

# Wideband Portable DF Antenna

1 – 3600 MHz

VERSION: 5.7

Product Code: DF-A0029



## PRODUCT DESCRIPTION:

The DF-A0029 is a wideband portable DF antenna suitable for fixed and mobile mast-mounted applications.

The antenna has a loop array for good DF performance at low frequencies where the phase size of the array is small, and two pentagonal arrays for the middle and high frequency ranges. Secondary arrays of dipoles and monopoles are combined, to provide omni outputs up to 3.6 GHz.

A cavity inside the antenna, approximately 350 mm wide by 370 mm high, allows an RF switch to be integrated into the antenna, reducing cable loss and weight. The cavity slides open, the switch can be installed by one person, on a mast, without a crane.

Small carrying handles moulded into the base of the antenna allow it to be moved safely by two people, while a lifting eye is provided at the top for positioning with a crane

## PRODUCT FEATURES:

- Full-band correlative interferometer
- HF capability
- Wideband dedicated omni capability
- Lightweight construction for portability

## APPLICATIONS:

- Portable direction finding
- Vehicle and fixed mast-mounted DF

## SPECIFICATIONS:

<b>Product codes:</b>	
DF-A0029	White, flange style A,
DF-A0029-01	Painted, flange style A
DF-A0029-02	Painted, flange style B, TNC conn.
DF-A0029-04	Painted, flange style C
DF-A0029-05	White, flange style C
<b>Electrical:</b>	
Frequency range	1 – 3600 MHz
Feed power handling	0.25 W (receive only)
Polarisation	Vertical
Internal connectors	SMA male SS (standard item)
<b>DF:</b>	
DF type	Correlative interferometer
Frequency bands	A: 1 – 90 MHz <sup>*1</sup> B: 30 – 1000 MHz <sup>*1</sup> C: 1000 – 3600 MHz
DF accuracy in azimuth	A: 3° RMS <sup>*2</sup> B: 2° RMS <sup>*2</sup> C: 2° RMS <sup>*2</sup>
Elevation coverage <sup>*3</sup>	-7° to +7° (full accuracy) -15° to +15° (reduced accuracy)
<b>Monitoring:</b>	
Frequency bands	AB: 1 – 700 MHz C: 700 – 3600 MHz
Monitoring antennas	AB: combined 5 dipoles C: combined 5 monopoles
<b>Internal features:</b>	
GPS antenna	Active patch antenna
Compass	KVH C100 compass (optional)
<b>Mechanical:</b>	
Dimensions (h x d)	548 mm x 1100 mm
Mass	26 kg
Colour	White, or painted to user colour
<b>Environmental: designed to meet the following specifications</b>	
Wind survival	150 km/h (no ice building)
Ingress protection	IP55
Temperature	-30 °C to +70 °C
<b>Related products:</b>	
DF-A0037-01	Rugged version of this antenna

## Notes:

- 1) Optimum A-B change-over is above 30 MHz, actual optimum to be determined by measurements with user's receiver.
- 2) DF accuracy when calibrated, on a test range. Operational accuracy will be lower, depending on platform and range effects.
- 3) Better azimuth accuracy at high elevations can be obtained by calibration over the full required elevation range.

# Wideband Portable DF Antenna

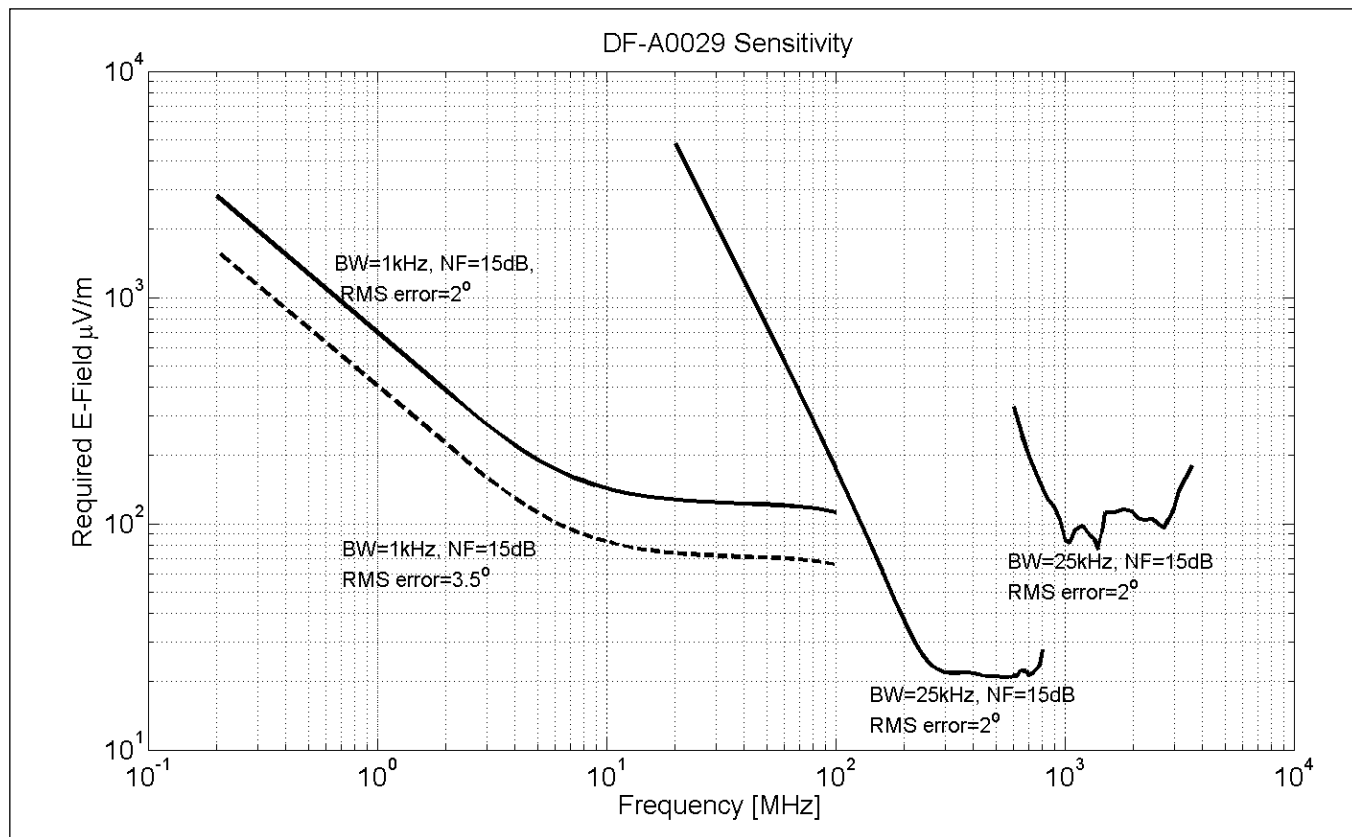
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## DF SENSITIVITY:

The following graph shows the predicted DF sensitivity of the antenna over frequency. The assumptions about receiver sensitivity, noise figure and RMS error are stated next to the lines.



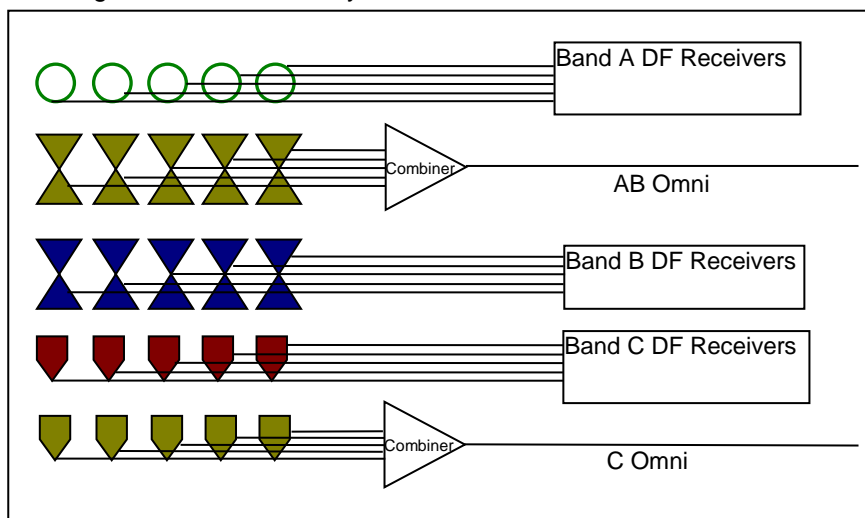
## LIST OF RF OUTPUTS FROM ANTENNA:

The antenna has 17 elements with connectors ending in the antenna cavity:

- 5 Band A loops
- 5 Band B DF elements
- 5 Band C DF elements
- Band AB combiner output
- Band C combiner output

The separate omni elements of Band B and Band C are passed through combiners to produce the 2 omni outputs.

The diagram shows the antenna outputs.



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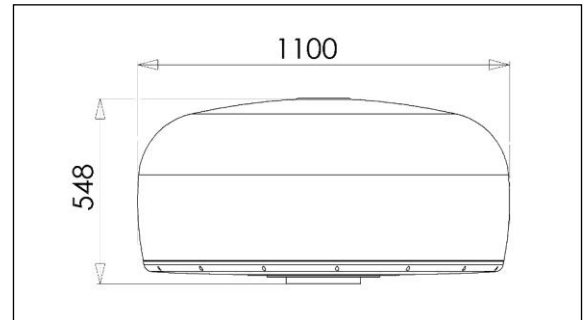
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## OUTER DIMENSIONS:

The outer dimensions of the antenna are as shown.

## HANDLING:

The antenna radome has four small handles in the base, near the edge, for carrying and handling of the antenna by two people.



## INTERNAL DIAGRAM SHOWING DF AND OMNI ELEMENTS:

This model shows the positioning of DF and omni elements in the antenna.

The monopoles (small green circles) are the Band C DF elements.

The outer dipoles are the Band B DF elements, and the inner dipoles are the Band B omni elements. These are combined in-phase to give a good omni to 700 MHz.

