

Model 4.7m Prime Focus Antenna

Professional Broadcast

The VertexRSI 4.7-meter antenna delivers exceptional performance for receive only and transmit/receive applications for L, C and Ku-band frequencies. This antenna offers a reflector that incorporates precision-formed panels and contoured radials that ensure ease of installation. It features a prime focus feed design which results in high gain and low noise temperature, with excellent rejection of noise and microwave interference. The reflector is supported by a galvanized 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. The electrical performance is compliant with FCC 25.209 regulations and ITU-RS-580 sidelobe specifications. All configurations meet SATCOM Technologies' own type-approved quality assurance and performance guarantee.

Features

- All aluminum reflector system
- Stretch-formed panels and contoured radials
- Designed to ensure ease of installation
- Fully interchangeable reflector components
- Meets FCC 25.209 and ITU-RS-580 regulations
- Designed for 1 to 15 GHz operation
- Standard Rx only and two port Tx/Rx feeds
- Jack screws or struts in azimuth and elevation
- Galvanized steel elevation over azimuth pedestal
- Survives 125 mph winds in any position
- Foundation hardware kit included

Options

- L, C and Ku-band feed configurations
- C/Ku receive only feed systems
- Fixed or motorizable pedestal mounts
- Antenna control system with tracking
- Reflector and feed deicing systems
- Integrated transmit cross axis kits
- Integrated LNA or LNB systems
- Load frame or non-penetrating mounts
- Packing for sea and air transport
- Turnkey installation and testing

Upgrades

- High wind configuration



Technical Specifications

<i>Electrical</i> ⁽¹⁾	C-Band 2-Port Linear Polarized Receive Only	C-Band 2-Port Circular Polarized Receive Only	C/Ku-Band 4-Port Linear Polarized Receive Only	
			C-Band	Ku-Band
Frequency (GHz)	3.625 - 4.200	3.625 - 4.200	3.625 - 4.200	10.950 - 12.750
Antenna Gain, Midband dBi ⁽²⁾	44.30	44.20	43.80	51.7
VSWR	1.38:1	1.38:1	1.38:1	1.38:1
Pattern Beamwidth ⁽²⁾				
-3 dB, at midband	1.03°	1.05°	1.09°	0.43°
-15 dB, at midband	2.16°	2.20°	2.29°	0.90°
Antenna Noise Temperature	56 K (5° Elevation) 49 K (10° Elevation) 45 K (20° Elevation) 42 K (40° Elevation)	58 K (5° Elevation) 51 K (10° Elevation) 47 K (20° Elevation) 44 K (40° Elevation)	55 K (5° Elevation) 48 K (10° Elevation) 44 K (20° Elevation) 41 K (40° Elevation)	69 K (5° Elevation) 62 K (10° Elevation) 57 K (20° Elevation) 52 K (40° Elevation)
Typical G/T (20° El) ⁽³⁾				
35 K LNA	25.3 (dB/K)	25.1 (dB/K)	24.8 (dB/K)	
65 K LNA	23.9 (dB/K)	23.7 (dB/K)	23.4 (dB/K)	
70 K LNA				30.7 (dB/K)
90 K LNA				30.0 (dB/K)
Axial Ratio		1.50 dB		
Cross Polarization Isolation				
On Axis	30.0 dB	21.3 dB	30.0 dB	25.0 dB
Within 1.0 dB beamwidth	30.0 dB	21.3 dB	30.0 dB	25.0 dB
Port to Port Isolation				
Rx to Rx (same band)	30 dB	22 dB	30 dB	30 dB
Sidelobe Performance	ITU-RS-580	ITU-RS-580	ITU-RS-580	
RF Specification	975-3563	975-3562	975-3564	975-3564

(1) All values are at rear feed flange. (2) C-band Rx values are at 4 GHz and Ku-band Rx values are at 11.85 GHz. (3) Typical G/T at 20° elevation with clear horizon using single bolt-on LNA to feed.

<i>Mechanical/Environmental</i> ⁽⁴⁾	Fixed Post Mount (PM) Pedestal	Motorizable Kingpost Pedestal (KP)
Antenna Diameter	4.7 meters (15.42 feet)	
Antenna Type	Prime focus design	
Reflector Construction	10 precision-formed aluminum panels with heat-diffusing white paint Clean and brightened aluminum back-up structure	
Mount Configuration	Elevation over azimuth pedestal, constructed of galvanized steel	
Drive Type	Manual strut	Manual strut or jack screw
Azimuth Travel	360° coarse, 40° fine adjustment	120° continuous
Elevation Travel	0 to 90° continuous	0 to 90° continuous
Foundation (L x W x D)	12.5 x 12.5 x 1.5 ft (3.8 x 3.8 x 0.38 m)	
Concrete	8.7 yds ³ (6.65 m ³)	
Reinforcing Steel	1,125 lbs. (510 kg)	
Shipping Containers	10 units in one 40 ft	8 units in one 40 ft
Operational Wind Loading	30 mph (48 km/h) gusting to 45 mph (72 km/h)	
Survival Wind Loading	125 mph (200 km/h) @ 58° F (15° C), any position	
Operational Temperature	+5° to +122° F (-15° to +50° C)	
Survival Temperature	-22° to +140° F (-30° to +60° C), low temperature options available	
Rain	Up to 4 in/h (10 cm/h)	
Relative Humidity	0 to 100% with condensation	
Solar Radiation	360 BTU/h/ft ² (1,000 Kcal/h/m ²)	
Ice (survival)	1 in (2.5 cm) on all surfaces or 1/2 in (1.3 cm) on all surfaces with 80 mph (130 km/h) wind gusts	
Atmospheric Conditions	As encountered in coastal regions and/or heavily industrialized areas	
Shock and Vibration	As encountered during shipment by airplane, ship or truck	

(4) Some specifications may vary based on the combination of equipment, options and/or upgrades ordered.

GENERAL DYNAMICS