



MA1320 MOBILE DF ANTENNA

- 0.5 - 1200 MHz frequency coverage
- Accurate and repeatable bearings
- Wide frequency coverage in a single antenna
- Low power consumption
- Ruggedized, compact, lightweight design
- One year warranty on parts and labor

A Compact Antenna for Mobile Operations

The MA1320 dual antenna array is a wide frequency coverage antenna that consists of a HF/VHF 4-element loop array with a vertical sense antenna and an UHF 4-element monopole adcock array. The MA1320 antenna is designed to receive vertically polarized signals in the 0.5 to 1200 MHz frequency range.

Removable magnetic mounts are attached to the bottom of the chassis to facilitate car top installation. Car straps are provided for added stability. For optimum performance, the antenna should be as level as possible; to achieve this, a leveling bubble is provided on top of the antenna enclosure.

All power and control signals to the antenna are provided through one 8-conductor control cable via the DF processor. The received signal with bearing information encoded is routed to the receiver through a RF coaxial cable. The antenna may be cascaded with another DF antenna to provide wider

frequency coverage. A typical configuration consists of a MA3000 antenna connected in series between the MA1320 and the DF receiver/processor to achieve a total range of 0.5 to 3000 MHz.

The MA1320 is compatible with several Cubic receiver/processor configurations. A typical DF system may comprise the antenna with the Cubic LCR-3000 communications receiver and the 4006R DF processor.

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SPECIFICATIONS

Frequency Range:	0.5 - 1200 MHz (2 - 1000 MHz optimum)			
Azimuthal Coverage:	360°			
Antenna:	HF/VHF: 4-element loop array with vertical sense antenna UHF: 4-element monopole Adcock array			
Bearing Accuracy:	10° rms maximum, 2 - 1000 MHz Bearing accuracy may be improved with site calibration (Note 1) (Note 3)			
Power:	Voltage: 11.5 - 20 VDC (supplied through DF Processor) Current: 250 mA for VHF; 310 mA for UHF			
Typical DF Sensitivity:	0.5 MHz: 400 µV/m 2 MHz: 100 µV/m 5 MHz: 40 µV/m 10 MHz: 20 µV/m 20 MHz: 4 µV/m 100 MHz: 8 µV/m 200 MHz: 6 µV/m 500 MHz: 2 µV/m 1000 MHz: 10 µV/m (Note 2)			
Polarization:	Vertical			
Impedance:	50 ohms nominal			
Mechanical:	Height: 6" (15.3 cm) Depth: 12" (30.5 cm)		Width: 12" (30.5 cm) Weight: 6.5 lbs (3.0 kg)	
Environmental:	Operating: -40°C to +60°C Storage: -40°C to +70°C Humidity: 95% RH per MIL-STD-810D (507.2) Shock: MIL-STD-810C Procedure VI Vibration: Random per MIL-STD-810D (514.3)			

Note 1: DF bearing accuracy is measured on an ideal site with no bias over specified azimuthal and frequency range with specified polarization at 0° elevation. Bearing accuracy improvement will depend upon the physical characteristics of the particular site chosen. Actual production acceptance testing performed at Cubic test site using standard deviation to eliminate site bias.

Note 2: System sensitivity is specified for an incident field strength in microvolts per meter for direction finding processor output with 6° standard deviation bearing jitter, minimum integration time of 200 msec and an IF bandwidth of 6 kHz.

Note 3: DF bearing accuracy is the rms value of all frequencies at all azimuth points as a single calculation.

$$RMS = \sqrt{\frac{\sum_{i=1}^n (AM_i - AT_i)^2}{n}}$$

i = index
n = # of points (frequency • azimuth)
AM = measured azimuth
AT = true azimuth

Ordering Information

Model No.	Part No.	Description
MA1320	0254455-1	Mobile DF Antenna, 0.5 - 1200 MHz, supplied with magnetic mounts (4) and safety straps (4), and interconnect cables. Color: Black

Specifications subject to change without notice

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