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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 Annular Slot Direction Finder Antenna providing accurate DF measurements over a broad 30 to 3000 MHz frequency range. The TC-8111-3E retains the same mechanical foot print and electrical interface as the TC-8111-2 and TC-8111-3 Arrays. The TC-8111-3E is intended for use with TC-9300 Series COMINT/DF systems. The antenna uses a patented annular slot element array with non-disruptive phase/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 – 3000 MHz Band 1: 30-400 MHz (Bay 1) Band 2: 400-1800 MHz (Bay 2) Band 3: 1800-3300 MHz, Bay 3L
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 & 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 slip stream, 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
Environmental	
Operating Temperature	-20 to +60° C (heater option extends range down to -40 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 companion DF Processor. The TC-8111-3E is configured with an internal 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 use on mast heads, tripods, non-metal vehicle 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, high 3rd order preamps (LNA's) are used with combining and switching circuits to provide a single, commutated phase & amplitude DFRF output to the companion TC-3000 system receiver and TC-373 DF Processor in TC-9300 and TC-9320 DF Systems. TC-8111-3E control and DC power is provided via 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 bottom of DF array, an IP67 water-proof cover is furnished which is also the mechanical interface with specific platform mounting kits.

Note: Photo shows TC-8111-3E Array. TC-8111-3E has a 5.00" high radome. (new photo of TC-8111-3E with goniometer attached is pending)