



RTM-100 Troposcatter Modem

Improved range, stability and throughput for troposcatter communications



The Raytheon RTM-100 troposcatter modem sets new milestones in troposcatter communications featuring 100 MB throughput.

Benefits

- Operation up to 100 Mbps
- Unique waveform for multipath cancellation and optimized algorithms for fading immunity
- Quad diversity with soft decision algorithm
- Highly spectrum-efficient FEC processing
- Dual transmission path with independent digital pre-distortion
- Ethernet data and control interface (SNMP and Web graphical user interface)
- Compact 2U 19-inch rack
- Carrier to noise ratio and bit error rate monitoring

Superior Performance

An industry first, the waveform of Raytheon's RTM-100 troposcatter modem offers strong resiliency to multipath, which negatively affects troposcatter communications. Combined with an optimized time-interleaving process and signal channel diversity, the RTM-100 delivers superior transmission performance. The sophisticated algorithms, including Doppler compensation and maximum ratio combining between the four diversity inputs, ensure high stability of the link even in mobile radio channels.

The use of turbo-coding forward error correction (FEC) and state-of-the-art digital processing ensures an unprecedented throughput up to 100 Mbps. The modem integrates a non-linear digital pre-distortion capability.

The Gigabit Ethernet (GbE) data port and the ability to command and control the operation over Simple Network Management Protocol (SNMP) simplify the integration of the device into a net-centric Internet protocol (IP) communication system.

The RTM-100 comes as a compact 2U rack with standard 70 MHz inputs/outputs.

RTM-100 Troposcatter Modem Technical Specifications

	Specification	Additional Information
Mechanical		
Dimensions	Two rack units (2RU)	~32 pounds
Environmental		
Power	110/120 – 220/240 V ac, 50/60 Hz, 200 watts	
Operating temperature	-10°C to 55°C, 95% humidity (non-condensing)	
Storage temperature	-32°C to 71°C, 99% humidity (non-condensing)	
Interfaces		
Transmit IF	4× 70 MHz	0 to -20 dBm (±1 dB)
Receive IF	8× 70 MHz	-20 to -80 dBm (QPSK 1/5 16 MHz) Max +2 dBm non-destructive input level
Ref in	~10 MHz, BNC	-15 dBm to 15 dBm
Ref out	~10 MHz, BNC	2 dBm ±2 dB
IP data port	Ethernet 10/100/1000, RJ45	Ethernet 802.3-2005
IP control port	Ethernet 10/100/1000, RJ45	Ethernet 802.3-2005, ARP, ICMP, HTTP, SNMPv2, FTP
Serial control port	RS232	For low-level product configuration and maintenance
Waveform		
Bandwidth	Up to 32 MHz	
FEC	1/5, 1/4, 1/3, 1/2, 2/3	TurboCodes
Time-interleaving	0 to 200 ms	
Constellation	QPSK, 16QAM, 64QAM	
Diversity algorithm	Soft decision by Maximum Ratio combining	
Throughput	Up to 100.0 Mbps	
Mean Time Between Failures	40,000 hours	

About Raytheon Intelligence, Information and Services

Raytheon Intelligence, Information and Services is a leader in intelligence, surveillance and reconnaissance; advanced cyber solutions; weather and environmental solutions; information-based solutions for law enforcement and homeland security; and training, logistics, engineering, product support, and operational support services and solutions for the Mission Support, homeland security, space, civil aviation, counterproliferation and counterterrorism markets.

For further information contact:
iispr@raytheon.com

**Intelligence, Information
and Services**
3 Van de Graaf Drive
Burlington, MA
01803 USA

www.raytheon.com