



EMC Antennas
**Double-Ridged
Waveguide Horn
with Pre-Amplifier**

Model 3117-PA

FEATURES:

- 1 GHz to 18 GHz Frequency Range
- Maintains Single Lobe Radiation
- Fitted with Pre-Amplifier for Increased Sensitivity
- Extremely Low Antenna Factor
- Flexible Mounting



ETS-Lindgren's Model 3117-PA Double-Ridged Waveguide Horn Antenna with Pre-Amplifier

ETS-LINDGREN'S MODEL 3117-PA is a special version of our popular Model 3117 Double-Ridged Waveguide Horn Antenna, fitted with a pre-amplifier package and calibrated as a single unit. By doing this, any possible mismatches between antenna and pre-amplifier are taken into account in the antenna factor (AF), which is provided with this unit. The antenna is ideal as a receive antenna for emissions testing above 1 GHz.

FEATURES

Frequency Range

This antenna covers the 1 GHz to 18 GHz range making it ideal as a receive antenna for any emissions testing above 1 GHz.

Maintains Single Lobe Radiation

Like the Model 3117, the Model 3117-PA maintains a single main lobe pattern in the direction of the horn axis over its frequency range. This characteristic is essential for even distribution of electromagnetic

energy on a target surface, and accurate measurement of gain and emissions. The model 3117's unique design suppresses the propagation of high order modes. The result is an antenna with a well-defined single lobe radiation pattern that outperforms other antennas in its class.

Fitted Amplifier

The pre-amplifier attached to the antenna has a frequency range of 1 GHz to 18 GHz and a typical gain of 48 dB. The gain flatness across the range is ± 2.5 dB. The pre-amplifier has a maximum noise figure of 4 dB maximum with the typical noise figure being 3 dB. The power output is +17 dB minimum at the 1 dB point. The input and output characteristics of the preamplifier are an Input and output VSWR of 2:1 maximum.

Low Antenna Factor

The result of matching the Model 3117 with the pre-amplifier is an antenna that is calibrated as a

system and it provides an extremely low AF that is less than -2 dB (1/m) for the entire frequency range.

Flexible Mounting

The Model 3117-PA includes both a 1/4 20 thread classic mount and a rear "stinger" mount.

STANDARD CONFIGURATION

- Antenna and Pre-amplifier
- Mounting Bracket for 1/4 20 Threads
- Stinger Mount
- AC/DC Power Supply for the Pre-amplifier Module
- Individually Calibrated Factors at 1m and 3m per SAE ARP 958
- Manual

OPTIONS

- 4-TR Tripod
- 7-TR Tripod

Electrical Specifications

| MODEL | FREQUENCY RANGE | VSWR (AVG) | MAXIMUM CONTINUOUS POWER | IMPEDANCE (NOMINAL) | CONNECTOR TYPE |
|---------|-----------------|---------------|--------------------------|---------------------|----------------|
| 3117-PA | 1 GHz to 18 GHz | N/A (Rx Only) | N/A (Rx Only) | 50 Ω | SMA (Female) |

Physical Specifications

| MODEL | LENGTH* | WIDTH | HEIGHT* | WEIGHT |
|---------|--------------------|-------------------|-------------------|------------------|
| 3117-PA | 33.0 cm 13.0 in | 17.5 cm 6.9 in | 19.7 cm 7.8 in | 1.4 kg 3.0 lb |

*Includes stinger and pre-amplifier box.

Model 3117-PA Typical Antenna Factor and Gain

