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## PRODUCT BRIEF

# MM6108 EKH03 Evaluation Kit

Industry-Leading, Best-in-class Wi-Fi HaLow  
Development Platform to Empower  
the Next Generation of IoT



## Overview

The MM6108-EKH03-05US Access Point (AP) Reference Platform leverages the versatility and power of Linux OS to provide powerful, out-of-the-box Wi-Fi HaLow® connectivity. The reference platform redefines wireless networking by extending the range of existing OpenWRT Wi-Fi APs with 802.11ah Wi-Fi HaLow capabilities. Architected around a highly integrated, low-power MediaTek SoC, the platform delivers exceptional performance and range at an accessible price point. Supporting an ecosystem of ready-to-use applications and software, the Linux environment enables faster development times with robust security and reliability. This Linux-based foundation, coupled with the open-source versatility of OpenWRT, empowers developers to craft custom Wi-Fi HaLow AP solutions for diverse scenarios.

This feature-packed AP platform caters to demanding networking needs. Equipped with a Wi-Fi HaLow to Ethernet/USB adapter, a 100 Mbps Ethernet port and a USB port, the MM6108-EKH03-05US can be configured directly via the host AP web interface,

providing a simplified, integrated configuration experience. Developers can capitalize on the platform's configurable dual-mode operation and leverage the performance of 2.4 GHz Wi-Fi, enabling seamless switching between AP and STA functionality. Whether you are building high-density home networks, extending enterprise coverage, or developing innovative IoT applications, the AP platform's robust, dual-mode capabilities and open-source ecosystem empower you to create groundbreaking wireless networking solutions.

## Evaluation Kit

Designed for developers seeking to validate Wi-Fi HaLow use cases alongside Wi-Fi 4/5/6 using a full Linux system, this kit includes:

1x

MM6108-EKH03-05US

1x

Power adapter

## MM6108-EKH03 Access Point Platform Key Features



MM6108 SoC-based access point reference platform



Supports a highly integrated, low-cost Mediatek SoC



Linux-based platform for a faster development experience



OpenWRT for open-source versatility



Dual-mode operation with 2.4 GHz Wi-Fi support



Maximum range and performance



USB interface



10/100 Ethernet interface

## Applications

- ✓ Long-range APs
- ✓ Mesh APs
- ✓ Smart city networks
- ✓ Public safety monitoring
- ✓ Connected healthcare and wearables
- ✓ Smart home automation and connected appliances
- ✓ Logistics and tracking
- ✓ Connected vehicles
- ✓ Environmental monitoring
- ✓ Utility smart meter and intelligent grid
- ✓ Industrial, agricultural and commercial management

## Configuration

Connected via USB (power and data) or Ethernet (data only) the evaluation kit is set up via a standard OpenWrt installable software package (.opk). This simplifies the management of Wi-Fi HaLow by making it a seamless part of the original network.

With the MM6108-EKH03-05US platform, Wi-Fi HaLow enabled IoT devices (e.g. mesh access points, security cameras, smart door locks, sensors, and thermostats) can be connected at longer ranges as illustrated in Figure 1.

Figure 1 - Wi-Fi HaLow network



## Wi-Fi HaLow Modulation and Coding Scheme

MCS index	Modulation scheme	Coding rate	PHY rate (kbps) per BW			
			1 MHz	2 MHz	4 MHz	8 MHz
10	BPSK	1/2 x 2	167		N/A	
0	BPSK	1/2	333	722	1500	3250
1	QPSK	1/2	667	1444	3000	6500
2	QPSK	3/4	1000	2167	4500	9750
3	16-QAM	1/2	1333	2889	6000	13000
4	16-QAM	3/4	2000	4333	9000	19500
5	64-QAM	2/3	2667	5778	12000	26000
6	64-QAM	3/4	3000	6500	13500	29250
7	64-QAM	5/6	3333	7222	15000	32500

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