98 cm RxTx Ka Band Antenna System

The Skyware Global 98cm Ka Band Antenna is a rugged, commercial grade product suitable for the most demanding applications.

The pressed steel reflector assures the surface accuracy needed for Ka band performance. Pre-galvanized steel with a powder coat finish guarantees excellent corrosion resistance and long life. The die-cast back structure provides for precision alignment of the reflector and support of the RF assembly without distortion. The reflector optics incorporate a long focal length for excellent cross-pol discrimination or “beam squint”.

The heavy gauge steel Az/El mount provides a rigid support for the antenna and incorporates precise fine elevation and azimuth adjustment. This Az/El allows the antenna to be installed on any standard 2-3/8” (60mm) OD installation mount.

- RoHS compliant
- Precision pressed steel reflector
- Long focal length optics for low cross-pol or beam squint
- Steel components are pre-galvanized and powder coat painted for excellent corrosion resistance
- All hardware meets 720 minimum salt spray test requirements (ASTM B-117)
- Fine elevation and azimuth adjustments
- Ideally suited for Skyware Global Ka Transceiver
98cm RxTx Ka Band Antenna

RF Performance

Operating Frequency
TX ........................................... 29.50 -30.00 GHz
RX ........................................... 19.20 - 20.20 GHz

Polarization
TX ........................................... Circular RH or LH
RX ........................................... Circular LH or RH

Gain1 (±0.3 dB)
TX ........................................... 46.8 dBi @ 29.75 GHz
RX ........................................... 43.8 dBi @ 19.70 GHz

3 dB Beamwidth
TX ........................................... 0.7° @ 29.75 GHz
RX ........................................... 1.1° @ 19.70 GHz

Sidelobe Envelope (Tx, Co-Pol dBi)
$100 \lambda/D < \theta < 20^\circ$ ................. 29-25 log $\theta$ dBi
$20^\circ < \theta < 26.3^\circ$ .............................. -3.5 dBi
$26.3^\circ < \theta < 48^\circ$ .............................. 32-25 log $\theta$ dBi
$48^\circ < \theta < 180^\circ$ .............................. -10 dBi (Typical)

Antenna Cross-Polarization (within 1dB b/w)
RX ........................................... 22dB

Antenna Noise Temperature 1
........................................... @ 30° EL 62°K Max

VSWR
........................................... 1.3:1 Max

Feed Interface ................................ Custom Circular

1 Gain and Noise Temperature at Feed Horn Flange

(All specifications typical)

Mechanical Performance

Reflector Material ........................................ Steel

Antenna Optics .............................. One-Piece Offset Feed Prime Focus

Mount Type .............................. Elevation Over Azimuth

Elevation Adjustment Range .......... 8° - 90° Continuous Fine Adjustment

Azimuth Adjustment Range ......... 360° Continuous; ± 5° Fine Adjustment

Mast Pipe Interface ................. 60 mm (2.38 in) Diameter

Environmental Performance

Wind Loading

Operational .................................. 45 mph (72 km/h)

Functional Survival ................. 80 mph (128 km/h)

Ultimate Survival ..................... 125 mph (200 km/h)

Temperature ........................ -50°C to +80°C

Humidity ......................... 0 to 100% (Condensing)

Corrosion protection ............... Standard Hardware 720 Hrs SST Requirements (ASTM B-117)

Solar Radiation .................. 360 BTU/h/ ft$^2$

Shock and Vibration ............ As Encountered during Shipping and handling