



The ViaSat VMT-1220LA Light Aircraft Terminal provides affordable, 2-way, always-on broadband IP access via satellite to aircraft while on the ground and in flight.

The ViaSat Mobile Terminal for Light Aircraft (VMT-1220LA) provides the lightest, smallest-footprint Ku-band broadband satcom terminal available. The system can be mounted on the tail or fuselage, and operates both in flight and on the tarmac. The VMT-1220LA supports channel speeds of up to 10 Mbps from the hub gateway to the aircraft and up to 1024 kbps from the aircraft to the hub.

Based on field-proven and certified ArcLight® technology, this small aperture terminal operates within FCC and ITU regulatory guidelines for adjacent satellite interference. The waveform is robust against intermittent blockage, allowing applications to run without interruption.

Part of the family of ViaSat ArcLight-based Mobile Satcom Systems, VMT-1220LA-equipped aircraft can seamlessly co-exist with ground vehicles, helicopters, and other aircraft on the ArcLight COTM network. This satellite networking technology and equipment have been granted interoperability certification by the U.S. Department of Defense (DoD) Joint Interoperability Test Command (JITC).

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 in flight.

The VMT-1220LA can be provided as a satcom-only terminal, or as a complete system, with router, encryption, acceleration, telephone, etc.

The terminal is designed for simple operation and seamless plug-and-play connectivity to any public or private IP network, such as the public Internet, NIPRNET, SIPRNET, and/or CENTRIXS.

ON-THE-MOVE BROADBAND

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 rate (into the aircraft)
- Up to 1024 kbps individual return channel burst rate (from the aircraft)
- Protected user IP traffic (HAIPÉ® Type 1 or FIPS 140-2)

Flexible Design for Aircraft Requirements

- DO-160D certified
- Permanently mounted on tail or fuselage
- Multiple radome options
- Variable distance from antenna to modem
- Operates from standard aircraft +28 VDC power

Bandwidth Efficiency

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

Service Options

- Shared hub service through ViaSat or a ViaSat partner (including fixed pricing per terminal options)
- Organic capability can be provided with purchased hub and user-supplied transponder bandwidth

Options include:

- HAIPE Type 1 and/or FIPS 140-2 certified encryption on all user traffic
- Router/switch to supply 10/100BaseT Ethernet and RJ-11 phone line connections
- TCP/HTTP accelerator to ensure that applications using TCP/IP achieve maximum speed over the satellite link.
- 802.11 or Type 1 secure 802.11 capabilities

SPECIFICATIONS

OPERATING FREQUENCIES

Transmit: 14.0 – 14.5 GHz
Receive: 11.7 – 12.75 GHz

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: 37 dBW minimum
G/T: 8 dB/K minimum
Polarization: Selectable horizontal/vertical linear polarization
Coverage: 360° continuous azimuth; 5° – 85° elevation
Tracking: 30°/sec; 40°/sec² (minimum)

BASEBAND INTERFACES

Data: 10/100BaseT Ethernet
Nav: ARINC™ 429 input required

OPTIONAL FEATURES

Encryption: Type 1 HAIPE (KG-250) and/or FIPS 140-2 (128, 192 or 256 bit AES)
Acceleration: TCP/HTTP Performance Enhancing Proxy
Telephony: VoIP or POTS phone connections
Router: Cisco Systems router/switch
Video Compression: NTSC or PAL; MPEG-4 Part 10 (H.264) real-time streaming compression
Wireless: 802.11 or secure 802.11

POWER

Input: +28 VDC, <275 W (w/o options)

ENVIRONMENTAL AND PHYSICAL

Operating Temp: -55° to +70° C (top-side equipment); -20° to +60° C (in-aircraft equipment)
Aircraft Ops: Idling, taxiing, and in full flight
Weight & Size (WDH): Modem: 10 lbs, 1/2 ATR;
 Antenna: 21 lbs, approx. 12 x 18 x 14 in.;
 ACU: 4 lbs, 8 x 11 x 2 in.

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