Viasat’s 4.1 meter Ka-band antenna is ideally suited for worldwide high-performance geostationary Ka-band gateway applications. With decades of experience going into the design, its performance, reliability, and maintainability are exceptional.

The shaped Cassegrain antenna with precision reflector surfaces provides superior gain and side lobe performance at Ka-band and higher frequencies. The carbon fiber antenna panels, back structure, spars, and sub-reflector provide a rigid structure that maintain its shape in extreme thermal environments, including during de-ice operation. Antenna is easily assembled including a bolt together reflector that achieves accurate surface and sub-reflector alignment without special equipment or skills.

The convenient rear mounting frame design supports multiple redundant suites of HPAs, LNAs, and converter configurations with minimal waveguide loss.

The rugged mount maintains Ka-band pointing accuracy in adverse wind conditions. Azimuth utilizes low backlash dual-drives with active torque bias. Elevation uses a novel fine and coarse drive configuration (patent pending) that greatly reduces jackscrew wear when tracking geostationary satellites. Routine service can be performed without taking the antenna out of service. Optical encoders in both axes provide precision position feedback.

Viasat’s 5th generation antenna control system offers DC servo performance with adaptive step tracking for unparalleled tracking performance. For quick access and service the control system can be conveniently located at the pedestal or optionally available in an indoor rack mount configuration.

4.1 Meter Ka-band
Broadband Gateway Earth Station Antenna

Designed for the latest high-capacity Ka-band satellites, the 4.1 meter antenna system offers exceptional broadband support to deliver high-speed connections for residential, commercial, and government services.
### SPECIFICATIONS

#### ELECTRICAL

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Frequency(^1) (GHz)</td>
<td></td>
</tr>
<tr>
<td>&gt; Receive</td>
<td>17.7 to 21.2</td>
</tr>
<tr>
<td>&gt; Transmit</td>
<td>27.5 to 31.0</td>
</tr>
<tr>
<td>Gain</td>
<td></td>
</tr>
<tr>
<td>&gt; Receive (at feed port)</td>
<td>56.0+20Log(F/18.95) dBi</td>
</tr>
<tr>
<td>&gt; Transmit (at feed port)</td>
<td>59.4+15Log(F/28.75) dBi</td>
</tr>
<tr>
<td>G/T (20° EL, clear sky)(^2)</td>
<td>33.0+20Log(F/18.95) dBi/K</td>
</tr>
<tr>
<td>Antenna Noise Temperature</td>
<td></td>
</tr>
<tr>
<td>&gt; Elevation</td>
<td></td>
</tr>
<tr>
<td>10°</td>
<td>83 K</td>
</tr>
<tr>
<td>20°</td>
<td>54 K</td>
</tr>
<tr>
<td>60°</td>
<td>32 K</td>
</tr>
<tr>
<td>90°</td>
<td>31 K</td>
</tr>
<tr>
<td>Beamwidth (3 dB)</td>
<td></td>
</tr>
<tr>
<td>&gt; Receive</td>
<td>0.23° nominal</td>
</tr>
<tr>
<td>&gt; Transmit</td>
<td>0.16° nominal</td>
</tr>
<tr>
<td>Feed System(^3)</td>
<td></td>
</tr>
<tr>
<td>&gt; 4-port TX/RX circular polarization</td>
<td></td>
</tr>
<tr>
<td>&gt; WR34 TX ports/WR42 RX ports</td>
<td></td>
</tr>
<tr>
<td>&gt; 600 W CW transmit power per port, simultaneous</td>
<td></td>
</tr>
<tr>
<td>&gt; 85 dB TX/RX and RX/TX isolation</td>
<td></td>
</tr>
<tr>
<td>VSWR TX and RX</td>
<td>1.25:1</td>
</tr>
<tr>
<td>Polarization(^4)</td>
<td></td>
</tr>
<tr>
<td>&gt; Sense</td>
<td>Simultaneous RHC and LHC</td>
</tr>
<tr>
<td>&gt; Axial Ratio</td>
<td>1.06:1 (0.50 dB)</td>
</tr>
<tr>
<td>Pattern Envelope</td>
<td>Compliant to ITU 580, FCC 25.209</td>
</tr>
<tr>
<td>Tracking Accuracy</td>
<td>Steptack over program</td>
</tr>
<tr>
<td></td>
<td>Track 0.042° RMS BRE, winds 30 mph gusting to 45 mph</td>
</tr>
<tr>
<td>De-ice Gain Degradation</td>
<td>0.25 dB (maximum)</td>
</tr>
</tbody>
</table>

#### MECHANICAL

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optics</td>
<td>Dual Shaped Cassegrain, axi-symmetric</td>
</tr>
<tr>
<td>Reflector</td>
<td></td>
</tr>
<tr>
<td>&gt; Diameter</td>
<td>13.3 ft; 4.1 m</td>
</tr>
<tr>
<td>&gt; Panels</td>
<td>8, self-aligning</td>
</tr>
<tr>
<td>Mount Type</td>
<td>Elevation over azimuth</td>
</tr>
<tr>
<td>Axis Drives</td>
<td></td>
</tr>
<tr>
<td>&gt; Elevation</td>
<td>Slewing Drive, 0.1 °/sec</td>
</tr>
<tr>
<td>&gt; Azimuth</td>
<td>Slewing Drive, 0.1 °/sec</td>
</tr>
<tr>
<td>Axis Travel</td>
<td></td>
</tr>
<tr>
<td>&gt; Elevation</td>
<td>0° to 90°, continuous</td>
</tr>
<tr>
<td>&gt; Fine</td>
<td>±0.25°, about coarse position</td>
</tr>
<tr>
<td>&gt; Azimuth</td>
<td>±95°, continuous</td>
</tr>
<tr>
<td>Servo</td>
<td></td>
</tr>
<tr>
<td>&gt; Brushless DC servo motors (AZ and EL fine)</td>
<td></td>
</tr>
<tr>
<td>&gt; AC slewing motor (EL coarse)</td>
<td></td>
</tr>
<tr>
<td>&gt; Optical encoders</td>
<td></td>
</tr>
<tr>
<td>&gt; Digital servo control</td>
<td></td>
</tr>
<tr>
<td>&gt; SGP4 orbit determined program track</td>
<td></td>
</tr>
<tr>
<td>&gt; Steptack over program track augmentation</td>
<td></td>
</tr>
</tbody>
</table>

#### ENVIRONMENTAL

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td></td>
</tr>
<tr>
<td>-40° to +55° C (operational)</td>
<td></td>
</tr>
<tr>
<td>-45° to +70° C (storage)</td>
<td></td>
</tr>
<tr>
<td>Wind</td>
<td></td>
</tr>
<tr>
<td>&gt; Operational (any position)</td>
<td>45 mph (72 km/h) gusting to 60 mph (97 km/h)</td>
</tr>
<tr>
<td>&gt; Survival</td>
<td>125 mph (200 km/h), stowed</td>
</tr>
<tr>
<td>Atmospheric Conditions</td>
<td>Salt, pollutants, and corrosive contaminants as conditions found in coastal and industrial areas</td>
</tr>
<tr>
<td>De-icing (optional)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Resistive heaters with automatic control</td>
</tr>
</tbody>
</table>

#### ORDERING INFORMATION

| Model         | VA-41-KA |

### NOTES

1. Other frequency bands within 17.7 to 21.2 GHz and 27.0 to 31.0 GHz bands available, Q/V-band feeds also available
2. Including non-redundant 110K LNA and feed to LNA waveguide
3. Other feed configurations available
4. Linear and linear/circular switchable polarization options available

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**CONTACT**

**SALES**
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