

Direction Finding and Monitoring Antenna

20 – 3000 MHz

Product Code: DF-A0038

VERSION: 3.4

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.

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| 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

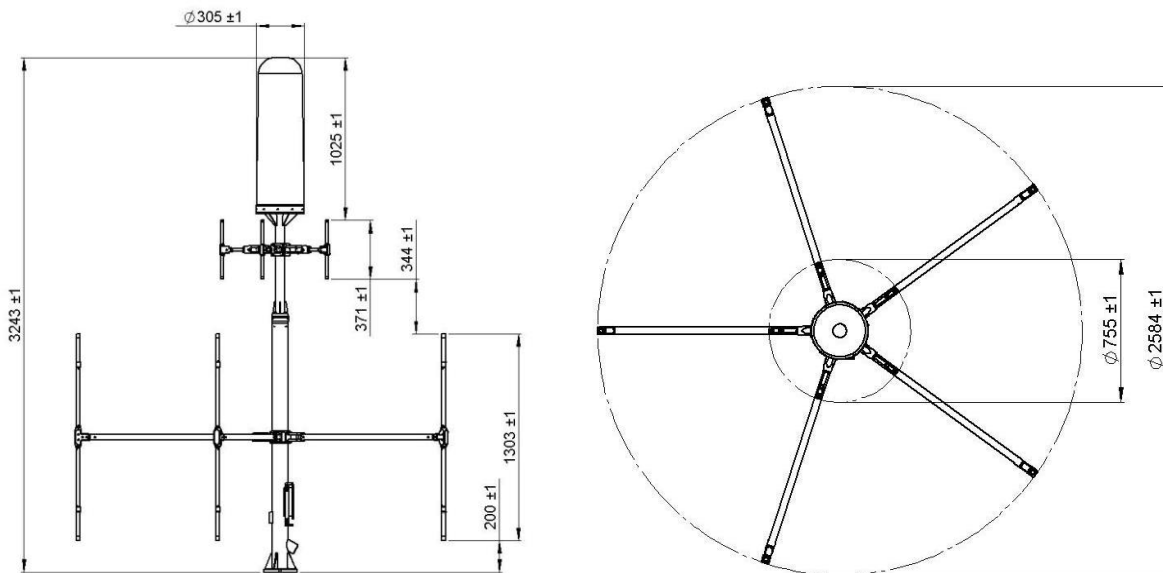
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20 – 3000 MHz

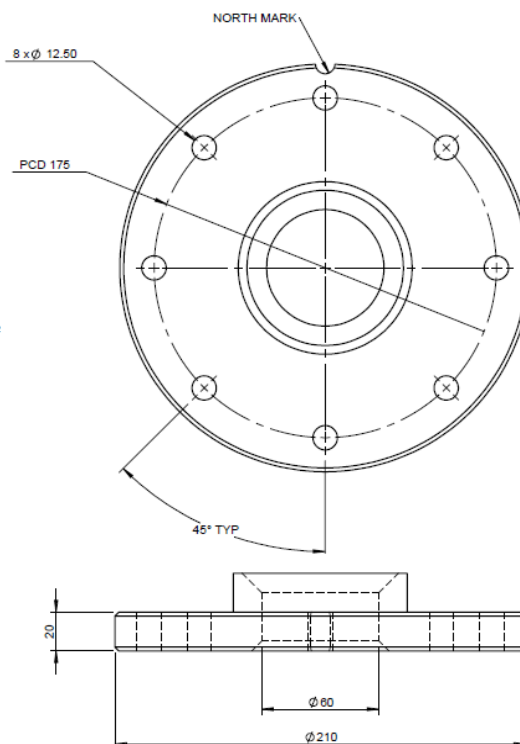
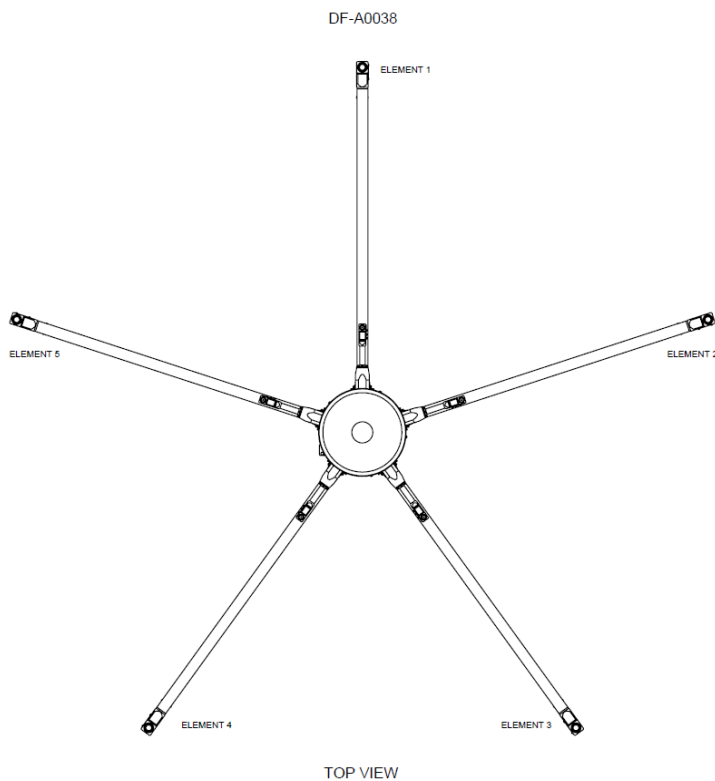
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DF ANTENNA DIMENSIONS:



MOUNTING DETAIL



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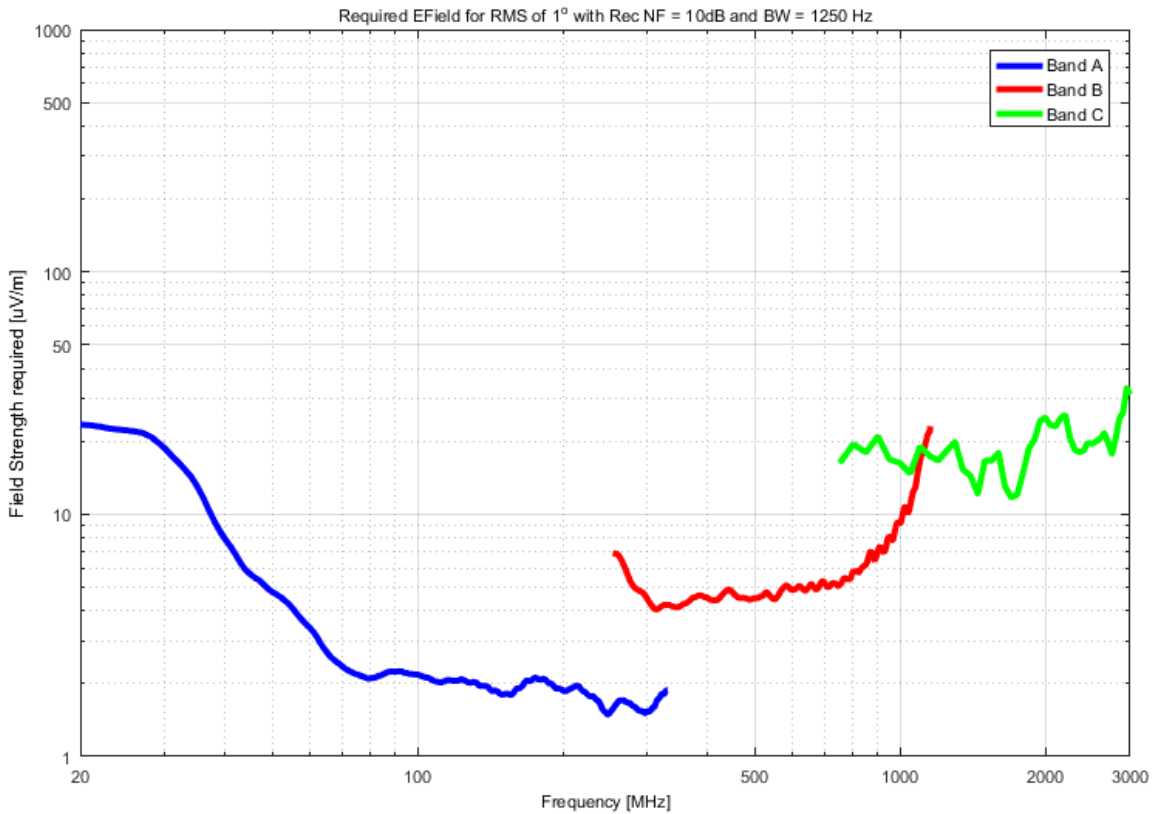
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DF SENSITIVITY GRAPH:



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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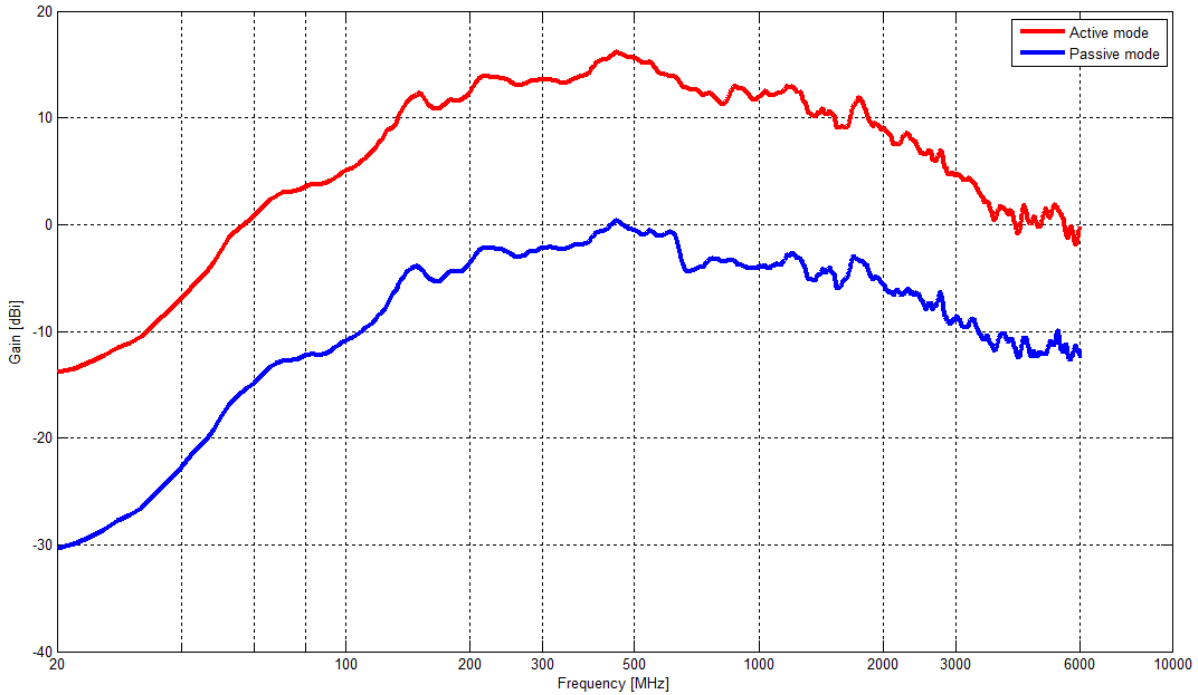
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GAIN OF MONITORING ANTENNA:



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