



## MIMOS Gigabit Enhanced Mesh System (Mi-GEMS)

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

### Overview

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

Mi-GEMS main variants include Multi-Mesh. The solution is also provision for other possible application of WiFi Access Point, Point to Point (PtP) and Point to Multi-Point (PtMP).

### Features

Mi-GEMS comprises the following features:

- **Robust Design (IP65)**  
Mi-GEMS 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-GEMS modular design gives the flexibility of choosing backhaul solution of either wired or wireless such as WiFi.
- **Quadruple Play Support**  
Multicasting and IPv6 features enable the user to experience Quadruple Play (Mobility, Data, VoIP and IPTV) by having seamless mobility with faster and better streaming quality.
- **Wireless Infrastructure for Surveillance System**  
Mi-GEMS enables CCTV system integration with wireless backbone infrastructure towards a centralised surveillance and monitoring system
- **Dynamic Frequency Selection (DFS)**  
Mi-GEMS 5GHz support Dynamic Frequency Selection (DFS) feature to automatically select a frequency that does not interfere with certain radar systems.

### Technology Benefits

The benefits of Mi-GEMS are:

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

### Technology Summary

#### Mi-GEMS

A wireless multi-radio mesh broadband infrastructure with an integrated appliance for multiprotocol broadband connectivity.

**Industries:** Communications, Enterprise, Government

#### Features

- Robust design (IP65)
- Modular design
- Quadruple play support
- Wireless Infrastructure for surveillance system
- Dynamic Frequency Selection (DFS)

#### Technology Benefits

- Enabling smart cities with metro-scale deployment
- Value-added broadband services



Mi-GEMS (illustration purpose only)

### Wireless Specifications

Mi-GEMS	
Wireless Specifications	
Standard Compliance	802.11 ac (2x2) Radio backward compatible with 802.11n
Modulation	BPSK, QPSK, DBPSK, DQPSK, CCK, 16-QAM, 64-QAM, 256-QAM
Frequency Band	2.412 – 2.472 GHz 5.180 – 5.825 GHz (Support Dynamic Frequency Selection)
RF Output Power	17dBm
Data Rate	IEEE 802.11ac: VHT40, 400Mbps IEEE 802.11ac: VHT80, 866.7Mbps
Other features	Traffic prioritisation, DHCP Client, VPN Pass-Through, Configurable Firewall

## Detailed Features

The detailed features of Mi-GEMS include:

- Backhaul and Wireless Access & Router System in a single box
- Multi-radio Mesh Self-Forming
- Access WiFi 802.11 n/ac (2x2) Radio
- 802.11ac compliant & back compatible with 802.11n
- Up to 17dBm WiFi Transmit Power
- Up to 866.7Mbps (Link Speed) WiFi Access VHT80
- One 10/100/1000 Base-T LAN with PoE (Power over Ethernet)
- One 10/100/1000 Base-T LAN with 48V output
- IP65 Outdoor Applications
- IPv4 and IPv6 with Enhanced Multicasting
- Enables wireless IPTV services
- WPA2 Enterprise Authentication
- Modular Device (Choice of Backhaul)
  - Wireless - WiFi Mesh 5GHz
  - Wired - ADSL or VSAT via Ethernet Port
- Backhaul WiFi 802.11 n/ac
- Wired Backhaul Solution:
  - Normal WiFi Access Device
  - Multiple SSID Features

## Variants

Whether for personal home use or for everyday business, Mi-GEMS comes in the following range of variants:

### ■ Mi-GEMS Multi-Radio Mesh

Mi-GEMS Multi-Radio Mesh enables hopping of access devices via a best possible path connection thereby providing seamless broadband connection and secure Hotzone coverage based on multipath access built on 802.11 WiFi Mesh Standard. This variant delivers also PtP and PtMP solution.

### ■ Mi-GEMS Access Points

Mi-GEMS based model provides also 802.11 n/ac WiFi access connectivity within the home or business for local devices.

