

Model 0.96m Quick Deploy Motorized Auto-Acquire Antenna

Satcom & Antenna Technologies Division



FEATURES

- Carbon fiber reinforced polymer (CFRP) reflector
- Captive hardware / fasteners
- No tools required for assembly or deployment
- Superior cross-pol performance
- Extremely low loss RF component mounting
- Auto deploy, auto calibrate, auto stow controller with DVB-aided acquisition
- Internal GPS receiver

OPTIONS:

- Multiple colors (black, white, green, tan or other)
- Transport case configurations
- Beacon receiver and tracking
- Spectrum analyzer
- Ruggedized touch screen remote computer

Overview

The ultra-lightweight CPI Satcom & Antenna Technologies (CPI SAT) 0.96-meter Quick Deploy Motorized Auto-Acquire (QDMA) Antenna is designed for worldwide transmit and receive operation in Ku, Ka and X-band. This portable antenna consists of a segmented composite reflector and motorized positioner mount. This configuration results in an extremely low-weight and packable antenna product with superior stiffness and high performance under wind loading conditions.

The unique optical shape and accurate reflector surface provide good sidelobe and excellent cross-polarization performance. Repeatability is maintained with precision registration of the nine-piece reflector segments and RF components.

The antenna can be quickly assembled by one person in less than ten minutes. The auto-acquire controller can find the correct satellite and optimize co-pol and cross-pol performance with the push of a button. The antenna controller can be configured as a multi-functional device combining several options such as external GUI, monitor and control, spectrum analyzer and tracking.

The 0.96m QDMA antenna system, including a Stepped Ring Focus (SRF) feed, is packaged in one or two transit cases (depending on options ordered). The transit cases, designed to be checked as airline baggage, feature wheels and suitcase handles to ease relocation by one person.

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Technical Specifications

Electrical	Ku-Band 2-Port Linear Polarized		Ka-Band 2-Port Circular Polarized		X-Band 2-Port Circular Polarized	
	Receive	Transmit	Receive	Transmit	Receive	Transmit
Frequency (GHz)	10.700 - 12.750	13.750 - 14.500	20.200 - 21.200	30.000 - 31.000	7.250 - 7.750	7.900 - 8.400
Antenna Gain at Midband, dBi	39.20	41.20	43.10	45.10	34.50	35.00
Sidelobe Compliant with	FCC requirements*		FCC requirements*		FCC requirements*	
Return Loss	15.9 dB	15.9 dB	17.7 dB	17.7 dB	17.7 dB	17.7 dB
Antenna Noise Temperature						
5° Elevation	85 K		192 K		89 K	
10° Elevation	75 K		149 K		74 K	
20° Elevation	68 K		117 K		69 K	
40° Elevation	63 K		96 K		67 K	
Cross Polarization Isolation						
On Axis	35.0 dB	35.0 dB	24.8 dB	24.8 dB	23.2 dB	18.8 dB
Within 1.0 dB Beamwidth	35.0 dB	35.0 dB	24.8 dB	24.8 dB	23.2 dB	18.8 dB
Pattern Beamwidth (in degrees at midband)						
-3 dB	1.80	1.49	1.10	0.88	3.06	2.84
-15 dB	3.78	3.13	2.31	1.85	6.43	5.96
Power Handling	100 W CW		100 W CW		500 W CW	
Output Waveguide Flange Interface	WR-75 Flat	WR-75 Flat	WR-42 Flat	WR-28 Flat	WR-112 Flat	WR-112 Flat
RF Specification	975-3792		975-3836		975-2468	

Mechanical	
Reflector Material	Nine-piece carbon fiber composite
Antenna Optics	Axis-symmetric stepped ring focus
Azimuth Travel	±120°
Elevation Travel	-1° to 91° (5° to 85° operational)
Polarization Travel	±90°
Pedestal Structure	Cable-driven elevation-over-azimuth aluminum construction
Shipping Configuration	Two rugged airline checkable cases
Shipping Weight	30 in. x 20 in. x 11.5 in. at 65 lbs. each

Auto Acquisition Control System	
System Interface	Independent embedded outdoor controller supporting one button acquisition. Optional laptop user interface via Ethernet for advanced antenna control. Multiple controller configuration options available.
Power	115/230 VAC, 50/60 Hz

Environmental	
Wind Loading	
Operational (anchored)	30 mph (48 km/h) gusting to 45 mph (72 km/h)
Survival (with tie-downs)	50 mph (80 km/h) any position, 80 mph (129 km/h) in stow position with reflector removed
Pointing Loss (operational winds)	2 dB peak Rx loss at Ku-band
Temperature - Antenna and Control System	
Operational	-22° to +140° F (-30° to +60° C)
Survival (packed)	-40° to +160° F (-40° to +71° C)
Solar Radiation	360 BTU/h/ft ² (1000 Kcal/h/m ²)
Relative Humidity - Antenna and Control System	100% (outdoor duty)
Shock and vibration tolerant to conditions encountered during shipment by airplane, ship or truck. Atmospheric tolerant to conditions encountered in coastal regions and/or heavily industrialized areas.	

* Per 25.220 (c)(1) with maximum input power density of -15.3 dBW / 4 kHz



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For more detailed information, please refer to the corresponding CPI technical description if one has been published, or contact CPI. Specifications may change without notice as a result of additional data or product refinement. Please contact CPI before using this information for system design.

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