

The Fluidmesh Mito Series



FM1100M-HW



FM3100M-HW

The Fluidmesh® MITO Series is a MIMO-based tri-band wireless Ethernet product line designed and manufactured specifically for multi-service backhaul applications.

MITO – The Revolution in Wireless Backhauling

With the MITO product line, Fluidmesh has developed a revolutionary wireless backhaul solution that is capable of offering extreme performances with a small form factor. MITO is a unique 2x2 MIMO solution with integrated directional antennas which has allowed Fluidmesh to break the mould and create a product line that is a game changer in the wireless backhauling arena. You won't need to install external antennas. You won't need to deal with coaxial cables, lightning suppressors, and grounding. The Fluidmesh 1100 MITO and the Fluidmesh 3100 MITO have an integrated radio-antenna solution with an outdoor rated enclosure that is slightly bigger than two decks of cards. The Fluidmesh 1100 MITO mounts a 2x2 MIMO patch antenna and can be used to create point to point, point to multipoint, and mesh networks providing unparalleled performances and a compact form factor. The Fluidmesh 3100 MITO mounts a 2x2 MIMO sector antenna and is designed for medium and large point to multipoint deployments with up to 150 clients.

Tri-band Radio operating at 4.9 GHz, and 5.1-5.8 GHz

The Fluidmesh MITO Series features one tri-band radio and can operate at 4.9 GHz, and 5.1-5.8 GHz and modulate up to 300 Mbps. The preferred frequency can be easily selected through a web based interface.

Optimized Prodigy Transmission Protocol for maximum Reliability

The Fluidmesh MITO Series employs Prodigy, Fluidmesh's proprietary high performance 'intelligent' transmission protocol, built to overcome the limits of standard license-free protocols and to deliver a wireless infrastructure with a higher level of reliability. Prodigy was developed to transmit any IP-compatible traffic including data, video, and voice. At the base of our innovative transmission protocol, there is a traffic optimization algorithm that allows every Fluidmesh device to assign a specific level of priority and reliability to every packet transmitted. This process allows the wireless network to automatically adjust its transmission parameters based on the type of traffic transmitted. The overall result is a better, more reliable, multi-service wireless infrastructure.

Compact Design for Easy Installation

The Fluidmesh MITO Series has a compact form factor designed for low visual impact deployments. The integrated panel antenna makes for easy installation and supports a range of up to 30 miles in line of sight. The provided low-power POE injector guarantees a straight-forward set-up.

FluidThrottle™

The Fluidmesh MITO Series is based on the innovative FluidThrottle™ technology which allows the user to limit the total cost of ownership of the wireless network by paying only for the amount of bandwidth required. Additional throughput can be easily achieved by upgrading the system with software plug-ins in case the bandwidth requirements increase over time. This solution makes Fluidmesh the most cost-effective and flexible wireless solution provider in the market.

FluidMAX™

The Fluidmesh MITO Series supports the patent-pending FluidMAX™ technology and can be used to create Point-to-Point, Point-to-Multipoint, and Mesh architectures. Thanks to FluidMAX™, the Fluidmesh MITO Series can operate with a centralized medium access control protocol, or with a distributed medium access control protocol, depending on the network layout. That means that our units can operate in either CSMA or TDMA. The decision is made automatically by the network based on its layout and requires no user intervention.

EasyMesh™ Platform and FMQuadro Interface

The Fluidmesh MITO Series includes EasyMesh™. The EasyMesh technology allows the user to set the same range of private IP addresses across the entire network. The Fluidmesh MITO Series also includes the FMQuadro™ web interface which allows the user to configure, monitor, and troubleshoot the wireless network in real time without the need of additional software or a server. The unit comes with a built-in spectrum analyzer, a real-time bandwidth monitoring tool, and a wizard to facilitate the configuration of the system.

AES-128 Encryption Support (FIPS-197 Compliant)

The Fluidmesh MITO Series includes support for 128 bit AES Encryption at the link-level which can be used for FIPS-197 compliance. Because AES is implemented in hardware, there is no loss in terms of performance when AES is enabled.

Simple Network Management Protocol (SNMP) Support

The Fluidmesh MITO Series supports SNMP version 3. The Simple Network Management Protocol allows the user to centrally manage the mesh devices with a SNMP server and to receive automatic alarms in case of network failure.

MITO Point-to-Point Usable Throughput

Throughput (Mbps)	Max Range (miles)	Max Range (Km)
100	6	10
50	12	20
30	20	30
20	25	40
15	30	50

Supported Architectures



Point-to-Point



Point-to-Multipoint



Mesh



Mixed

SOLUTIONS

- Cellular and Wi-Max Backhauling
- Enterprise Backhauling
- Rural and Municipal Broadband
- Industrial and SCADA
- Smartgrids
- Video Surveillance
- Transportation and Railways
- Military and Government

Fluidmesh 1100 with MITO Technology

RADIO

- Frequency Bands: 5.15-5.25 and 5.725-5.825 GHz (US, FCC)
5.470 - 5.725 GHz (Europe, ETSI)
4.940 - 4.990 GHz (US, FCC)
- Modulation: OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
- Modulation speed: Up to 300 Mbps
- TX Power: Up to 27 dBm, depending on configuration and regulatory constraints
- RX Sensitivity 5GHz: -96dB@6.5Mbps; -75dB@300Mbps
- Antenna Type: 2x2 MIMO
- Antenna Gain: 14.6-16.1 dBi
- Antenna Polarization: Dual Linear
- Cross-pol Isolation: 22dB minimum
- Max VSWR: 1.6:1
- H-pol Beamwidth: 43 deg.
- V-pol Beamwidth: 41 deg.
- Elevation Beamwidth: 15 deg.

ELECTRICAL

- Power input: Passive PoE 15V DC,
0.8A, (pairs 4,5+; 7,8 return)
- Power consumption: Max 8W
- Power over Ethernet Injector: Included, 90/260V 50/60 Hz AC input

ENVIRONMENTAL

- Operating Temperature: -30°C to +80°C
- Storage Temperature: -30°C to +80°C
- Humidity: 95% condensing
- Weather Rating: IP65
- Wind Survivability: 120 mph
- Shock & Vibration: ETSI 300-019-1.4

PHYSICAL

- Interfaces: Two (2) Internal Ethernet
10/100BaseT autosensing, RJ45
- Dimensions (mm): 294 (h) x 80 (w) x 30(d)
- Weight (Kg): 0.4
- Enclosure material: Outdoor UV Stabilized Plastic

OPTIONAL SOFTWARE PLUG-INS

- Ethernet Capacity Plug-in up to 1 Mbps (included)
- Ethernet Capacity Plug-in up to 2.5 Mbps
- Ethernet Capacity Plug-in up to 5 Mbps
- Ethernet Capacity Plug-in up to 10 Mbps
- Ethernet Capacity Plug-in up to 30 Mbps
- Ethernet Capacity Plug-in up to 60 Mbps
- Unlimited Wired Ethernet Capacity Plug-in (up to 100 Mbps)
- 802.1Q VLAN Support
- AES-128 Encryption

MITO Series General Characteristics:

NETWORK

- Protocols: UDP, TCP, IP, RTP, RTCP, RTSP, HTTP, HTTPS, ICMP, ARP
- Medium Access Control (MAC) Protocols: Centralized
Polling-based, Distributed CSMA/CA-based
- Web-based interface for remote management
- Multicast support
- UPnP support
- SNMP support
- 802.1Q VLAN Support

SECURITY

- Full VPN compatibility
- Full compatibility with all encryption and authentication standards (AES, 3DES, RSA, HTTPS, SSL, etc.)
- AES-128 (FIPS-197 Compliant) Link-level Encryption

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Fluidmesh 3100 with MITO Technology

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- TX Power: Up to 27 dBm, depending on configuration and regulatory constraints
- RX Sensitivity 5GHz: -96dB@6.5Mbps; -75dB@300Mbps
- Antenna Type: 2x2 MIMO
- Antenna Gain: 16.1-17.1dBi
- Polarization: Dual Linear
- Cross-pol Isolation: 22dB minimum
- Max VSWR: 1.5:1
- Hpol Beamwidth (6dB): 72 deg.
- Vpol Beamwidth (6dB): 93 deg.
- Elevation Beamwidth: 8 deg.

ELECTRICAL

- Power input: Passive PoE 24V DC,
1A, (pairs 4,5+; 7,8 return)
- Power consumption: Max 8W
- Power over Ethernet Injector: Included, 90/260V 50/60 Hz AC input

ENVIRONMENTAL

- Operating Temperature: -30°C to +75°C
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- Humidity: 95% condensing
- Weather Rating: IP65
- Wind Survivability: 120 mph
- Shock & Vibration: ETSI 300-019-1.4

PHYSICAL

- Interfaces: One (1) Internal Ethernet
10/100BaseT autosensing, RJ45
- Dimensions (mm): 370 (h) x 80 (w)x 70(d)
- Weight (Kg): 1.6
- Enclosure material: Anodized Aluminum

OPTIONAL SOFTWARE PLUG-INS

- Ethernet Capacity Plug-in up to 10 Mbps (included)
- Ethernet Capacity Plug-in up to 30 Mbps
- Ethernet Capacity Plug-in up to 60 Mbps
- Unlimited Wired Ethernet Capacity Plug-in (up to 100 Mbps)
- 802.1Q VLAN Support
- AES-128 Encryption

APPROVALS

- FCC CFR 47 Part 15, class B
- Industry Canada RSS 210
- CE!

SUPPLIED ACCESSORIES

- PoE Injector with US/EU/UK Power Cord
- Pole Mounting Kit (i.e. Pole Mounting Kit Max O.D. 2 in.)

WARRANTY

- Two (2) years on parts and labor
- Three (3) years optional extended warranty plan with advanced replacement
- Five (5) years optional extended warranty plan with advanced replacement

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