

# 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. Please note, the 3117-PA is not intended for RSE testing of intentional radiators.

## **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  $\pm$  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**

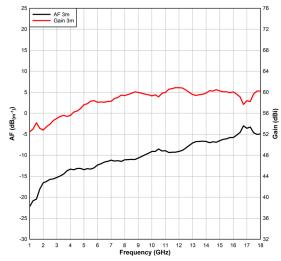
MODEL	FREQUENCY	VSWR	MAXIMUM CONTINUOUS	IMPEDANCE	CONNECTOR
	Range	(AVG)	POWER	(NOMINAL)	Type
3117-PA	1 GHz to 18 GHz	N/A (Rx Only)	N/A (Rx Only)	50 Ω	SMA (Female)

# **Physical Specifications**

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

<sup>\*</sup>Includes stinger and pre-amplifier box.

## **Model 3117-PA Typical Antenna Factor and Gain**



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