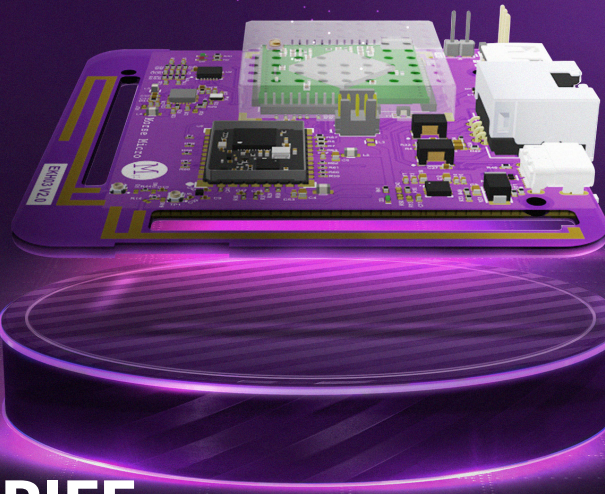# PRODUCT BRIEF
MM6108-EKH03 OVERVIEW

IEEE 802.11ah Sub-1 GHz 1/2/4/8 MHz Wi-Fi HaLow Evaluation

Overview

The MM6108-EKH03 is an integrated Wi-Fi HaLow® development platform, leveraging the power of Linux to provide powerful, out-of-the-box connectivity to users. Supporting an ecosystem of ready-to-use applications and software, the Linux environment enables faster development times with robust security and reliability.

Specifically, this development platform has been designed to extend the range of existing OpenWrt Wi-Fi access points (APs) with 802.11ah Wi-Fi HaLow® capabilities. Equipped with a Wi-Fi HaLow® to Ethernet/USB adapter, a 100 Mbps Ethernet port and a USB port, the MM6108-EKH03 can be configured directly via the host AP web interface, providing an integrated and simplified configuration experience.

Evaluation kit

Designed for those seeking to validate Wi-Fi HaLow® use cases alongside Wi-Fi 4/5/6, using a full Linux system this kit is comprised

| 1x | MM6108-EKH03 | 1x | Power adapter |

For Internet of Things (IoT) 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

Leverages the power of Linux to speed up development times through ready-to-use applications and software

Simple configuration for fast and efficient evaluation of Wi-Fi HaLow® and Wi-Fi 4/5/6

Supports data rates up to 32.5 Mbps

Programmable operation in the sub-1 GHz range (licence exempt from RF bands worldwide)

WPA3 security

Dedicated MediaTek MT72T2R 802.11n Wi-Fi AP/Router (SoC)

Conveniently powered by USB-C

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

Figure 1 - Wi-Fi HaLow® network
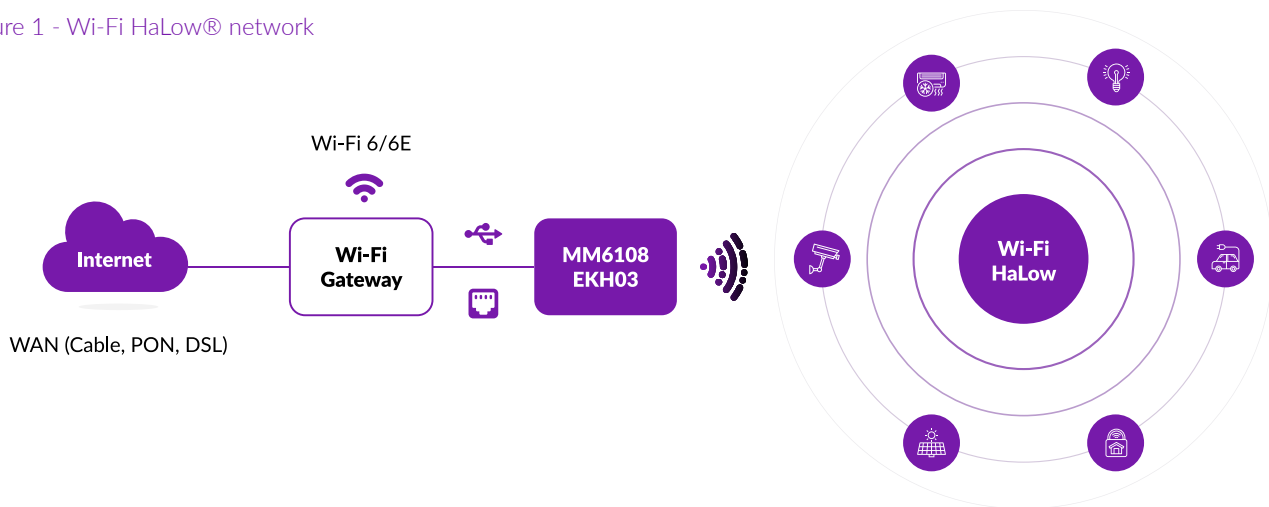
Wi-Fi HaLow® modulation and coding scheme

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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