

# Compact Adcock DF Antenna

20 – 6000 MHz

Product Code: DF-A0111

VERSION: 1.8



## PRODUCT DESCRIPTION:

The DF-A0111 is a wideband compact DF antenna appropriate for use with the Watson Watt method. It can also be used in 3 or 2-channel correlative systems.

The antenna uses primarily Adcock type arrays, and incorporates a patented high sensitivity hybrid loop-Adcock topology for the lowest frequency band to maintain high sensitivity for its size. Each band offers an omni-channel output that can also be used for monitoring.

Band switching is done by a switch integrated into the antenna. An on-board wideband noise source is provided to allow for downstream RF channel calibration. An on-board electronic compass is provided.

Communication to, and control of, the antenna is provided by means of RS485 interface. Band switching can also be accomplished via direct differential pair switching for higher speed if needed.

## SPECIFICATIONS:

Product Codes:		
DF-A0111	Compact Adcock DF antenna with integrated band switch	
DF-A0111-01	Compact Adcock DF antenna	
Electrical: DF		
Frequency range	20 – 6000 MHz	
Band B	20 – 700 MHz <sup>1</sup>	
Band C	500 – 2000 MHz <sup>1</sup>	
Band D	1500 – 6000 MHz <sup>2</sup>	
Channels per band	3	
DF method	Watson-Watt or 3-channel CIDF	
RMS large signal accuracy	Refer to graph below	
Polarisation	Vertical	
Omni-output	Yes (utilised for Watson Watt estimation)	
Nominal input impedance	50 Ω	
Electrical: band switch (DF-A0111 only) and CAL switch (DF-A0111-01)		
Frequency range	20 – 6000 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 (DF-A0111 only)	RF chain calibration using Integrated noise source or external applied signal	
Power supply	15 ±2 V DC	
Power consumption	< 1 W (noise source and compass off)	
Interfaces:		
Electrical	Connectors recessed into base of antenna	
	DF-A0111	DF-A0111-01
Antenna outputs	3x N-type female	9x TNC female
Antenna inputs (RF Cal)	1x N-type female	None
Control and power	MIL-DTL-38999 multi-pin connector	
Mechanical	Flange for vehicle, mast or shelter mounting	
Mechanical:		
Dimensions (ø x h)	320 mm x 690 mm	
Total mass	8.5 kg	
Environmental: designed to meet the following specifications		
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.
- Some degradation of accuracy using pure Watson Watt estimation can occur from 5.5 - 6.0 GHz (can be corrected using correlative methods or correction table)
- 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

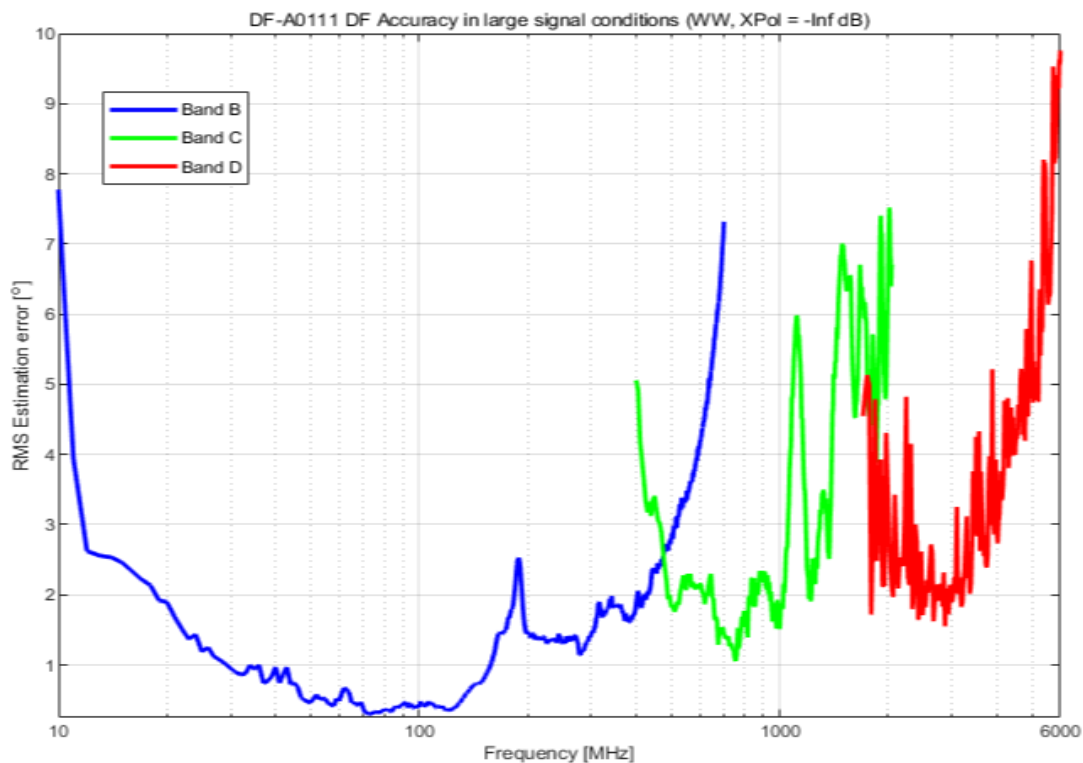
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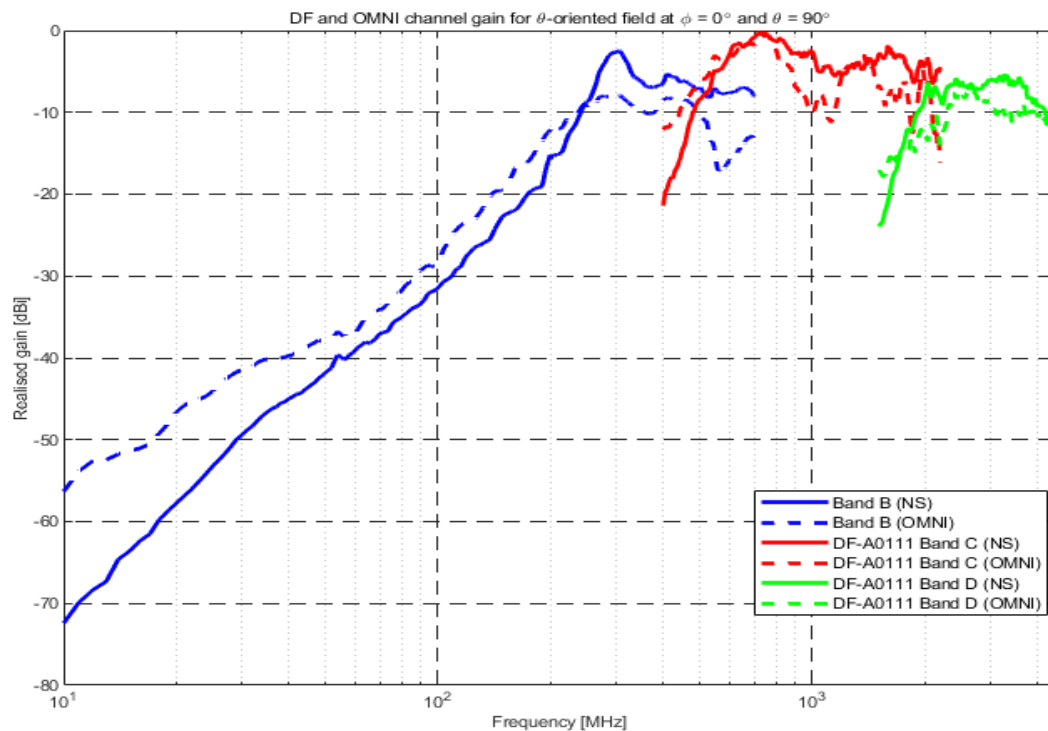
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## RMS LARGE SIGNAL ACCURACY:



## ANTENNA CHANNEL GAIN:



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MOUNTING DIMENSIONS: (DF-A0111 connector layout shown)

