



The ViaSat® VMT-1220HM Hatch-Mount Terminal provides affordable, 2-way, “always-on” broadband IP access via satellite to C-130 aircraft while stationary, taxiing or in flight.

The ViaSat VMT-1220 Hatch-Mount Terminal, (VMT-1220HM), provides roll-on/off Ku-band broadband satcom for C-130 aircraft while on the tarmac or in flight. The VMT-1220HM series 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.

The VMT-1220HM features a roll-on/off design for simple installation and dismantling. A single crew member can quickly install the terminal in the aircraft hatch. It can be easily removed in flight or during an emergency by one crew member to allow smoke exhaust or personnel egress. The VMT-1220HM is provided in ready-to-ship packaging for easy transporting.

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-1220HM-equipped aircraft can seamlessly coexist with ground vehicle, maritime, and helicopter terminals on the ArcLight COTM network. This satellite networking technology and equipment are at the heart of a Command and Control On-the-Move (C²OTM) satellite communication system that has been granted interoperability certification by the U.S. Department of Defense (DoD) Joint Interoperability Test Command (JITC). The system is in operational use on multiple C-130 aircraft.

This broadband IP access satisfies many customer needs — including command and control, emergency response, streaming video, situational awareness, Intelligence Surveillance, and Reconnaissance (ISR), web access, client-server applications, and voice, video and data communications — all while in flight.

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 rate (into the aircraft)
- Up to 1024 kbps individual return channel burst rate (from the aircraft)
- Protected IP traffic with HAIPE® Type 1 encryption

Flexible Design for Aircraft Requirements

- Airworthiness certified by USAF
- Roll-on/off capability for use on different C-130 aircraft
- Center hatch standard; forward hatch optional
- Mount/dismountable in minutes by single crew member while on the ground or in flight
- Integrated Inertial Reference Unit (IRU) provides accurate satellite tracking in all mission phases
- Operates from aircraft and ground power
- Integrated UPS allows seamless transition from aircraft to GPU

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

The VMT-1220HM is a complete terminal — just bring your user equipment: laptop computers, telephones, VoIP phones, or any IP-based equipment. The terminal includes all necessary equipment for powering the unit from the aircraft's 400Hz electrical source. The VMT-1200HM can also be operated from ground power. A high-precision inertial reference unit is included to provide navigation data to the antenna control unit for tracking. The inertial reference unit has quick-release mounts underneath the hatch.

The terminal provides black and red routers, HAIPE Type 1 encryption, and TCP/IP acceleration to ensure that applications using TCP/IP achieve maximum speed over the satellite link.

Other hatch-mount and permanent-mount configurations are available.

SPECIFICATIONS

OPERATING FREQUENCIES

Transmit: 14.0 – 14.5 GHz
Receive: 11.55 - 12.75 GHz, (optional 11.45 - 12.65 GHz)

MODULATION AND FEC

Forward Link Rx: (O)/QPSK spreading, BPSK data
Return Link Tx: GMSK spreading, BPSK data
Spread Factors: Return Link: 4 to 150; Forward Link: 1 to 23
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: 39.5 dBW minimum
G/T: 9 dB/K minimum
Polarization: Selectable horizontal/vertical linear polarization
Coverage: 360° azimuth; 5° – 85° elevation
Tracking:

	Azimuth	Elevation	Polarization
Rates	30°/s	20°/s	20°/s
Acceleration	30°/s ²	30°/s ²	30°/s ²

BASEBAND INTERFACES

Data: 10/100BaseT Ethernet
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
Router: Cisco Systems 2811 router

POWER

Input: 120 Volts Single Phase AC 47-450Hz, max 950 W

ENVIRONMENTAL AND PHYSICAL

Operating Temp: -55° to 65° C (hatch with antenna); 0° to 40° C (IRU and in-aircraft equipment)
Weight: 44 lbs (hatch with antenna); 12 lbs (IRU with quick-release mount); 206 lbs (in-aircraft equipment)
Size: 24"H x 30" base diameter (hatch with antenna); 20"H x 23"W x 36"D (in-aircraft equipment)



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