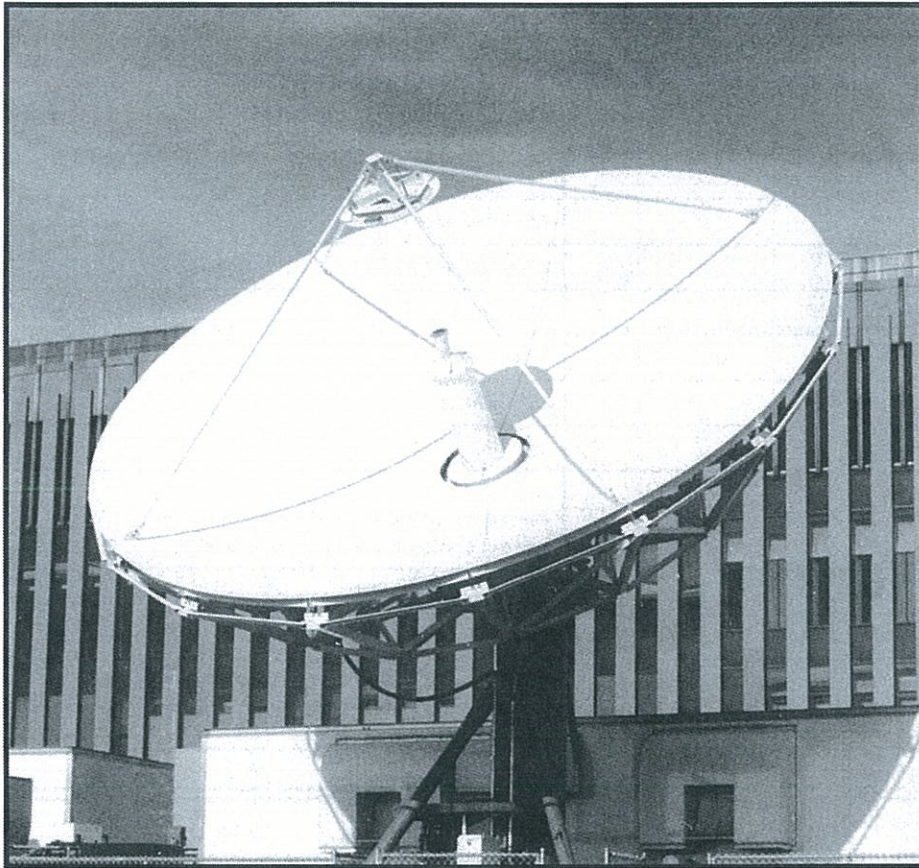




VERTEX 8.1-METER

MODEL 8.1 KPC & KPK (Kingpost Pedestal)

C - B A N D and K U - B A N D



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

Vertex has developed the 8.1 Meter C-band and Ku-band antennas to offer superior performance for receive only and transmit-receive worldwide applications.

Model 8.1 KPC (C-band) and Model 8.1 KPK (Ku-band) antennas incorporate stretch formed doubly contoured panels with matched radials and hub assemblies for ease of field assembly. 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 and are readily adaptable to ground or rooftop installations.

The antennas meet FCC Regulation 25.209, IESS (INTELSAT), or CCIR Recommendation 580 sidelobe specification.

Options:

- Two port, three port, four port Rx/Tx linear and circular polarized feeds
- Full reflector and feed deicing systems with manual or automatic controls
- Manual or motorized azimuth, elevation and polarization drive systems with controls and readouts
- Step Track control system with readouts
- Turnkey installations or installation assistance
- Extended Azimuth Travel Pedestal System, 200° - 2 positions

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8.1 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
Frequency in GHz*	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
Antenna Gain	48.5 dB	52.6 dB	48.8 dB	52.7 dB				
3.625/5.850 GHz								
3.700/5.925 GHz								
3.912/6.137 GHz								
3.950/6.175 GHz								
4.200/6.425 GHz								
10.950/14.000 GHz								
11.850/14.250 GHz								
12.750/14.500 GHz								
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 35°K LNA	30.7 dB/K							
with 50°K LNA	29.9 dB/K							
Typical G/T at 20° Elevation, 3.950 GHz, Clear Horizon								
with 35°K LNA			30.9 dB/K					
with 50°K LNA			30.1 dB/K					
Typical G/T at 20° Elevation, 11.850 GHz, Clear Horizon								
with 90°K LNA								
with 120°K LNA								
Pattern Beamwidth in Degrees at 3.912/6.137 GHz								
- 3 dB	<0.60	<0.38						
- 15 dB	<1.25	<0.79						
Pattern Beamwidth in Degrees at 3.950/6.175 GHz								
- 3 dB			<0.59	<0.38				
- 15 dB			<1.24	<0.79				
Pattern Beamwidth in Degrees at 11.850/14.250 GHz								
- 3 dB					<0.19	<0.16	<0.19	<0.16
- 15 dB					<0.40	<0.34	<0.40	<0.34
Sidelobes								
First sidelobe level across the band as shown.								
Designed to meet or exceed FCC 25.209, INTELSAT, EUTELSAT, ASIAT, or CCIR 580 requirements. Please check with Vertex for your particular sidelobe requirement. **								
Cross Polarization Isolation								
On Axis								
within 1 dB Beamwidth								
VSWR	30.7 dB	30.7 dB	35.0 dB	35.0 dB	35.0 dB	35.0 dB	35.0 dB	35.0 dB
Feed Insertion or Ohmic Loss	30.7 dB	30.7 dB	30.0 dB	30.0 dB	35.0 dB	35.0 dB	35.0 dB	35.0 dB
Receive-to-Receive Port Isolation	1.25:1	1.25:1	1.25:1	1.25:1	1.25:1	1.25:1	1.30:1	1.25:1
Transmit-to-Transmit Port Isolation	0.15 dB	0.20 dB	0.15 dB	0.20 dB	0.40 dB	0.40 dB	0.50 dB	0.50 dB
Transmit-to-Receive Isolation	21.0 dB		30.0 dB				30.0 dB	
Transmit-to-Receive Isolation	30.0 dB	23.0 dB	30.0 dB	30.0 dB			50.0 dB	30.0 dB
Axial Ratio (Voltage Axial Ratio)	0.50 dB (1.06)	0.50 dB (1.06)	30.0 dB	30.0 dB	30.0 dB	30.0 dB	50.0 dB	85.0 dB
Feed Interfaces	CPR-229G	CPR-159G	CPR-229G	CPR-159G	WR-75 Flat	WR-75 Flat	WR-75 Flat	WR-75 Flat
Total Power Handling Capability**	10 kW CW	10 kW CW	10 kW CW	10 kW CW	2 kW CW	2 kW CW	2 kW CW	2 kW CW

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* 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.

NOTES: 1. All values are at the rear feed output flange.

2. Values shown are predicted, but do not include allowance for measurement error.

8.1-METER KPC/KPK MECHANICAL SPECIFICATIONS

Azimuth Travel	120° continuous (standard) 200° 2 positions (optional)
Azimuth Travel Rate	.4°/sec. C-band; .2°/sec. Ku-band*
Elevation Travel	5° to 90° continuous (standard) 0° to 90° with 200° azimuth travel
Elevation Travel Rate	.4°/sec. C-band; .2°/sec. Ku-band*
Polarization Travel	±95° (Two ports) ±50° (Four ports)
Polarization Travel Rate	1.5°/second
Weight - Reflector	3,500 pounds (1590 kg)
Weight - Pedestal	3,200 pounds (1450 kg)
Shipping Weight (Typical)	10,880 pounds (4935 kg)
Shipping Volume	2,011 cubic feet (57 m ³)
Reflector Structure	Aluminum
Pedestal Structure	Steel
Finishes Reflector Surface Pedestal	Aluminum panels with heat-diffusing white paint Red oxide primer and two coats of enamel
Surface Accuracy	0.020 inch (.5 mm) Static
Foundation Size	22 ft x 22 ft x 1.5 ft (6.7 m x 6.7 m x 0.46 m)
Concrete Volume	27 cubic yards (20.7 m ³)
Reinforcing Steel	3,360 pounds (1524 kg)
Soil Bearing Pressure	2,000 PSF (10,000 kg/m ²)

* Optional Rates Available

8.1-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 (Survival)	-40° to 140°F (-40° to 60°C)
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/ft ² (1000 Kcal/h/m ²)
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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