

## Features

- **Frequency Range**  
1 GHz to 18 GHz (useable from 700 MHz)
- **Built-in Preamp** lier with 40 dB Gain
- **Transmit & Receive Capabilities**
- **Individual Calibration Included**

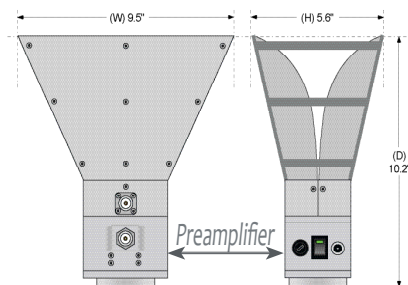
## Description

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 presence 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 can easily be secured to any tripod or mast via its standard 1/4-inch x 20 mounting hole located on the back of the antenna. For installations without a horizontal mounting bolt arrangement, a right-angle mounting bracket is supplied, which mounts to the rear of the horn so that the orientation of the 1/4-inch x 20 mounting hole is vertical.

### 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 Gain	40 dB (±2.5 dB)
P <sub>OUT</sub> @ 1 dB Compression	+12 dBm
RF Connectors	Precision N-type (female)
Active Antenna Factor	-13.1 to 11.3 (average: -0.4) [dB(m <sup>-1</sup> )]
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]

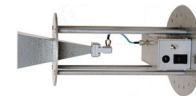
### Accessories available from Com-Power:



PAM-840A Preamplifier



AT-812 Antenna Tripod

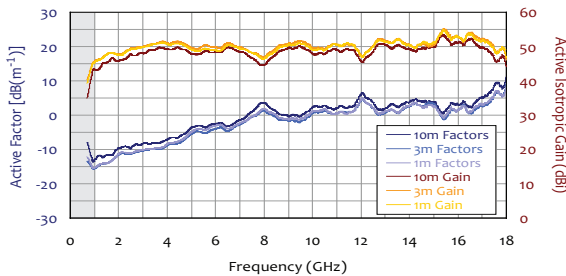


AHA-840 Active Horn Antenna

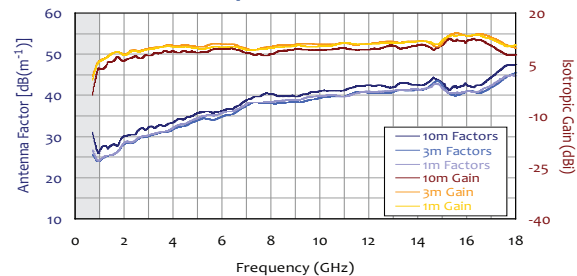
### Also Available:

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

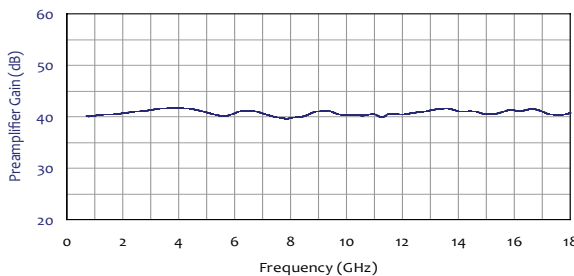
### Active Antenna Factors / Isotropic Gain



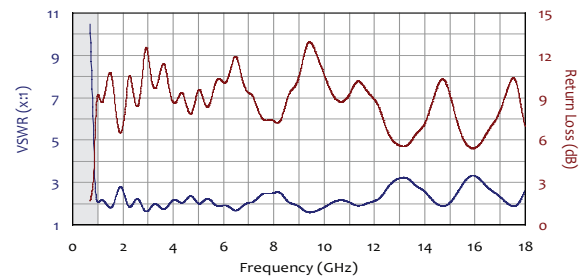
### Antenna Factors / Isotropic Gain (preamp bypassed)



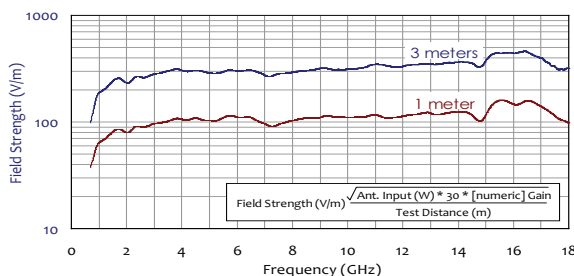
### Preamplifier Gain



### VSWR / Return Loss (antenna input)



### Typical Field Strength with 300W Input Power



### -3 dB [Half-Power] Beamwidth

