



The ViaSat 13.5 meter Earth Station Antenna gives you high-performance in C-, Ku- or DBS-band geostationary satellite applications. The shaped-Cassegrain reflector provides superior gain and sidelobe performance, meeting stringent FCC requirements.

Precision stretch-formed and interchangeable aluminum panels are attached to a central structural-steel hub with rigid, interchangeable structural trusses. The panels are coated with a solar-diffusive white coating system that provides years of environmental protection while minimizing thermal expansion effects. The reflector back structure and subreflector spars are designed to exacting rigidity requirements under wind and gravity loads. The hub provides a protective enclosure for sensitive electronics.

The ViaSat "Turning Head" mount provides an efficient structure for supporting and positioning the feed/reflector system over a full 360° in 70° continuous sectors. Elevation travel provides 0 - 90° of continuous travel. Extended azimuth travel is available as an option.

Antenna Control System options range from adaptive step-track and program track systems to full DC servo and monopulse tracking systems.

13.5 METER AT-A-GLANCE

- » Antenna patterns compliant with FCC, ITU, and Eutelsat regulations
- » High efficiency shaped-Cassegrain optics
- » Various C-, Ku- and DBS-band feed configurations
- » Steel turning head mount
- » CE compliant Antenna Controller and tracking options
- » Easily accessible hub space for electronics packages
- » Full line of feed, reflector, and mount options available

Options

- » >180° Continuous azimuth travel
- » Mounted on Model 8118 mount for high wind applications
- » TT&C pointing upgrade
- » Workplatform with ladder
- » Hub light and fan
- » Hub cover
- » Cross-axis transmit waveguide (2 kW C-Band, 700 W Ku-Band). Higher powers available.
- » Lightning protection
- » Aircraft warning lights
- » De-icing

Model 8013 13.5 Meter Earth Station Antenna

SPECIFICATIONS

ELECTRICAL

	C-band	Ku-band	DBS-band
Operating Frequency (GHz)			
Transmit	5.850 – 6.425	13.75 – 14.5	17.3 – 18.4
Receive	3.625 – 4.2	10.70 – 12.75	10.95 – 12.75
Gain (Midband, Ref. Feed Horn)			
Transmit	57.1 (@6.138 GHz)	64.2 (@14.25 GHz)	65.5 (@17.85 GHz)
Receive	53.7 (@3.912 GHz)	63.1 (@11.85 GHz)	63.3 (@11.85 GHz)
Feed Insertion Loss (dB)¹			
4-Port RX/RX Linear			
Transmit	0.55 dB	0.55 dB	0.40 dB
Receive	0.67 dB	0.67 dB	0.54 dB
4-Port RX/RX Circular			
Transmit	0.19 dB	N/A	N/A
Receive	0.21 dB	N/A	N/A
VSWR			
TX	1:25:1	1:25:1	1:25:1
RX	1:25:1	1:25:1	1:25:1
Feed Power Handling (CW, per TX port)²			
	5kW	1kW	1kW
Feed Port Isolation (on axis, minimum)			
RX/TX (RX-band)	85 dB	50 dB	50 dB
TX/RX (TX-band)	85 dB	85 dB	85 dB
TX/TX	21 dB	35 dB	35 dB
RX/RX	18 dB	35 dB	35 dB
Cross Pol Isolation (on axis, min.) (Linear)			
Transmit	N/A	35 dB	35 dB
Receive	N/A	35 dB	35 dB
Axial Ratio (Circular Polarization)			
	1.06:1 (0.5 dB)		
Beamwidth (Typical)			
Transmit	0.25°	0.10°	0.09°
Receive	0.37°	0.12°	0.13°
Antenna Noise Temp (Typical, Ref. Feed Horn)³			
Elevation			
10°	33 K	41 K	36 K
20°	24 K	28 K	27 K
30°	20 K	22 K	25 K
40°	17 K	19 K	24 K
Radiation Pattern			
	Compliant with ITU 580-5, FCC 25.209, INTELSAT IESS, and Eutelsat		

MECHANICAL

Optics	Dual reflector, shaped axi-symmetric
Reflector	
» Diameter	13.5 meters; 534 in
» Panels	36, precision aluminum
Mount Type	Elevation-over-azimuth
Axis Drives	
» Elevation	Jackscrew
» Azimuth	Jackscrew
Antenna Travel	
» Elevation	0° to 90° continuous
» Azimuth	360° in overlapping 70° sectors >180° continuous (optional)
Hub Enclosure	
» Diameter	84 in
» Depth	47 in
Weight C-Band	
» Net	35,000 lb
» Ship	44,000 lb
ENVIRONMENTAL	
Wind Loading	
» Operational	48 km/h gusting to 72 km/h 30 MPH gusting to 45 MPH
» Drive-to-stow Survival	129 km/h; 80 MPH 200 km/h (stowed); 125 MPH, 15° C, no ice
Temperature Range	
» Operational	-40° to +65° C; -40° to +150° F
Atmospheric Conditions	Salt, pollutants and corrosive contaminants as found in coastal and industrial areas

NOTES

¹ Other frequency bands and feed configurations available. Consult factory.

² Higher power options available. Consult factory.

³ Under clear sky, 7.5g/m³ H₂O vapor density, 25° C ambient conditions.



CONTACT

SALES

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

