3.7 meter Ka-band

Broadband LEO Earth station antenna

Designed for the latest high-capacity Ka-band LEO satellites, the 3.7 meter antenna system delivers high-speed broadband connectivity for residential, commercial and government services.

Viasat 3.7 meter Ka-band antenna is ideally suited for high performance NGSO orbit Ka-band applications. With decades of experience going into the design, its performance, reliability and maintainability are unmatched.

The shaped antenna and subrefelctor with precision reflector surfaces provides superior gain and sidelobe performance at Ka-band frequencies. The antenna panels provide a rigid structure that maintains its shape in extreme thermal environments, including deice operation.

The design includes mounting provisions for LNAs, LNBs, and BUCs of up to 500W.

The rugged mount delivers pointing accuracy in adverse wind conditions. All axes utilize robust slewing drives for years of reliable service in severe environments. Optical encoders provide precision position feedback.

Viasat's proven antenna control system offers DC servo performance with adaptive step tracking for unparalleled tracking performance. For quick access and service, the control system is conveniently located on the pedestal.

Viasat's Antenna Control System features auto alignment capabilities which greatly simplify installation. Initial antenna pointing alignment errors are automatically detected and corrected by the system.

3.7-meter at-a-glance

- Antenna patterns compliant with FCC, ITU, ANATEL and Eutelsat regulations
- High efficiency ring focus optics
- Aluminum reflector construction
- 4-port circularly and linearly polarized feeds available
- Precision structural steel mount
- Easily accessible counterweight arm frame for electronics packages
- Damage resistant feed window

OPTIONS

- Electric de-icing
- HPA/LNA/converter mounting
- Alternate frequency bands
- Installation and maintenance services

3.7-meter broadband LEO Earth station antenna

ELECTRICAL

Operating frequency (GHz)	
› **Receive**	17.8 to 20.2
› **Transmit**	27.5 to 30.0
Gain	
› **Receive**	54.5+20Log(F/18.95) dBi (Ref to Feed Rx port output)
› **Transmit**	57.8+20Log(F/29.0) dBi (Ref to Feed Tx port input)
G/T (20° EL, clear sky)	29.5+20Log(F/18.95) dB/K (over listed bands)
Bandwidth (3 dB)	
› **Receive**	0.26° nominal
› **Transmit**	0.175° nominal
Feed system[2]	› 4-port TX/RX circular polarization › WR34 TX ports/WR42 RX ports › 80 dB nominal TX/RX isolation
VSWR TX and RX	1.4:1
Polarization	
› **Sense**	Simultaneous RHCP / LHPC
› **Axial ratio**	1.11:1 (1.0 dB)
Pattern envelope	Compliant to ITU 580, FCC 25.209, Anatel RES 572
Tracking accuracy	› Program track: 0.085° RMS BRE, winds 35 mph gusting to 45 mph › Steptrack over program track, 0.067° RMS BRE, winds 35 mph gusting to 45 mph
Power	200–240 VAC, single phase, 50/60Hz

MECHANICAL

Optics	Dual shaped, Gregorian ring focus
Reflector	
› **Diameter**	12.1 ft; 3.7 m
› **Panels**	10
Mount type	Elevation over azimuth over tilt axis
Axis drives	
› **Elevation**	Slewing drive, 3°/sec
› **Azimuth**	Slewing drive, 12°/sec
› **Tilt**	Slewing drive, 0.6°/sec
Axis travel	
› **Elevation**	5° to 90°
› **Azimuth**	±225°, continuous
› **Tilt**	±8.5°
Servo	› Servo motors (dual Az, single El) › Brushless DC motor (tilt) › Optical on-axis encoders › Digital servo control › SGP4 orbit determined program track › Augmented steptrack over program track › Initial pointing alignment within ±5 degrees of north is automatically corrected

ENVIRONMENTAL

Temperature	–40° to +50° (Operational)
Wind	
› **Operational**	35 mph (56 km/h) gusting to 45 mph (72 km/h)
› **Survival**	125 mph (200 km/h), stowed
Atmospheric conditions	Salt, pollutants, and corrosive contaminants as conditions found in coastal and industrial areas
De-icing (optional)	Resistive heaters with automatic control

Antenna Systems Division
1725 Breckinridge Plaza, Duluth, GA 30096, USA

Sales
TEL +1 678 924 2400 EMAIL AS-Sales@viasat.com WEB viasat.com/antenna-systems

1061518-200204-001