



Size:

7.50m

PXY-750

7.5m Tri-Band Carbon-Fibre X/Y Antenna for LEO/MEO Tracking & Telemetry

The PXY-750 is a 7.5 m ring-focus tri-band S/X/Ka telemetry, tracking and command antenna on a full X/Y pedestal. The X/Y geometry gives complete hemispheric coverage with no cone of silence at zenith, so low- and medium-orbit satellites are followed continuously through overhead passes. A tri-band S/X/Ka feed with TE21 multimode monopulse tracking network provides simultaneous LHCP and RHCP data reception on every band and real-time switching between S, X and Ka tracking without loss of lock – S-band TT&C and X- or Ka-band mission data are handled by one antenna.

Carbon-Fibre Reflector, Backlash-Free Drive

The main reflector, radial support frames and ring beams are all carbon-fibre composite, co-cured as single units on a steel central hub. The result is a 16-segment reflector with 0.25 mm RMS surface accuracy, 30–60 % lighter than an equivalent aluminium dish, near-zero thermal expansion under diurnal and solar loading, and full resistance to salt-spray corrosion. Each X and Y axis is driven by two motors through a dual worm-gear backlash-elimination transmission, sharing load between drives and delivering 0.001° angular resolution with better-than-0.002° measurement accuracy.

Key Features

- 7.5 m aperture, tri-band S/X/Ka operation
- Tri-band S/X/Ka feed, multimode monopulse tracking
- X/Y pedestal – full hemisphere, no zenith keyhole
- Simultaneous LHCP + RHCP data reception on S, X and Ka
- Automatic S / X / Ka tracking hand-over, uninterrupted lock
- Dual-motor backlash-free worm-gear drive on both axes
- Acquisition at 3° elevation, stable tracking from 5°
- Pre-positioning and automatic stow
- Optional Radome





Scan the QR code for more information.

TECHNICAL SPECIFICATIONS / PXY-750

GENERAL SPECIFICATIONS

Reflector Diameter
Antenna Mount
Primary Mission
Tracking Method
Acquisition / Reception Elevation
Power Supply

PXY-750

7.5 m
X/Y
LEO/MEO TT&C (S-band), high-speed data reception (X- and Ka-band)
Single-channel monopulse (S/X/Ka), program tracking, manual
3° / 5°
AC 220 V ±10 % single-phase; AC 380 V ±10 % three-phase; 50/60 Hz ±10 %

RF CHARACTERISTIC

Frequency (GHz) Tx
Frequency (GHz) Rx
G/T @ 10° Elevation (dB/K) (clear sky, 23 °C, at LNA output)
Gain Tx (dBi)
Polarization Tx
Polarization Rx
Axial Ratio (dB)
VSWR
Tx/Rx Isolation (dB) (at Tx freq.)
Rx Polarization Isolation (dB)
Sum / Difference Channel Isolation (dB)
First Sidelobe Level (dB)
Difference-beam Null Depth (dB)
IF Interface
Pointing Accuracy (R.M.S.)
Tracking Accuracy (R.M.S.)
Antenna Pattern Compliance

S-Band

2.025 – 2.120
2.200 – 2.300
≥ 19.1
≥ 40.5
LHCP / RHCP (Switchable)
LHCP / RHCP (Simultaneous)
≤ 1.2
≤ 1.5:1
≥ 90
≥ 20
≥ 30
≤ -14
≥ 35
70 MHz (TT&C / Tracking)
≤ 0.16°
≤ 0.13°
ITU-R S.580-6 & S.465-6

X-Band

7.145 – 7.250
7.750 – 8.500
≥ 32
≥ 52.8
LHCP / RHCP (Switchable)
LHCP & RHCP (Simultaneous)
≤ 1.0
≤ 1.5:1
≥ 90
≥ 20
≥ 30
≤ -14
≥ 35
1.2 GHz (data), 70 MHz (Tracking)
≤ 0.045°
≤ 0.035°
ITU-R S.580-6 & S.465-6

Ka-Band

30.0 – 31.0
20.2 – 21.2
≥ 36.4
≥ 64.4
LHCP / RHCP (Switchable)
LHCP / RHCP (Simultaneous)
≤ 1.0
≤ 1.5:1
≥ 90
≥ 20
≥ 30
≤ -14
≥ 35
1.2 GHz (data), 70 MHz (Tracking)
≤ 0.012°
≤ 0.01°
ITU-R S.580-6 & S.465-6

MECHANICAL SPECIFICATIONS

Travel Range
Maximum Velocity
Maximum Acceleration
Drive

X

± 90°
≥ 5°/s
≥ 10°/s²
Dual-motor backlash-free worm gear

Y

± 90°
≥ 5°/s
≥ 10°/s²
Dual-motor backlash-free worm gear

ENVIRONMENTAL SPECIFICATIONS

Wind Speed Operational
Wind Speed Survival
Temperature Range Operational
Temperature Range Storage
Relative Humidity
Lightning Protection
Radome

PXY-750

90 km/h
240 km/h survival
-40 °C to +55 °C
-45 °C to +70 °C
2 – 98 % @ 25 °C, non-condensing
Independent lightning rods, grounding ≤ 4 Ω (equipment) / ≤ 10 Ω (lightning tower), SPDs on all lines
Optional

Specifications are subject to change.

