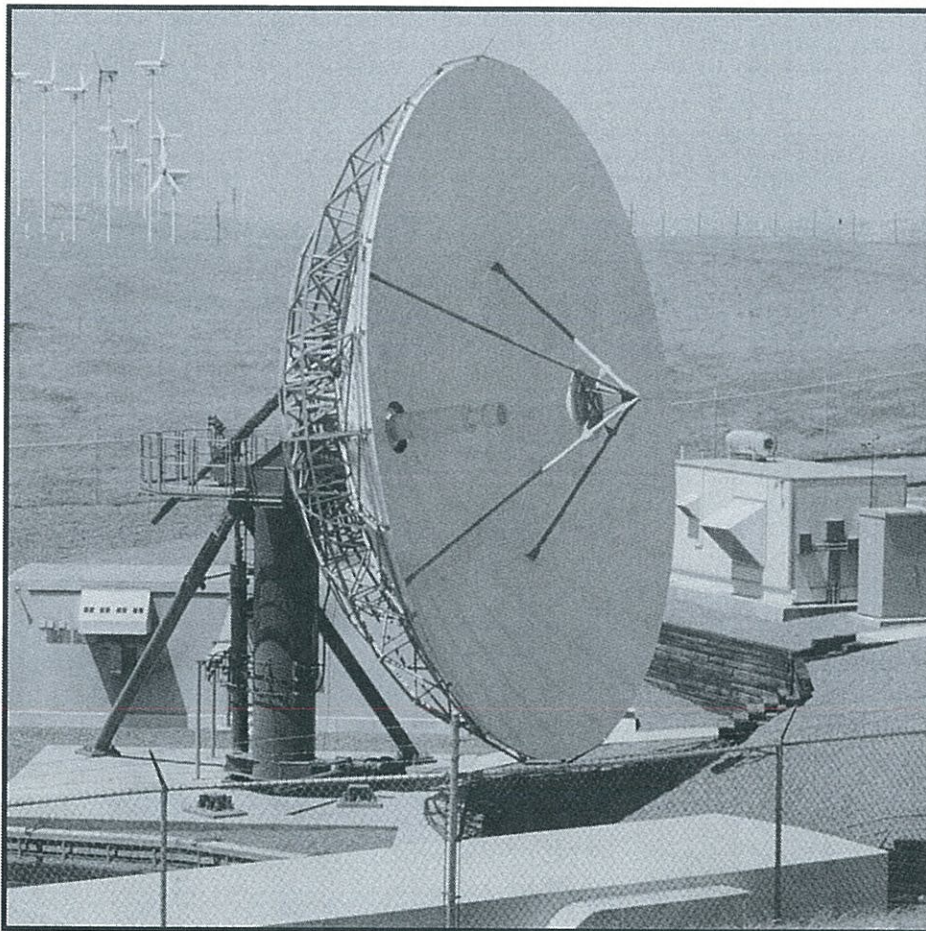




VERTEX 13-METER

MODEL 13 KPC & KPK (Kingpost Pedestal)

C - BAND and K U - BAND



E A R T H S T A T I O N A N T E N N A S

Vertex has developed the 13-Meter C-Band and Ku-Band antennas to offer superior performance for a variety of applications, such as: broadcast uplinks, private networks, domestic satellite telephony/video networks and international INTELSAT Standard "B" Earth Stations.

Model 13KPC (C-Band) and 13KPK (Ku-Band) antennas incorporate two tiers of stretch-formed doubly contoured panels, radials and hub assemblies for ease of field alignment. The reflectors and azimuth/elevation kingpost pedestals provide the stiffness and pointing accuracy required for C-Band and Ku-Band operation. These antennas are designed for full orbital arc coverage.

The antennas meet FCC Regulation 25.209, Eutelsat requirements for antenna pattern and polarization discrimination, and INTELSAT requirements as specified in associated IESS documents.

Options:

- Two-port, three-port, four-port Rx/Tx linear and circular polarized feeds
- Reflector and feed deicing, full- and half-reflector systems with manual or automatic controls
- Manual or motorized azimuth, elevation and polarization drive systems with controls and readouts
- Steptrack control system with readouts
- Turnkey installations or installation assistance

VERTEX COMMUNICATIONS CORPORATION

2600 LONGVIEW ST. • P.O. BOX 1277 • KILGORE, TX 75663 • TEL 903-984-0555 • FAX 903-984-1826

13-METER KPC/KPK MECHANICAL SPECIFICATIONS

Azimuth Travel	180° (in three 70° overlapping segments) 180° continuous (optional)
*Azimuth Travel Rate	.08°/second
Elevation Travel	0° to 90° continuous
Elevation Travel Rate	0.035°/second
Polarization Travel	±95° (2 port) ±50° (4 port)
Polarization Travel Rate	1.0°/second
Weight - Reflector	17,000 pounds (7,711 kg)
Weight - Pedestal	15,400 pounds (6,985 kg)
Shipping Weight (Typical)	48,507 pounds (22,003 kg)
Shipping Volume	6,664 cubic feet (189 m³)
Reflector Structure	Steel
Pedestal Structure	Steel
Finishes Reflector Surface Pedestal & Reflector Backup Structure	Aluminum panels with heat-diffusing white paint Hot-dipped galvanized steel
Surface Accuracy	0.018 inch (static) (Ku-band) 0.028 inch (static) (C-band)
Foundation Size	30 ft x 30 ft x 2 ft (9.1 m x 9.1 m x 0.6 m)
Concrete Volume	67 cubic yards (51.26 m³)
Reinforcing Steel	7,500 pounds (3,402 kg)
Soil Bearing Pressure	3,000 PSF (15,000 kg/m²)

* Optional Rates Available

13-METER KPC/KPK ENVIRONMENTAL SPECIFICATIONS

Operational Winds	45 mph (72 km/h); gusts to 60 mph (97 km/h)
Survival Winds	125 mph (200 km/h) @ 58°F (15°C)
Ambient Temperature	-20° to +50°C (survival) -15° to +50°C (operational)
Rain (Operational and Survival)	Up to 4 in/h (10 cm/h)
Relative Humidity (Operational and Survival)	0% to 100% with condensation
Solar Radiation	360 BTU/h/ft² (1000 Kcal/h/m²)
Radial Ice (Survival)	1 inch (2.5 cm) on all surfaces or 1/2 inch (1.3 cm) on all surfaces with 80 mph (130 km/h) wind gusts
Shock and Vibration	As encountered during shipment by commercial air, sea or truck
Corrosive Atmosphere	As encountered in coastal regions and/or heavily industrialized areas
Seismic (Survival)	0.3 G's horizontal 0.1 G's vertical

NOTE: This document gives a description of only the prominent features of the product(s). Vertex reserves the right to change the specifications without notice.

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13-METER KPC/KPK R.F. SPECIFICATIONS	C-BAND 4-PORT CIRC. POL FEED		C-BAND 4-PORT LINEAR POL FEED		KU-BAND 2-PORT LINEAR POL FEED		KU-BAND 4-PORT LINEAR POL FEED	
	RECEIVE	TRANSMIT	RECEIVE	TRANSMIT	RECEIVE	TRANSMIT	RECEIVE	TRANSMIT
	3.625-4.200	5.850-6.425	3.700-4.200	5.925-6.425	10.95-12.75	14.00-14.50	10.95-12.75	14.00-14.50
Frequency in GHz*								
Antenna Gain								
3.625/5.850 GHz	52.9 dB	56.5 dB		56.6 dB				
3.700/5.925 GHz			53.0 dB					
3.912/6.137 GHz	53.5 dB	56.8 dB						
3.950/6.175 GHz			53.6 dB	56.9 dB				
4.200/6.425 GHz	54.1 dB	57.1 dB	54.1 dB	57.1 dB				
10.950/14.000 GHz					62.0 dB	63.8 dB	61.9 dB	63.7 dB
11.850/14.250 GHz					62.6 dB	64.0 dB	62.5 dB	63.9 dB
12.750/14.500 GHz					63.1 dB	64.1 dB	63.0 dB	64.0 dB
Antenna Noise Temperature								
5° Elevation	51°K		49°K		74°K		79°K	
10° Elevation	39°K		37°K		57°K		63°K	
20° Elevation	31°K		29°K		47°K		53°K	
40° Elevation	28°K		26°K		43°K		48°K	
Typical G/T at 20° Elevation, 3.912 GHz, Clear Horizon								
with 40°K LNA	34.6 dB/K							
with 65°K LNA	33.4 dB/K							
Typical G/T at 20° Elevation, 3.950 GHz, Clear Horizon								
with 40°K LNA			34.8 dB/K		40.9 dB/K		40.7 dB/K	
with 65°K LNA			33.6 dB/K		39.4 dB/K		39.2 dB/K	
Typical G/T at 20° Elevation, 11.850 GHz, Clear Horizon								
with 90°K LNA								
with 150°K LNA								
Pattern Beamwidth in Degrees at 3.912/6.137 GHz								
- 3 dB	< 0.36	< 0.24						
-15 dB	< 0.76	< 0.51						
Pattern Beamwidth in Degrees at 3.950/6.175 GHz								
- 3 dB			< 0.36	< 0.24				
-15 dB			< 0.75	< 0.51				
Pattern Beamwidth in Degrees at 11.850/14.250 GHz								
- 3 dB					< 0.12	< 0.10	< 0.12	< 0.10
-15 dB					< 0.25	< 0.21	< 0.25	< 0.21
Sidelobes								
First Sidelobe Level Across the Band								
Meets FCC Regulation 25.209, Eutelsat, IESS								
(Intelsat) or ITU 580-4 Sidelobe Specification								
Cross Polarization Isolation								
On Axis	30.8 dB	30.8 dB	35.0 dB	35.0 dB	35.0 dB	35.0 dB	35.0 dB	35.0 dB
within 1 dB Beamwidth	30.8 dB	30.8 dB	30.0 dB	30.0 dB	35.0 dB	35.0 dB	35.0 dB	35.0 dB
VSWR	1.25:1	1.25:1	1.25:1	1.25:1	1.25:1	1.25:1	1.30:1	1.25:1
Feed Insertion or Ohmic Loss	0.15 dB	0.20 dB	0.15 dB	0.20 dB	0.40 dB	0.40 dB	0.50 dB	0.50 dB
Receive-to-Receive Port Isolation	21.0 dB		30.0 dB				30.0 dB	
Transmit-to-Transmit Port Isolation		23.0 dB		30.0 dB				30.0 dB
Transmit-to-Receive Isolation								
Axial Ratio (Voltage Axial Ratio)	30.0 dB	30.0 dB	30.0 dB	30.0 dB	30.0 dB	30.0 dB	50.0 dB	85.0 dB
Feed Interfaces	0.50 dB (1.06)	0.50 dB (1.06)						
Total Power Handling Capability**	CPR-229G	CPR-159G	CPR-229G	CPR-159G	WR-75 Flat	WR-75 Flat	WR-75 Flat	WR-75 Flat
	10 kW CW	10 kW CW		10 kW CW	2 kW CW	2 kW CW		2 kW CW

-14 ±2 dB

* Other Operational Frequencies Available

** Power handling capability is based on and limited by the physical characteristics in the feed components. Microwave power at these levels may contribute to radiation hazard or exceed certain off-axis E.I.R.P. specifications.

NOTE: All values are at the rear feed output flange.