



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
- » Steer 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	14.0 – 14.5	17.3 – 18.4
Receive	3.625 – 4.2	10.95 – 12.75	10.95 – 12.75
Gain (Midband, Ref. Feed Horn)			
Transmit	57.3 (@6.138 GHz)	64.5 (@14.25 GHz)	65.5 (@17.85 GHz)
Receive	53.8 (@3.912 GHz)	63.3 (@11.85 GHz)	63.3 (@11.85 GHz)
Feed Insertion Loss (dB)			
4-Port RX/RX Linear			
Transmit	N/A	0.39 dB	0.40 dB
Receive	N/A	0.64 dB	0.54 dB
4-Port RX/RX Circular			
Transmit	0.17 dB	N/A	N/A
Receive	0.20 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)¹			
	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. Fee Horn)			
Elevation			
10°	25 K	36 K	36 K
20°	18 K	27 K	27 K
30°	16 K	25 K	25 K
40°	15 K	24 K	24 K
Pattern Envelope			
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 inches)
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 inches
Depth	47 inches
Weight C-Band	
Net	35,000 lb.
Ship	44,000 lb.
ENVIRONMENTAL	
Temperature Range	
Operational	-40° C to +65° C (-40° F to +150° F)
Wind	
Operational	72 km/h gusting to 97 km/h (45 MPH gusting to 60 MPH)
Drive-to-stow	129 km/h (80 MPH)
Survival	200 km/h (stowed) (125 MPH), 15° C, no ice
Atmospheric Conditions	Salt, pollutants and corrosive contaminants as found in coastal and industrial areas

NOTES

¹ Higher power options available. Consult factory.

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