

MCU 30 - Miniature Unit - Extended Ruggedized

When Small Form Factor Matters!

Mobilicom's multifunctional MCU-30 unit is a 4G combined with Mobile MESH, IP communications unit that delivers ad-hoc direct wireless mobile communication including HD Video, data and VoIP without the need for any infrastructure. This low power consumption, lightweight, battery operated unit delivers the highest form-to-performance ratio and is ideal for hand carry missions and robotics on-the-move whether aerial, ground or sea.

The multifunctional MCU-30 extended ruggedized unit offers a wide frequency range from 75 MHz to 5.9 GHz. The extended ruggedized MCU-30 unit provides additional protection to withstand shocks, vibration, dust, humidity, extreme temperature and is waterproof (IP67). With field-proven high performance in challenging Non-Line of Site (N-LOS) surrounding, the multifunctional MCU-30 unit exceeds standard performance including multipath environments and N-LOS such as forests and urban environments.

The MCU-30 extended ruggedized unit adapts and supports multiple network topologies on-the-move: Mobile Point-to-Point, Mobile Point-to-Multipoint, Mobile Multipoint-to-Multipoint, Mobile MESH, Extended MESH and Collaborative MESH. As a multifunctional unit, the MCU-30 operates as a transceiver, relay, and gateway to other units in the network and will "self-manage" and "self-heal" on-the-move. Each unit transceives all data, thus eliminating the need for base stations, repeaters and transmitters, and consequently can become a backup unit for all other units in the network, creating a robust and redundant communications network with no single-point-of-failure.

By leveraging 4G technology combined with Mobile MESH topology and MIMO antennas, each antenna is an independent unit fully transceiving HD video, data and VoIP. With a smart antenna consisting of transmit Cyclic Delayed Diversity (CDD) and Maximal Ratio Combining (MRC) receive diversity, Mobilicom provides highest communication quality, larger distance range.

Powered by Mobilicom's Software Defined Radio (SDR) the MCU-30 unit is adaptable to any modification or configuration of the wireless link parameters to best fit the ever changing environment conditions.

With a triple layer security solution integrated within the unit, the multifunctional MCU-30 offers superior 4G MESH security layer comprising of AES-128 and AES 256 bit encryption standards.



The second layer consists of an allocated available space within the CPU for any security software of your choice. A third layer resides within Mobilicom's proprietary technology fully developed with in-house knowledge and insight uncovered or recognized by external party. With changing message structures, Mobilicom ensures even greater immunity to 3rd party hacking.

Designed as a high capacity small form factor unit, the multifunctional extended ruggedized MCU-30 unit is 12 x 9 x 6 cm (4.7 x 3.5 x 2.3") and weighs 550 gr. (19.5 Oz.).

The MCU-30 extended ruggedized unit is uniquely designed to operate in ultra-high mobility speed environment of up to 800Km/h, the only 4G MESH technology to truly operate in ultra-high mobility speed.

Mobilicom's MCU units are managed via an optional software management solution that provides encompassing management and control tools over distributed onsite MCU units in a simple, intuitive and efficient manner. Mobilicom's software management tool consolidates all relevant data into a single powerful software platform that enables real-time monitoring of communications networks and deployment.

Additionally a well-documented in band Application Programmable Interface (API) is available for control of customer Command and Control systems.



No Infrastructure



No Single Point of Failure



Triple Layer Security



Flexible & Scalable



Ultra-High Mobility Speed

Radio and Modem MCU-30 Extended Ruggedized	
Range	Up to 15km (omni); 20-30km (directional) Longer ranges available.
Frequency	700-950 MHz 902-928 MHz (ISM) 2.4 GHz (ISM) 2.3-2.7 GHz 5.8 GHz (ISM) 4.9-5.9 GHz <ul style="list-style-type: none"> ▪ Multi Band Radio (MBR) Available ▪ Other frequencies available ranging from 75 MHz - 6 GHz
Antenna	Various options: Omni 0-8dBi Hemisphere, Sectorial, Directional Tracking antenna also available.
Antennas Connectors	2XSMA female
Output Power (Average per channel)	Up to 1W per Antenna (total 2W)
Tx Power Control	50dB
Rx Dynamic Range	70dB
Sensitivity	Max -101dBm
Radio Access Method	OFDM - TDMA
Duplexing	TDD
Configuration	MIMO 2X2; Tx & Rx Diversity
Channel BW	2.5 MHz - 10 MHz; Up to 20 MHz available upon request
FFT Supported	512 32 - 2048 upon request
FEC method	CTC
Modulations	QPSK / 16QAM
Throughput	1.6 - 10 mbps; Up to 20 mbps upon request.
Synchronization	Synchronized w/o GPS. GPS & 1PPS also available.
Encryption	AES 128 AES 256 and Custom Export Control

Highlights

- 4G with Mobile MESH
- Fully synchronized system
- Outdoor & indoor operation
- Hand carried size & low power consumption
- Highest form-to-performance ratio
- Designed to withstand shock, vibration, dust, humidity, fog, and extreme temperature range.
- Battery Operated
- Wide Frequency Range - 75MHz-6GHz
- Software Defined Radio (SDR)
- **MIMO Advanced Antenna Processing**
- **Triple Layer Security**
- Water proof (IP67) and extreme temperature range

Environmental		
Temperature Range	Operating	Storage
Extended Ruggedized	-20 to 60°C	-50 to 85°C
Humidity	5 to 95% non-condensing	
Sealing	Designed for IP67, dust, water proof, immersion in water up to 1 meter	
Environment Casing	Shock, Vibration, Salt	

Interfaces	
Data	Ethernet 10/100Mbps
Full Ethernet Protocol Transparency	IP, TCP, UDP, RTP, HTTP Broadcast, Multicast, Unicast Ethernet, VLAN, VPN
Optional Interfaces*	RS232 /485 / 422,GPIO, 1pps

Dimensions	[HxWxD] cm	[HxWxD] inch
	12x9x6 cm	4.7x3.5x2.3

Weight	Grams	Ounce
	550 gr.	19 oz.

Power	
DC Voltage	7.5-24V DC
Power Consumption	10W Average Up to 12W

Configuration and Management	
Unit Monitoring Application - Web Based GUI	MC-EMA
Network Management Application	MC-NMA

Making Impossible Mission Critical Communications Possible:

As a global mission-critical-communications solution provider, Mobilicom develops and delivers Mobile Private Network technology and solutions for wireless mobile networks, without the need for any infrastructure. By leveraging 4G technology combined with Mobile MESH network topology, Mobilicom assures optimal secured wireless communications. With versatile network topologies and large product portfolio, Mobilicom caters to every deployment and project scope from small to large scale with the highest flexibility, reliability and mobility in the market.

Products are available to security users in licensed frequency bands. Encryption licenses are subject to export control. These products are approved for use by licensed users only.

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