PRODUCT BRIEF
MM6108-EKH01

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

Morse Micro
reaching farther™

Overview

The MM6108-EKH01 is an integrated Wi-Fi HaLow® development platform. This Linux-based platform provides reliable, out-of-the-box wireless connectivity, with fast development times and robust security.

With the Morse Micro EKH01 platform, users can test the functionality of Wi-Fi HaLow® in a variety of contexts. Raw throughput can be measured with the iPerf tool, while the maximum usable range can be determined with a simple ping between the two EKH01 units.

Evaluation kit

Designed for those seeking to validate Wi-Fi HaLow® use cases, using a full Linux system this kit is comprised of:

- Host CPU; Raspberry Pi 4 model B
- Wi-Fi HaLow® Morse Micro MM6108
- OS: Linux OpenWRT
- 1dBi antenna
- Power adapter
- Option of adding camera to the evaluation kit for additional testing (p/n: MM6108-EKH01-CAM)

- Interface
  - Micro HDMI for display outputs
  - USB type-C for power supply
  - USB-A ports for serial console access
  - Ethernet ports
  - Headphone jack

For Internet of Things (IoT) applications:

→

- ✓ Long-range APs
- ✓ Mesh APs
- ✓ Smart city networks
- ✓ Video cameras
- ✓ Public safety monitoring

- ✓ Connected healthcare and wearables
- ✓ Smart home automation and connected appliances
- ✓ Connected vehicles
- ✓ Environmental monitoring

Features

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

Simple configuration for fast and efficient evaluation of Wi-Fi HaLow®

Supports data rates up to 32.5 Mbps

Programmable operation in the sub-1 GHz range (license exempt from RF bands worldwide)
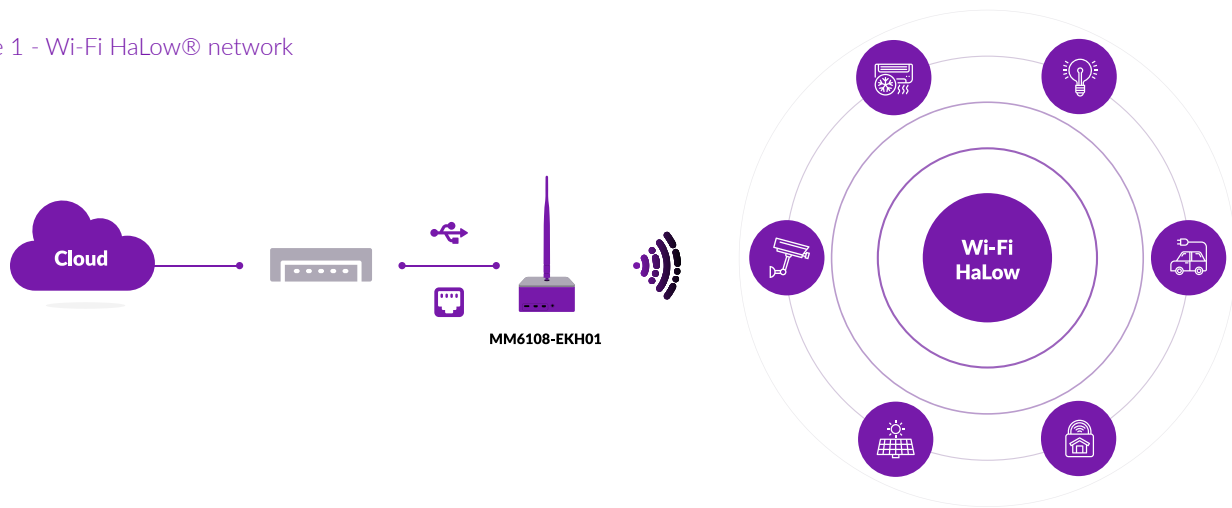
WPA3 security

Conveniently powered by USB-C

Configuration

Connected via USB-C, USB (power and data) or Ethernet (data only) this 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-EKH01, 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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