implemented through the use of up to two AR RF/Microwave Instrumentation Model SC1000/SCP2000 System Controllers, enabling single-test bandwidth from 10 kHz - 18 GHz and beyond.

User Security Levels

Define equipment and test set-ups as a System Administrator, then change the security level to Restricted User to ensure secure testing.

Reports

Extensive report generation capability is built in, using Microsoft Word and Microsoft Excel.

Help File

Included with the software is a detailed help utility with tutorials and a searchable index.

emcware®

Included Test Standards

Radiated Susceptibility Module

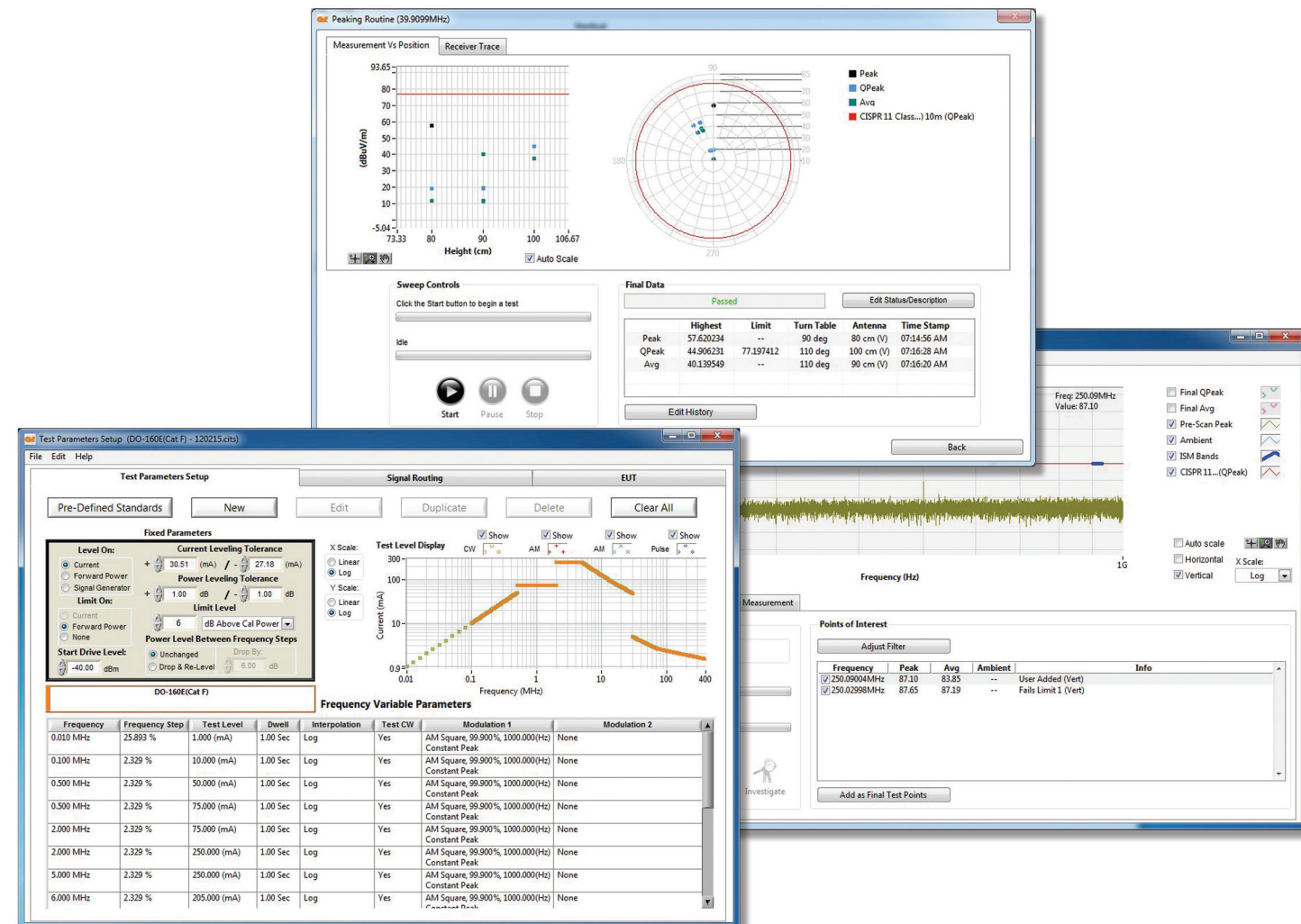
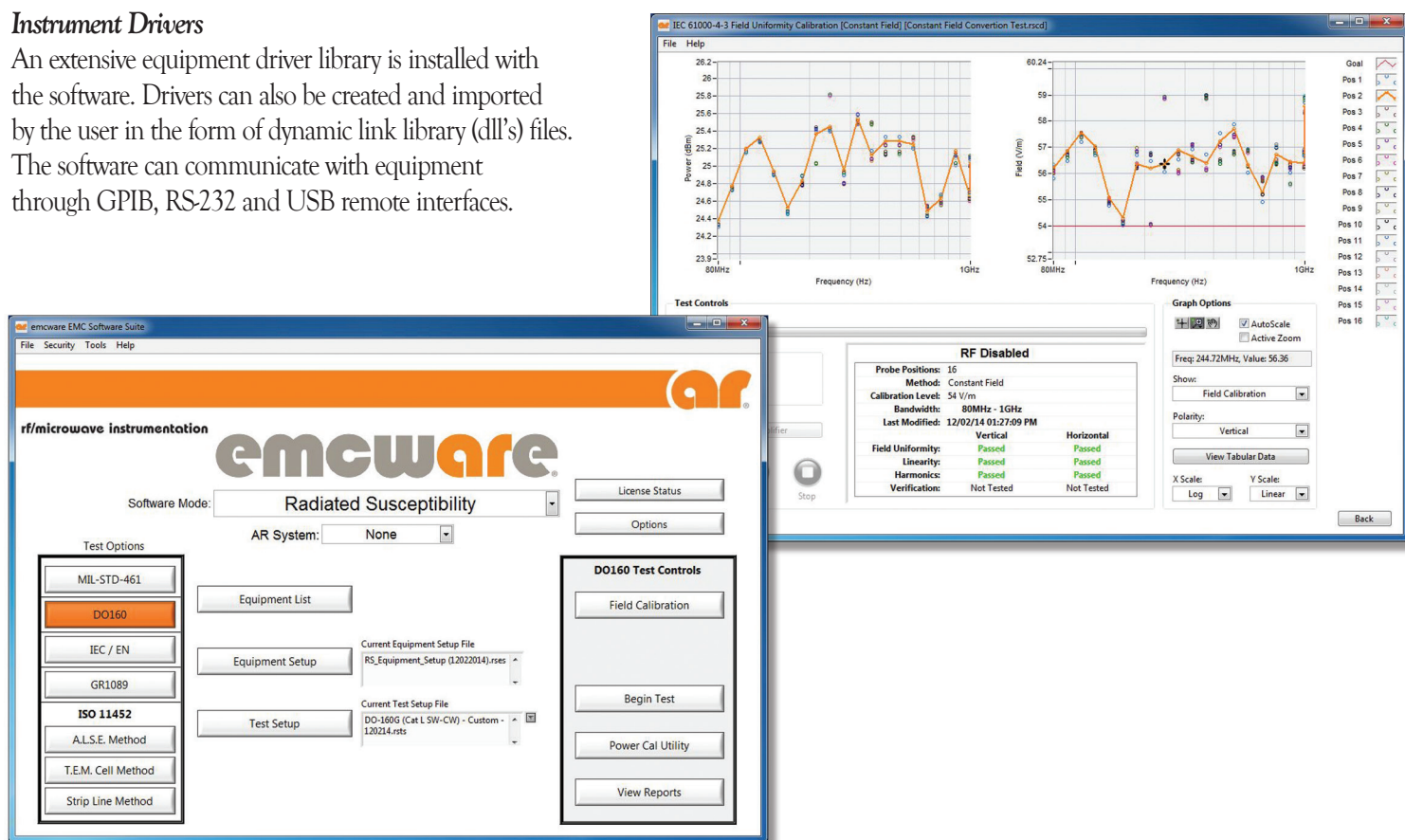
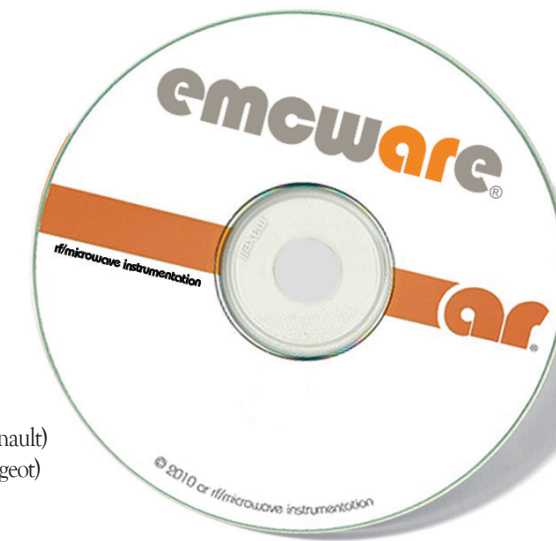
- IEC 61000-4-3
 - 50130-4
 - 60601-1-2
- GR-1089
- ISO 11452
 - 11452-2
 - ESXW7T-1A278-AC (FORD)
 - GMW3097 (GM)
 - 11452-3
 - 11452-5
- MIL STD 461 CS114 (Rev D, E, F, G)
- RTCA/DO-160 Section 20 (Rev D, E, F, G)

Conducted Immunity Module

- IEC 61000-4-6
 - 50130-4
 - 60601-1-2
 - 61000-6-1
- ISO 11452-4
 - ESXW7T-1A278-AC (FORD)
 - GMW3097 (GM)
 - GS 95002 (BMW)
 - DC11224 (Chrysler)
- MIL STD 461 RS103 (Rev D, E, F, G)
- RTCA/DO-160 Section 20 (Rev D, E, F, G)

Emissions Module

- MIL STD 461 (RE-101/RE-102/CE 101/CE 102)
- RTCA/DO-160 Section 21
- CISPR 11, 13, 22, 25 and 32



The AR SI1000 System Interlock.



The SI1000 System Interlock provides a means of interlocking up to 12 independent pieces of equipment and/or other SI1000 units through the use of relay contacts and a fiber-optic output, which change state based on a single master interlock signal. The master interlock signal may be either a monitored switch state change or a fiber-optic signal state change. The master interlock input signal and relay output signals can be wired either NO or NC. A front panel key switch enables the system and can be removed in the disabled position to lockout the system from accidental access. Interlock status is displayed on the front panel through the use of a bicolor (Red/Green) LED.

By using two SI1000 units, one configured for wired master interlock and one configured for fiber-optic master interlock and a connecting fiber-optic cable, a single switch outside an anechoic chamber (door closure switch) can be used to disable the RF generation of a system inside the chamber. Multiple units could be linked together either wired or fiber-optically to expand the interlock system.

The SI1000 front panel also includes a main power (ON/OFF) switch and an emergency power off (EPO) switch. The outputs of these switches are routed to the rear panel of the interlock system and are provided for systems with power distribution systems with remote capability.

SI1000 System Interlock.

Specifications

Wired Interlock, Remote Out, and Relay Connections	Molex receptacle, 3 pin, 0.093 in DIA terminals
Mating 3 pin plug connector and terminals supplied	
Fiber Optic Connectors	(2) FSMA for fiber connection
Compatible with FC2000 series Cables	
Power Requirements	
Input Voltage	90-260 VAC, 50-60 Hz
Input Current	0.2-0.6 A
Input type	IEC inlet with filter
Enclosure	Rack mount case, 1U high
Dimensions (WxHxD)	48.3 x 4.5 x 17.8 cm (19.0 x 1.75 x 7.0 in)
Weight	2.5 kg (6.25 lb)
Operating Temperature Range	10 C to 40 C (50 F to 104 F) @ 5% to 95% RH non-condensing

AR's NEW SC2000 System Controller Makes System Integration Possible

The SC2000 switch controller family is a versatile and expandable platform which provides switching functions for RF systems. Unlike our previous design, the SC2000 has five user configurable module slots on the rear panel which offers great flexibility for numerous applications. Eighteen different SCM series switch modules are available to populate the available slots; these switch modules include different switching configurations and connector types - SMA(f), K(f), or N(f). The SC2000 system can be further expanded by fiber-optically linking up to seven SCX2000 expansion units that include an additional 5 module slots.

Features:

- Five user configurable slots per chassis
- Fiber optically expandable up to 8 chassis
- Preconfigured versions are available (Drop-in replacements for legacy model, SC1000)
- Color touch screen
- Remote or local control
- Multiple interlocks
- User defined switch states
- More than 18 switch modules are available

The SC2000 switch control platform accommodates systems using combinations of multiple signal sources, amplifiers, antennas, and forward/reverse power measurement equipment for radiated immunity testing in a wide variety of configurations. Alternative applications include the use of the system controller to switch in various RF filters for reducing harmonic distortion.

The SCP2000 model variants are preconfigured versions of the SC2000 family specifically configured to replace, on a one-for-one basis, the legacy model SC1000 System Controller model variants with the same switching and control functionality.

System interlock capability is provided by sensing a switch closure. Interlock, "safe", and common switch states are user programmable. A fused 24VDC output, four open drain outputs, and four TTL I/O lines are supplied to allow the control and monitoring of external switches or other peripherals.

Operational control is available manually, using the provided color LCD touch screen display, or remotely, using any of the four provided remote ports (USB, GPIB, RS-232, and Ethernet).

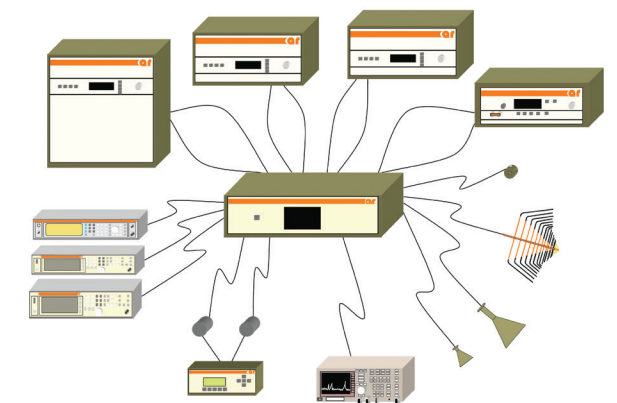
For more information, see the specification sheets on www.arworld.us for details on the SC2000, SCX2000 and SCP2000 products and their RF switch modules, configurations, and performance (power handling and derating factors), along with specifications for base unit dimensions, weight, power requirements, power consumption, etc.



SC2000 Configuration Guide

SC2000 Versions	Max # of signal generators	Max # of amplifiers	Max # of Loads	Ability to Switch in a receiver/spectrum analyzer	# of forward power ports can be switched to 1 power head	# of reverse power ports can be switched to 1 power head	Can work up to 40 GHz	Total # of switches installed
SCP2000	3	4	4	No	4	NA	No	5
SCP2000M1	3	4	4	Yes	4	4	No	7
SCP2000M2	3	4	NA	No	4	NA	No	3
SCP2000M3	3	4	NA	No	4	4	No	4
SCP2000M4	3	4	NA	No	4	4	Yes	4

System Configuration Example



The Competitive Edge in Couplers

A Wide Range Of Couplers Monitor Forward And Reflected Power To 50 GHz.

Cover the RF spectrum from 10 kHz to 50 GHz with power handling capability from 50 to 15,000 watts continuous, 60,000 watts peak pulse power. This broad range gives you flexibility in coupling low-and high-power amps to power meters, spectrum analyzers, receivers, oscilloscopes, and other sensitive measuring instruments.

Dual directional design- two couplers in the same package—lets you monitor forward and reflected power. The directivity, flatness and coupling factors are excellent, allowing for accurate measurement of power.

Dual directional couplers are required for measurements per IEC 61000-4-3 and -6. Popular applications include power sampling, amplifier leveling, VSWR monitoring, field control and amplifier load protection.

All AR couplers are power- and frequency-matched to our amplifiers and antennas.

Different connector configurations are available for all models.



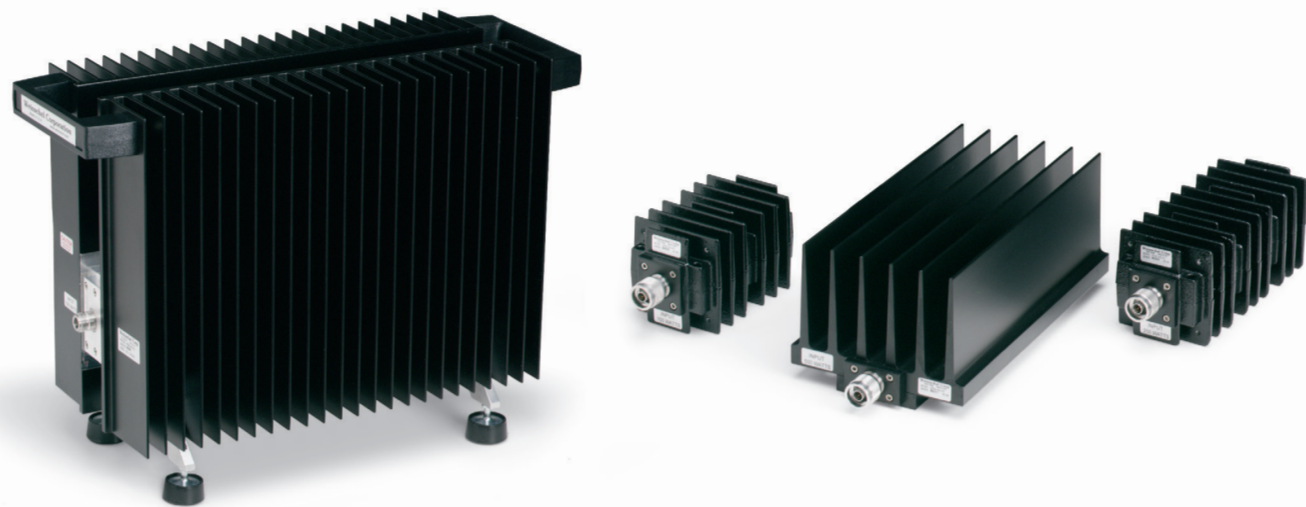
RF Couplers 9 kHz to 1 GHz.

	DC2035A	DC2500AM1	DC2600A	DC3001A	DC3002A	DC3010A	DC3400A	DC3401	DC3510A	DC4250*
Frequency Range	10 kHz-250 MHz	10 kHz-250 MHz	10 kHz-250 MHz	100 kHz-1000 MHz	100 kHz-1000 MHz	10 kHz-1000 MHz	10 kHz-400 MHz	10 kHz-400 MHz	9 kHz-1000 MHz	100 kHz-250 MHz
Power (max. watts)	3500 CW 7000 peak	1000 CW 2000 peak	600 CW, 1200 peak (10 kHz-100 MHz)	100 CW 1000 peak 300 CW, 600 peak (100-250 MHz)	120 CW 1200 peak	100 CW 200 peak	250 CW 400 peak	500 CW 1000 peak	200 CW 400 peak	15000 CW 50000 peak
Flatness (max.)	±0.9 dB	±0.9 dB	±0.5 dB	±0.6 dB	±0.6 dB	±0.6 dB	±0.5 dB	±0.6 dB	±0.6 dB	±0.9 dB
Coupling Factor (includes flatness)	50 ± 1 dB	50 ± 1 dB	50 ± 1 dB	40 ± 0.8 dB	40 ± 0.8 dB	40 ± 0.8 dB	40 ± 0.1 dB	50 ± 0.8 dB	40 ± 0.8 dB	60 dB ± 1 dB
Directivity										
typical	5 dB	25 dB	25 dB	25 dB	25 dB	25 dB	25 dB	25 dB	25 dB	25 dB
minimum	20 dB	20 dB (20 kHz-250 MHz) 18 dB (10 kHz-20 kHz)	18 dB	20 dB	20 dB	20 dB	20 dB	20 dB	20 dB	20 dB
Insertion Loss (max.)	0.30 dB	0.22 dB	0.25 dB	0.6 dB	0.65 dB	0.6 dB	0.5 dB	0.5 dB	0.5 dB	0.1 dB
VSWR (main line)	1.2:1 max.	1.2:1 max.	1.3:1 max.	1.3:1 max.	1.3:1 max.	1.3:1 max.	1.3:1 max.	1.3:1 max.	1.3:1 max.	1.2:1 max.
Connectors										
main line (I1/J2)	7-16(M)/7-16(F)	N(M)/N(F)	N(M)/N(F)	N(M)/N(F)	N(M)/N(F)	N(M)/N(F)	N(M)/N(F)	N(F)/N(F)	N(M)/N(F)	EIA fixed flanges 1 7/8" EIA (m)
coupled (B/J4)	N(F)/N(F)	N(F)/N(F)	N(F)/N(F)	N(F)/N(F)	N(F)/N(F)	N(F)/N(F)	N(F)/N(F)	N(F)/N(F)	N(F)/N(F)	N(F)/N(F)
Weight (max.)	1.8 kg 4 lb	1.13 kg 2.5 lb	0.64 kg 1.4 lb	0.39 kg 0.86 lb	0.7 kg 1.5 lb	0.9 kg 2 lb	0.8 kg 1.8 lb	0.8 kg 1.8 lb	1.36 kg 3 lb	7 kg 15.5 lb
Size (approx.) W x H x D	25.4 x 8.9 x 11.7 cm (10 x 3.5 x 4.6 in.)	26.6 x 8.1 x 7.6 cm (10.1 x 3.2 x 3.0 in.)	10.2 x 7.6 x 6.6 cm (4 x 3 x 2.6 in.)	12.7 x 5.1 x 3.8 cm (5 x 2 x 1.5 in.)	13.2 x 6.8 x 4.1 cm (5.2 x 2.7 x 1.6 in.)	12.7 x 5.1 x 3.8 cm (5 x 2 x 1.5 in.)	13.2 x 6.8 x 4.1 cm (5.2 x 2.7 x 1.6 in.)	13.2 x 6.8 x 4.1 cm (5.2 x 2.7 x 1.6 in.)	4.3 x 5.8 x 4.3 cm (1.69 x 2.28 x 1.69 in.)	15.24 x 35.56 x 16.5 cm (6.5 x 6 x 14 in.)

	DC4255*	DC4256*	DC4260*	DC6080A	DC6180A	DC6280AM1	DC6380	DC6380M1	DC6380M2	DC6580AM1
Frequency Range	10 kHz-250 MHz	10 kHz-250 MHz	10 kHz-250 MHz	80-1000 MHz	80-1000 MHz	80-1000 MHz	80-1000 MHz	80-1000 MHz	80-1000 MHz	80-1000 MHz
Power (max. watts)	10,000 CW 35,000 peak	13,000 CW 50,000 peak	20,000 CW 60,000 peak	500 CW 1000 peak	600 CW 1000 peak	1500 CW 3000 peak	3000 CW 6000 peak	4500 CW 9000 peak	7000 CW 10,000 peak	1500 CW 3000 peak
Flatness (max.)	±0.9 dB	±1 dB	±2 dB	±0.5 dB	±0.5 dB	±0.5 dB	±1.0 dB	±1.0 dB	±1.0 dB	±0.5 dB
Coupling Factor (includes flatness)	60 dB ± 1 dB	60 dB ± 1 dB	60 dB ± 2 dB	40 dB ± 1 dB	60 ± 1 dB	63 ± 1 dB	65 ± 1.5 dB	68 ± 1.5 dB	70 ± 1.5 dB	50 ± 1 dB
Directivity										
typical	25 dB	25 dB	25 dB	25 dB	25 dB	25 dB	25 dB	25 dB	25 dB	25 dB
minimum	20 dB	20 dB	20 dB	20 dB	20 dB	20 dB	20 dB	20 dB	20 dB	20 dB
Insertion Loss (max.)	0.1 dB	0.1 dB	0.1 dB	0.25 dB	0.15 dB	0.15 dB	0.15 dB	0.15 dB	0.15 dB	0.15 dB
VSWR (main line)	1.2:1 max.	1.2:1 max.	1.25:1 max.	1.2:1 max.	1.15:1 max.	1.2:1 max.	1.5:1 max.	1.5:1 max.	1.5:1 max.	1.2:1 max.
Connectors										
main line (I1/J2)	EIA fixed flanges 1 7/8" EIA (m)	EIA fixed flanges 1 7/8" EIA (m)	EIA fixed flanges 3/8" EIA (m)	EIA fixed flanges 1 7/8" EIA (m)	N(M)/N(F)	7-16(M)/7-16(F)	EIA flange 1 7/8" EIA (m)	EIA flange 1 7/8" EIA (m)	EIA flange 1 7/8" EIA (m)	Q(M)/Q(F)
coupled (B/J4)	N(F)/N(F)	N(F)/N(F)	N(F)/N(F)	N(M)/N(F)	N(F)/N(F)	N(F)/N(F)	N(F)	N(F)	N(F)	N(F)/N(F)
Weight (max.)	7 kg 15.5 lb	7 kg 15.5 lb	7.9 kg 17.5 lb	0.45 kg 1 lb	0.6 kg 1.2 lb	0.6 kg 1.2 lb	1.8 kg 4 lb	1.8 kg 4 lb	1.8 kg 4 lb	0.6 kg 1.2 lb
Size (approx.) W x H x D	15.2 x 11.4 x 30.48 cm (6.0 x 4.5 x 12 in.)	15.24 x 11.43 x 32.38 cm (6.0 x 4.5 x 12.75 in.)	17 x 14.5 x 30.5 cm (6.7 x 5.7 x 12 in.)	7.62 x 7.62 x 2.77 cm 3.0 x 3.0 x 1.09 in.	10.9 x 6.3 x 3.2 cm (4.3 x 2.5 x 1.3 in.)	15.24 x 6.3 x 3.2 cm (4.3 x 2.5 x 1.3 in.)	20.3 x 8.9 x 10.2 cm (8 x 3.5 x 4 in.)	20.3 x 8.9 x 10.2 cm (8 x 3.5 x 4 in.)	20.3 x 8.9 x 10.2 cm (8 x 3.5 x 4 in.)	7.62 x 7.62 x 2.79 cm (3 x 3 x 1.1 in.)

*Power required for fan cooling.

LA Series Load Attenuators.



Monitor Signals at Acceptable Levels.

This series of high-power, fixed coaxial attenuators is recommended for use with RF power amplifiers that operate in the same frequency and power range as the attenuators. The attenuated output provides a means of monitoring the signal at an acceptable level by sensitive measuring instruments like a spectrum analyzer, power meter or oscilloscope, and permits use of a detector for RF leveling.

LA Load Attenuators

	LA100	LA150	LA500	LA1000
Frequency Range	DC-18 GHz	DC-6 GHz	DC-5 GHz	DC-3 GHz
Power (max. watts)	100 W continuous to 55°C*	150 W continuous to 25°C*	500 W continuous to 25°C*	1000 W continuous to 25°C*
Attenuation	40 dB ± 1.0 dB (DC-5 GHz)	40 dB ± 2.0 dB (DC-5 GHz)	40 dB ± 1 dB (DC-2.5 GHz) 40 dB +0.5 dB, -3 dB (2.5-5 GHz)	40 dB ± 0.75 dB (DC-1.5 GHz) +1.5, -0.5 dB (1.5-3 GHz)
Input VSWR (max.)	1.25:1 (DC-8 GHz)	1.1:1 (DC-2 GHz) 1.2:1 (2-6 GHz)	1.15:1 (DC-2.5 GHz) 1.35:1 (2.5-5 GHz)	1.15:1 (DC-1.5 GHz) 1.25:1 (1.5-3 GHz)
Output VSWR (max.)	1.35:1 (8-12.4 GHz) 1.45:1 (12.4-18 GHz)	1.20:1 (2-5 GHz)	1.15:1 (DC-2.5 GHz) 1.25:1 (2.5-5 GHz)	1.15:1 (DC-1.5 GHz) 1.25:1 (1.5-3 GHz)
Connectors Input	N (M)	N (M)	N (M)	N (F)
Output	N (F)	N (F)	N (F)	N (F)
Ambient Temperature Range	-55°C to 125°C	-55°C to 125°C	-55°C to 125°C	-55°C to 125°C
Operating Position	Horizontal Only	Horizontal Only	Horizontal Only	Horizontal Only
Weight (max.)	320 g 11 oz	1.13 kg 2.5 lb	3.63 kg 8 lb	13.15 kg 29 lb
Size (approximate) W x H x D	21.8 x 4.2 x 4.2 cm (8.6 x 1.62 x 1.62 in.)	80 x 80 x 137.1 mm (3.15 x 3.15 x 5.4 in.)	138.7 x 109.5 x 259.6 mm (5.46 x 4.31 x 10.22 in.)	178 x 332 x 451 mm (7.00 x 13.1 x 17.76 in.)

* See specification sheet for derating curves.

Waveguides and Waveguide Adapters

AR also offers a full line of low loss microwave waveguides for high frequency testing. We offer several varieties of waveguides including flexible twistable, rigid, seamless, 90 degree rigid twist and 90 degree E or H bend. Our line of waveguide adapters are high power, double rigid waveguide-to-coax adapters. For a full listings of our offerings, please visit our website for the full specification sheets.

Waveguides Series

- WF Series (flexible twistable waveguides)
- WR Series (rigid waveguides)
- WS Series (seamless waveguides)
- WT Series (90 degree rigid twist waveguides)
- WB Series (90 degree E of H bend)



Waveguide Adapters

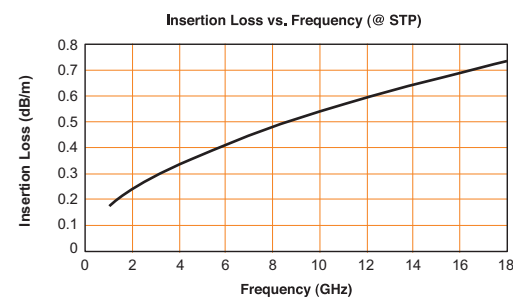
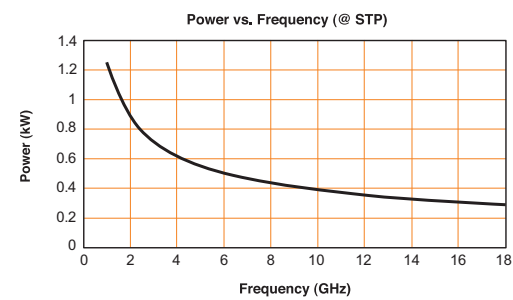
WAVEGUIDES					
	Frequency Range	Waveguide	Available Lengths	Power (watts)	Attenuation (dB/meter)
WF Series	7.5 to 18 GHz	WRD-750-D24	30.5 to 243 cm (1 to 8 ft)	650	1.15
	18 to 26.5 GHz	WR-42	15.25 to 200 cm (0.5 to 6.56 ft)	100	1
	26.5 to 40 GHz	WR-28	15.25 to 200 cm (0.5 to 6.56 ft)	75	1.64
WR Series	7.5 to 18 GHz	WRD-750-D24	30.5 to 243 cm (1 to 8 ft)	3000	0.4
	18 to 26.5 GHz	WR-42	30.5 to 91.44 cm (1 to 3 ft)	350	0.79
	26.5 to 40 GHz	WR-28	30.5 to 91.44 cm (1 to 3 ft)	250	1.27
WAVEGUIDE ADAPTERS					
Frequency Range	Waveguide	Coax Connector	Sex	Power	Comments
7.5 to 18 GHz	WRD-750-D24	N	M or F	500	Side or End Launch
		TNC	M or F	500	Side or End Launch
		N	M or F	250	Side Launch only
2.5 to 7.8 GHz	WRD-250-D30	SMA	F	50	Side Launch only
		N	M or F	750	Side or End Launch
		SC	M or F	1000	Side or End Launch
18 to 26.5 GHz	WR-42	N	M or F	250	Side Launch only
		SMA	F	50	Side Launch only
		SMA	F	100	End Launch only
26.5 to 40 GHz	WR-28	K	M or F	10	Side or End Launch

Coaxial Cables

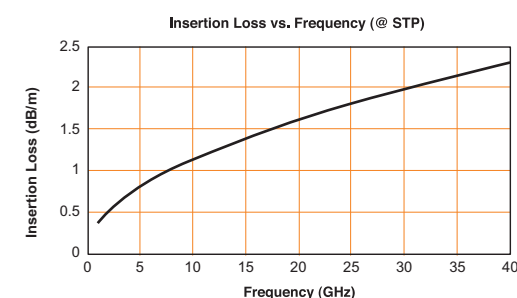
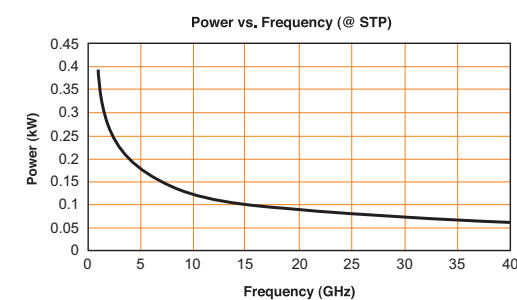
AR offers a line of low loss microwave coaxial cables. Several connector options and lengths are available. To see a full listing of our available cables, please view the specification sheets on our website.



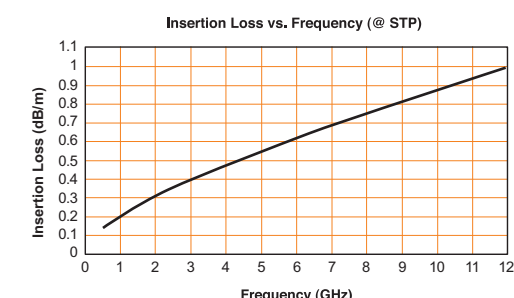
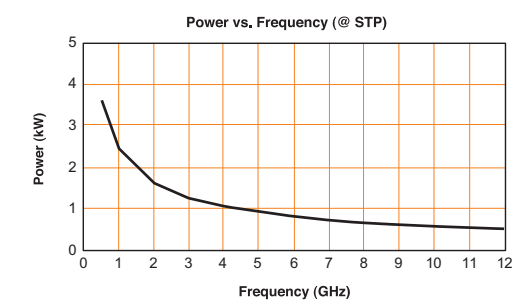
CC1 Series: Armored low loss microwave cables for applications with frequencies less than 18 GHz, VSWR typically less than 1.35:1



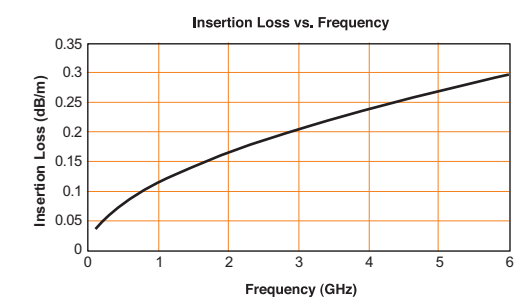
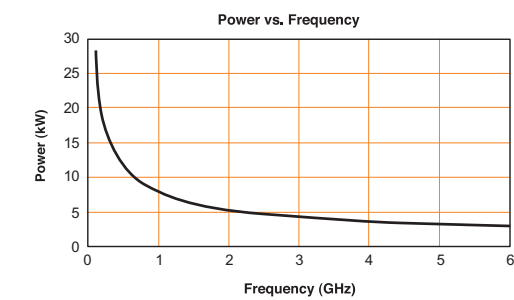
CC2 Series: Armored low loss microwave cables for applications with frequencies less than 40 GHz, VSWR typically less than 1.45:1

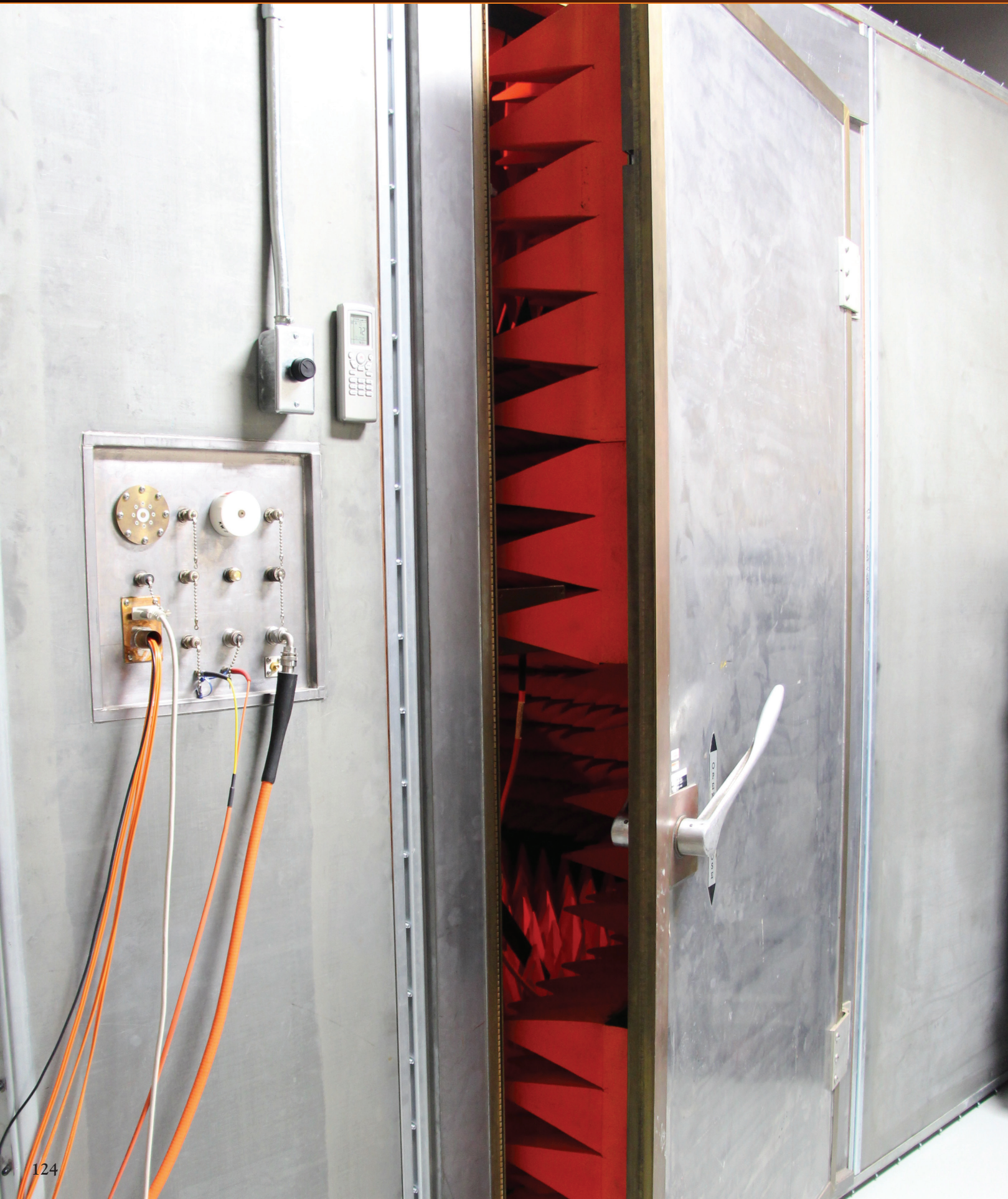


CC3 Series: Low loss microwave cables for applications with frequencies less than 12.4 GHz and high power, VSWR typically less than 1.25:1. The CC3 cables feature a built-in armor designed to resist crush forces up to 250 PSI.



CC4 cables are recommended for AR's high power A, W, and S series amplifiers, or other applications in the appropriate frequency and power range. VSWR is typically less than 1.25:1.





Identify Shielding Discontinuities with the AR CL-105A/CL-106A Shielded Enclosure Leak Detection System (SELDS)

The CL-105A/CL-106A provides convenient, and easy to use means of testing electromagnetic shielding effectiveness. The CL-105A/CL-106A may be used on any shielded apparatus such as shielded cables, cable plenums, and shielded enclosures. This leakage detector is specifically designed to identify points of degradation in seams, doors, patch panels, and cable to enclosure interfaces, to name a few. The system consists of a transmitter, receiver, headphones and durable carrying case. The rugged construction yet sleek appearance allows it to be used under the most adverse conditions.

The transmitter generates a pulse modulated output signal that is coupled directly to the shield under test. The receiver is then moved along the surface of any suspect areas of the item under test to detect and alert the user, both visually and audibly in the event a discontinuity in the shield is detected. This method can detect much smaller discontinuities than typical shielding effectiveness measurements. To further aid the user with detection of leakages, the receiver features a meter, audio output for headphone operation, battery operation for portable use and dynamic range of 120dB. The meter is calibrated in logarithmic units called SELDs units. SELDs units are a relative unit that will provide an indication of how severe the shielding discontinuity is.



Speed, Accuracy and Precision – All in One Package

The MultiStar family of products features Field Analyzers, a Multi-Tone Radiated Immunity Test System and a Precision DSP EMI Receiver that all utilize groundbreaking technology to perform multiple tasks simultaneously. These products dramatically reduce test time, provide more information and assure the highest degree of accuracy.

The MultiStar Field Analyzers measure modulated electric fields and CW fields with a sampling rate of 1.5 million times per second. The MultiStar Multi-Tone Radiated Immunity Test System tests multiple frequencies concurrently, taking just minutes to perform tests that used to require hours. The MultiStar Precision DSP Receiver can measure a signal using 4 CISPR detectors simultaneously, reducing test times from days to hours.

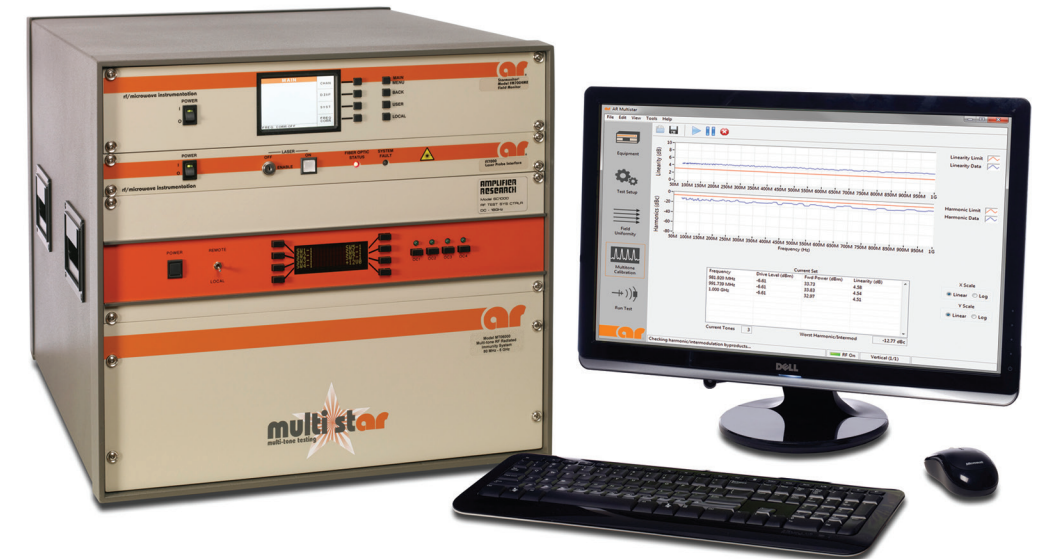


MultiStar Precision DSP Receiver

Carl Mueller Demonstrates AR's Multi-Tone Test Solution



Visit www.arworld.us/MultiToneVid to view a demo on our Multi-Tone Tester or scan this page with the Layar app to watch on your mobile device.



MultiStar Multi-Tone Tester



MultiStar Field Analyzer



For a capsule summary of the Multitone system, watch this 60 second video by AR Sales Manager, Chuck Britten: www.arworld.us/tour