The MD-1377 Joint Internet Protocol Modem (JIPM) system from ViaSat combines flexible satellite networking with information assurance capabilities to deliver secure, high-speed IP communications to the military and government agencies. Featuring a DVB standards-based waveform with powerful encryption and government-specified transmission security (TRANSEC), JIPM is the Department of Defense (DoD) satellite modem standard for connecting all US forces. This system powers an IP networking backbone across the battlespace, enabling today’s information-hungry warfighters to efficiently share voice, video, and data communications over military and commercial satellites (including Ka-band) using adaptive and variable coded modulation techniques.

JIPM connects more users in more networks — and does so more efficiently — thanks to flexible networking and bandwidth optimization features. The 1U remote modem (RM) and highly scalable network control center (NCC) rely on advanced forward error correction (FEC), modulation, and coding schemes to make better use of bandwidth in star or multi-star topologies. The JIPM system even supports an upgrade for single satellite hop mesh connections between remote modems. So you can change your network architecture to suit your application, without changing your modem. One modem, multiple networks, for all US forces.

With an embedded FIPS 140-2, Level 2, AES-256 TRANSEC module, the system ensures secure connectivity and protects sensitive communications. Using transportable and mobile SATCOM platforms equipped with JIPM remote modems, deployed warfighters can access core Global Information Grid (GIG) services including SIPRNET, NIPRNET, VTC, DSN, DRSN and JWICS through JIPM NCCs. Share information across forces and across the battlespace with IP satellite networking powered by JIPM. Arm yourself with this secure, high-speed modem to communicate across the GIG and directly between deployed forces to execute joint missions more effectively.
**SPECIFICATIONS**

**NETWORK**
- Independent Networks: 10 per JIPM NCC
- Forward Link Carriers: 1 per network
- Remote Modems: \( \geq 1000 \) per network; \( \geq 300 \) 2-way RMs per network
- Return Link Carriers: Up to 3 per network
- Multi-Satellite Operation: Each network can operate on a separate satellite or transponder, software upgradeable to up to 64 carriers per network
- NCC Network Interface: Gigabit Ethernet, 1 data port per network, 4 control ports per NCC
- Frequency Hopping: Per SatLabs recommendation
- Hop Rate: Up to 6000 hops/sec
- Synchronization: Network Timing Reference provided by NCC
- Forward Transmission Rate (NCC to RM): 1 to 50 Msps, independent on each DVB-S2 receiver
- Return Transmission Rate (RM to NCC): 128 Kbps to 2.048 Msps (extendible to 8.192 Msps)
- Receive Only Operation: Yes (with or without TRANSEC enabled)

**TRANSMISSION SECURITY**
- Encryption: AES-256 with additional TRANSEC features

**PLANNED CERTIFICATIONS**
- MILSATCOM: DSCS, GBS, WGS compliance
- DIACAP: DoD 8510.01 compliance
- NIST: NIST compliance with FIPS 140-2 (extendible to 140-3)

**DVB-S2/RCS**
- Forward Link: DVB-S2 per ETSI EN 302 307 with ACM/VCM/CCM
- Return Link: DVB-RCS per ETSI EN 301 790

**REDUNDANCY**
- NCC Redundancy: 1:1 for core components
- Forward Link Redundancy: 1:4
- Return Link Redundancy: 1:4

**IP**
- IP Packet Forwarding: Transparent IPv4 and IPv6 packet forwarding for unicast and multicast
- IP Packet Routing: IGMP v1, v2, v3; MLD v1, v2; RIP v1, v2, ng
- IP Encapsulation: MPE, MPEG and ATM encapsulation
- IPv6: Per DoD IPv6 Special Profiles for IPv6 Compatible Products Mandatory requirements
- IP QoS: Configurable mapping of standard or non-standard DSCP to five traffic classes on both FL and RL
- TCP/IP Acceleration: Configurable for FL and RL; applies to unencrypted (SBU) traffic flows concurrent with Type 1 encrypted traffic flows

**SATELLITE INTERFACE**
- IF Interface: 950–2050 MHz
- Supported RF Interfaces: 3–32 GHz
- Spectral Confinement: \( \alpha = 0.20 \) or 0.35 (FL-selectable), 0.35 (RL)
- Doppler Performance: Maintains specified performance under all of the satellite Doppler conditions corresponding to up to seven (7) degrees of orbital inclination
- BUC, LNB Support: 10 MHz on/off, LNB power (13, 18 VDC, off), BUC power (24 VDC, external, off), independently selectable

**MODULATION AND CODING**
- Forward Links: DVB-S2 ACM/VCM/CCM LDPC FEC, QPSK/8PSK/16APSK
- Return Links: DVB-RCS turbo FEC, QPSK/8PSK
- Mesh Links (Upgrade): DVB-RCS Turbo FEC, QPSK/8PSK

**HARDWARE**
- RM Packaging: 19 inch rack mountable
- RM Cooling: External forced air cooling not required
- System Availability: 99.99%
- AC Prime Power: 100 to 240 VAC, 47 to 63 Hz
- NCC High Temperature: 38ºC (100ºF) Operating; 60ºC (140ºF) Non-Operating
- NCC Low Temperature: 4.4ºC (40ºF) Operating; -40ºC (-40ºF) Non-Operating
- RM High Temperature: 50ºC (122ºF) Operating; 70ºC (158ºF) Non-Operating
- RM Low Temperature: 0ºC (32ºF) Operating; -40ºC (-40ºF) Non-Operating
- Humidity: Operating: 95%, Non-Condensing
- Humidity, Transportation and Storage: 100%, Non-Condensing
- Management Interface: Web browser for NCC and RM (local or remote access); SNMPv3 on NCC allows local or remote monitor from external NMS

**CONTACT**

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