



**With a small footprint and superior tracking performance, ViaSat's VMT-1220SFP Ground Mobile Terminals provide affordable, 2-way, "always-on" broadband IP access via satellite while on the move over any terrain.**



ViaSat's Small Footprint Ground Mobile Terminal family, (the VMT-1220SFP series of Satcom Terminals), offers true broadband IP access to vehicles needing beyond-line-of-sight network access while on the move over difficult terrain. The VMT-1220SFP 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 VMT-1220SFP design delivers superior tracking performance in a smaller antenna footprint, making it the ideal choice for vehicles that traverse rigorous terrain or have limited deck space.

The innovative waveform employed by the embedded ArcLight® 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.

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 terminal minimizes the above-deck installation footprint with a high-performance antenna design.

The VMT-1220SFP 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.

## SYSTEM AT A GLANCE

### FCC/ITU-compliant On All Satellites

- Reliable Ku-band communication, without harmful adjacent satellite interference issues, enabled by spread spectrum waveform
- Increased network efficiency through mobile terminal burst transmission
- Optimized capacity enabled by closed loop power control and advanced network management

### Secure Broadband IP Network Access

- Up to 10 Mbps shared forward channel (hub-to-mobile) rate
- Up to 1024 kbps individual return channel burst rate (mobile-to-hub)
- Protected user IP traffic (HAIPE® Type 1 or FIPS 140-2)

### Advanced Blockage Mitigation

- Increased throughput with local blockage detection, burst transmit control, and data buffering
- Maximum channel capacity with rapid acquisition/reacquisition

### Bandwidth Efficiency

- Low-overhead shared IP network media access
- Reduced bandwidth cost with frequency reuse overlaying forward and return links simultaneously in same bandwidth

### Higher Performance In a Small Footprint

- Installation on vehicles with limited deck space enabled by small footprint antenna
- Superior tracking performance achieved over challenging terrain

### Service Options

- Dedicated or shared hub service through ViaSat or ViaSat's partners
- Organic capability can be provided with purchased hub and user-supplied transponder bandwidth

Depending on the model, the terminal provides HAIPE Type 1 or FIPS 140-2 encryption, router(s) to supply 10/100BaseT 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.

## SPECIFICATIONS

### OPERATING FREQUENCIES

**Transmit:** 14.0 – 14.5 GHz  
**Receive:** 10.95 – 12.75 GHz (through field changeable LNBs)

### MODULATION AND FEC

**Forward Link Rx:** (O)/QPSK spreading, BPSK data  
**Return Link Tx:** GMSK spreading, BPSK data  
**Spread Factors:**  $4 \leq k \leq 150$  (Ret Tx);  $1 \leq k \leq 23$  (FW Rx)  
**FEC:** R=1/3 Turbo  
**Min. Req. Eb/No:** 1.7 dB (FW Rx); 2.25 (Ret Tx) to achieve Quasi-Error Free (QEF)  
**Multiple Access:** TDM (FW Rx); CRMA spread ALOHA (Ret Tx)  
**Freq. Reuse:** Paired Carrier Multiple Access (PCMA)

### TRANSMISSION RATES

**Return Link Tx:** 32, 64, 128, 256, 512, 1024 Kbps burst rates  
**Forward Link Rx:** 500 Kbps to 10 Mbps

### RF/TRACKING PERFORMANCE

**EIRP:** 44 dBW minimum  
**G/T:** 11 dB/K minimum  
**Polarization:** Linear  
**Coverage:** 360° continuous azimuth; 0° – 90° elevation  
**Tracking:** 400°/sec; 600°/sec<sup>2</sup> (minimum across all axes)

### BASEBAND INTERFACES

**Data:** 10/100BaseT 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  
**Acceleration:** TCP/IP Performance Enhancing Proxy  
**Telephony:** POTS phone connections  
**Integrated Router:** Cisco Systems 2811 router

### POWER

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

### ENVIRONMENTAL AND PHYSICAL

**Operating Temp:** -40° to 71° C (antenna); 0° to 40° C (in-vehicle equipment)  
**Vehicle Ops:** Paved, unpaved, and all off-road conditions  
**Weight:** 105 lbs (antenna); <120 lbs (in-vehicle equipment)  
**Size:** 17"H x 26"W x 26"D (antenna); 14.6"H x 22.5"W x 24"D (in-vehicle equipment)

STANDARD FEATURES	VMT-1220SFP-N	VMT-1220SFP	VMT-1220SFP-S
Small footprint, auto-tracking, Ku-band antenna	YES	YES	YES
RFE with 8 watt HPA and world-wide LNB set (10.95-12.75 GHz)	YES	YES	YES
Spread Spectrum Arclight network modem	YES	YES	YES
7RU IVE Transit Case with Power Distribution		YES	YES
20-PORT Router with 4 FXS ports, 8 packet-voice/fax ports (FIPS 140-2 encryption optional)		YES (qty 1)	YES (qty 2)
KG-250 (HAIPE Type 1) Encryptor			YES
xPEP (TCP/IP Accelerator)		YES (qty 1)	YES (qty 2)
Vehicle 1.8 kVA Power Converter (12/24V to 115 VAC) and 2.2 kVA UPS		YES	YES

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

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