

Direction Finding and Monitoring Antenna

20 – 3000 MHz

Product Code: DF-A0038

VERSION: 3.5

SPECIFICATIONS:



PRODUCT DESCRIPTION:

The DF-A0038 direction finding antenna covers a frequency range of 20 MHz to 3 GHz. An integrated active monitoring antenna, working up to 6 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 in two bands, mounted above the Band C DF antenna. These are amplified at the top of the cable, and passively combined to give continuous coverage over the frequency range 20 MHz to 6 GHz, with a single output connector.

This DF antenna is designed to be used with a 2-channel phase-sensitive receiver, and correlative algorithm. Characterisation of the antenna can be performed on request.

Product codes:	
DF-A0038	DF with monitoring up to 6 GHz
DF-A0038-01	DF with monitoring up to 6 GHz; quick-disconnect mast
DF-A0038-03	Fixed-mount DF and monitoring antenna with monitoring up to 6 GHz;
Electrical - DF:	
DF frequency range	Band 1: 20 – 300 MHz; Band 2: 300 – 1000 MHz; Band 3: 1000 – 3000 MHz
Nominal input impedance	50 Ω
Antenna type	5-element DF interferometer optimised for 2-channel receiver
Polarisation	Vertical
Output cables	RG 400 cables
DF connectors	15 x TNC male
Electrical - monitoring:	
Frequency range	20 – 6000 MHz
Nominal H-plane beamwidth	360°
Nominal E-plane beamwidth	60°
Typical VSWR	3:1
Polarisation	Vertical
Connector type	N-type male
Nominal impedance	50 Ω
Input voltage (via coax)	15 ± 1 V DC
Input current	< 150 mA
Power consumption	< 2.25 W
OP1dB (typ.)	> 11 dBm
OIP2 (typ.)	> 31 dBm
OIP3 (typ.)	> 21 dBm
Mechanical:	
Cross-sectional wind area	1.30 m ² (including antenna switch) Operational - 160 km/h (without ice load)
Maximum wind speed	Max 251 km/h gusts in a debris free environment, short interval gusts only
Assembled height	3.4 m
Assembled diameter (max)	2.7 m
Shipping dimensions	1.55 m x 0.9 m x 0.6 m
Weight of antenna including shipping container	55 kg 135 kg

ELECTRICAL FEATURES:

- Full-size, wideband DF
- 5-element interferometer
- High sensitivity integrated omni antenna

MECHANICAL FEATURES:

- Designed for tower mounting
- Full quick-disassembly system allows antenna to be broken down into manageable parts without tools
- Assembly can be performed by one person in 15 minutes

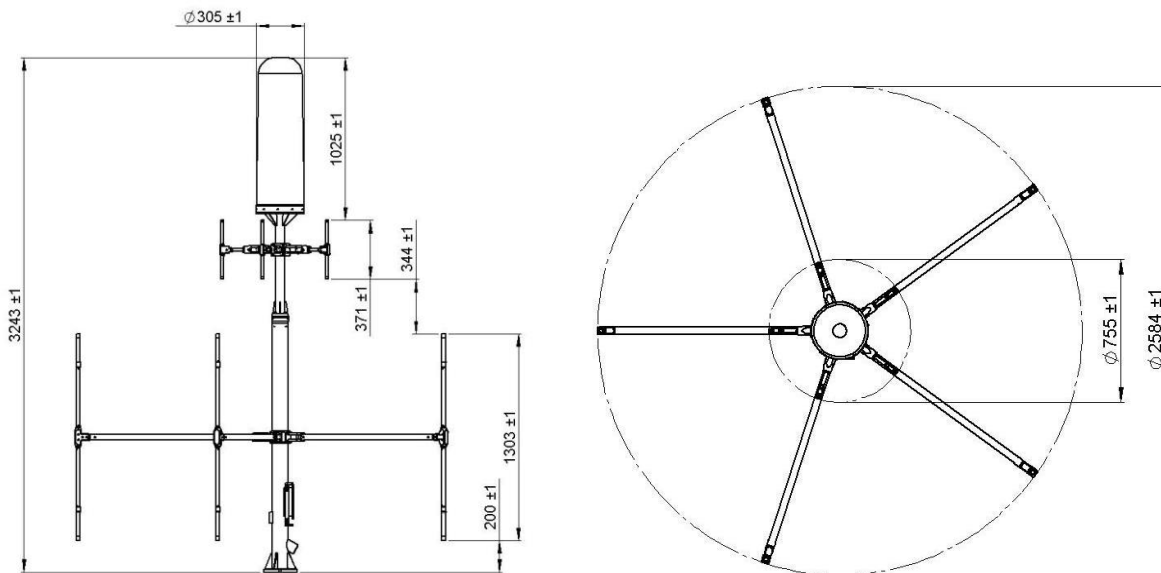
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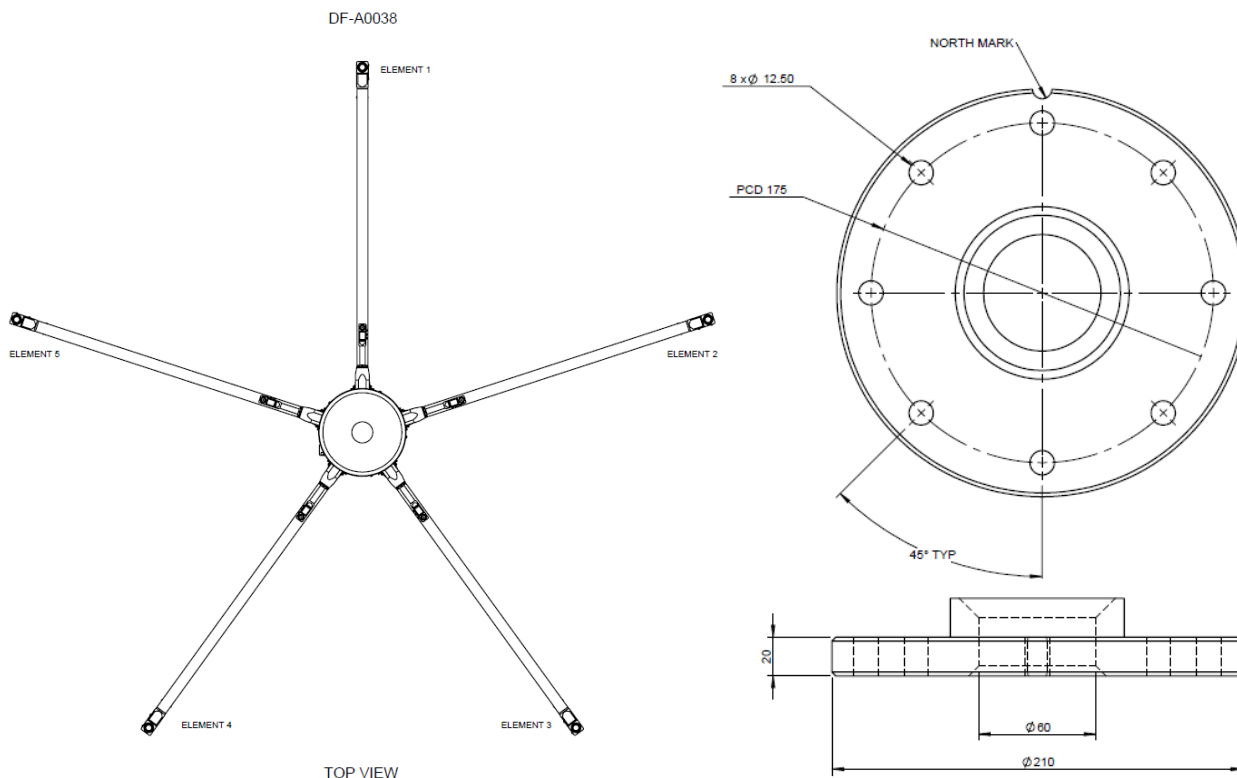
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DF ANTENNA DIMENSIONS:



MOUNTING DETAIL



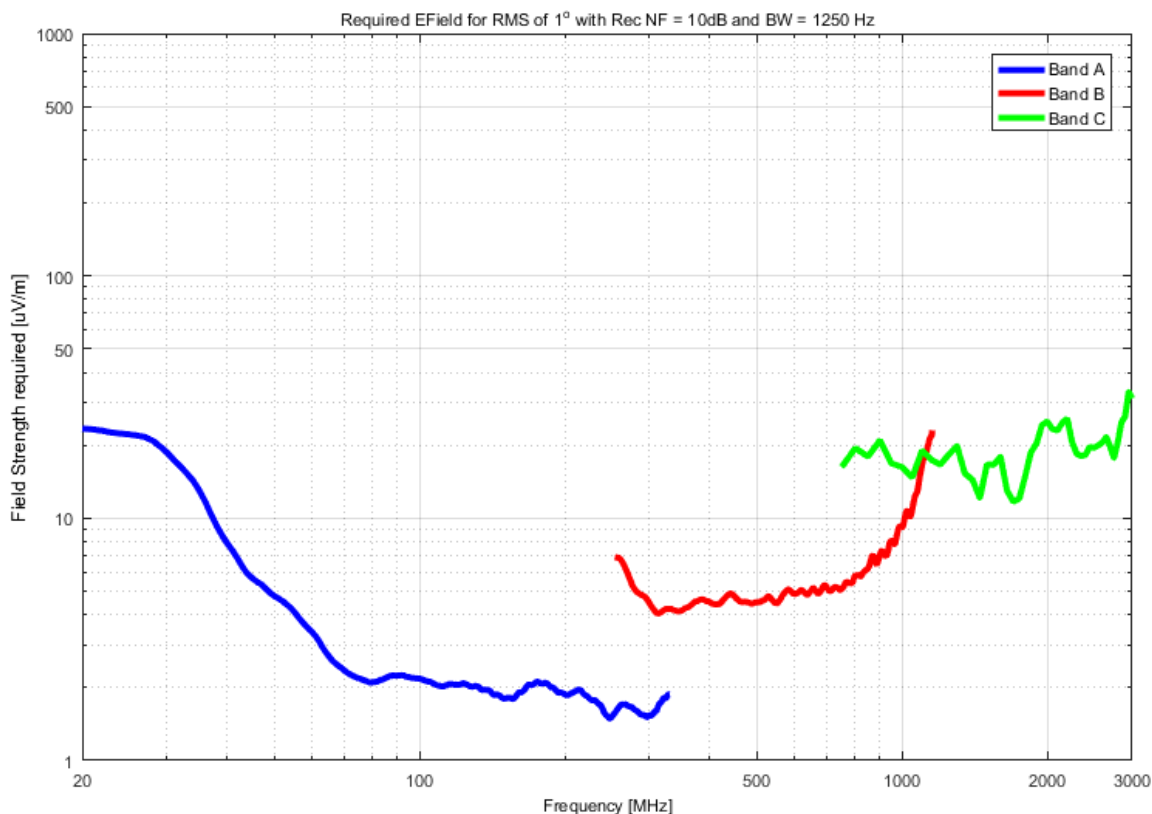
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DF SENSITIVITY GRAPH:



TWO-CHANNEL DF RECEIVERS:

The 1 to 3 GHz band of this antenna is designed for efficient operation with a commutated 2-channel receiver. Special attention has been paid to the nulls which usually occur in this band due to the large 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. The graph above is for a five-channel receiver, a two-channel receiver will be between 1 and 10 dB less sensitive.

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GAIN OF MONITORING ANTENNA:

