ViaSat’s Ground Mobile Terminal family, (the VMT-1220 series of Satcom Terminals), offers true broadband IP access to vehicles needing beyond-line-of-sight network access while on the move. The VMT-1220 series supports channel speeds of up to 10 Mbps from the hub gateway to the vehicle and up to 1024 kbps from the vehicle to the hub.

The Innovative ViaSat ArcLight® Spread-Spectrum Waveform employed by the embedded modem enables the small aperture terminal to operate within FCC and ITU regulatory guidelines for adjacent satellite interference. The waveform is robust against the intermittent blockage (buildings, bridges, trees and other obstacles) that is encountered during ground mobile operations, allowing applications to run without interruption.

The waveform reduces terminal cost and complexity by eliminating the need for high-performance and high-cost antenna implementations required by SCPC or MFTDMA modem waveforms to meet regulatory constraints.

This broadband IP access satisfies many customer needs—including command and control, emergency response, situational awareness, emergency restoral communications, web access, client-server applications, and voice, video and data communications—all while on the move.

The VMT-1220 series Ground Mobile Terminal family is available with a variety of baseband configurations, including modem only, transit case mounted with router and power supplies, and a secure version with KG-250 HAIPE Type 1 encryption. The baseband suite for the complete terminals includes all necessary equipment for powering the unit from the vehicle’s electrical system and housing the equipment in a rugged, shock-isolated enclosure.

Depending on the model, the terminal provides HAIPE Type 1 or FIPS 140-2 encryption, router(s) to supply 10/100BASE-T Ethernet and RJ-11 POTS phone line connections, and TCP/IP acceleration to ensure that applications using TCP/IP achieve maximum speed over the satellite link. The terminals are designed for simple operation on a variety of vehicles and seamless plug-and-play connectivity to any public or private IP network, such as the public Internet, NIPRNET, SIPRNET, and/or CENTRIXS.
VMT-1220 Ground Mobile Terminal

SPECIFICATIONS

OPERATING FREQUENCIES
- Transmit: 14.0 to 14.5 GHz
- Receive: 10.95 to 12.75 GHz (through field changeable LN Bs)

MODULATION AND FEC
- Forward Link RX: (0)/QPSK spreading, BPSK data
- Return Link TX: GMSK spreading, BPSK data
- Spread Factors:
  - Return TX: 4 ≤ k ≤ 150
  - Forward RX: 1 ≤ k ≤ 23
- FEC: R=1/3 Turbo
- Minimum Requirement Eb/No:
  - Return TX: 1.7 dB
  - Forward RX: 2.25
- Multiple Access:
  - Return TX: TDM
  - Forward RX: CRMA spread ALOHA
- Frequent Reuse: Paired Carrier Multiple Access (PCMA)

BASEBAND INTERFACES
- Data: 10/100BASE-T Ethernet
- Voice: RJ-11
- Console: RS-232 and Ethernet (via telnet)

OTHER FEATURES
- Encryption: Type 1 HAIPE (KG-250); FIPS 140-2 (128, 192 or 256 bit AES) optional
- Telephony: POTS phone connections
- Integrated Router: Cisco Systems 2811 router

POWER
- Input: 10 to 14 VDC, 20 to 30 VDC or 115 VAC 50/60 Hz

ENVIRONMENTAL AND PHYSICAL
- Operating Temperature:
  - Antenna: -30° to 50° C
  - In-vehicle Equipment: 0° to 40° C
- Vehicle Ops: Typical paved and unpaved road operation; some off-road operations
- Weight:
  - Antenna: <150 lb
  - In-vehicle Equipment: <120 lb
- Coverage:
  - Continuous azimuth: 360°
  - Elevation: 20° to 70°
- Tracking:
  - 100°/s/min; 200°/s/2/min

TRANSMISSION RATES
- Return Link TX: 32, 64, 128, 512, 1024 Kbps burst rates
- Forward Link RX: 500 Kbps to 10 Mbps

RF/TRACKING PERFORMANCE
- EIRP: 44.5 dBW minimum
- G/T: 10.5 dB/K minimum
- Polarization: Linear
- Coverage:
  - Continuous azimuth: 360°
  - Elevation: 20° to 70°

STANDARD FEATURES

<table>
<thead>
<tr>
<th>VMT-1220-N</th>
<th>VMT-1220</th>
<th>VMT-1220-S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid-profile, auto-tracking, Ku-band antenna</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>RFE with 25 W HPA and world-wide LNB set (10.95 to 12.75 GHz)</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Spread Spectrum network modem</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>7RU IVE Transit Case with Power Distribution</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>20-PORT Router with 4 FXS ports, 8 packet-voice/fax ports (FIPS 140-2 encryption optional)</td>
<td>YES (qty 1)</td>
<td>YES (qty 2)</td>
</tr>
<tr>
<td>KG-250 (HAIPE Type 1) Encryptor</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>xPEP (TCP/IP Accelerator)</td>
<td>YES (qty 1)</td>
<td>YES (qty 2)</td>
</tr>
<tr>
<td>Vehicle 1.8 kVA Power Converter (12/24 V to 115 VAC) and 2.2 kVA UPS</td>
<td>YES</td>
<td>YES</td>
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</tbody>
</table>

There are many more optional configurations for mobile terminals. Please contact ViaSat to discuss your specific requirements.

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