13.5 Meter Ka-band
Broadband Gateway Earth Station Antenna

Viasat 13.5 meter Ka-band antenna is ideally suited for the latest high capacity Ka-band satellites. The antenna system offers exceptional broadband support to deliver high-speed Wi-Fi connections for residential, commercial and government services.

Viasat's 13.5 meter Ka-band antenna is ideally suited for high-performance geostationary Ka-band gateway applications. With decades of experience going into the design, its performance, reliability and maintainability are unmatched.

The shaped Cassegrain antenna with precision machined subreflector provides superior gain and sidelobe performance at Ka-band frequencies. Improved high-precision, stretch formed panels are supported by stiff steel radial trusses attached to a large central hub. The reflector back structure and spars are designed to exacting Ka-band rigidity requirements to provide optimum performance under a wide range of environmental conditions. All aluminum reflector panels, coated with a solar diffusive white paint, minimize thermal effects at Ka-band.

The oversized hub is specifically designed to support multiple redundant suites of HPAs, BUCs and receive chain configurations. The extra-large doorway allows easy access from the large extended work platform for convenient maintenance of all the electronics. The redundant HVAC system maximizes the electronics Mean Time Before Failures (MTBF) and service availability.

The rugged steel mount delivers Ka-band pointing accuracy in adverse wind conditions. The pedestal design features a precision azimuth bearing with dual drivers for very low backlash.

Viasat's proven antenna control system offers full DC servo performance with monopulse autotracking for unparalleled tracking performance. For quick access and service the control system is conveniently located on the work platform.

13.5 METER AT-A-GLANCE

- Antenna patterns compliant with FCC, ITU, ANATEL, and Eutelsat regulations
- High efficiency shaped Cassegrain optics
- Both 2-port and 4-port circular and linear polarized feeds available
- Precision structural steel mount
- Easily accessible hub for electronics packages with hinged door access (accommodates up to 8 HPAs)
- Standard accessories include large work platform and stairs, foundation template and anchor bolts, lightning protection kit, rain blower
- CE compliant
- Low maintenance with auto lubrication and damage resistant feed window

Options

- Hot air de-icing
- HPA/LNA/converter mounting
- Environmentally controlled hub
- Alternate frequency band
- Work platform ladder
- Equipment hoist
- Elevation counterweights
- Defrost (feed and subreflector)
- TT&C capabilities
- Radome
- Installation and maintenance services

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SPECIFICATIONS

ELECTRICAL

Operating Frequency[1] (GHz)
- » **Receive** 17.7 to 20.2
- » **Transmit** 27.0 to 30.0

Gain
- » **Receive** 67.2+20 Log (F/20.2) dBi (ref to feed receive port output)
- » **Transmit** 70.2+15 Log (F/30) dBi (fef to feed transmit port input)

G/T (30° elevation, clear sky) 43.0+20Log(F/20.2) dBi/K (including 1:2 redundant 120 K LNA plate and feed to LNA waveguide)

Beamwidth (3 dB)
- » **Receive** 0.07° nominal
- » **Transmit** 0.05° nominal

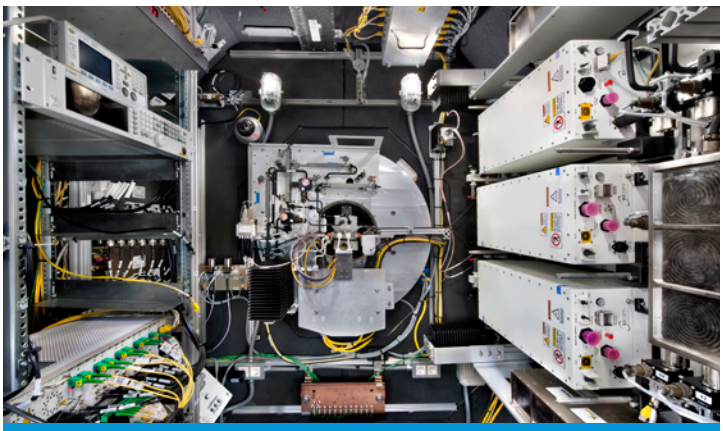
Feed System[2]
- » 4-port TX/RX circular polarization
- » TE21 tracking coupler
- » WR34 TX ports/WR42 RX ports
- » 600 W CW transmit power per port
- » 85 dB TX/RX isolation
- » 18 dB TX/TX and RX/RX isolation

Transmit and Receive VSWR 1.25:1

Polarization[3]
- » **Sense** Simultaneous RHC & LHC
- » **Axial Ratio** 1.06:1 (0.50 dB)

Pattern Envelope Compliant to ITU 580-5, FCC 25.209, ANATEL

Tracking Accuracy (Monopulse) 0.0034° RMS BRE, 45 mph gusting to 60 mph winds



LARGE HUB FOR EASY ACCESS TO ALL RF ELECTRONICS

MECHANICAL

Optics Dual shaped cassegrain, axis-symmetric

Reflector
- » **Diameter** 13.56 meter; 44.5 ft
- » **Panels** 36, precision aluminum, 2 tiers

Mount Type Elevation over azimuth

Axis Drives
- » **Elevation** Jackscrew, 0.20°/s
- » **Azimuth** Geared bearing dual drive, 0.5°/s

Antenna Travel
- » **Elevation** 0° to 90° continuous
- » **Azimuth** ±100° continuous Option for ±270° continuous

Hub Enclosure
- » **Width** 80.5 in.; 205 cm
- » **Height** 75.5 in.; 192 cm
- » **Depth** 48 in.; 121 cm

ENVIRONMENTAL

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

Wind
- » **Operational** 45 mph gusting to 60 mph; 72 km/h gusting to 97 km/h
- » **Drive to Stow** 80 mph; 129 km/h
- » **Survival** 90 mph any position, 150 mph stowed; 145 km/h any position, 240 km/h stowed

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

Deicing (Optional)
- » **Main Reflector** Hot air
- » **Subreflector** Resistive heaters
- » **Feed** Resistive heaters

CONTACT

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