



Communications & Power Industries



malibu division

# Model **HD50** SERIES Antenna Pedestal

Product Data Sheet

## Features:

- EL/AZ Configuration
- Portable, Compact, Lightweight
- Rugged Construction
- Supports Solid Reflectors up to 2.4 meters (8 ft)
- High Reliability and Accuracy
- High Torque and Low Backlash
- Rotary Joints & Sliprings for Continuous Azimuth Rotation
- Fast Slew Rates
- Brushless DC Motors
- Supports L-Band through Ka-Band
- PC-based Automated Computer Control with P-Series ACU
- Camera Ready and Compatible
- Acquisition-Aid Antenna Available (Optional)
- Compass & Inclinometer Available (Optional)
- Fiber-Optic Control Available (Optional)



The HD50 is designed to support solid reflectors in the range of 1.8 to 2.4-meters or a FLAPS™ reflector up to 3.6-meters, in winds of 50 MPH. High output torque with low backlash is accomplished with the use of planocentric gearboxes and brushless DC motors. The rugged gearboxes use built-in angular ball bearing construction, which improves the ability to support external loads, increases moment rigidity and maximum allowable moment. The result is increased reliability and a reduction in maintenance. The use of roller bearings throughout the gearbox yields low backlash (less than 1 arc. min.).

For added reliability, the pedestal is designed with servo amplifiers that have protection for over-current, voltage, and temperature. O-ring seals on all panels, allows for positive air pressurization of the pedestal.

The HD50 provides both electronic and mechanical stops and all components are modular. Strategically placed and sized access hatches ensure that all pedestal components are easily accessible. Safety switches are implemented to protect the operator. Various slipring and rotary joint packages are available for integration in the pedestal to allow for continuous travel or for high transmit power applications.

## Related Data Sheets

- P-Series Antenna Control Unit
- Conically Scanning Feed
- Acquisition-Aid Antenna

# Model HD50 SERIES

## Specifications

### KEY PERFORMANCE VALUES WITH STANDARD HARDWARE COMPLEMENT

Antenna	Reflector Diameter (meters)	
	1.8 (6-ft)	2.4 (8-ft)
Operating Frequency <sup>1</sup>	1435-2400 MHz	
Polarization <sup>2</sup>	Simultaneous Right Hand and Left Hand Circular	
VSWR	2.0:1 maximum	
Feed Type <sup>3</sup>	Conically Scanning or Single Channel Monopulse	
<b>Antenna Gain (minimum) Antenna gains, beamwidth, G/T are estimates and feed configurations may change the final values.</b>		
1435 MHz	25.0 dBi	27.5 dBi
1540 MHz	25.5 dBi	28.1 dBi
1710 MHz	26.5 dBi	29.0 dBi
1850 MHz	27.1 dBi	29.7 dBi
2200 MHz	28.6 dBi	31.2 dBi
2400 MHz	29.1 dBi	31.9 dBi
<b>Antenna Beamwidth (3 dB) (nominal)</b>		
1435 MHz	7.7°	5.7°
1540 MHz	7.1°	5.4°
1710 MHz	6.4°	4.8°
1850 MHz	5.9°	4.5°
2200 MHz	5.0°	3.7°
2400 MHz	4.6°	3.4°
<b>Sidelobes (nominal) G/T @ 10° elevation<sup>4</sup></b>		
1435 MHz	18 dBp	20 dBp
1540 MHz	2.8 dB/°K	5.6 dB/°K
1710 MHz	3.4 dB/°K	6.2 dB/°K
1850 MHz	4.3 dB/°K	7.1 dB/°K
2200 MHz	5.0 dB/°K	7.8 dB/°K
2400 MHz	6.4 dB/°K	9.3 dB/°K
2400 MHz	7.2 dB/°K	10.0 dB/°K
<b>Pedestal</b>		
Type	Elevation/Azimuth	
Velocity	≤ 25°/sec	≤ 20°/sec
Acceleration	≤ 25°/sec <sup>2</sup>	≤ 20°/sec <sup>2</sup>
Travel	Azimuth	420° minimum (cable wrap)   360° continuous with slipping -10° to +190° (mechanical)
	Elevation	
Torque	Continuous	900 ft-lbs
	Peak	1,800 ft-lbs
Compliance	2.0 x 10 <sup>-5</sup> radians/ ft-lbs	
<b>Environmental</b>		
Temperature	Operating	-20°C to +52°C
	Storage	-54°C to +71°C
Relative Humidity	Up to 100%, including condensation	
Rain	Up to 4 Inches per Hour	
Ice	One-half Inch, Radial	
Wind (Estimate)	Operating	80 km/h / 50 MPH (gusting to 105 km/h / 65 MPH)
	Storage	193 km/h / 120 MPH
Weight	398 kg / 875 lbs	500 kg / 1100 lbs
Power Requirements	110-220 VAC, 50-60 Hz, 1Ø	

NOTES:

- Other frequency bands available upon request.
- Simultaneous orthogonal linear polarizations available.
- Specifications denoted are for conically scanning system.
- G/T specifications are nominal and may vary based upon system configuration.
- Continuous azimuth travel is available through the use of an optional slipping/rotary joint assembly.

Subject to change without notice.



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