

# Vehicle Adcock DF Antenna

20 – 3000 MHz

VERSION: 2.6

Product Code: DF-A0069

## SPECIFICATIONS:



### PRODUCT DESCRIPTION:

The DF-A0069 is a wideband vehicle-mounted Adcock DF antenna intended for direction-finding from 20 to 3000 MHz.

The antenna uses a combination of crossed-loop and Adcock array principles for the various bands providing maximum possible sensitivity for its compact form factor. The loop designs incorporate patent pending technology to mitigate cross-pol disturbance. Each band offers an omni-channel output that can also be used for monitoring.

The antenna presents patterns suitable for the Watson-Watt estimation method, as well as 3-channel correlative DF (CIDF).

Band switching is done by a switch integrated into the antenna. Limiters are used to prevent damage to the switch from strong nearby transmitters. A noise source for switch calibration and an electronic compass is integrated into the switch.

<b>Electrical: DF</b>	
Frequency range	20 – 3000 MHz
Band B	20 – 500 MHz <sup>1</sup>
Band C	500 – 1500 MHz <sup>1</sup>
Band D	1500 – 3000 MHz <sup>1</sup>
Channels per band	3
DF method	Watson-Watt or 3-channel CIDF
RMS accuracy	< 5° (using only pure WW)*
Polarisation	Vertical
Omni-output	On channel 1 for all bands
Nominal input impedance	50 Ω
<b>Electrical: band switch (fully integrated into antenna)</b>	
Frequency range	20 – 3000 MHz
Control	- RS 485 serial at 115 kbaud - two switching lines, each a differential pair using RS485 levels
Switching time	< 100 μs using serial commands < 4 μs when using dedicated lines
Integrated compass	Available on RS485 serial. Accuracy 2°
Stored information	Model no., serial no., user data fields
RF calibration	Internal wideband noise source
Power supply	15 ±2 V DC
Power consumption	< 1 W (noise source and compass off)
Maximum incident power	Protected by internal limiters. See page 2
<b>Interfaces:</b>	
Electrical	Connectors recessed into base of antenna
Antenna outputs	3 x N-type female
Control and power	MIL-DTL-38999 multi-pin connector
Mechanical	Flange for vehicle or mast-mounting
<b>Mechanical:</b>	
Dimensions (ø x h)	320 mm x 690 mm
Total mass	8.5 kg
<b>Environmental: designed to meet the following specifications</b>	
Wind survival	160 km/h (without ice)
Temperature (operation)	-30 °C to +70 °C
Vibration and shock	Designed to MIL-STD-810-F for ground vehicles
Water proofing	IP65 rain proof

\* Improved accuracy is possible using correlative methods

### Notes:

- Optimum band change-over frequencies to be chosen by user after measurement.
- RMS accuracy is measured over all azimuth, over each full band. Individual frequencies may exceed this figure.

\*CA Application 2,853,219;

\*EP Patent 2771943;

\*U.S. Patent No. 14/353,382;

\*ZA Patent No. 2014/02806

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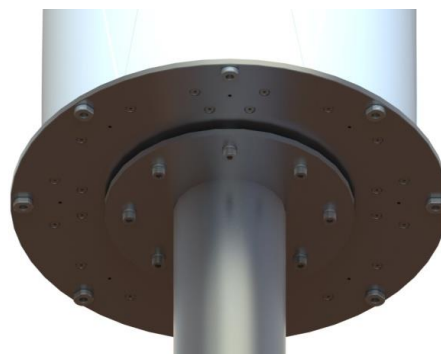
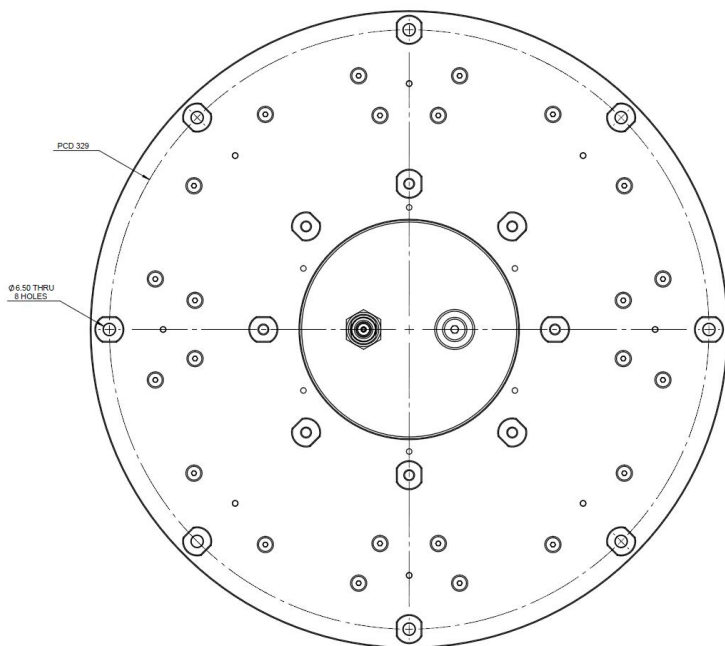
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## INTERNAL LIMITER OPERATION:

The internal limiters in the switch provide good protection against strong signals. The following characteristics can be expected of these limiters in the Bands B and C, and Band D.

Region	Pmin (BC)	Pmin (D)	Pmax (BC)	Pmax (D)	Pout max (BC)	Pout max (D)
Linear	small	small	+5 dBm	+7 dBm	linear	linear
Limiting	+5 dBm	+7 dBm	+11 dBm	+18 dBm	+11 dBm	+18 dBm
Saturation	+11 dBm	+18 dBm	+33 dBm	+33 dBm	+11 dBm	+18 dBm
Destruction	> +33 dBm	> +33 dBm	> +47 dBm (1 $\mu$ s)	> +47 dBm (1 $\mu$ s)	-	-

## MOUNTING FLANGE DETAILS:



For vehicle-mounting: 8 x 6.5 mm clearance holes on 329 mm PCD  
For mast-mounting: 8 x M6x1 mm tapped holes on a 160 mm PCD



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