

6.3 Meter Cassegrain Antenna

Satcom & Antenna Technologies Division



Overview

The CPI Satcom & Antenna Technologies Inc. (CPI SAT) 6.3 meter antenna delivers exceptional performance for transmit/receive and receive only applications for C through Ku-Band frequencies. This antenna offers a deep dish reflector that incorporates precision-formed panels, contoured radials and hub assembly. It features an innovative feed and subreflector design which results in high gain, low noise temperature, high antenna efficiency and excellent rejection of noise and microwave interference.

The aluminum 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 ITU and FCC sidelobe specifications. Type approved configurations are available for Intelsat (F1, E2), Eutelsat (L), Asiasat, Hispasat, EuropeStar or Singapore Telecom. All configurations meet CPI Satcom & Antenna Technologies Inc. (CPI SAT) own type-approved quality assurance and performance guarantee.

FEATURES:

- 'Type-Approved' bolt-together
- 3.4 to 18.4 GHz operation, meeting ITU and FCC
- Aluminum reflector, galvanized pedestal
- 125 mph (200 km/h) wind survival

OPTIONS:

- C, X, Ku, DBS and Ka-Band feed configurations
- C/Ku receive-only feed systems
- Specialized feed systems (e.g., extended, multi-band)
- Improved feed cross-pol performance
- CP/LP manual or remote switchable feeds
- Antenna control system with tracking
- Reflector and feed deicing systems
- Environmental hub configurations
- Integrated transmit cross-axis kits
- Integrated LNA or LNB systems
- HPAs, converters and M&C systems
- Load frame mounts
- Packing for sea and air transport
- Turnkey installation and testing

UPGRADES:

- X-band low PIM reflector/feed configurations
- Extended azimuth travel
- High wind configuration
- Low operating temperatures
- High power configurations
- Ka-band (see separate datasheet)

BENEFITS:

- High antenna efficiency
- Excellent rejection of noise and microwave interference

APPLICATIONS:

- Communications, Data Transfer, Broadcast

6.3 Meter Cassegrain Antenna

Specifications

ELECTRICAL ⁽¹⁾	C-Band 4 Port Circular Polarized		C-Band 4 Port Linear Polarized ⁽⁵⁾		X-Band 2 Port Circular Polarized		Ku-Band 4 Port Linear Polarized ⁽⁵⁾		DBS-Band 4 Port Linear Polarized	
	Receive	Transmit	Receive	Transmit	Receive	Transmit	Receive	Transmit	Receive	Transmit
Frequency (GHz)	3.625 - 4.200	5.850 - 6.425	3.625 - 4.200	5.850 - 6.425	7.250 - 7.750	7.900 - 8.400	10.700 - 12.750	13.750 - 14.500	10.700 - 12.750	17.300 - 18.400
Antenna Gain, Midband dBi ⁽²⁾	46.54	50.70	46.30	50.20	52.00	52.60	55.70	57.50	55.40	59.40
VSWR	1.25:1	1.25:1	1.25:1	1.25:1	1.25:1	1.25:1	1.30:1	1.30:1	1.30:1	1.30:1
Pattern Beamwidth ⁽²⁾ -3 dB, at midband	0.81°	0.50°	0.82°	0.52°	0.41°	0.38°	0.26°	0.22°	0.28°	0.17°
Antenna Noise Temperature (K) 5° Elevation 10° Elevation 20° Elevation 40° Elevation	49 K 40 K 34 K 32 K		51 K 42 K 37 K 34 K		63 K 53 K 46 K 43 K		87 K 74 K 66 K 61 K		78 K 64 K 55 K 50 K	
Typical G/T (dB/K) ⁽³⁾	28.4 (4.000 GHz, 30 K LNA)		28.1 (4.000 GHz, 30 K LNA)		32.4 (7.500 GHz, 45 K LNA)		34.4 (11.725 GHz, 70 K LNA)		34.4 (11.725 GHz, 70 K LNA)	
Axial Ratio (dB)	0.51 dB	0.51 dB			1.50 dB	1.50 dB				
Power Handling (total)	10 kW CW		10 kW CW		5 kW CW		2 kW CW		2 kW CW	
Cross Polarization Isolation (dB) On Axis Within a 1.0 dB Beamwidth	30.7 dB 30.7 dB	30.7 dB 30.7 dB	35.0 dB 35.0 dB	35.0 dB 30.0 dB	21.3 dB 21.3 dB	21.3 dB 21.3 dB	35.0 dB 35.0 dB	35.0 dB 35.0 dB	35.0 dB 35.0 dB	35.0 dB 30.0 dB
Port-to-Port Isolation (dB) Rx/Tx (Rx frequency) Tx/Rx (Tx frequency)	0 dB -85 dB	-70 dB 0 dB	0 dB -85 dB	-50 dB 0 dB	0 dB -110 dB	-110 dB 0 dB	0 dB -85 dB	-50 dB 0 dB	0 dB -85 dB	-75 dB 0 dB
Sidelobe Performance	Meets ITU-RS-580, FCC ⁽⁴⁾				Meets ITU-RS-580		Meets ITU-RS-580, FCC		Meets ITU-RS-580	
RF Specification	975-2121		975-2354		975-2342		975-3143		975-2682	

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

⁽⁴⁾ Meets FCC 25.209 beyond the first sidelobe in C-Band. ⁽⁵⁾ Also available in extended frequency bands.

6.3 Meter Cassegrain Antenna

Specifications

MECHANICAL/ENVIRONMENTAL ⁽⁶⁾	Kingpost Pedestal (KX120)	Kingpost Pedestal (KX200)	High Wind Kingpost Pedestal (KX-HW)
Antenna Diameter	6.3 meters (20.83 feet)		
Antenna Type	Compact Cassegrain design		
Reflector Construction	20 precision-formed aluminum panels with heat-diffusing white paint Cleaned and brightened aluminum back-up structure		
Hub Dimensions	60 in (152 cm) OD, 36 in (91 cm) depth		
Mount Configuration	Elevation over azimuth pedestal, constructed of galvanized steel		
Drive Type Azimuth Travel Elevation Travel	Manual jack screws 120° continuous 0 to 90° continuous	Manual jack screw 200° (2 segments @ 120°) 0 to 90° continuous	Manual jack screws 200° (2 segments @ 120°) 0 to 90° continuous
Foundation (L x W x D) Concrete Reinforcing Steel	17 x 17 x 1.5 ft (5.2 x 5.2 x 0.46 m) 16.1 yds ³ (12.7 m ³) 2,785 lbs. (1,263 kg)		16.5 x 16.5 x 2.5 ft (5.0 x 5.0 x 0.61 m) 20.2 yds ³ (15.5 m ³) 1,980 lbs. (900 kg)
Shipping Containers	One 40' HC container and One 20' STD container		
Wind Loading Operational Survival (any Position) Survival (at Zenith)	45 mph (72 km/h) gusting to 60 mph (97 km/h) 125 mph (200 km/h) @ 58° F (15° C) N/A		Up to 62 mph (100 km/h) 125 mph (200 km/h) @ 58° F (15° C) 186 mph (300 km/h) @ 58° F (15° C)
Temperature Operational Survival	+5° to +122°F (-15° to +50° C) -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		

⁽⁶⁾ Some specifications may vary based on the combination of equipment, options and/or upgrades ordered.

Contact us at CustomerCareSAT@cpii.com or call us at +1 770-689-2040

The data should be used for basic information only.
Formal, controlled specifications may be obtained from CPI for use in equipment design.



**Satcom & Antenna
Technologies Division**
2600 N Longview St.
Kilgore, TX
USA 75662

+1 770-689-2040
1 888-874-7646
(In North America)
1 619-240-8480
(Outside North America)
CustomerCareSAT@cpii.com
www.cpii.com

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. © 2021 Communications & Power Industries LLC. Company proprietary; use and reproduction is strictly prohibited without written authorization from CPI.

©2021 Communications & Power Industries LLC.
Company proprietary; use and reproduction is strictly prohibited without written authorization from CPI.