

Features

- **Frequency Range**
1 GHz to 18 GHz (useable from 700 MHz)
- **Built-in Preamplifier with 40 dB Gain**
- **Transmit & Receive Capabilities**
- **Individual Calibration Included**
- **Three-year Standard Warranty**

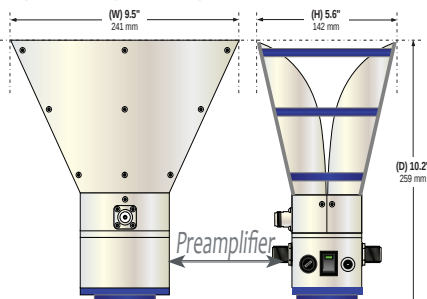
Description

The AHA-118 is a broadband, linearly polarized Double Ridge Horn Antenna with built-in, 40 dB gain, low noise preamplifier. This active antenna operates over the frequency range of 700 MHz to 18 GHz, with excellent efficiency from 1 GHz to 18 GHz.

This measurement system arrangement, with preamplifier directly behind the antenna, rather than next to (or embedded into) the remotely located test receiver, increases measurement sensitivity, as well as accuracy, by amplifying the received signals prior to being significantly attenuated by the long cable run between the test site and test equipment area.

Construction

The AHA-118 is designed to be extremely durable, making it an ideal choice for daily use in laboratory environments. The antenna is constructed using a heavy gauge, high grade aluminum with a corrosion resistant coating. It is fitted with high quality, precision N-type coaxial connectors at the antenna terminals, as well as the preamplifier input/output terminals.



Calibration

Each antenna is individually calibrated per ANSI C63.5 or SAE ARP958 with NIST traceability. The calibration data and certificate is provided. Recognized ISO 17025 accredited calibration is also available upon request.



Application

The AHA-118 Active Double Ridge Horn Antenna is suitable for use in the following capacities:

- » as an EMI test antenna for qualification-level regulatory compliance measurements (FCC, CE, MIL-STD-461, RTCA DO-160, FDA, SAE (automotive), etc.)
- » as a transmitting antenna (preamp bypassed) for establishing radiated RF fields for product immunity tests, with up to 300 Watts input power
- » as a “substitution antenna” (preamp bypassed) for determining the Effective Radiated Power (ERP) and/or Effective Isotropic Radiated Power (EIRP) of intentional radiators
- » test site comparisons, shielding effectiveness tests of large enclosures, field monitoring, site surveys, and other general purposes

Flexibility

The AHA-118 can easily be configured by the operator on the fly, as necessary, to meet the specific requirements for the task at hand. Where system sensitivity (large signal to noise ratio) is not the primary concern; attenuation, notch or bandpass filters can be inserted between the antenna and preamplifier, in order to facilitate measurements in the presense of high-amplitude signals. Or, the preamplifier can be bypassed altogether, in which case the antenna can be used for receiving or transmitting purposes.

Mounting

The AHA-118 is equipped with a standard 1/4-inch x 20 mounting hole located on the back of the antenna.

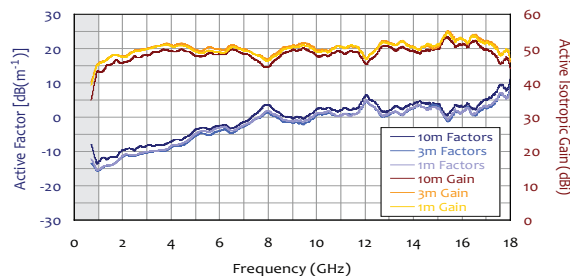
Specifications

All values are typical, unless specified.
All specifications are subject to change without notice.

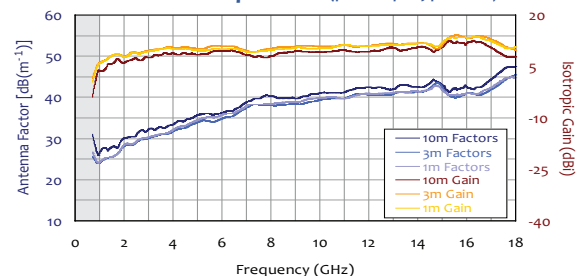
Product Name	Active Double Ridge Horn Antenna
Frequency Range	1 GHz to 18 GHz (useable from 700 MHz)
Polarization	Linear
Nominal Impedance	50Ω
Power Handling	300 Watts (continuous, preamplifier bypassed)
Preamplifier Gain	40 dB (±2.5 dB)
P_{OUT} @ 1 dB Compression	+12 dBm
Noise Figure	<3 dB (@ 25°C)
RF Connectors	Precision N-type (female)
Active Antenna Factor	-13.1 to 11.3 (average: -0.4) [dB(m ⁻¹)]
Active Isotropic Gain	43.2 to 53.6 (average: 48.6) dBi
VSWR (ant. input)	1.58 to 3.32 (average: 2.23) :1
Return Loss (ant. input)	5.4 to 12.9 (average: 8.8) dB
Specifications	FCC, CISPR, EN, ETSI, FAA, MIL-STD-461, SAE, etc.
AC Power Adapter Output	6 VDC (unregulated), 500 mA
Dimensions (H x W x D)	5.6" x 9.5" x 10.2" [14.2 x 24.1 x 25.9 cm]
Weight	4 lbs. [1.8 kg]

The low noise figure (<3 dB) combined with the 40 dB preamplifier gain improves overall measurement system sensitivity by amplifying low-level signals before the cable loss between the antenna and the spectrum analyzer / receiver.

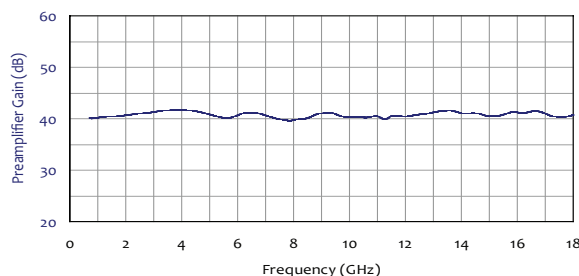
Active Antenna Factors / Isotropic Gain



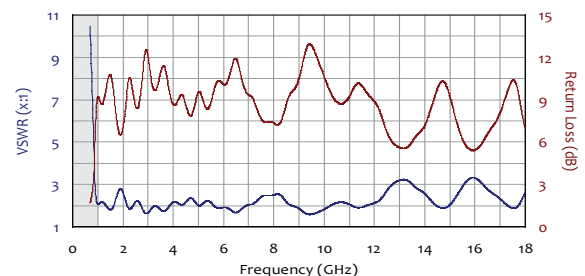
Antenna Factors / Isotropic Gain (preamp bypassed)



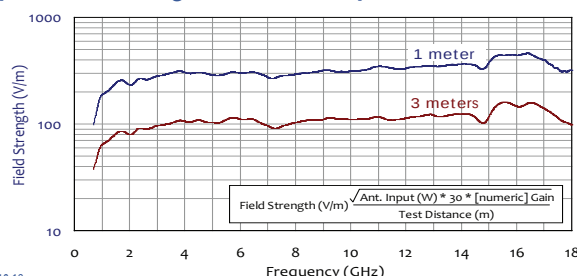
Preamplifier Gain



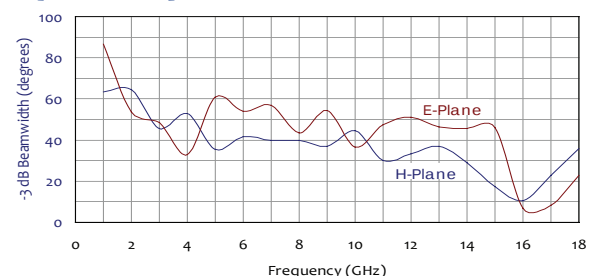
VSWR / Return Loss (antenna input)



Typical Field Strength with 300W Input Power



-3 dB [Half-Power] Beamwidth



Accessories available from Com-Power:



PAM-840A Preamplifier



AT-812 Antenna Tripod



AHA-840 Active Horn Antenna

Also Available:

AC-220 CombiLog Antenna
AH-118 Double Ridge Horn Antenna
AL-100, ALC-100, ALP-100 Log Periodic Antennas