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TC-8111-3E DF ANTENNA 30-3000 MHz

Airborne, Shipboard, Vehicle, and Transportable System Applications

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GENERAL DESCRIPTION

The Tech Comm, Inc. TC-8111-3E is a Three-Bay Direction Finder Antenna covering the 30 to 3000 MHz frequency range. The TC-8111-3E has the same mechanical footprint and cable connections as the TC-8111-2 and TC-8111-3 Arrays. The antenna uses a patented annular slot element array with a non-disruptive phase and amplitude processing technique to provide line of bearing information from the Direction Finder Antenna to the radio transmission source.

SPECIFICATIONS

Antenna Model	TC-8111-3E
Frequency	30 – 6000 MHz Band 1: 30-400 MHz Band 2: 400-1800 MHz Band 3: 1800-3000 MHz
Polarization	Vertical (50 degrees elevation plane)
Horizontal Coverage	360 degrees
Sense Antenna	None Required
Accuracy	4 degrees RMS, typical
Impedance	50 Ohms, nominal
Pre-Amplifier	Switchable In / Out, DF and Omni paths
RF Outputs	DF, OMNI
Electronics	3 Goniometers: Low, Mid and High Band
Goniometer Control	Automatic, supplied by DF Processor
Power	+12 VDC, supplied by DF Processor
Diameter	Radome: 14.85 inches (Same footprint as TC-8111-2, -3)
Height	
Radome (Element Housing)	5.00 inches (in the slipstream, above/below mounting surface)
Electronics Enclosure	4.66 inches (protruding inside platform-airframe/vehicle)
Overall	9.66 inches (excluding connectors and cable service loops)
Weight	13.5 pounds, Nominal inclusive or radome
Environmental	
Operating Temperature	-40 to +60° C
Non-Operating Temperature	-50 to +70° C
Relative Humidity	0 to 95%

FEATURES

The TC-8111-3E includes a BIT (Built-In Test) feature to verify DF array performance via GUI screens used with a companion DF Processor. The TC-8111-3E has a built-in Omni antenna for signal intercept and monitoring functions.

For airborne requirements, the aircraft fuselage provides the required antenna ground plane. For shipboard, ground transportable, or ground deployment, the TC-8111-3E is furnished with an integral 22.0" diameter ground plane for mastheads, tripods, non-metal vehicles, or platform surfaces. Mounting kits are available to match specific applications.

The TC-8111-3E goniometer accepts RF inputs from the annular slot multi-bay elements. Low noise and high third-order preamps (LNA's) combine and switch circuits to provide a single, commutated phase and amplitude DF and RF output to the companion TC-6000 system receiver and TC-373 DF Processor. Antenna control and DC power are from a 15-pin MS connector and cable set from the companion DF system.

For shipboard, vehicle, or fixed site applications with the goniometer attached to the bottom of the DF array, an IP67 water-proof cover is furnished, which is also the mechanical interface with specific platform mounting kits.