

VERSION: 1.3

Manpack/Mobile DF **Antenna System**

1 – 6000 MHz

Product Code: DFS-A0245

SPECIFICATIONS

Electrical: DF	1 6000 MU-
Frequency range	1 – 6000 MHz
Band A	1 – 200 MHz
Band B	20 – 800 MHz
Band C	500 – 2100 MHz
Band D	2000 – 6000 MHz
Channels per band	3/2
DF method	Watson-Watt or 3/2-channel correlative
RMS accuracy: Using full vector correlation Using WW	< 2° * < 5° up to 4 GHz ** < 8° up to 6 GHz **
Polarisation	Vertical
Elevation coverage	± 15° with accuracy degraded to 3°
_ioralion corolago	± 25° with accuracy degraded to 10° over 80% of the band
Omni-output	Provided as one of the DF channels
Electrical: band swit	tch (fully integrated in antenna)
Frequency range	1 – 6000 MHz
Control	RS 485, dedicated switching lines
Switching time	< 10µs when using dedicated lines
Integrated features	- Compass (accuracy 3°) - Active GPS antenna
Stored information	Model no., serial no., user data fields
RF calibration	- Internal noise source
	- External cal injection option
Interfaces:	
Connector	MIL-38999 connector on cable
Antenna outputs	3 x co-axial (size 12 contact)
Ext cal input	1 x co-axial (size 12 contact)
GPS output	1 x co-axial (size 12 contact)
Mechanical:	
Dimensions (h x d)	< 800 mm x 85 mm (excl quadpod) < 1500 mm x 2000 mm (incl quadpod)
Mass	< 9.0 kg
Environmental: desi	gned to meet the following specifications
Temperature range	-30 °C to +55 °C (operating) -40 °C to +71 °C (storage)
Ingress protection	IP65
Shock and vibration	MIL-STD-810E 516.4, Cat 8, shock 40g

* When used in a three-receiver configuration, however, < 1° RMS is possible.

Shock and vibration MIL-STD-810E 516.4, Cat 8, shock 40g



PRODUCT DESCRIPTION

The DFS-A0245 is a wideband DF antenna intended for on-the-move direction finding from 1 – 6000 MHz.

The antenna array is implemented as a three-band vertical stack with the low frequency band integrated into a quadpod with its performance enhanced with patented hybrid loop-Adcock technology to provide improved sensitivity vs traditional designs of the same form factor.

The antenna presents patterns suitable for the Watson Watt estimation method, as well as 3/2-channel correlative DF.

Mounting of the VUHF module is directly via the basemounted MIL DTL 38999 connector interface onto the quad pod housing the HF band.

A cavity inside the antenna houses an integrated band switch that allows control and calibration circuitry to be integrated into the antenna. External and internal RF chain calibration is accommodated, and a compass and active GPS antenna with receiver are also integrated in the antenna.

*CA Application 2,853,219;

*EP Patent 2771943;

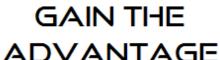
*U.S. Patent No. 14/353,382;

*ZA Patent No. 2014/02806

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^{**} Using pure Watson Watt estimation (no calibration, arctan formula)

Manpack/Mobile DF Antenna System

1 – 6000 MHz

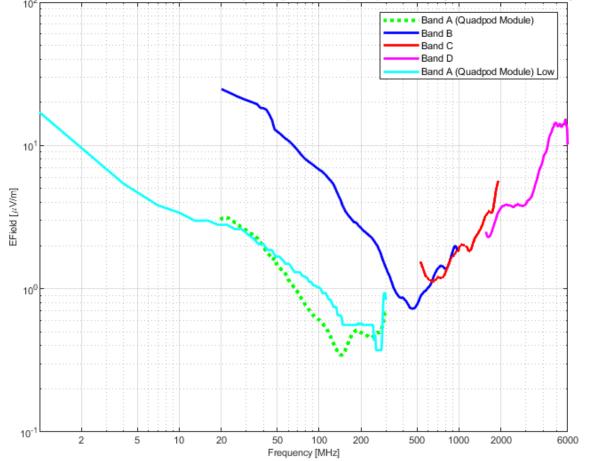
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Typical Sensitivity:

Expected DF Sensitivity for proposed DFS-A0245

E-field required for 2° RMS accuracy with NF=9dB and BW=1Hz (Multiply E-field by BW^{1/2} to adjust to system bandwidth)

** Assumes a three-coherent-receiver system utilising vector (phase and amplitude) correlation e.g. with the DOT-Correlate algorithm



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