



# VERTEX 6.1-METER

## MODEL 6.1 KXC (Kingpost Pedestal)

### C - B A N D



## EARTH STATION ANTENNAS

The Vertex 6.1-Meter C-band antenna delivers exceptional performance for receive only and transmit-receive worldwide applications.

The Model 6.1 KXC antenna offers a deep dish reflector which incorporates precision-formed panels, radials and hub assembly with matched tooling for ease of assembly without field alignment. The antenna features an innovative compact Cassegrain subreflector and unique feed design which results in high gain, low noise temperature, high antenna efficiency and excellent rejection of noise and microwave interference. The reflector is supported by a steel azimuth/elevation kingpost pedestal providing stiffness and pointing accuracy. The pedestals are designed for full orbital arc coverage.

The antenna meets FCC Regulation 25.209, IESS (INTELSAT) or CCIR Recommendation 580 sidelobe specification beyond first sidelobe ( $1.8^\circ$  Rx,  $1.4^\circ$  Tx).

#### Options:

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

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### 6.1-METER KXC MECHANICAL SPECIFICATIONS

|                                           |                                                                       |
|-------------------------------------------|-----------------------------------------------------------------------|
| Azimuth Travel                            | 120° continuous (standard)<br>200° 2-position (optional)              |
| Azimuth Travel Rate                       | .50°/second*                                                          |
| Elevation Travel                          | 0° to 90°                                                             |
| Elevation Travel Rate                     | .50°/second*                                                          |
| Polarization Travel                       | ±95° (Two Ports)<br>±50° (Four Ports)                                 |
| Polarization Travel Rate                  | 1.5°/second                                                           |
| Weight - Reflector                        | 1,200 pounds (545 kg); 2,000 pounds (908 kg) deiced                   |
| Weight - Pedestal                         | 2,000 pounds (907 kg)                                                 |
| Shipping Weight (Typical)                 | 5,230 pounds (2,372 kg)                                               |
| Shipping Volume                           | 735 cubic feet (21 m³)                                                |
| Reflector Structure                       | Aluminum                                                              |
| Pedestal Structure                        | Steel                                                                 |
| Finishes<br>Reflector Surface<br>Pedestal | Aluminum panels with heat-diffusing white paint<br>Hot-dip galvanized |
| Surface Accuracy                          | 0.020 inch (.5 mm) Static                                             |
| Foundation Size                           | 16.5 ft x 16.5 ft x 1.5 ft (5.0 m x 5.0 m x 0.46 m)                   |
| Concrete Volume                           | 15.5 cubic yards (11.8 m³)                                            |
| Reinforcing Steel                         | 1,875 pounds (852 kg)                                                 |
| Soil Bearing Pressure                     | 2,000 PSF (10,000 kg/m²)                                              |

\* Optional Rates Available

### 6.1-METER KXC 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/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<br>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<br>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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| 6.1-METER KXC COMPACT CASSEGRAIN<br>R.F. SPECIFICATIONS | C-BAND<br>4-PORT<br>CIRCULAR POL. FEED |                |
|---------------------------------------------------------|----------------------------------------|----------------|
|                                                         | RECEIVE                                | TRANSMIT       |
| Frequency in GHz*                                       | 3.625-4.200                            | 5.850-6.425    |
| Antenna Gain                                            |                                        |                |
| 3.625/5.850 GHz                                         | 45.8 dB                                | 49.2 dB        |
| 3.912/6.138 GHz                                         | 46.5 dB                                | 49.6 dB        |
| 4.200/6.425 GHz                                         | 47.1 dB                                | 50.0 dB        |
| Antenna Noise Temperature                               |                                        |                |
| 5° Elevation                                            | 52°K                                   |                |
| 10° Elevation                                           | 41°K                                   |                |
| 20° Elevation                                           | 35°K                                   |                |
| 40° Elevation                                           | 30°K                                   |                |
| Typical G/T at 20° Elevation, 3.912 GHz, Clear Horizon  |                                        |                |
| with 35°K LNA                                           | 27.7 dB/K                              |                |
| with 50°K LNA                                           | 26.9 dB/K                              |                |
| Pattern Beamwidth in Degrees at 3.912/6.138 GHz         |                                        |                |
| - 3 dB                                                  | <0.82                                  | <0.56          |
| - 15 dB                                                 | <1.73                                  | <1.17          |
| Sidelobes                                               | -12 ±2 dB                              |                |
| First Sidelobe Level across the Band                    |                                        |                |
| Beyond First Sidelobe Meets IESS (Intelsat) or CCIR     |                                        |                |
| Recommendation 580 Sidelobe Specification               |                                        |                |
| Cross Polarization Isolation                            |                                        |                |
| On Axis                                                 | 30.7 dB                                | 30.7 dB        |
| within 1 dB Beamwidth                                   | 30.7 dB                                | 30.7 dB        |
| VSWR                                                    | 1.25:1                                 | 1.25:1         |
| Feed Insertion or Ohmic Loss                            | 0.15 dB                                | 0.20 dB        |
| Receive-to-Receive Port Isolation                       | 19.0 dB                                |                |
| Transmit-to-Transmit Port Isolation                     |                                        | 23.0 dB        |
| Transmit-to-Receive Isolation                           | 30.0 dB                                | 30.0 dB        |
| Axial Ratio (Voltage Axial Ratio)                       | 0.50 dB (1.06)                         | 0.50 dB (1.06) |
| Feed Interfaces                                         | CPR-229G                               | CPR-159G       |
| Total Power Handling Capability**                       |                                        | 10 kW CW       |

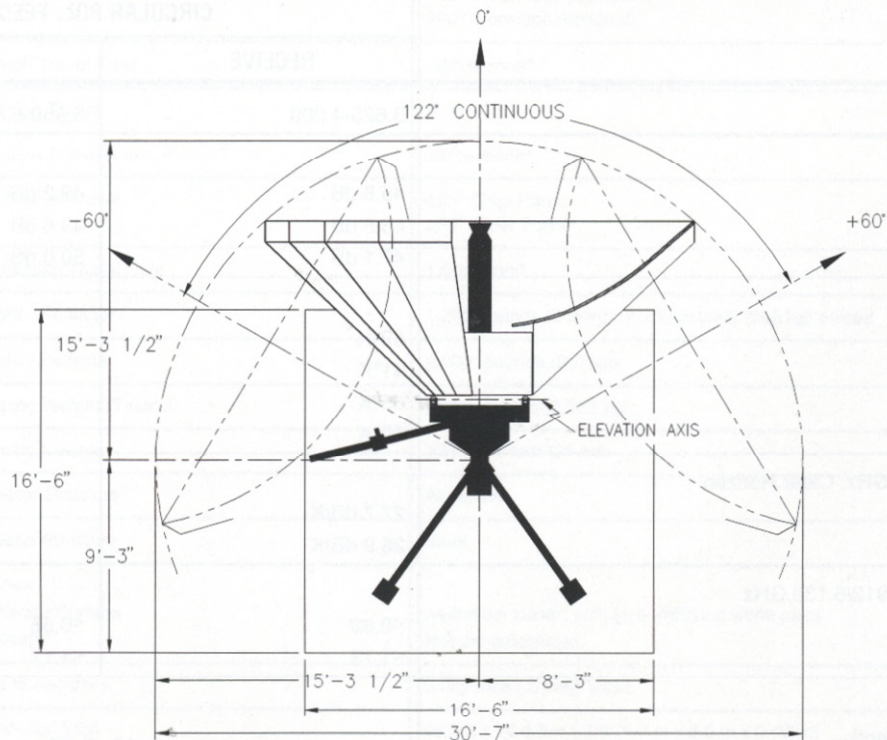
\* Other Operational Frequencies Available

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

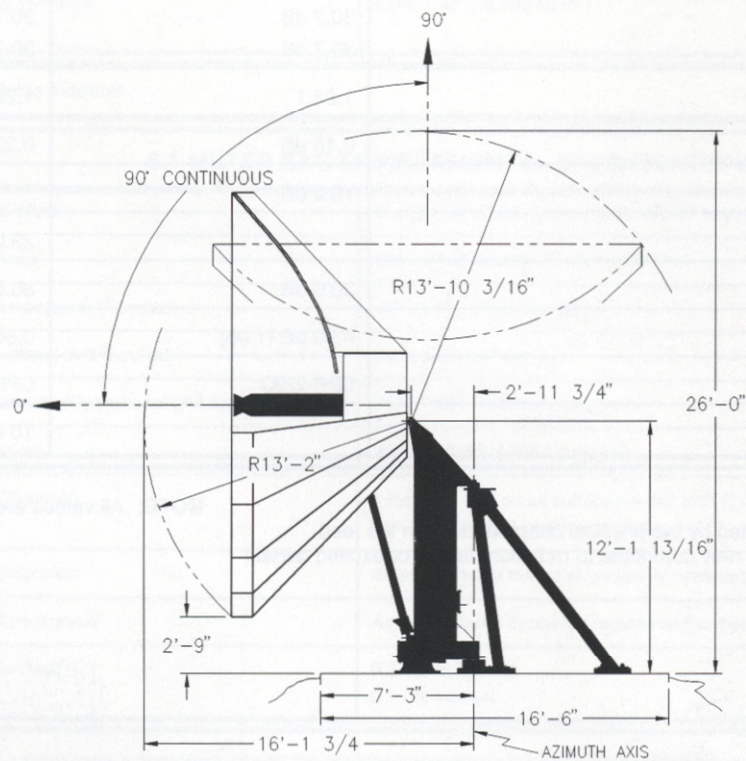
\*\* Power handling capability is based on and limited by the physical characteristics in the feed components. Microwave power at these levels may contribute to radiation hazard or exceed certain off-axis e.i.r.p. specifications.

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PLAN VIEW



SIDE ELEVATION

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