

DF Antenna with Integrated Monitoring

20 – 1300 MHz

Product Code: DF-A0068

VERSION: 1.4



PRODUCT DESCRIPTION:

The DF-A0068 direction finding antenna covers a frequency range of 20 MHz to 1.3 GHz. An integrated monitoring antenna, working up to 1.3 GHz, gives a high sensitivity omni on the same axis as the DF antenna, without interference between them.

The full-size elements on all bands give excellent DF sensitivity. Ultimate angular resolution for strong signals is well under 1° for most of the frequency range. Dipole elements provide good cross-polarisation rejection, and fair performance for signals arriving from up to 15° above or below the horizon.

The integrated monitoring antenna is mounted above the band 2 DF antenna. A large passive bi-conical antenna, it gives good sensitivity over the whole frequency range.

This DF antenna is designed to be used with a 2-channel or 5-channel phase-sensitive receiver, and correlative algorithm.

Characterisation of the antenna can be performed on request.

SPECIFICATIONS:

Electrical - DF:

DF frequency range	Band 1: 20 – 400 MHz Band 2: 400 – 1300 MHz
Nominal input impedance	50 Ω
Antenna type	5-element DF interferometer
Polarisation	Vertical
Output cables, connectors	RG 400 cables, 10 x TNC(m)

Electrical - monitoring:

Frequency range	20 – 1300 MHz
H-Plane beamwidth	360°
E-Plane beamwidth	60° nominal
Azimuth ripple	Better than ± 3 dB
VSWR	< 3:1 for 95% of band
Polarisation	Vertical
Connector type	N-type male on cable
Nominal impedance	50 Ω

Mechanical:

Cross-sectional wind area	1.30 m ²
Maximum wind speed	160 km/h (without ice load)
Assembled dimensions	3 m tall, 2.7 m diameter
Shipping dimensions	1.55 m x 0.8 m x 0.5 m
Weight of antenna in shipping container	40 kg 110 kg

ELECTRICAL FEATURES:

- Full-size DF
- Wideband DF
- 5-element interferometer
- Optimised for 2-channel receivers
- High sensitivity omni antenna integrated

MECHANICAL FEATURES:

- Designed for tower-mounting
- Disassembly system allows antenna to be broken down into manageable parts
- Assembly can be performed by one person in 15 minutes

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ENVIRONMENTAL SPECIFICATIONS AND TESTS (designed to meet the following):

Vibration	MIL-STD-810E method 516.4, category 8
Mechanical shock	MIL-STD-810E method 516.4 (40 g)
Low temperature storage	MIL-STD-810E method 502.3 (-30 °C)
High temperature storage	MIL-STD-810E method 501.3 (+70 °C)
Rain	MIL-STD-810E 506.3 procedure I (95% RH)
Artificial weathering (UV stability) total duration 500 h	BS 3900: part F16, method A. lamps: UV-B (313) Product exceeds requirements set out by the British Standard
Temperature and humidity	MIL-STD-810E method 507.3
Salt / fog	MIL-STD-810E 509.3 procedure I
Dust	MIL-STD-810E 510.3 procedure II

2-CHANNEL DF RECEIVERS:

The antenna is designed for efficient operation with a commutated 2-channel receiver.

Special attention has been paid to the nulls which usually occur due to the diameter mast. Receiver systems with two channels, commutated to measure five antennas, are sensitive to nulls in the element patterns. Depending on the receiver and algorithm, reducing the null depth leads to a more reliable system.

RELATED PRODUCTS:

DF-A0058 band switch with omni amplifiers.

For band selection between the two antenna bands. Omni amplifier channel gives best omni sensitivity.

DF-A0057 outdoor housing for DF switches

DF-A0038 is a 3 GHz version of this antenna