

Compact Dual Band Direction Finding Antenna

400 – 6000 MHz

Product Code: DF-A0121

VERSION: 1.5



SPECIFICATIONS:

Electrical:	
Frequency range	400 – 6000 MHz
Polarisation	Vertical
DF:	
DF frequency range	Band C: 400 – 3000 MHz; Band D: 3000 – 6000 MHz
Nominal input impedance	50 Ω
Antenna type	5-element DF array (From 5- to 2-channel receiver compatible)
Strong signal DF accuracy	< 1° RMS
Monitoring:	
Frequency Range	400 – 6000 MHz
RF Interface:	
Connectors	11 x N-Type (f)
Mechanical:	
Height	765 mm
Diameter	315 mm
Mounting method	Fixed mounting flange for mast or mobile mounting
Material	Aluminium, fibreglass
Weight	<12 kg
Environmental: designed to meet the following specifications	
Wind survival	160 km/h
Temperature (operational)	- 31 °C to +70 °C
Water ingress rating	IP65

FEATURES:

- Highly versatile
- Accurate DF applications
- Vertical polarization
- Rugged construction

APPLICATIONS:

- Mobile and fixed DF applications
- Ideal for C-UAS applications

PRODUCT DESCRIPTION:

The DF-A0121 direction finding antenna from Alaris Antennas originates from the well-established DF-A0062 wideband DF antenna. This antenna is the highest-frequency set, which works well from 400 to 6000 MHz. It is suitable for quick deployment as well as fixed applications.

The 5-element DF array is located inside a radome with the electrical connections for the ten channels being available near the base, via the enclosure at the base of the antenna.

The antenna also includes a dedicated Monitoring channel.

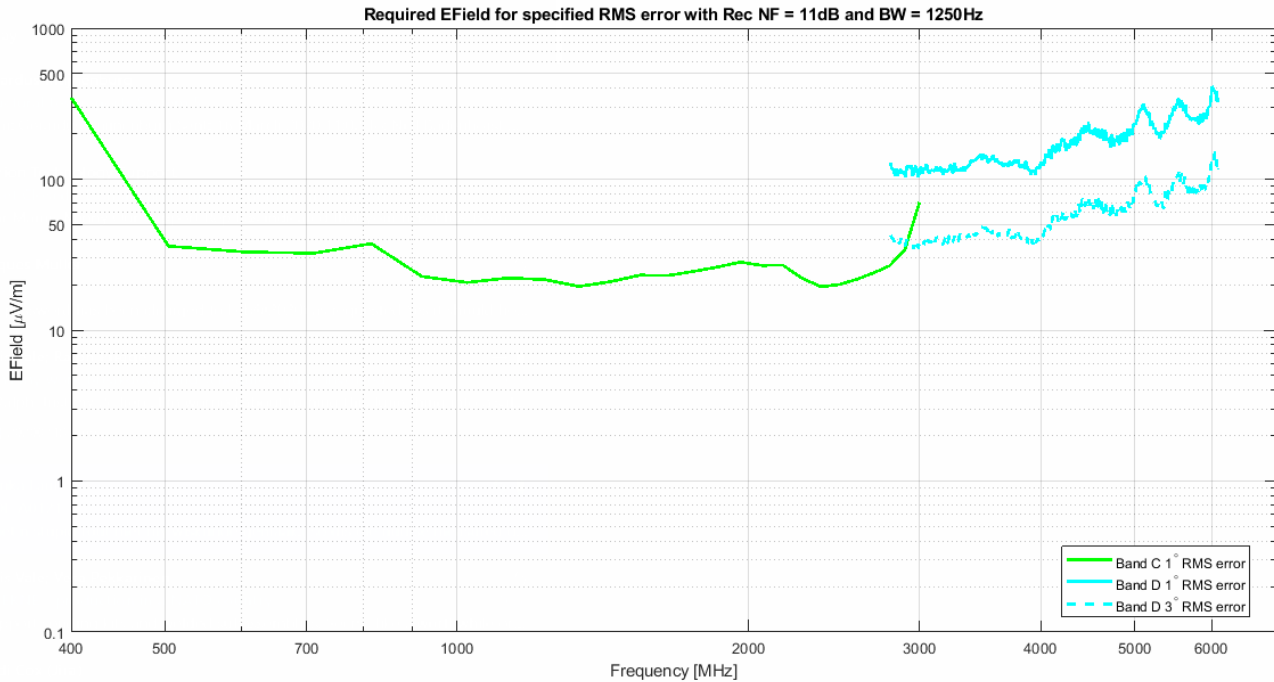
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DF SENSITIVITY GRAPH:



The graph illustrates the direction finding sensitivity of a typical system, modelled using a **phase and amplitude correlative DF algorithm**. The sensitivity is measured using an IF bandwidth of 1.25 kHz and **without** averaging. The graph shows the minimum signal required to obtain a bearing fluctuation of less than 1° for the frequency range 400 to 3000 MHz, less than 3° for the frequency range 3000 to 6000 MHz. **The values should be adapted for the system in question if it uses a different bandwidth and receiver noise figure, or if considering a different required accuracy.**

INTEROPERABILITY WITH DF RECEIVERS:

The DF sensitivity of the full system is highly dependent on the receivers, processing and algorithm used, as well as the characterization table density. The graph above assumes a 5-channel, low noise receiver and correlative algorithm.

The sensitivity will be between 1 and 10 dB worse with a 2-channel receiver system.

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.