

4.5 Meter Earth Station Antenna



General Description

The probecom 4.5-meter antenna delivers exceptional performance for transmit/receive and receive only applications for L through Ka-band frequencies. This antenna offers a reflector design that incorporates precision-formed panels, truss radials and hub assembly using matched tooling for interchangeable components. It features an innovative Cassegrain or Ring Focus feed and sub-reflector design which results in high gain, low noise temperature, high antenna efficiency and excellent rejection of noise and microwave interference. A large center hub provides spacious accommodation for equipment mounting. The reflector is supported by a galvanized elevation over azimuth kingpost pedestal that provides the required stiffness for pointing and tracking accuracy. The pedestals are designed for full orbital arc coverage and are readily adaptable to ground or rooftop installations.

Highlighted Features:

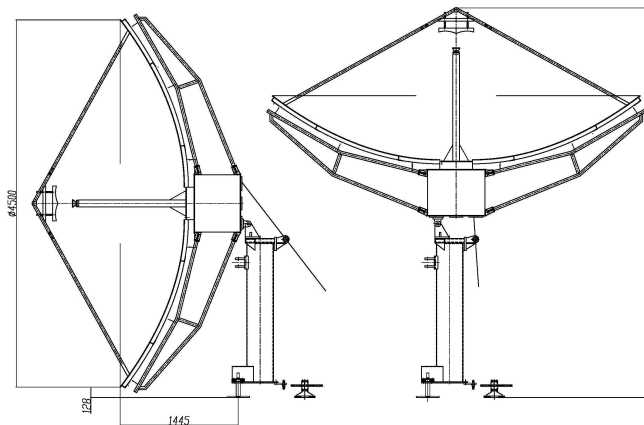
- *Meets CCIR 580 and INTELSAT Requirements
- *Precisely adjusted before leaving factory, and no need theodolite to adjust the panel accuracy;
- *High precision alloy aluminum main reflector.
- *Hot spray galvanized with white paint
- *CP/LP switchable feed
- *High RF performance
- *Galvanized stainless steel hardware
- *Different frequency ranges from many feed configurations
- *Ka band antenna with rotary pedestal is available
- *A large hub for install RF equipments
- *Multi-layer anti-corrosion treatment.

Options

- *L, S, X, Ka bands and multi-bands
- *Customer feed system design
- *800MHz Extended C band is available
- *Full motion antenna
- *Feed blower or deicing sub-system with automatic controls
- *Two or four Tx/Rx port in linear or circular polarized feeds
- *Antenna control system with tracking
- *ODU Support Kits
- *Increase the surface spray zinc thickness along seaside.

Antenna Accessory

- *Motorization Kits
- *Limit Switches
- *Factory Feed System Testing and Documentation
- *Ocean /Air Transport Packing
- *Foundation Kit
- *Grounding Kit Cable-Mounting Kit



Technical Specification

Electrical Specification											
Type	C45T		EC45T		IC45T		K45T		DBS45T		
Operating Frequency, GHz	Standard C band		Extended C band		Insat C band		Ku Band		DBS Band		
	Receive	Transmit	Receive	Transmit	Receive	Transmit	Receive	Transmit	Receive	Transmit	
Gain, Mid-band, dBi	3.625~4.2	5.85~6.425	3.4~4.2	5.85~6.725	4.5~4.8	6.725~7.025	10.70~12.75	13.75~14.5	10.70~12.75	17.3~18.4	
Polarization	Linear/Circular		Linear/ Circular		Linear/ Circular		Linear		Linear		
XPD(on Axis), dB(Linear)	35	35	35	35	35	35	35	35	35	35	
XPD across 1dB Beam Width, dB(Linear)	30	30	30	30	30	30	30	30	30	30	
Axis Ratio, dB (circular)	2	0.75	2	0.75	2	0.75	/	/	/	/	
VSWR	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	
Antenna Noise Temperature (2 Port Feed)											
10° Elevation	34K		34K		36K		52K		52K		
30° Elevation	24K		25K		27K		41K		41K		
50° Elevation	21K		22K		24K		37K		37K		
-3 dB Beam Width, Mid-band	1.2°	0.8°	1.2°	0.7°	1.0°	0.7°	0.4°	0.3°	0.4°	0.3°	
Typical G/T (EL=10°)	25.8dB/K (30K LNA)		24.8dB/K (30K LNA)		26.4dB/K (30K LNA)		31.8dB/K (70K LNA)		31.8dB/K (70° LNA)		
Tx. Power Capability, KW	1		1		1		1		1		
Feed Interface	CPR-229F	CPR-137F	CPR-229F	CPR-137F	CPR-229F	CPR-137F	WR-75	WR-75	WR-75	WR-45	
Feed Insertion Loss,dB	0.3	0.25	0.3	0.25	0.3	0.25	0.3	0.25	0.3	0.25	
Isolation, Tx to Rx, dB	85		85		85		85		85		
Sidelobe	CCIR 580-5										
Mechanical Specification											
Antenna Diameter	4.5m										
Antenna Type	Ring Focus										
Surface Accuracy (RMS)	≤0.35mm										
Reflector Construction	12 precision-formed aluminum panels with heat-diffusing white paint, Hot spray galvanized back structure.										
Mount type	Kingpost pedestal					Turn table					
Antenna Pointing Range	Azimuth	±85°(11 sections)					0°~355°(Continuous)				
		Elevation	0°~90°(Continuous)					0°~90°(Continuous)			
Polarization	±90°(Continuous)					±90°(Continuous)					
	Drive Mode	Manual/Motorized									
Motor Drive System	Azimuth Travel Rate	0.023°/S					0.003°-0.3°/S				
	Elevation Travel Rate	0.021°/S					0.003°-0.3°/S				
	Polarization Travel Rate	1°/S					1°/S				
Environmental Specification											
Operational Wind	79km/h gusting to 126km/h										
Survival Wind	200km/h(at zenith)										
Temperature	-40°~+60°										
Relative Humidity	100%										
Solar Radiation	1135Kcal/h/m ²										
Seismic(Survival)	0.3g(H), 0.15g(V)										
Ice Loading	13mm Operational; 25mm Survival										