



MIMOS Mesh and Sensor Appliance (Mi-MESA)

Wireless broadband and Internet-related services need be thoroughly embedded in urban and upcoming areas to create smart populations and enhance current infrastructure. MIMOS Mi-MESA is a versatile wireless broadband infrastructure appliance that can be integrated into a multitude of environments to provide seamless communication and transmission of data.

Overview

MIMOS Mi-MESA is a multi-radio mesh wireless broadband infrastructure appliance solution for a multi-protocol broadband connectivity and sensory system. More than just a provider for wireless broadband access to residential areas, enterprises, communities and metropolitans through its many variants and integration solution, Mi-MESA can be adapted to support the backbone of wireless communication for a multitude of industries with various purposes, and is also cost-effective and flexible to cater to a variety of requirements.

Mi-MESA main variants include Multi-Radio Mesh and Hybrid HSDPA. The solution provides for other possible applications such as WiFi Point-to-Point (PTP) and Point-to-Multi-Point (PTMP).

Features

Mi-MESA comprises the following features:

- **IP65 Robustness**
Mi-MESA can be deployed in harsh outdoor or stringent indoor environments to ensure seamless communication and transmission of crucial sensor data from the field to the user via real-time and remote monitoring.
- **Modular Design**
Mi-MESA's modular design provides the flexibility of choosing a backhaul solution of either wired or wireless such as WiFi or HSDPA
- **Long Haul at High Throughput**
Mi-MESA maximises performance at long haul connectivity with dual-radio bonding. It provides double the bandwidth of a single radio equivalent.
- **Integrated Sensor Appliance**
Mi-MESA is the first in the world to include a sensor appliance such as gas sensor or environmental sensor, either as embedded solution or as wireless access connectivity, of an external sensor appliance.
- **Wireless Infrastructure for Surveillance Systems**
Mi-MESA enables CCTV system integration with a wireless backbone infrastructure towards centralised surveillance and monitoring systems.

Technology Benefits

The benefits of Mi-MESA are:

- **Enabling Smart Cities with Metro-Scale Deployment**
Mi-MESA enables smart cities at metropolitan, municipal and community to be easily scaled up to several mesh nodes for metro or state-wide deployment. It allows flexible and cost effective wireless infrastructure leverage on a complete range of modular designed variants to allow the creation of a simple WiFi Hotspot to a more complex Metronet.
- **Broadband Value-Added Services**
Mi-MESA enables the easy integration of various value-added services associated with environmental control systems and surveillance services. The integrated sensor helps authorities and industries in regulation monitoring and promotes business opportunities.

Technology Summary

Mi-MESA

A wireless multi-radio mesh broadband infrastructure appliance integrated with multi-protocol broadband connectivity and sensory system.

Industries: Communications, Enterprise, Government

Features

- IP65 robustness
- Modular design
- Long haul at high throughput
- Integrated sensor appliance
- Wireless infrastructure for surveillance systems

Technology Benefits

- Enabling smart cities with metro-scale deployment
- Broadband value-added services



*MIMOS registered design

MIMOS Mi-MESA (illustration purposes only)

Wireless Specifications

Mi-MESA	
Wireless Specifications	
Standard Compliance	802.11 a/b/g/n (3x3) Radio
Modulation	DBPSK, DQPSK, CCK, BPSK, QPSK, 16-QAM, 64-QAM
Frequency Band	WiFi Mesh : 4.900 – 5.900GHz Wi-Fi Access: 2.4 – 2.4835GHz HSDPA : 900/1800/2100 MHz
RF Output Power	802.11b/g: 21dBm, 802.11n:19dB
Receive Sensitivity	802.11a: -81dBm ± 2dBm@54Mbps 802.11g: -81dBm ± 2dBm@54Mbps 802.11n: HT20 -73dBm ± 2dBm@300Mbps 802.11n: HT40 -71dBm ± 2dBm@300Mbps
Channels	US/FCC and Canada/ICC – 11 Channels Europe/ETSI – 13 Channels
Other features	Traffic prioritization, QoS for Voice and Video, 2 radios bandwidth bonding, DHCP Server/Client, VPN Pass-Through, Configurable Firewall

Detailed Features

The detailed features of Mi-MESA include:

- Backhaul and Wireless Access* & Router* System in a single box
- Multi-radio Mesh Self-Healing and Self-Forming
- Access WiFi 802.11 b/g/n (3x3) Radio
- 802.11 a/b/g/n - OFDM/CCK
- Up to 21dBm WiFi Transmit Power
- 2 radios bandwidth bonding up to 600Mbps
- Up to 300Mbps WiFi Access
- One 10/100/1000 Base-T LAN with PoE (Power over Ethernet)
- IP65 Outdoor Applications
- IPv4 and IPv6 with Enhanced Multicasting
- Enables wireless IPTV services
- WPA2 Enterprise Authentication
- Element Management System (WeMS)
- Modular Device (Choice of Backhaul)
 - Wireless - WiFi Mesh 5GHz
 - Wireless - HSDPA
 - Wired - ADSL or VSAT via Ethernet Port
- Backhaul WiFi 802.11 a/b/g/n or HSDPA
- Wired Backhaul Solution:
 - Normal WiFi Access Device
 - Multiple SSID Features

*Future Release

Interface Specifications

Mi-MESA					
Interface Specifications					
Antenna		Mi-MESA Device		Hybrid	Mesh
Access	Omni-External	2.4GHz	4dBi	•	•
	Directional-External	2.4GHz	4dBi	•	•
Backhaul	Directional-External	5GHz	20dBi		•
	Omni-External	5GHz	20dBi		•
	Omni-External	824 – 960 MHz	0.5 ± 0.7dBi	•	
		1710 – 2170 MHz	1.7 ± 0.7dBi		
Ethernet (10/100/1000 Base-T LAN)				•	•

Variants

Mi-MESA comes in the following range of variants:

■ Mi-MESA Multi-Radio Mesh

Mi-MESA Multi-Radio Mesh enables hopping of access devices via a best possible path connection by providing a seamless broadband connection and secure Hotzone coverage based on multipath access built on the 802.11 WiFi Mesh Standard. This variant also delivers the PTP and PTMP solutions.

■ Mi-MESA Hybrid HSDPA*

Simple and fast WiFi Hotspots can be built with this Mi-MESA variant that provides WiFi connectivity using HSDPA mobile radio coverage capabilities.

*Future Release

MIMOS is the leader in ICT innovations, pioneering new market creations for partners through patentable technologies for economic growth. For more information on MIMOS technologies, contact mimosolutions@mimos.my or go to www.mimos.my.



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