

C - B A N D a n d K U - B A N D



VERTEX 3.5-METER

Model 3.5 KPC & KPK (Kingpost Pedestal)

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

Vertex has developed the 3.5 Meter C-Band and Ku-Band high quality antennas to offer superior performance for receive only and transmit-receive video, voice and data applications for common carriers, private networks and INTELSAT Standard "E" stations.

The Model 3.5 KPC (C-Band) and Model 3.5 KPK (Ku-Band) antennas feature deep dish, compact cassegrain feed design construction that result in exceptional high gain and low noise temperature characteristics. The antennas incorporate precision-formed panels, radials and hub assemblies with matched tooling for ease of assembly without field alignment. The pedestals are azimuth/elevation kingpost types that are designed to provide the necessary 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 for ground, mobile or rooftop installations.

The antennas meet FCC Regulation 25.209, IESS (INTELSAT) and CCIR Recommendation 580 in Ku-Band.

Options:

- Two port Rx/Tx, three port, linear or 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
- Turnkey installations or installation assistance



VERTEX COMMUNICATIONS CORPORATION

PERFORMANCE SPECIFICATIONS

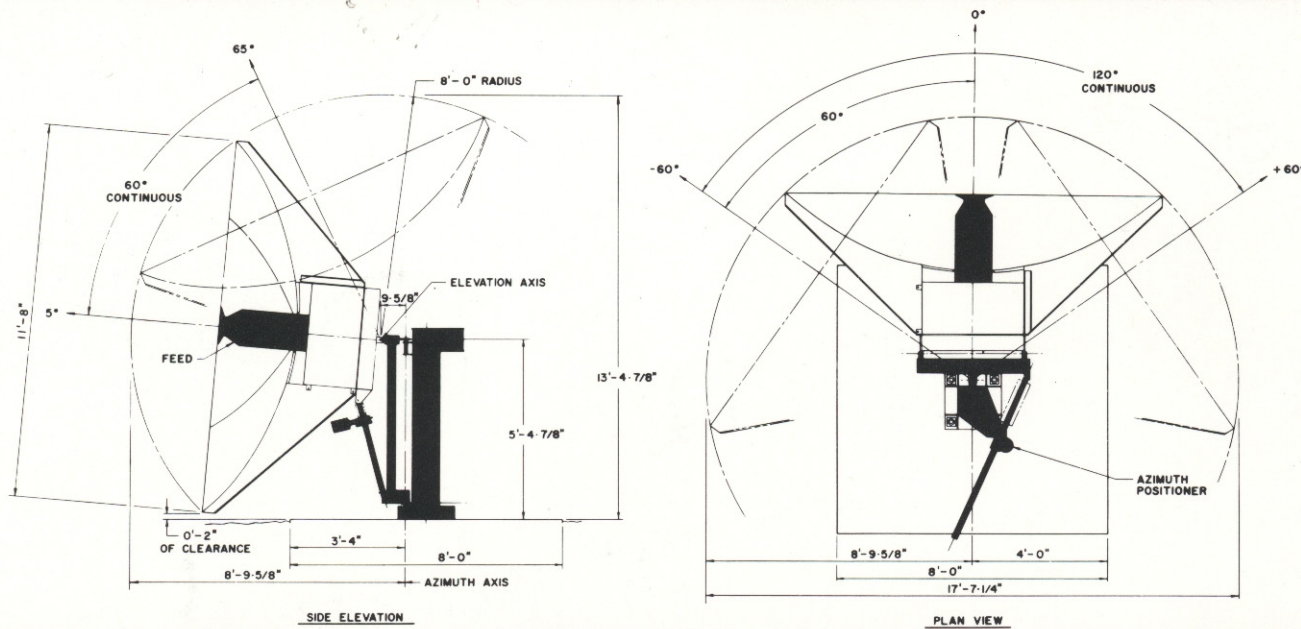
| R.F. SPECIFICATIONS | C-Band | | Ku-BAND | | ENVIRONMENTAL SPECIFICATIONS |
|--|-----------------|-----------------|--|---------------|---|
| | RECEIVE | TRANSMIT | RECEIVE | TRANSMIT | |
| Frequency* | 3.7-4.2 GHz | 5.925-6.425 GHz | 11.7-12.2 GHz | 14.0-14.5 GHz | Operational Winds 45 mi/h (72 km/h) gusts to 60 mi/h (97 km/h) |
| Typical Gain at Midband | 41.9 dBi | 45.0 dBi | 50.9 dBi | 52.3 dBi | Survival Winds (Any position) 125 mi/h (200 km/h) @ 58°F (15°C) |
| VSWR | 1.25:1 | 1.25:1 | 1.25:1 | 1.25:1 | Ambient Temperature (survival) -29° to 60°C (-20° to 140°F) |
| Beamwidth: -3 dB | 1.38° | 0.95° | 0.47° | 0.39° | Rain (Operational and Survival) Up to 4 in/h (10 cm/h) |
| -15 dB | 2.90° | 2.00° | 0.98° | 0.82° | Relative Humidity (Operational and Survival) 0% to 100% with condensation |
| Antenna Noise Temperature at Midband | 2 Port LP Feed | | 2 Port LP Feed | | Solar Radiation 360 BTU/h/ft ² (1000 Kcal/h/m ²) |
| 5° Elevation | 47°K | | 66°K | | Radial Ice (Survival) 1 inch (2.5 cm) on all surfaces or 1/2 inch (1.3 cm) on all surfaces with 80 mi/h (130 km/h) wind gusts |
| 10° Elevation | 36°K | | 50°K | | Shock and Vibration As encountered during shipment by commercial air, rail or truck |
| 20° Elevation | 30°K | | 41°K | | Corrosive Atmosphere As encountered in coastal regions and/or heavily industrialized areas |
| 40° Elevation | 25°K | | 36°K | | Seismic (Survival) Mercalli X |
| Typical G/T at 20° Elevation, Clear Horizon, 4 GHz | | | | | |
| With 40°K LNA, dB/°K | 23.1 | | | | |
| With 100°K LNA, dB/°K | 20.6 | | | | |
| Typical G/T at 20° Elevation, Clear Horizon 12 GHz | | | | | |
| With 250°K LNA, dB/°K | | | 26.1 | | |
| With 190°K LNA, dB/°K | | | 27.1 | | |
| Power Handling Capability** | | 10 kW | | 1 kW | |
| Feed Interface | CPR-229G | CPR-159G | WR-75 Choke | WR-75 Flat | |
| Feed Insertion Loss | 0.10 dB | 0.15 dB | 0.25 dB | 0.25 dB | |
| Port-to-Port Isolation: Tx to Rx | 30 dB | 30 dB | 30 dB | 30 dB | |
| Cross Polarization Isolation: | | | | | |
| On Axis | 35 dB | 35 dB | 35 dB | 35 dB | |
| Within 1 dB Beamwidth | (Typical 40 dB) | | | | |
| Axial Ratio (Circular Polarization): | | | | | |
| 2 Port Tx/Rx | | 2.28 dB (1.30) | | | |
| Sidelobes Pattern Performance: | | | | | |
| Beyond first sidelobe to 48° | | -14 dB | Per FCC Regulation 25.209, IESS (INTELSAT) and CCIR Recommendation 580 | | |
| 48° to 180° | | 32-25 Log θ dBi | | | |
| | | -10 dB | | | |

* Other frequencies available

** Higher power optional

Specifications and product availability subject to change without notice.

ANTENNA GEOMETRY



MECHANICAL SPECIFICATIONS

| | | | |
|---------------------------|--------------------------------------|-----------------------|---|
| Azimuth Travel | 120° continuous | Finishes: | |
| Azimuth Travel Rate | 2.0° / second, variable | Reflector Surface | Aluminum panels with heat-diffusing white paint |
| Elevation Travel | 5° to 65° continuous | Pedestal | Red oxide primer, and two coats of enamel |
| Elevation Travel Rate | 1.0° / second, variable | Surface Accuracy | 0.020 inch (.5 mm) Static |
| Polarization Travel | ±90° | Foundation Size | 8 ft x 8 ft x 1.7 ft (2.4 m x 2.4 m x 0.52 m) |
| Polarization Travel Rate | 1.5° / second | Concrete Volume | 4 cubic yards (3.1 m ³) |
| Weight — Reflector | 400 pounds (182 kg) | Reinforcing Steel | 405 pounds (185 kg) |
| Weight — Pedestal | 500 pounds (227 kg) | Soil Bearing Pressure | 2,000 PSF (10,000 kg/m ²) |
| Shipping Weight (Typical) | 2,300 pounds (1,043 kg) | | |
| Shipping Volume | 340 cubic feet (7.9 m ³) | | |



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