MorosX

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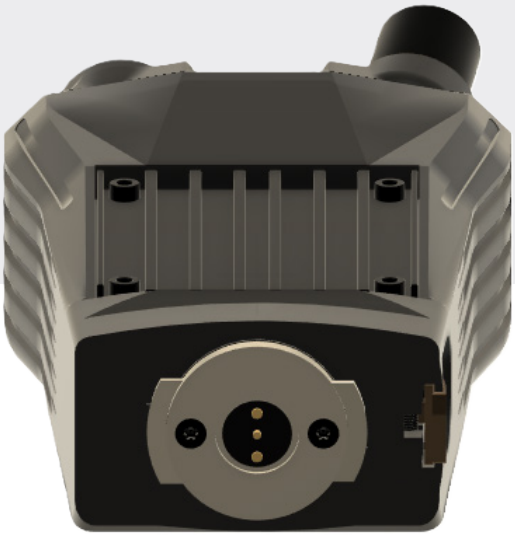

TECHNICAL DATA SHEET

MorosX IP MESH MANET RADIO

The MorosX MX88 IP Mesh radio redefines off-grid communication by delivering the power of a professional-grade MANET system at an accessible price point. Built for reliability in the most demanding conditions, this radio eliminates the single point of failure inherent in traditional networks, instead creating a dynamic, self-healing mesh where each node intelligently routes data. Designed with the tactical user and outdoor professional in mind, the MX88 ensures uninterrupted, secure voice, video, and data communication.

The MX88 's ability to transfer data in harsh environments is underpinned by several key features inherent to its Mobile Ad-Hoc Network (MANET) technology. Unlike traditional wireless communication, which relies on a fixed, centralized infrastructure (like a cellular tower or a single Wi-Fi access point) that can easily fail, a MANET is decentralized and robust. This architecture provides reliable, secure, and dynamic communication even in the most challenging conditions where conventional data transfer is impossible

PRODUCT INFO

PRODUCT NAME:
MorosX IP Mesh Radio

PRODUCT CODE:
MX88

CATEGORY:
IP MESH MANET

PRODUCT KEY FEATURES

- One of the most critical features is multi-hop routing, which allows the network to bypass obstructions and extend its range far beyond that of a single radio's line of sight.
- Each MX88 radio in the network acts as both a transmitter and a relay for other units.
- Data intelligently "hops" from one radio node to the next until it reaches its destination, automatically circumventing physical obstacles like buildings, mountains, or dense foliage.
- This creates a dynamic chain of communication that can navigate around complex and varied terrain, a capability conventional point-to-point radios lack.

Self-forming and self-healing network topology

The MX88 radios form a network with a dynamic, self-organizing topology. This means the network requires no pre-configuration or manual setup, allowing for rapid deployment in time-critical situations.

- When a new radio powers on, it automatically detects and connects to other nearby MX88 radios, joining the mesh.
- The network is also self-healing; if a radio node is lost due to damage, low battery, or moving out of range, the network automatically and seamlessly re-routes data through alternative paths.
- This built-in redundancy eliminates any single point of failure, ensuring continuous operation and exceptional resilience in unpredictable and high-risk scenarios, such as disaster recovery or military operations.

High adaptability to mobile and dynamic environments

The network is built to handle constant motion and change without disruption. For users in vehicles, on foot, or operating unmanned systems, this is a critical advantage.

- As nodes in the network move, the intelligent routing protocols running on each MX88 radio constantly and automatically assess link quality, latency, and available paths.
- The system then dynamically re-optimizes routes in real-time to maintain the most efficient data flow.
- This functionality is crucial for maintaining command and control in rapidly changing operational environments, from urban canyons to dense forest coverage.

TECHNICAL SPECIFICATIONS

Specifications	2x2 MU-MIMO, IEEE 802.11ax		
Physical		**Network Capabilities**	
Overall Size	6.5 L x 2.6-3.7 W x 2 H in (165mm x 66-94mm x 50mm)	Mesh Type	• Mobile Ad-Hoc NETworking
Weight	Without battery (333g) With PRC-152 battery (730g)	Modulation Technique	• OFDMA | QAM 1024-4096 • Robust in harsh RF Enviroments • 485 Mbps
Frequency Range	• LoRa 902 – 928 MHz • S Band 2412 MHz to 2484 MHz	Compliance	RoHS, MIL-STD-810G Shock & Vibration
Channel Spacing	5 MHz/10 MHz/20 MHz/40 MHz	Communication	• Simultaneous Voice, Data, PLI • Multicast Voice Talk Group • External GPS • IP Support – IPv4, IPv6; Unicast, Multicast, Broadcast; TCP, UDP; RTP
Transmit Power	• LoRa 26db, 631mw • 2.4 GHz 36db, 4W	Security	• AES-CCMP at 128/256 bits • AES-GCMP at 128/256 bits • WEP, TKIP hardware encryption • WPA/WPA2/WPA3
		Application support	• ATAK Multicast Support
Battery	70wh		
Connectors	TNC RF, SMA GPS/LoRa		
Operating Temp	-40°F to +185°F (-40 deg C to 85 deg C)		
Water Resistance	IP68		
GNSS	u-blox ZOE-M8 GPS		
Computing Hardware			
Processor	• NXP™ i.MX 8M Plus Quad Core 1.6GHz ARM® Cortex™-A53		
RAM	• 4 GByte LPDDR4		
Flash	• 64GBytes eMMC		
Ethernet	• Gigabit Port | 4-Pin IP68		
Input Voltage	• 8 to 60VDC		
Enviromental	Operating Parameters • Temperature: -40°C to +85°C • Humidity (non-condensing): 20% to 90% • MTBF: 67 Years at 55C		
Storage Parameters	• Temperature: -40°C to +85°C • Humidity (non-condensing): 5% to 95%		

CONTACT

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GET CONNECTED

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OUR LOCATION

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