L3HARRIS®
FAST. FORWARD.

MPM-3000 SATELLITE IP MODEM

Connect, Collaborate, Communicate Anytime, Anywhere


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The enhanced MPM-3000 provides the capability, capacity and features to provide secure, mesh protected satellite communications for our warfighters

L3Harris continues to meet the demand for Network Centric Satellite IP communications by providing the most powerful and advanced MPM (Multi-Purpose Modem) system to date. The MPM-3000 modem hosts the Network Centric Waveform (NCW) and Network Centric Waveform-Resilient (NCW-R), the standard wideband SATCOM waveforms for tactical military use.

The MPM-3000 NCW/NCW-R modem provides a fully automated network which requires no operator intervention to maintain connectivity, even during changing data link conditions. It enables full use of the advanced capabilities of the Wideband Global SATCOM (WGS) multi-beam, multi-band satellite. The MPM-3000 is a drop-in replacement for the RMPM-1000 Modem.

FEATURES

Enables NCW Network Capabilities

- Supports full-mesh, star, hub-spoke and hybrid network topologies
- Hub-assist mode maintains communications when conditions prevent peer-to-peer links
- Dynamic multicast: bandwidth efficient handling of multicast and broadcast packets

Excellent Support for On-The-Move (OTM) Operations

- Rapid acquisition/reacquisition of network connection after blockage
- Supports Doppler, Doppler-rate and Doppler acceleration requirements for high-speed OTM performance
- Link-layer assured delivery (ARQ)
- Direct Sequence Spreading for off-axis Power Spectral Density (PS) regulatory limit accommodation for small aperture antennas

Highly Dependable Mobile Communications

KEY FEATURES

- **Wide range of data rates, modulation schemes and FEC code rates for enhanced security**
- **Software defined multi-waveform capability**
- **L-Band Interface: 950 MHz to 2150 MHz**
- **Aggregate data rate: 32 Mbps Tx / 64 Mbps Rx (non-stacked)**
- **Up to 6 Modems can be stacked for higher aggregate data rates and spectrum usage**
- **Multiple independent channels: 2 Tx/4 Rx**
- **Low-latency / jitter Voice-over-IP (VoIP)**
- **Automated link power and data-rate control maintains connectivity in rapidly changing environments and seamlessly accommodates different terminal types and sizes**
- **Operates over any commercial or military transponded satellite (C-, X-, Ku- or Ka-band)**

Operational Flexibility

- Supports loading of mission configurations for simplified field operations and rapid start-up
- Any MPM-3000 can take over as hub/network controller, no special hardware needed
- MPM-3000 stacking capability provides increased throughput for a hub or high-traffic node

WGS-Compliant – Leverages Capabilities of Advanced Wideband Satellites

- 1.2 GHz agile tuned front-end allows back-to-back bursts scheduled across wideband transponders/beams
- Multi-beam operation with cross-banded allocations
- Network terminals may reside in different beams and bands
- Multi-beam fan-in/fan-out capabilities, supports multicast and broadcast information streams

Efficient Use of Satellite Resources

- Floating carriers, no need to fix carrier frequency or pre-plan carrier bandwidth
- Automatic handover of control keeps network operational under adverse conditions
- Simultaneous support for spread and non-spread users

Interference Protection (with NCW-Resilient Operation)

- Robust communications in highly contested environments
- Inherent real-time interference detection and characterization
- Automated switching between benign and contested operation
- Automated link adaptation for efficient interference mitigation

RoHS 2 and CE Compliant

SPECIFICATIONS

MF-TDMA NETWORK CENTRIC WAVEFORM	
Burst data rate	32 Kbps to 16 Mbps (per channel) 32 Mbps Tx / 64 Mbps Rx (max single unit aggregate)
FEC coding	LDPC
FEC block sizes	640, 1280, 2560, 5120 bits
Modulation Types and Code Rates	BPSK: Rate 1/2 OQPSK: Rate 1/2, 2/3, 8/11, 4/5 8 PSK: Rate 2/3
Direct sequence spreading gain	0 to 12 dB (spread factors 1, 2, 4, 6, 8, 12, 16; up to 8.192 Mcps)
Number of independent carriers (MF-TDMA operation)	2 Transmit/4 Receive (Rapidly tunable over 1.2 GHz)
Transmission security	FIPS 140-2 Level 2 Certified AES-256 CBC TRANSEC (user data and control)
Control	SNMP v2/v3 / L3 HCI Application

ENVIRONMENTAL	
Airflow conduction cooled and environmentally sealed	
Operating temperature	-20 ˚C to +50 ˚C
Storage temperature	-37.2 ˚C to +71.1 ˚C
Vibration/Shock	MIL-STD-810G
EMI	MIL-STD-461F

MECHANICAL/ELECTRICAL	
Size	1U 19 in. rack-mountable chassis 18.5 in. L x 19 in. W x 1.75 in. H (46.99 cm L x 48.26 cm W x 4.445 cm H)
Weight	19 lb. (excluding mounting hardware) (8.618 kg)
Input power	100-120 and 220-240 VAC, 50 to 60 Hz
Power consumption	< 170 W
Frequency reference	Internal or external input (5 or 10 MHz, threaded TNC) 10 MHz reference output (threaded TNC)

INTERFACES	
Monitor and control	10/100/1000 Base-T Ethernet
NCW data port	10/100/1000 Base-T Ethernet
Terminal control port	10/100/1000 Base-T Ethernet
Tx/Rx	Threaded TNC
10 MHz Ref in/out	Threaded TNC

SUPPORTED INTERFACES	
External GPS	ICD-GPS-153C Compliant, RS-232 or RS-422
RoHS 2 and CE compliant	CE

Front View

Back View

MPM-3000 Satellite IP Modem

L3Harris Technologies is an agile global aerospace and defense technology innovator, delivering end-to-end solutions that meet customers' mission-critical needs. The company provides advanced defense and commercial technologies across air, land, sea, space and cyber domains.

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