

The 7.3 meter Ka-band gateway is an integral part of the broadband system delivering high-speed WiFi connections for residential, commercial and government services. The antenna is efficiently designed to receive and transmit data from high capacity satellites to make full use of their high data rate capabilities.



The 7.3 meter Earth station antenna is ideally suited to high-performance Ka-band geostationary applications. The shaped Cassegrain reflector provides superior gain and sidelobe performance at Ka-band frequencies.

High precision stretch formed panels are supported by strong radial trusses attached to a large central hub. Spars support a high-precision machined subreflector.

Thermal effects at Ka-band are minimized by aluminum reflector materials coated with solar diffusive white paint. The reflector back structure and subreflector spars are designed to stringent Ka-band rigidity requirements under wind and gravity loads.

The oversized hub provides a protective enclosure for sensitive electronics with ample space for equipment such as HPAs. The large extended work platform provides easy access to the hub. Transmit path losses are improved by storing the HPAs in the hub.

The precision steel mount delivers extremely accurate Ka-band pointing even under adverse wind conditions. The pedestal design features a precision azimuth bearing and very low backlash for high performance.

ViaSat's Antenna Control Units are ideally suited for controlling the Ka-band antenna, offering full DC servo performance and adaptive step tracking or monopulse autotrack options depending on the desired tracking accuracy.

7.3 METER AT-A-GLANCE

- » Antenna patterns compliant with FCC, ITU, and Eutelsat regulations
- » High efficiency shaped Cassegrain optics
- » 2-port and 4-port circularly and linearly polarized feeds available
- » Precision structural steel mount
- » CE compliant Antenna Controller with adaptive step tracking or monopulse autotrack options available
- » Roll-up door provides easy access to electronics packages
- » Standard accessories include large work platform and ladder, foundation template and anchor bolts, lightning protection kit

Options

- » De-icing
- » HPA/LNA mounting
- » Environmentally controlled hub
- » Alternate frequency band
- » Large riser with HVAC for equipment mounting

7.3 Meter Ka-Band Broadband Gateway Earth Station Antenna

SPECIFICATIONS

ELECTRICAL

Operating Frequency (GHz)

- » Receive 17.7 – 20.2
- » Transmit 27.5 – 30.0

Gain (ref feed horn)

- » 17.70 GHz 61.0 dBi
- » 18.95 GHz 61.6 dBi
- » 20.20 GHz 62.3 dBi
- » 27.50 GHz 64.5 dBi
- » 28.75 GHz 64.8 dBi
- » 30.00 GHz 65.2 dBi

Feed Insertion Loss (dB, 4-pt CP, tracking)

- » Receive <0.65 dB
- » Transmit <0.63 dB

Beamwidth (3 dB)

- » Receive 0.14° nominal
- » Transmit 0.09° nominal

Feed System

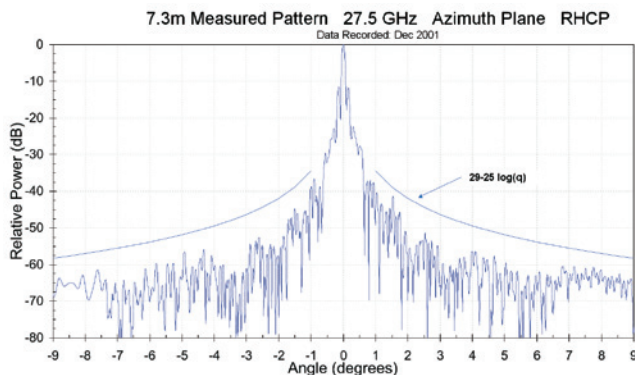
- » 4-port Tx/Rx circular polarization
- » TE21 tracking coupler
- » WR34 Tx ports / WR42 Rx ports
- » 500 W CW transmit power per port
- » 85 dB Tx/Rx isolation
- » 18 dB Tx/Tx and Rx/Rx isolation

VSWR (Tx/Rx) 1.25:1

Polarization

- » Sense Simultaneous RHCP & LHCP
- » Axial Ratio 1.06:1 (0.50 dB)

Pattern Envelope Compliant to ITU 580-5, FCC 25.209



ELECTRICAL (CONTINUED)

Antenna Noise Temperature¹

Clear sky, 20° C, ref feed horn:

Elevation	@17.7 GHz	@20.2 GHz
» 10°	61 K	102 K
» 30°	34 K	51 K
» 40°	31 K	45 K

MECHANICAL

Optics

Dual reflector, axis-symmetric

Reflector

- » Diameter 7.3 m; 288 in
- » Panels 16, precision aluminum

Mount Type

Elevation over Azimuth

Axis Drives

- » Elevation Jackscrew, 0.25°/sec, Options to 0.5°/sec
- » Azimuth Dual Drive, 0.5°/sec, Options to 1.0°/sec

Antenna Travel

- » Elevation 0° to 90° continuous
- » Azimuth 180° continuous

Hub Enclosure

- » Width 82 in; 208 cm
- » Depth 44 in; 121 cm

ENVIRONMENTAL

Temperature

- » Operational -30° to +55° C
- » Optional Range -40° to +55° C

Wind

- » Operational 72 km/hr gusting to 97 km/h
- » Survival 200 km/hr (stow mode)

Atmospheric Conditions

Salt, pollutants, and corrosive contaminants as found in coastal and industrial areas

Deicing (Optional)

- » Main reflector Hot air
- » Subreflector Resistive heaters
- » Feed Resistive heaters

Note

¹ Other 2.5 GHz wide frequency bands within 17.7 – 21.2 GHz and 27.5 – 31.0 GHz bands available

CONTACT

SALES

TEL +1 678 924 2400 FAX +1 678 924 2480 EMAIL kabandgateways@viasat.com WEB www.viasat.com/antenna-systems

