



MA1310 MOBILE DF ANTENNA

- 200 - 1300 MHz frequency coverage
- Accurate and repeatable bearings
- Extremely high signal handling capability
- Low power consumption
- Ruggedized, compact, lightweight design
- One year warranty on parts and labor

An Accurate, Compact Antenna for Mobile Operations

The MA1310 mobile antenna is a wide frequency coverage Adcock DF antenna consisting of four monopole elements mounted on the antenna chassis. The MA1310 antenna is designed to receive vertically polarized signals in the 200 to 1300 MHz frequency range.

The MA1310 is available with several mounting options; these include car top mount using magnets and/or car straps, tripod mount or mast mount. Removable magnetic mounts are attached to the bottom of the chassis to facilitate car top installation. Car straps are provided for added stability. When mounted on a tripod or mast, ground planes are required in lieu of the car top's metal roof.

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 MA1310 antenna, connected in series between the MA1310 and the DF receiver/processor to achieve a total frequency range of 0.5 to 1300 MHz.

The MA1310 is compatible with several Cubic receiver/processor configurations. A typical DF system may comprise the antenna with the Cubic 4400 DF Receiver/Processor.

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SPECIFICATIONS

Frequency Range:	200 - 1300 MHz (200 - 1000 MHz optimum)
Azimuthal Coverage:	360°
Antenna:	4-element monopole Adcock array
Bearing Accuracy:	4° rms maximum, 200 - 1000 MHz 9° rms maximum, 1000 - 1300 MHz, 15° rms maximum, 1300 - 1400 MHz (Notes 1 & 3)
Power:	Voltage: 11.5 - 20 VDC (supplied through DF Processor) Current: 250 mA
Typical DF Sensitivity:	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: 2" (5.1 cm) with 5" (12.7 cm) antenna elements Width: 12" (30.5 cm) Depth: 12" (30.5 cm) Weight: 7 lbs (3.2 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 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
MA1310	0251448-3	Mobile DF Antenna, 200 - 1300 MHz, supplied with magnetic mounts (4) and safety straps (4), and interconnect cables. Color: Grey

Specifications subject to change without notice

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