A.H. SYSTEMS

EMC Test Antennas Since 1974

Next-Day On-Time Delivery with over 95% of our products in stock

Antennas | Probes | Accessories
Preamplifiers | Low-Loss Cables | Recalibration Services

Antennas... **and Kits too...**

Innovation **Quality** **Performance**

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A.H. Systems

A.H. Systems, Inc.
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Chatsworth, CA 91311
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To our present and future customers,

A.H. Systems specializes in the design, development, manufacturing and calibration of quality, reliable equipment for EMC testing.

The objective of our company is to supply innovative quality products that are fit for use and meet or exceed the desired performance standards required by our customers. We are also proud to provide outstanding technical support for information, sales, repairs and calibrations.

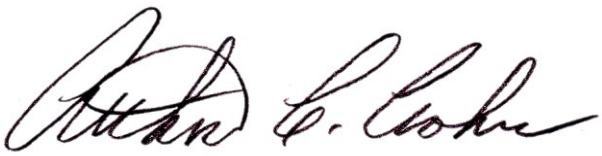
Our customers expect safe, reliable products at optimum costs, delivered on time.

In order to achieve these objectives, our company is totally committed to maintaining a quality management and assurance system reflective to the ISO 9001 model. This has enabled us to increase our technical and manufacturing capabilities ensuring our customers' satisfaction.

The successful operation of our system relies upon the communication, cooperation and involvement of all our personnel, on every level. This commitment to excellence provides the continued success and improvement of our company.

Thanks for using our products. We stand ready to support you in fulfilling your EMC requirements.

Sincerely,



Arthur C. Cohen
President
A.H. Systems, Inc.

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What's New @ A.H. Systems, Inc.

New Mounting Configuration *(Coming Soon)*

Stay tuned for our newly designed mounting configuration with some added improved antenna performance. Each log periodic antenna in the series will now have a mid-mounting point.

Find out more...

24" Passive Loop Antennas

Two new electrostatically shielded loop antennas have been added to our product line. These passive loop antennas are an excellent solution for low frequency magnetic field emissions and immunity testing in the frequency range of 20 Hz to 30 MHz.

Specifications:
20 HZ - 1 MHz Loop Antenna
9 KHz - 30 MHz Loop Antenna

Low Frequency Preamplifiers

New models will be added to our extensive line of preamplifiers focusing on the lower frequency ranges. Recently added models include our PAM-5K300 with a modest 28 dB of gain that covers 5 KHz - 300 MHz and our PAM-0101 with a 50 dB gain that covers 10 MHz - 1 GHz.

Find out more...

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Changes

The information presented herein was current at the time of printing. All specifications, characteristics, and models set forth in this catalog are subject to change without notice. Please call A.H. Systems for additional information and current pricing.

Certification

The materials used in fabrication of our products have been thoroughly inspected. To the best of our knowledge and belief, they conform to specification requirements of the applicable purchase. All non-conforming materials are removed. Calibrations traceable to NIST are maintained in our facility for three (3) years for future reference.

Shipments

All shipments within the USA are sent directly from our facility and are made F.O.B. factory (Chatsworth, CA. USA), shipments outside the USA are EXW. A.H. Systems will select the shipping method on the basis of economy and delivery requirements unless directed otherwise at the time the order is placed. Shipping charges can be prepaid and added to the invoice.

Rentals

All rentals are subject to product availability. Rental equipment must be returned in good condition with all manuals and calibration data included. Rental is based on one (1) month. We do not pro-rate for early returns. Rental items that are not returned to the facility by the due date will be billed for an additional month's rental price. Customers will incur all charges for damaged or missing equipment and manuals. Payment by credit card only.

Recalibrations

Annual recalibration is important to ensure repeatable and reliable data. At our facility, we calibrate our own antennas, as well as, most other brand antennas in accordance with ARP, ANSI, and IEEE specifications. Calibration data can be provided for 1, 3 and 10 meter distances, horizontal and vertical.

Warranty

A.H. Systems Inc. warrants that our Antennas, Sensors and Probes will be free from defects in materials and workmanship for a period of three (3) years. All other products delivered under contract will be warranted for a period of two (2) years. Damage caused by excessive signals at the product's input is not covered under the warranty. A.H. Systems' obligation under this warranty shall be limited to repairing or replacing, F.O.B. Chatsworth, California, each part of the product which is defective, provided that the buyer gives A.H. Systems notice of such defect within the warranty period commencing from the delivery of the product by A.H. Systems.

The remedy set forth herein shall be the only remedy available to the buyer and in no event shall A.H. Systems be liable for direct, indirect, incidental or consequential damages.

This warranty shall not apply to any part of the product which, without fault of A.H. Systems has been subject to alteration, failure caused by a part not supplied by A.H. Systems, accident, fire or other casualty, negligence, misuse or normal wear of materials.

Except for the warranty set forth above, there are no other warranties, expressed or implied, with respect to the condition of the product or it's suitability for the use intended for it by the end user.

For prompt service, please contact our service department for instructions and a Return Material Authorization before shipping equipment back to A.H. Systems.

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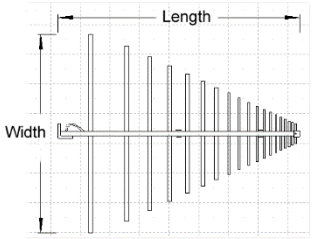
Log Periodic Antennas

Maximum Gain, Low VSWR & High Power

These antennas display efficient performance throughout their broad frequency range. Each antenna is lightweight, compact and has been manufactured for maximum gain, low VSWR and high-power handling capabilities.

80 MHz – 7 GHz

Log periodic antennas are our specialty here at A.H. Systems, and on this page, you will find a great selection of log periodic antennas that are excellent for shielding effectiveness, site-survey, pre-compliance testing, or full compliance applications. Whether testing inside a shielded enclosure or outdoors, these antennas display efficient performance characteristics through the broad frequency range of 80 MHz to 7 GHz.



Features

- Emissions and Immunity Testing
- Wide Frequency Coverage
- Individually Calibrated
- Rugged Construction
- Custom Cases Available

Model	Frequency Range (MHz)	Typical Antenna Factor (dB/m)	Max Continuous Power (W)	Max Radiated Field (V/m)	Ave VSWR	Length	Width	Weight
SAS-510-2	290-2000	14-32	1000	200	1.45	22.6” / 57.5cm	20.1” / 51.1cm	1.4lbs / 640g
SAS-510-4	290-4000	15-37	1000	200	1.66	23.8” / 60.4cm	20.1” / 51.1cm	1.5lbs / 680g
SAS-510-7	290-7000	15-47	1000	200	1.70	24.0” / 61.2cm	20.1” / 51.1cm	1.5lbs / 680g
SAS-512-2	190-2000	11-30	1000	200	1.62	33.2” / 84.4cm	29.5” / 74.9cm	2.2lbs / 1.0kg
SAS-512-4	190-4000	11-37	1000	200	1.61	34.3” / 87.1cm	29.5” / 74.9cm	2.3lbs / 1.04kg
SAS-512-7	190-7000	11-43	1000	200	1.58	34.6” / 88.0cm	29.5” / 74.9cm	2.3lbs / 1.04kg
SAS-512F-2*	190-2000	11-30	325	100	1.64	33.2” / 84.4cm	29.5” / 74.9cm	2.2lbs / 1.0kg
SAS-512F-4*	190-4000	11-38	325	100	1.62	34.3” / 87.1cm	29.5” / 74.9cm	2.3lbs / 1.04kg
SAS-512F-7*	190-7000	11-46	325	100	1.64	34.6” / 88.0cm	29.5” / 74.9cm	2.3lbs / 1.04kg
SAS-515	120-4000	10-39	1000	200	1.60	44.3” / 112.5cm	55.9” / 142cm	3.9lbs / 1.27kg
SAS-517	80-4000	5-36	1000	200	1.65	56.3” / 143cm	72.3” / 183cm	4.6lbs / 2.09kg
SAS-519-4	650-4000	21-39	700	200	1.72	11.0” / 28.1cm	8.2” / 20.8cm	0.7lbs / 320g
SAS-519-7	650-7000	21-45	700	200	1.63	11.6” / 29.4cm	8.2” / 20.8cm	0.7lbs / 320g

** Folding Antenna*

Optional preamplifiers available *(see page 22)*

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Biconical Antennas Broadband Dipole

You asked for convenience...

Our folding Biconical Antenna is a unique, one of a kind designed and manufactured for portability.

20 MHz – 18 GHz

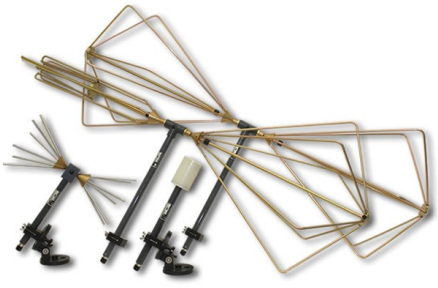
Our 7 models of Biconical Antennas and 2 Broadband Dipole Antennas operate efficiently over the frequency range of 20 MHz - 18 GHz. Suitable for FCC, MIL-STD, VDE, TEMPEST and Immunity testing, each model provides repeatable and reliable measurements. For rapid deployment along with the mobility of a small package, the folding Biconical elements can be closed similar to an umbrella allowing the antenna to be contained in a compact transit storage case. The ability to input up to 1 kW of continous power makes the Biconical a versatile performer.

Features

- Wide Operating Frequency
- Receive and Transmit
- Individually Calibrated
- Rugged Construction
- Custom Cases Available
- Rigid or Folding Elements

Model	Frequency Range (MHz)	Typical Antenna Factor (dB/m)	Max Continuous Power (W)	Max Radiated Field (V/m)	Width	Width	Weight
SAS-530*	160-500	17-26	1	5	24” / 61cm	21” / 53cm	2.5lbs. / 1.1kg
SAS-530H*	160-500	15-25	300	50	24” / 61cm	21” / 53cm	2.5lbs. / 1.1kg
SAS-540	20-330	8-27	1	2	52.8” / 134cm	29” / 74cm	4.3lbs. / 1.9kg
SAS-542**	20-330	8-27	1	2	52.8” / 134cm	29” / 74cm	4.3lbs. / 1.9kg
SAS-543	20-300	8-23	1000	100	52.6” / 133cm	17” / 43cm	6.0lbs. / 2.7kg
SAS-544	20-300	5-29	300	20	52.8” / 134cm	29” / 74cm	4.3lbs. / 1.9kg
SAS-544F**	20-300	5-29	300	20	52.8” / 134cm	29” / 74cm	4.3lbs. / 1.9kg
SAS-545	20-1000	18-42	200	1	14.3” / 36.3cm	15” / 38cm	1.6lbs. / 725g
SAS-547	1-18 GHz	32-59	50	10	2.3” / 5.7cm	14.3” / 36cm	1.0lbs. / 454g

** Broadband Dipole Antenna.*
*** Folding Elements.*
Optional preamplifiers available *(see page 22)*



Biconical Antenna Selection for Compliance Testing

Article

The Biconical Antenna is considered a standard workhorse for every compliance test lab. Used in a variety of applications such as radiated emissions, immunity and shielding effectiveness testing; this article will help guide the decision process of which Biconical Antenna to purchase. Read More ->

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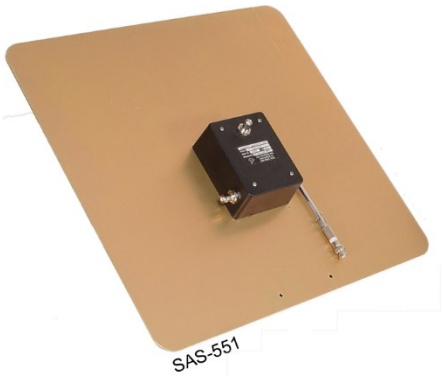
Monopole Antennas

Superior Performance

Quality construction with a flat antenna factor makes these monopole antennas an ideal choice for compliance testing.



100 Hz – 60 MHz

Our Monopole Antennas provide superior performance for electric field measurements. The Active Monopole can drive any receiver with 50 ohm input impedance and will perform FCC, MIL-STD, NSA 65-6 and TEMPEST tests. The Passive Rod is used for transmitting to perform Shielding Effectiveness and Immunity testing. All Monopole antennas come with an 18" ground plane (24" available) with a standard 1/4-20 threaded tripod mount and a telescoping monopole element. Each monopole antenna is individually calibrated per ECSM in IEEE std. 291 and ARP-958. An Equivalent Capacitance Fixture is also avaliable for calibration of the monopole antennas.

Features

- Receive and/or Transmit
- Individually Calibrated
- Rugged Construction
- MIL-STD 461G Compliant
- Rigid or Folding Elements

Model	Frequency Range (MHz)	Typical Antenna Factor (dB/m)	Max Continuous Power (W)	Weight
SAS-550-1B	9 KHz – 60 MHz	2 to 0	--	4.7lbs / 2.1kg
SAS-550-2B	100 Hz – 60 MHz	27 to 0	--	4.7lbs / 2.1kg
SAS-551	9 KHz – 40 MHz	88 to 14	500	3.5lbs / 1.6kg
SAS-551A	1 KHz – 30 MHz		500	5.7lbs / 2.6kg
ECF-12K	100 Hz – 60 MHz	--	--	0.1lbs / 50g

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Loop Antennas

High Performance

High performance Loop Antennas for a wide range of magnetic field testing. Whether used in a set to measure shielding effectiveness per MIL-STD 285 and NSA 65-6 or individually to satisfy specific requirements, the Loop Antenna is an efficient, low-cost solution.

20 Hz – 30 MHz

A.H. Systems manufactures a wide variety of loop antennas in the frequency range of 20 Hz to 30 MHz. Loop antennas are primarily used to measure the magnetic field strength at lower frequencies. The electrically small size of these loop antennas has the advantage of convenience in handling, availability of a zero- response orientation, and a simple expression for the voltage produced by a given field strength. At higher frequencies, about above 100 MHz, a loop of practical size may no longer be electrically small and has a significant response to the electric field as well as the magnetic field.

Features

- Individually Calibrated
- FCC, MIL-STD, CISPR
- Battery Powered
- Rugged Construction

Model	Frequency Range	Magnetic Correction Factor	Max Continuous Power (W)	Loop Diameter
SAS-560	20 Hz – 1 MHz	86 to 21	--	5.25” / 13.3cm
SAS-562B	10 KHz – 30 MHz	28 to -60	--	18” / 46cm
SAS-563B	1 KHz – 30 MHz	48 to -56	--	12” / 30.5cm
SAS-563P*	1 KHz – 30 MHz	58 to -10	500	12” / 30.5cm
SAS-564*	1 KHz – 30 MHz	62 to -22	500	12” / 30.5cm
SAS-565L	20 Hz – 1 MHz	65 to 0	10	22.4” / 57cm
SAS-565H	9 KHz – 30 MHz	35 to -20	20	22.4” / 57cm

** N connector, all others BNC.*

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H-Field Rod Antennas

High Sensitivity

Low-Frequency field testing.

20 Hz – 30 MHz

For applications where high sensitivity is required, A.H. Systems set of H-Field Rods provides an accurate standard for magnetic field testing. Our H-Field Rods are available individually or in a set of four to cover the frequency range of 100 Hz to 30 MHz. For those situations when improved sensitivity is desired in magnetic field testing, the H-Field Rod is an effective alternative to traditional Loop Antennas. One amplifier pre-assembled to a metallic ground plane covers the entire frequency range and can be used with any or all of the H-Field Rod Antennas.

Features

- High Sensitivity
- Magnetic Field Testing
- Individually Calibrated
- Rugged Construction
- Three-Year Warranty

Model	Frequency Range	Magnetic Correction Factor
HFR-1	100 Hz – 100 KHz	27 to -40
HFR-2	20 KHz – 2 MHz	-8 to -48
HFR-3	1 MHz – 10 MHz	-20 to -48
HFR-4	5 MHz – 30 MHz	-20 to -43
EHA-50B	100 Hz – 30 MHz	10 dB gain

AK-HFR

AK-HFR Antenna Kit includes one of each H-Field Rods, the EHA-50B, Cable, Battery Charger and a Transit Storage Case. Our portable solution for improved sensititvity.

AK-HFR

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Double Ridge Guide Horn Antennas

Maximum Gain, Low VSWR & High Power


SAS-571


SAS-574

These Horn antennas are an excellent choice for both radiated immunity and emissions testing for the higher frequencies.

700 MHz – 40 GHz

A.H. Systems Horn Antennas are broadband antennas that offer excellent performance over the frequency range of 170 MHz to 40 GHz. High gain, low VSWR, input power handling capability of up to 800 Watts CW and rugged design make these Horn Antennas excellent for both Immunity and Emissions testing.

Features

- Precision machined
- Rugged Construction
- Radiated Susceptibility
- Radiated Emissions
- MIL-STD 461, FCC Part 15, EN 55022 and IEC 61000-4-3 Testing

Model	Frequency Range (GHz)	Typical Gain (dBi)	Max Power (W)	Max Radiated Field (V/m)	Length	Width	Height	Weight
SAS-570	0.17 – 3	0 – 12	800	200	36.7” / 93cm	28.7” / 73cm	38.5” / 96cm	23lbs / 10.2kg
SAS-571	0.7 – 18	1.4 – 15	300	200	11” / 28cm	5.6” / 14cm	9.5” / 24cm	3.5lbs / 1.6kg
SAS-574	18 – 40	15 – 21.2	10	150	3.4” / 8.6cm	1.2” / 3cm	1.6” / 4.1cm	0.2lbs / 90g

Other models available upon request.
Low-Loss High-Frequency cables required above 10 GHz
Optional preamplifiers available *(see page 22)*


AK-571-4 (Horn Antenna Kit)


SAS-570

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Standard Gain Horn Antennas

The Industry Reference

Manufactured with precision, these horn antennas are an ideal solution for gain measurements.

1.1 GHz – 40 GHz

The Standard Gain Horn Antennas are designed specifically for utilization in emissions and immunity testing over the frequency range of 1 to 40 GHz. Each antenna is linearly polarized and has medium gain, low VSWR, and constant antenna factor. The Standard Gain Horn performance is very precise and predictable through design parameters. Comparisons of measured versus computed antenna factors and gain have been shown to be +/- .5 dB. Therefore, the antenna is considered to be a standard reference, similar to that of a resonant dipole below 1 GHz. The coax-to-waveguide adapter is the only power-limiting component on the antenna and can be removed if high fields are desired. Each Standard Gain Horn comes with a tripod mount that adapts to any tripod with 1/4-20 male threads. Horizontal and vertical polarization is obtained by rotating the antenna on the tripod. Gain: 15 dB, also available in 10 dB or 20 dB gain.

Features

- 5G, OTA, Spurious Emissions Testing
- Receive and Transmit
- Individually Calibrated
- Rugged Construction
- Custom Cases Available

Model	Frequency Range (GHz)	Average Gain* (dBi)	Max Continuous Power (W)	Max Radiated Field (V/m)	Connector Type	Length	Width	Height
SAS-580	1.12 – 1.70	14.7	550	700	WR650 / N	34.4” / 87.3 cm	14.2” / 36.1 cm	20.0” / 50.8 cm
SAS-581	1.70 – 2.60	14.6	500	650	WR430 / N	27.0” / 68.6 cm	8.5” / 21.6 cm	11.8” / 30 cm
SAS-582	2.60 – 3.95	15.0	250	500	WR284 / N	17.9” / 45.5 cm	6.0” / 15.24 cm	8.1” / 20.6 cm
SAS-583	3.95 – 5.85	14.4	250	500	WR187 / N	12.0” / 30.5 cm	3.7” / 9.4 cm	5.1” / 12.9 cm
SAS-584	5.85 – 8.20	14.8	250	500	WR137 / N	8.6” / 21.8 cm	2.6” / 6.6 cm	3.5” / 8.89 cm
SAS-585	8.20 – 12.4	15.5	250	500	WR90 / N	7.2” / 18.3 cm	2.1” / 5.33 cm	2.8” / 7.11 cm
SAS-586	12.4 – 18.0	14.9	200	450	WR62 / N	4.0” / 10.2 cm	1.5” / 3.81 cm	1.9” / 4.83 cm
SAS-587	18.0 – 26.5	14.8	50	225	WR42 / SMA	3.4” / 8.6cm	0.9” / 2.29 cm	1.2” / 3.05 cm
SAS-588	26.5 – 40.0	14.6	10	100	WR28 / 2.9mm	2.9” / 7.4cm	0.6” / 1.5cm	0.9” / 2.29 cm
SAS-572	18.0 – 26.5	20.1	50	300	WR42 / SMA	5.1” / 13 cm	1.7” / 4.3 cm	2.2” / 5.6 cm
SAS-573	26.5 – 40.0	20.2	10	150	WR28 / 2.9mm	4.1” / 10.4 cm	1.1” / 2.8 cm	1.4” / 3.6 cm

** 10 dBi and 20 dBi gain horns also available*
Low-Loss High-Frequency cables required above 10 GHz
Optional preamplifiers available *(see page 22)*

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Octave Horn Antennas

Pyramidal horn antennas that offer excellent half power performance

Octave Horn Antennas designed to match the operating frequency of most octave bandwidth amplifiers that are typically used for compliance testing.

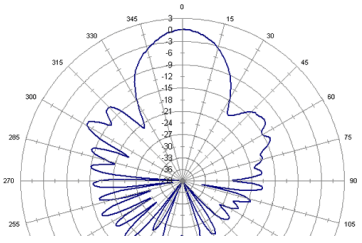
1 GHz – 8 GHz

The A.H. Systems' Octave Horn Antennas is an octave bandwidth pyramidal horn antenna that offers excellent half power performance. With low VSWR, high input handling capability and rugged design make this horn antenna excellent for both immunity and emissions testing. One advantage to the Octave horn antennas is that the half power beamwidths are equal in both the horizontal and vertical polarities which makes them ideal for radiated immunity testing.

Features

- precise and repeatable measurements
- Receive and Transmit
- Individually Calibrated
- Rugged Construction

Model	Frequency Range (MHz)	Average Antenna Gain (dBi)	Max Continuous Power (W)	Ave VSWR	Length	Width	Height
SAS-590-10	1 – 2 GHz	15	300	1.5:1	25.7” / 65 cm	16.6” / 42.3 cm	22.” / 56.3 cm
SAS-590-11	2 – 4 GHz	15	300	1.5:1	14.8” / 37.7 cm	8” / 20.4 cm	10.4” / 26.4 cm
SAS-590-12	4 – 8 GHz	15	150	1.5:1	9” / 23 cm	4” / 10.3 cm	5.4” / 13.8 cm



The Importance of Antenna Beamwidth in RF Testing

Article

Understanding antenna beamwidth and how it influences a test environment is critical to accurate and repeatable tests. This article defines antenna beamwidth, explores the antenna beamwith properties and explains it's importance for compliance testing.

Read More ->>

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Antenna Kits

All you need in one small package.

AK-40G shown with 3 optional Preamplifiers

Constantly changing for today's dynamic environment, A.H. Systems presents the proven line of Antenna Kits. Designed to meet the needs of your various testing requirements.

20 Hz – 40 GHz

A.H. Systems provides many models of Portable Antenna Kits, each containing all the necessary Antennas, Current Probes and Cables to satisfy numerous customer requirements. Excellent performance, portability (compact size and lightweight), along with ease in setup make all of the Antenna Kits a reliable choice for indoor or field testing. Loss and breakage are virtually eliminated as each component has a specific storage compartment within the case. All Antenna Kits are accompanied with a Tripod and Azimuth & Elevation Head, both contained in a Tripod Carrying Case.

Features

- 50-ohm Impedance
- Receive and Transmit
- Individually Calibrated
- Rugged Construction
- Custom Cases Available

Antenna Case size is 28" x 23" x 10" (71cm x 58cm x 25cm)
Tripod Case size ~~is 8" Dia. x 48" (20cm Dia. x 122cm) Weight: 19lbs. (8.6kg) with tripod~~

Model	Frequency Range	AK-2G 20 Hz – 2 GHz	AK-4G 20 Hz 4 GHz	AK-7G 20Hz – 7GHz	AK-18G 20Hz – 18GHz	AK-26G 20Hz – 26GHz	AK-40G 20Hz – 40GHz
SAS-510-2	290-2000	X			X	X	X
SAS-510-4	290-4000		X				
SAS-510-7	290-7000			X			
SAS-542	20-330MHz	X	X	X	X	X	X
SAS-550-1B	0.09-60MHz	X	X	X	X	X	X
SAS-560	20Hz-2MHz	X	X	X	X	X	X
SAS-571	0.7-18GHz				X	X	X
SAS-572	18-26.5GHz					X	
SAS-574	18-40GHz						X
BCP-610	20Hz-20MHz	X	X	X	X	X	X
BCP-611	0.01-150MHz	X	X	X	X	X	X
SAC-213	Up to 5 GHz	X					
SAC-211	Up to 10 GHz		X	X			
SAC-18G-3	Up to 18 GHz				X		X
SAC-26G-3	Up to 26 GHz					X	
SAC-40G-1.5	Up to 40 GHz						X
ADP-202		X	X	X	X	X	X
ADP-203							X
ADP-206						2	
Case Weight with antennas		35lbs / 15.9kg	35lbs / 15.9kg	35lbs / 15.9kg	38lbs / 17.2kg	39lbs / 17.7kg	39lbs / 17.7kg

All kits come with TSC-542, TCC-510, ATU-514, AEH-510.
Custom cases available
Optional preamplifiers available *(see page 24)*

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Shielding Effectiveness Antenna Kits

A must for room verifications

These antenna kits were designed for shielding effectiveness testing.

Shown with optional Preamplifiers

1 KHz – 18 GHz

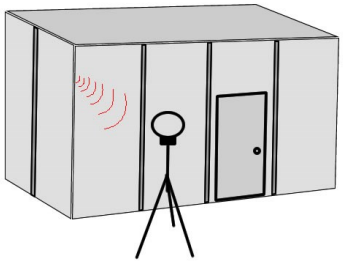
Announcing our new A.H. Systems Shielding Effectivness Kits. A portable and economical approach to having all the antennas required for most shielding effectiveness testing. Optional Preamplifier cutouts are included in the foam for a greater dynamic range. For ease and convenience, these Kits are an ideal portable solution. Our kits are available with upper frequencies of 2, 4, 7 or 18 GHz.

Features

- 50-ohm Impedance
- Receive and Transmit
- Individually Calibrated
- Rugged Construction
- Custom Cases Available

Model	Frequency Range (MHz)	AK-285R	AK-285T
SAS-510-2	290 MHz – 2000 MHz	X	X
SAS-544F	20 MHz – 300 MHz	X	X
SAS-550-1B	9 KHz – 60 MHz	X	
SAS-551	9 KHz – 40 MHz		X
SAS-563B	1 KHz – 30 MHz	X	
SAS-563P	1 KHz – 30 MHz		X
SAS-571	700 MHz – 18 GHz	X	X
SAC-18G-3	Up to 18 GHz	X	X
ADP-202		X	X
TSC-285R/T		X	X
TCC-510		X	X
ATU-514		X	X
AEH-510		X	X

Optional preamplifiers available *(see page 24)*



Shielding Effectiveness Test Guide

Test Guide

Just as interference testing requires RF enclosures, isolation systems in turn need their own testing. This document reviews some of the issues and considerations in testing RF enclosures.

Read More ->

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Bilogical Antenna Kits

Portable Broadband Solution

For rapid deployment along with the mobility of small package, the Bilogical Antenna Kits, AK-521F- (2, 4 or 7), provides an inexpensive solution to broadband applications.

25 MHz – 7 GHz

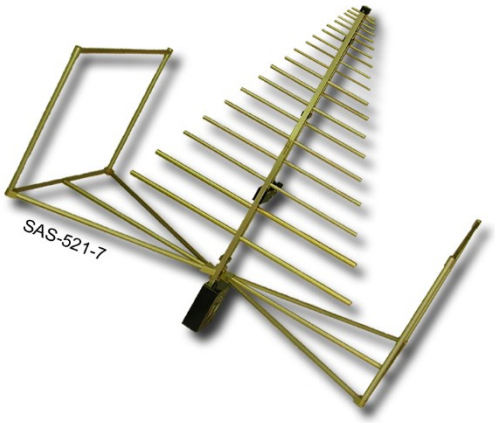
Each Bilogical Antenna Kit, AK-521F- (2, 4 or 7), comes with a Folding Bilogical Antenna, tripod extension rod, cable, screwdriver and a rugged carrying case with a cutout for an optional preamplifier.

Features

- 50-ohm Impedance
- Receive and Transmit
- Individually Calibrated
- Rugged Construction

Bilogical Antenna

The 8 models of Bilogical Antennas operate efficiently over the frequency range of 25 MHz to 7 GHz. Suitable for FCC, MIL-STD, VDE, TEMPEST and Immunity testing, each Bilogical Antenna provides consistent and reliable measurements. For rapid deployment along with the mobility of a small package, the folding Bilogical Antenna is folded in half, allowing the antenna to be contained in a rugged compact carrying case. The Bilogical Antenna eliminates the need for antenna switching and therefore makes this unique hybrid a versatile performer.



Case size 28" x 23" x 10". (71cm x 58cm x 25cm)
Kit weight 26 lbs. (11.8kg)

Model	Frequency Range (MHz)	Typical Antenna Factor (dB/m)	Max Cont. Power (W)	Max Radiated Field (V/m)	Ave VSWR	Length	Width	Height	Weight
SAS-521-2	25-2000	7-30	1000	100	1.55	37.3” / 95cm	38.5” / 98cm	22.2” / 56cm	4.4lbs / 2.0kg
SAS-521-4	25-4000	7-37	1000	100	1.66	38.3” / 98cm	38.5” / 98cm	22.2” / 56cm	4.5lbs / 2.1kg
SAS-521-7	25-7000	7-47	1000	100	1.75	39.0” / 99cm	38.5” / 98cm	22.2” / 56cm	4.5lbs / 2.1kg
SAS-521F-2*	25-2000	7-30	400	100	1.65	37.3” / 95cm	38.5” / 98cm	22.2” / 56cm	4.4lbs / 2.0kg
SAS-521F-4*	25-4000	7-37	400	100	1.60	38.3” / 98cm	38.5” / 98cm	22.2” / 56cm	4.5lbs / 2.1kg
SAS-521F-7*	25-7000	7-47	400	100	1.62	39.0” / 99cm	38.5” / 98cm	22.2” / 56cm	4.5lbs / 2.1kg
SAS-522-2	25-2000	3-30	1000	100	1.85	57.0” / 145cm	59.7” / 152cm	35.1” / 89cm	7.6lbs / 3.5kg
SAS-522-5	25-5000	3-41	1000	100	1.73	58.0” / 147cm	59.7” / 152cm	35.1” / 89cm	7.6lbs / 3.5kg

** Folding Antenna*

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Horn Antenna Kit

Maximum Gain, Low VSWR & High Power

These antennas display efficient performance throughout their broad frequency range.


AK-571-4 (Horn Antenna Kit)

700 MHz – 40 GHz

A.H. Systems offers 13 Log Periodic Antennas. Each antenna is lightweight, compact and has been manufactured for maximum gain, low VSWR and high-power handling capabilities. Whether testing inside a shielded enclosure or outdoors, these antennas display efficient performance characteristics through the broad frequency range of 80 MHz to 7 GHz.

Features

- Individually Calibrated
- Rugged Construction
- Three-year warranty

SAS-571 Specifications

Frequency Range	700 MHz - 18 GHz
Antenna Factor	22 to 44 dB/m
Average Gain	12 dBi
Maximum Continuous Power	300 Watts
Peak Power	500 Watts
Average Beamwidth (E-Field)	48°
Average Beamwidth (H-Field)	30°
Impedance (nominal)	50 Ω
Average VSWR	1.5:1
Maximum Radiated Field:	200 V/m
Connector:	N-type (female)
Mounting	1/4-20 (female)

SAS-574 Specifications

Frequency Range	*18 - 40 GHz*
Antenna Factor	*40 to 41 dB/m*
Average Gain	*15 to 21 dBi*
Maximum Continuous *Power*	*10 Watts*
Maximum Radiated Field:	*150 V/m*
Impedance (nominal)	*50 Ω*
Average VSWR	*1.2:1*
Connector:	*2.9mm (female)*
Mounting	*1/4-20 (female)*

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Tuned Dipole Set

Provides reliable, repeatable measurements

Designed per the FCC specifications, this Tuned Dipole Set is ideal for site attenuation measurements.


TDS-535-2

20 MHz – 1000 MHz

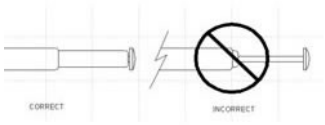
Model TDS-535 Tuned Dipole Set provides an accurate standard for precise EMI and site attenuation measurements (per OET-55 and ANSI C63.5). Our half wave Dipole Set is manufactured per the FCC balun design and is individually calibrated per ANSI C63.5 at 3 and 10 Meters. Our half wave Dipole Set should be considered as a standard reference set for frequencies below 1000 MHz. All Sets come contained in a rugged, lightweight storage case. The set includes four Baluns, Element extension rods, telescoping Elements, 10 Meter Cable, Tape Measure and Clamp for tripod mounting. Two Dipole Sets in one case (TDS-535-2) is available as an option.

Features

- Radiated and Immunity
- Individually Calibrated
- FCC or CISPR Site Attenuation
- Rugged Construction
- FCC Balun Design

Case size 28" x 23" x 7" (71cm x 58cm x 18cm)
Kit weight 19 lbs. (8.6kg) Two sets in one case: Kit weight 24 lbs. (10.8kg)

Model	Frequency Range (MHz)	Typical Antenna Factor (dB/m)	Max Continuous Power (W)	Ave VSWR	Length	Weight
FCC-1	25 – 70	-3 to 6	300	< 1.6	23.7 in.	1.2 lb.'s
FCC-2	65 – 180	5 to 14	200	< 1.6	21.7 in.	0.7 lb.'s
FCC-3	170 – 340	13 to 19	90	< 1.6	12.5 in.	0.5 lb.'s
FCC-4	325 – 1000	20 to 29	60	< 1.6	9.0 in.	0.4 lb.'s



Tuned Dipole Antenna Element Lengths

Application Note

Our tunable dipole antennas have a set of telescoping elements that needs to be adjusted to the frequency of interest. Here is a lookup table of our Tuned Dipole Antennas and the appropriate element lengths for each balun. Read More ->

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VHF, UHF and FM Tuned Dipole Set

Broadcast field measurements

Efficient performance covering the common broadcasting frequencies.


TDS-536

50 MHz – 220 MHz & 325 MHz – 1000 MHz

The TDS-536 Kit provides an accurate assessment of surrounding signals in VHF, UHF and FM bands. Designed to withstand all weather environments, this kit is an ideal solution for Radio/Television Broadcast and Land Mobile Radio engineers. The TDS-536 Kit comes complete with two Baluns, Cable, Tape Measure, Balun Clamp and Transit Storage Case.

Features

- VHF, UHF and FM Ranges
- Individually Calibrated
- Rugged Construction
- 50 Ω or 75 Ω Impedance

The TV-1 Dipole Antenna specifications:

Frequency Range	50 MHz - 220 MHz
Maximum Continuous Power	60 Watts
Antenna Factor	4 to 16 dB/m
Gain	0 to 2 dBi
Average VSWR	< 2:1
Impedance	50 Ω
Connector Type	N-type Female
Weight	0.7 lbs.
	318 grams
Size (W x H x D)	65" X 17.5" X 1.5"
	165cm X 44cm X 3.8cm

The TV-2 Dipole Antenna specifications:

Frequency Range	325 MHz - 1000 MHz
Maximum Continuous Power	60 Watts
Antenna Factor	19 to 29 dB/m
Gain	0 to 2 dBi
Average VSWR	< 2:1
Impedance	50 Ω
Connector Type	N-type Female
Weight	0.4 lbs.
	181 grams
Size (W x H x D)	16" X 9" X 1.5"
	41cm X 23cm X 3.8cm

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RF Current Probes

Split type clamp-on design

Small and lightweight, each Current Probe is manufactured to exacting standards, thus insuring repeatable performance.

20 Hz – 500 MHz

These Current Probes offer a wide operating frequency range of 20 Hz to 500 MHz. For ease and convenience of performing conducted measurements, all Current Probes utilize the split type clamp-on design. Small and lightweight, each Current Probe is manufactured to exacting standards, thus insuring consistent performance.

Features

- 1.2” and 2.6” apertures
- Individually Calibrated
- High Current Capability
- Split Type Clamp-on Design

Model	Frequency Range	Typical Transfer Impedance (dB ohms)	Max Continuous Line Current (Amps)	Aperture	Weight
BCP-610	20 Hz – 20 MHz	-60 to 10	300	1.25” (32mm)	1.4lbs. (0.65kg)
BCP-611	10 KHz – 150 MHz	-25 to 2	450	1.25” (32mm)	1.4lbs. (0.65kg)
BCP-614	10 KHz – 300 MHz	-25 to 4	350	2.62” (67mm)	5.5lbs. (2.5kg)
BCP-615	10 KHz – 500 MHz	-35 to 17	350	1.25” (32mm)	1.2lbs. (0.55kg)
BCP-616	10 KHz – 150 MHz	-25 to 15	600	1.25” (32mm)	1.4lbs. (0.65kg)
BCP-618	100 KHz – 500 MHz	-18 to 20	350	2.62” (67mm)	5.6lbs. (2.54kg)
BCP-619	1 KHz – 100 MHz	-60 to -75	70	2.62” (67mm)	5.4lbs. (1.43kg)
BCP-620	10 KHz – 500 MHz	-29 to 17	200	1.25” (32mm)	1.2lbs. (0.55kg)

Additional current probes available

Understanding and Implementing RF Current Probes

Article

Current probes generate and measure RF currents, combining great diagnostic utility with ease of use. However, a basic knowledge of these devices is necessary to maximize their effectiveness. Read More ->

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Injection Current probes

Sub title

Inductively couple large RF currents into conductors passing through their aperture. For conducted susceptibility.

10 KHz – 500 MHz

A.H. Systems series of Injection Current Probes offer a wide operating frequency range of 10 KHz - 500 MHz. The geometry of our probes optimize coupling to the circuit under test. Each probe comes with an N-type connector.

Features

- High Power Capability
- Individually Calibrated
- Rugged Construction
- Custom Cases Available

Model	Frequency Range	Typical Insertion Loss (dB)	Max Continuous Power (W)	Aperture	Outer Diameter	Weight
ICP-621	10 KHz – 100 MHz	33 to 8	100	1.5” / 3.8cm	4.25” / 10.8cm	4.2lbs / 1.9kg
ICP-622	1 MHz – 500 MHz	23 to 4	200	1.5” / 3.8cm	4.25” / 10.8cm	4.2lbs / 1.9kg

Additional injection probes available

Current Probe Fixtures

Current probe fixtures are a part of the test equipment required by most of the Current Injection Test Procedures. We offer several Current probe calibration fixtures allowing the user to quickly and easily calibrate the current probe prior to performing the compliance testing.

20 Hz – 500 MHz

Model	Frequency Range	Description	Use with
CPF-630	20Hz – 500 MHz	1.5" (32 mm - 44 mm) diameter window.	MIL-STD 461 Specifications
CPF-632	20Hz – 500 MHz	1.25" (32 mm) diameter window, totally enclosed	BCP-610, BCP-611, BCP-615, BCP-620
CPF-633	20Hz – 500 MHz	2.62 " (66 mm) diameter window, totally enclosed	BCP-614, BCP-618, BCP-619

Other current probe fixtures available upon request

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Broadband Preamplifiers

Reliable, repeatable performance.

An excellent choice with a rugged design. No hassles with soldering your own power leads and they improve overall system sensitivity 20 to 40dB.

5 KHz – 40 GHz

A.H. Systems' Preamplifier line is an excellent choice with a rugged design, no hassles with soldering your own power leads and they improve overall system sensitivity by at least 20 dB. All of A.H. Systems' Preamplifiers come with a 12-volt DC regulated power source. A low voltage indicator confidently allows you to power the amplifier with your own external 12-volt DC battery. This makes it a convenient choice for field measurements. See table below for amplifier specifications.

Features

- Broad Frequency Range
- Optional Battery Powered
- High Gain, Flat Response
- Low Noise Figure

Model	Frequency Range	Typical Gain (dB)	Flatness (+/- dB)	Noise Figure (dB)	Connector Type
PAM-5K300	5 KHz – 300 MHz	32	1	2.1	N
PAM-0101	10 MHz – 1000 MHz	50	1.5	2.7	N
PAM-0202	20 MHz – 7 GHz	31	0.5	4.0	N
PAM-0204	20 MHz – 4 GHz	24	2.0	4.5	N
PAM-0207	20 MHz – 7 GHz	28	1.5	2.5	N
PAM-0207A	20 MHz – 7 GHz				
PAM-0118P	20 MHz – 18 GHz	37	2.8	3.0	N
PAM-1826	18 GHz – 26 GHz	37	1.5	2.5	SMA
PAM-2640	26 GHz – 40 GHz	22	2.0	4.5	2.9mm
PAM-0126	20 MHz – 26.5 GHz	30	3.1	4.2	SMA
PM-1840	18 GHz – 40 GHz	20	3.5	4.5	2.9mm
PAM-1840VH	18 GHz – 40 GHz	35	3.0	2.5	2.9mm

Low-loss high-frequency cables required above 10 GHz.
Custom cases available.

Make Smart Use of Preamps in RF Testing

Article

There are a number of ways that mistakes with preamps in test configurations can lead to misleading or incorrect readings or even damaged equipment and unnecessary costs. With some attention and proper equipment matching, results will be accurate and useful, and expenses will remain at a minimum. Read More ->>

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High-Frequency, Low-Loss Cables

Low VSWR, and high frequency

made to your specified length, these Low-Loss High-Frequency flexible cables are the preferred choice over standard cable types.

up to 40 GHz

- 50-ohm Impedance
- Receive and Transmit
- Individually Calibrated
- Rugged Construction

AH Systems assembles high performance microwave cable that utilizes only the very best materials. With plenty of raw stock on hand, we can create a custom length high precision cable assembly within a few days. The outer jacket is a tough, high temperature thermoplastic that can withstand temperatures from -65° to +200° Celsius. All this adds up to a very superior microwave cable product that can meet the most demanding requirements. This product line has three different sizes of cable designed to operate from DC- 40 GHz. Please call us and discuss your needs with one of our design engineers..

Model	Frequency Range	Connector Type	Standard Length	Min Bend Radius	RF Leakage	Max Power @ 1 GHz	Max Power @ 18 GHz
SAC-18G-X	Up to 18 GHz	Precision N(m)	3 Meters	2.0”	> 100 dB to 18 GHz	1.9K watts	400 watts
SAC-26G-X	Up to 26.5 GHz	SMA(m)	3 Meters	1.0”	> 100 dB to 18 GHz	720 watts	160 watts
SAC-40G-X	Up to 40 GHz	2.9mm(m)	1.5 Meter	0.5”	> 100 dB to 18 GHz, 80dB up to 40 GHz	540 watts	100 watts

To order custom length replace the X with the desired length in meters (e.g., SAC-18G-5 would be a 5-meter 18 GHz cable assembly)
Other connector types available

Standard RF Cables

Our custom-made microwave/RF cable assemblies provide repeatable, reliable performance for use in a variety of commercial and industrial applications. Standard Length for all cables is 3 meters. Longer cables can be ordered (specify -"x" with the length in meters after the model number, e.g., SAC- 210-10 = 10 meters). Simply call or email for more information.

Model	Frequency Range	Connector Types	Cable Type
SAC-210-X	Up to 5 GHz	BNC(m) to BNC(m)	RG-58
SAC-211-X	Up to 10 GHz	N(m) to N(m)	RG-214
SAC-212-X	Up to 5 GHz	N(m) to BNC(m)	RG-58
SAC-213-X	Up to 5 GHz	N(m) to N(m)	RG-58
SAC-215-X	Up to	N(m) to N(m)	RG-223

To order custom length replace the X with the desired length in meters (e.g., SAC-18G-5 would be a 5-meter 18 GHz cable assembly)
Other connector types available

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Tripods and Accessories

Not just antennas, but accessories too.

Here you will find a listing of general accessories, including cables, tripods, adapters, carrying cases and more.

Our Low-Loss High-Frequency flexible cables are the preferred choice over standard cable types. With improved power handling, low VSWR and high frequency capabilities, the Low-Loss cables can be made to your specified length and delivered in two days.

Model	Description	Material		
ATU-514	Non-metallic tripod	Plastics		
AEH-510	Azimuth and Elevation Head	Plastic		
AEH-511	Azimuth and Elevation Head	Metal		
TCC-510	Tripod Carrying Case, Hard			
TCC-511	Tripod Carrying Case, Soft	Nylon		
TCC-512	Large Tripod Carrying Case, Hard			
ABC-B	Antenna Balun Clamp, Biconicals	Delrin		
ABC-TD	Antenna Balun Clamp, Dipoles	Delrin		
LPM-510	Log Periodic Tripod Mount	Delrin		
BTE-510	Bilogical Tripod Extension	Fiberglass		

Features

- Wood or Nylon Construction
- Rugged Construction
- Individually Calibrated
- Rugged Construction
- Compact and Lightweight

RF Adapters

Model	Description	Frequency
ADP-201	BNC(f) to N(m)	up to 7 GHz
ADP-202	BNC(m) to N(f)	up to 7 GHz
ADP-203	SMA(m) to N(f)	up to 18 GHz
ADP-204	N(m) to N(m)	up to 10 GHz
ADP-205	N(m) to N(m)	up to 18 GHz
ADP-206	N(m) to SMA(f)	up to 18 GHz
ADP-207	N(f) to SMA(f)	up to 18 GHz
ADP-208	N(m) to N(f) 90 Deg.	up to 10 GHz
ADP-209	3.5(f) to 3.5(f)	up to 26 GHz
ADP-210	3.5(m) to 3.5(m)	up to 26 GHz
ADP-211	2.9 (m) to 2.9(m)	up to 40 GHz
ADP-212	N(m) to SMA(m)	up to 18 GHz
ADP-213	2.9 (f) to 2.9(f)	up to 40 GHz
ADP-214	BNC(f) to BNC(f)	up to 7 GHz
ADP-215	N(f) to N(f)	up to 18 GHz

Other adapters available upon request

Antenna Formulas and Calculators

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Engineers were not meant to be caged in cubicles or meeting rooms; engineers were meant to calculate. Their pencil quick-draws are unmatched; their computing expertise unparalleled. These are the RF formulas that stir a primal craze of chest bumps and cheers, not polite half-smiles; the RF formulas of water cooler legend.

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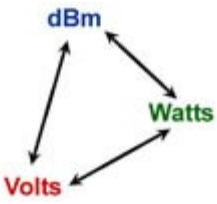
<td> 

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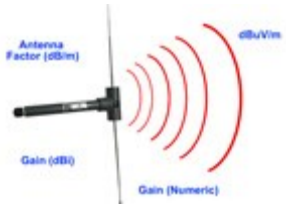
<td> 

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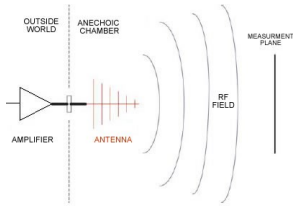
<td> 

Field Strength Calculation</td>
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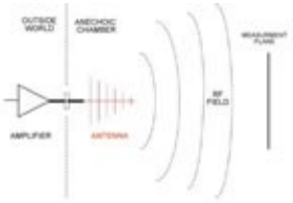
<td> 

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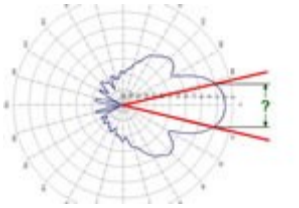
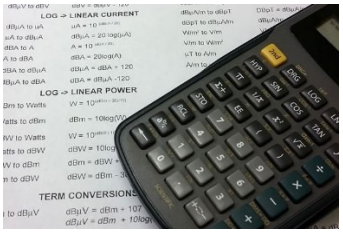
<td> 

Antenna Beamwidth Coverage</td>
<td> 

Typical EMC Related Formulas & Term conversions</td>
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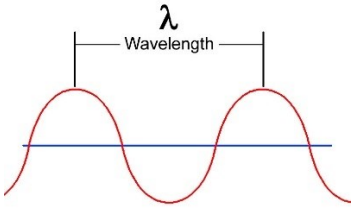
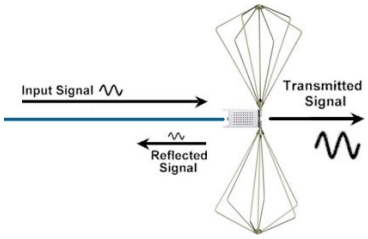
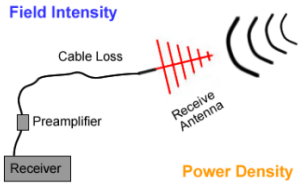
<td> 

Frequency Wavelength Calculator</td>
<td> 

VSWR Calculations</td>
<td> 

Received Field Intensity and Power Density Calculation</td>
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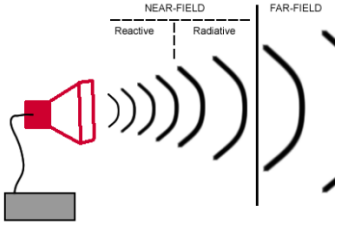
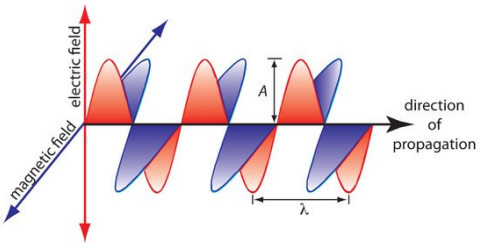
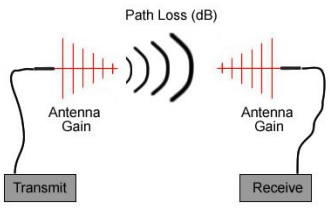
<td> 

Antenna Near Field & Far Field Distance Calculator</td>
<td> 

Magnetic Field Conversions</td>
<td> 

Free-Space Path Loss Calculator</td>
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