



Size:

13.0m

PQV-1300

Gateway Application for GEO HTS / VHTS

PALS 13 m Ka/Q/V-Band earth station antenna designed for feeder and gateway links of high and very-high throughput GEO satellites. A single tri-band feed transmits in Ka and V Band and receives in Q Band, allowing operators to migrate gateway capacity from Ka to Q/V Band on the same aperture.

RF & Mechanical Design

High-efficiency dual-reflector optics and a precision main reflector deliver more than 73 dBi of gain at V Band. Dual circular polarization with axial ratio of 1 dB or better and 85 dB Tx-Rx isolation. The stiff elevation-over-azimuth full-motion pedestal drives both axes from 0.001 °/s to 0.3 °/s and holds tracking error within one tenth of the half-power beamwidth.

Deployment & Integration

Built for continuous outdoor operation from -40 °C to +60 °C, 100 % humidity, 30 mm ice load and seismic zones. The hub houses HPAs, LNAs and converters close to the feed to minimise millimetre-wave losses. Delivered turnkey with installation supervision, alignment and site acceptance testing.

Key Features

- Tri-band operation on one aperture: Ka Tx, Q Rx, V Tx
- Gain > 73 dBi at V Band
- Dual circular polarization, axial ratio ≤ 1 dB
- Tx-Rx isolation ≥ 85 dB
- Tracking accuracy ≤ 1/10 HPBW
- Monopulse, program (TLE) and step tracking
- Operates from -40 °C to +60 °C
- Remote control via Web GUI and SNMP
- Optional reflector, subreflector and feed de-icing
- Optional environmentally controlled hub



Scan the QR code for more information.

TECHNICAL SPECIFICATIONS / PQV-1300

GENERAL SPECIFICATIONS

Reflector Diameter
Optics
Antenna Mount
Application
Tracking Modes

PQV-1300

13.0m
Dual-reflector Cassegrain, tri-band Ka/Q/V feed
Elevation over Azimuth, full motion
GEO HTS / VHTS gateway and feeder links, TT&C, IOT
Monopulse, Program Track (TLE / ephemeris), Step Track

RF CHARACTERISTIC

Frequency Tx (GHz)
Frequency Rx (GHz)
Antenna Gain, Band Start (dBi)
Antenna Gain, Band End (dBi)
-3 dB Beamwidth, Mid-Band
G/T dB/K (230 K LNA, 50° elevation, clear sky)
Polarization
Axial Ratio
Tx - Rx Isolation
VSWR
First Side Lobe

Ka-Band

27.0 - 30.0
-
≥ 68.7
≥ 69.6
0.05°
-
Dual circular (RHCP / LHCP)
≤ 1.0 dB
≥ 85 dB
≤ 1.35 : 1
≤ -14 dB

Q-Band

-
37.5 - 42.0
≥ 71.1
≥ 72.1
0.04°
≥ 44 @ 37.5 GHz

V-Band

47.2 - 51.4
-
≥ 73.1
≥ 73.8
0.03°
-

MECHANICAL SPECIFICATIONS

Antenna Motion Range
Axis Velocity
Tracking Accuracy
Stow Position

Azimuth

-175° to +175°
0.001 °/s to 0.3 °/s
0.003° (at V Band)
Zenith, elevation locked

Elevation

5° to 90°
0.001 °/s to 0.3 °/s

ENVIRONMENTAL SPECIFICATIONS

Temperature Range Operational
Wind Speed Operational
Wind Speed Survival
Humidity (Relative)
Ice Load
Solar Radiation
Seismic (Survival)

PQV-1300

-40 °C to +60 °C
80 km/h
200 km/h, elevation locked at zenith
0% to 100%
30 mm
1.1 kW/m² (360 BTU/h/ft²)
0.3 g horizontal, 0.15 g vertical

Specifications are subject to change.