DF-80A

Downconverting DF Antenna Head

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L-3's DF-80A downconverting, direction finding (DF) antenna head enables COMINT DF and intercept operations in the 3 to 6 GHz frequency range with existing lower frequency sensors and receivers. The DF-80A antenna architecture consists of a commutating, eight-element directional antenna array and an omni-directional antenna element mounted above the directional array to provide signal intercept and DF reference signals. The unit contains an internal, dual-channel, phase-coherent downconverter in support of simultaneous intercept and DF functionality. The downconverter bypass mode retains the low-noise amplifier (LNA) and antenna switching, providing an output frequency in the 3 to 6 GHz band that is useful as an electronically steerable, directional intercept antenna. Additional features include compact size, weight and power (SWaP), integrated electronic compass and Conducted Built-In-Test (CBIT).

FEATURES

- Wide frequency range
- Small size and low weight
- Internal preamplification
- Rugged design
- Dedicated broadband RF intercept diplexer
- Integrated GPS and compass

APPLICATION

L-3's DF-80A enables the user to detect, collect, and DF/geolocate radio frequency (RF) signals of interest in the 3000 to 6000 MHz frequency range when used with an existing companion DF sensor or receiver. The unit can be mounted on a fixed mast, tripod or vehicle roof. Control of the unit is accomplished via a serial interface from the companion DF sensor or receiver. The DF-80A unit requires DC power from an external source, such as the companion DF sensor or receiver.

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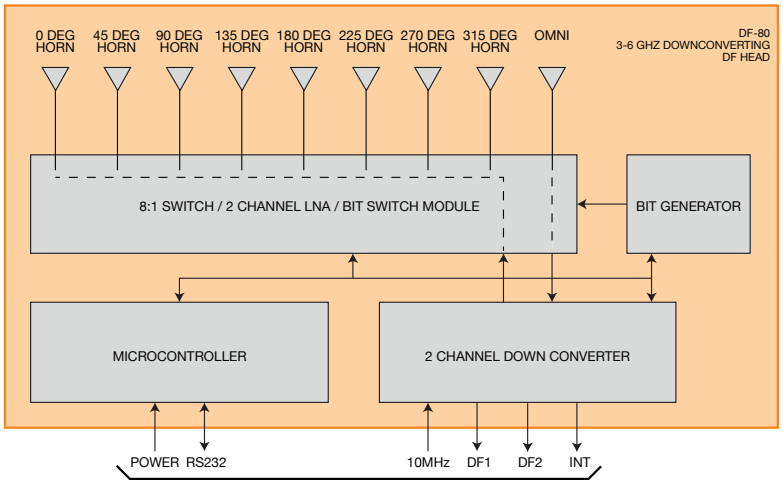
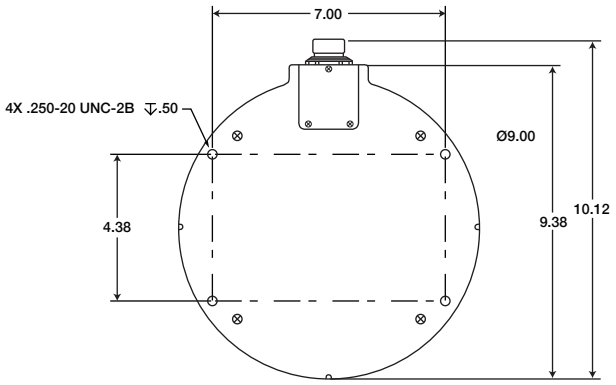
SYSTEM BLOCK DIAGRAM



MECHANICAL DATA

All dimensions shown are in inches.



Bottom View

SPECIFICATIONS	
Operating frequency	3 to 6 GHz
Output frequency range	400 to 2000 MHz in 7 sub-bands
Gain (typical)	DF 18 dB, Omni 21 dB
Noise figure (typical)	DF 8 dB, Omni 5 dB
DF accuracy (20 dB SNR)	< 10 deg RMS, typical
Reference input	10 MHz, 50 Ω, 0 dBm +/- 5 dBm (internal temperature compensated, 10 MHz reference used in absence of external input)
Size	Diameter 10 in., height 9.5 in.
Weight	< 10 lb.
Power	< 10 W (9 to 36 VDC source)
Operating temperature	-37 °C to +71 °C
Storage temperature	-46 °C to +85 °C
Environmental (designed to meet)	Humidity: 5% to 95% non-condensing Altitude: < 15,000 ft. MSL Shock (11 mS, 1/2 sine): 2.5 g op, 10 g non-op Vibration (5 to 500 Hz random): 2 g RMS EMI/RFI (MIL-STD-461E): CE102, CE106, CS101, CS103, CS114, CS115, CS116, RE102 and RS103

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