

4.2 M Ka-Band LEO Satellite Communication Antenna



1. Features

PR42KaR2 model 4.2m antenna is designed for Ka-band LEO satellite communication. The antenna is in the form of dual shaped Ring-focus antenna. The main reflector is stretch-formed aluminum panel divided into 12 panels. It has high accuracy, low weight and high temperature stability. The feed is corrugated horn feed with high antenna efficiency. The antenna pedestal is full motion X/Y type. Both axes uses large gear transmission, it has high structural rigidity, high pointing accuracy and cost effective.

2. Main functions:

- a) Automatic pointing to satellite: The antenna controller can reserve the local site latitude and longitude data and parameters of 10 commonly used satellites. Users can select the satellite through manual. Antenna controller can automatically calculate azimuth, elevation angle, and drive the antenna pointing to selected satellite automatically.
- b) Manual operation: Can manually operate and control the antenna Az/El rotation through buttons.
- c) Quick-stop control: Through the keyboard control antenna in continuous movement and quick-stop movement, can also achieve stepless speed change in movement.
- d) Command position: Control antenna pointing through input the azimuth and elevation angle command.
- e) Automatic search: Connect to tracking beacon receiver, can automatically search the satellite in sector scan.
- f) Automatic tracking: Connect to tracking beacon receiver, enabling intelligent automatic step tracking.
- g) Antenna controller real-time display of the current position and limit switches status.
- h) Can be connected via a network interface or RS-232 serial interface with system monitoring computer, monitors the parameter configuration

of antenna system, control and equipment status.

3. Main specifications

Electrical Specification		
Model	PR42KaR2	
Operating Frequency, GHz	Ka-Band	
	Receive	Transmit
	17.7~21.2	27.5~31
Gain, dBi	56@18.5GHz	59.8@28.8GHz
Polarization	Circular	
Axial Ratio, dB		0.8
VSWR	1.30	1.30
Antenna noise temperature (EL=30°)	100K	
Feed Interface	WR-42	WR-28
Isolation, Tx to Rx, dB	85	
Side lobe	CCIR 580-4	
Mechanical Specification		
Antenna Diameter	4.2m	
Antenna Type	Dual shaped Ring-focus antenna	
The main reflector surface accuracy	0.3mm(RMS)	
Mount pedestal	X/Y type	
Travel range	Azimuth: ± 175° (continuous) Elevation: 0° -90°	
Travel acceleration	Az: 0.01~0.5 °/s; El: 0.01~0.3 °/s	
Pointing accuracy	≤ 0.05 °	
tracking accuracy	≤ 0.05°	
Antenna total weight	≤ 1T	
Rated power	≤ 2kw	
Environmental Specification		
Operational Wind	20m / s, gusts of 27m / s	
Survival wind speed	56 m / s	
Temperature	-40°~+55°	
Relative Humidity	100%	
Rainfall	100 mm / hr	