COM-POWER CORPORATION

Horn Antenna

AH-220

Features

Broadband - For sweep measurements

High Gain

Two year warranty

Individual calibration

Description

The model AH-220 is a linearly polarized broadband double ridged horn antenna operating in the frequency range of 200 MHz - 2000 MHz.

The AH-220 Horn antenna is an alternative to biconicals and log periodic antennas operating in the same frequency range for emissions and immunity testing where high gain is needed and the large size of the antenna is not an important factor. For immunity measurements the AH-220 can accept up to 800 Watts input power in a continuous mode.

For easier handling, the AH-220 is a constructed using light weight aluminum with a corrosion resistant conductive coating. The mounting bases of Model AH-220 are located near the antenna's center of gravity. Two mounting bases are provided for vertical and horizontal polarizations. Each mounting base has a 1/4 inch x 20 threaded hole. The antenna can be purchased with an optional Com-Power antenna tripod (Model AT-100) which has a mounting head with a matching screw.

Each antenna is individually calibrated before shipment. The test data will be shipped with the antenna.

Application

The AH-220 horn antenna was specifically designed to make EMC measurements. This antenna is suitable for making EMC measurements per EN 61000-4-3 and MIL-STD 461/462 test specifications.

The distinct advantage of the AH-220 horn antenna is its high gain. This reduces necessary power requirement for generating high field strengths for immunity testing. High gain also increases antenna sensitivity to low level signals during emissions testing. The gain of this horn antenna is at least 6 dBi over the entire frequency range.

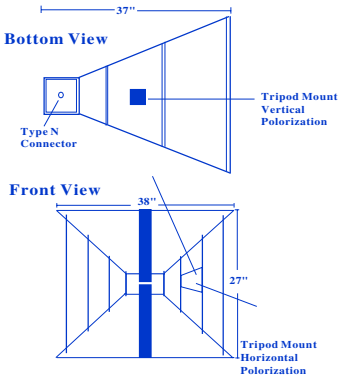
For immunity testing, the input power requirement **P** in Watts to generate **E** Electric Field Strength in V/m at a distance in **D** meters can be calculated by using the following formula:

$P = E^2 \times D^2 / 30 \times \text{Numeric Gain}$
$G = 20 \log F - 29.79 - AF$
$G = 10 \log (\text{Numeric Gain})$

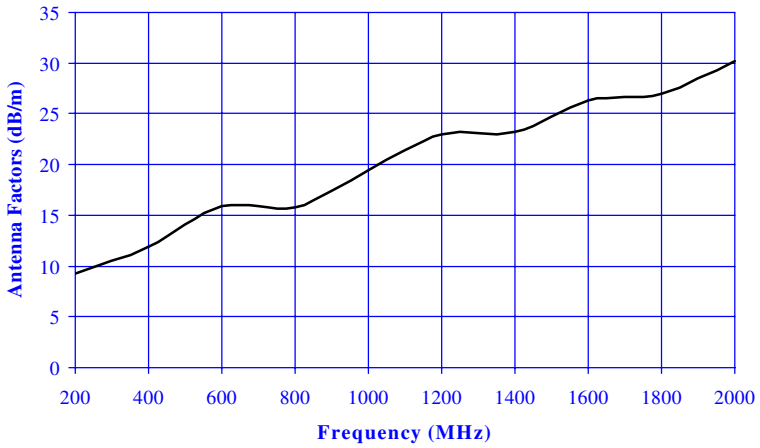
Where
G = gain in dBi
F = Frequency in MHz
AF = antenna factor in dB

Specifications

Frequency Range:	200 MHz - 2000 MHz
Input Power:	800 Watts continious
VSWR (typical):	1.5: 1
Polarization:	Linear
Impedance:	50 Ohm
Connector type:	N- Female
Weight:	27 lbs. (12.2 kg) max.
Size:	37 x 38 x 27 inches (94 x 96.5 x 68.5 cm) max.
Mounting:	1/4 inch x 20 threads.



Typical Antenna Factors:



Field strength (dBV/m) = Output measured (dBV) + Antenna Factor (dB/m)

Typical Antenna Gain and Power Requirement:

Freq. (MHz)	Gain (dBi)	Power Requirements (Watts) at 1 meter antenna spacing		
		10 V/m	20 V/m	100 V/m
200	6.9	0.7	2.7	67.6
400	10.4	0.3	1.2	30.7
600	9.9	0.3	1.4	34.3
800	12.5	0.2	0.8	18.9
1000	10.7	0.3	1.1	28.3
1200	8.8	0.4	1.8	44.0
1400	9.9	0.3	1.4	33.9
1600	8.0	0.5	2.1	52.9
1800	8.3	0.5	2.0	49.1
2000	6.0	0.8	3.3	83.1

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