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PRODUCT BRIEF

MM6108 EKH01 Evaluation Kit

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

Overview

The MM6108-EKH01-05US development platform leverages the power of Linux to provide powerful, out-of-the-box Wi-Fi HaLow® connectivity. The platform breaks away from conventional development kits by offering a robust foundation for exploring the next generation of low-power, long-range wireless applications for the IoT. Built on the popular, versatile Raspberry Pi 4 single-board computer, the platform seamlessly integrates the MM6108 Wi-Fi HaLow module, unlocking a new frontier in edge computing and IoT connectivity possibilities.

The EKH01 platform gives developers unprecedented access to the unique attributes of Wi-Fi HaLow technology. Its powerful Quad-Core Cortex-A72 processor running Linux and OpenWRT software provides a familiar development environment with ample processing muscle. Supporting an ecosystem of ready-to-use applications and software, the Linux environment enables faster development times with robust security and reliability. Comprehensive connectivity options including Ethernet, USB, HDMI display interfaces, serial console, and an audio jack cater to diverse development project needs. An optional camera module further expands the platform's capabilities, enabling vision-based applications and edge intelligence exploration.

Much more than a development board, the EKH01 platform provides an open invitation to innovate. Its open-source architecture, customizable hardware, and extended wireless reach empower developers to push the boundaries of low-power connectivity. Whether you are building long-range sensor networks, optimizing industrial automation, or developing cutting-edge IoT applications, the EKH01 platform offers the perfect blend of performance, flexibility, and connectivity to bring your vision to life.

Evaluation Kit

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

- 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-EKH01-05US-CAM)
- Interface
  - Micro HDMI for display outputs
  - USB type-C for power supply
  - USB-A ports for serial console access
  - Ethernet ports
  - Headphone jack

MM6108-EKH01 Development Platform Key Features

Raspberry Pi 4 Model B based development platform with MM6108 Wi-Fi HaLow connectivity

Powerful host processor running Linux OS and OpenWRT software

Ethernet and USB interfaces

Micro HDMI interface for display outputs

Serial console port access

Headphone jack

Optional camera module

Applications

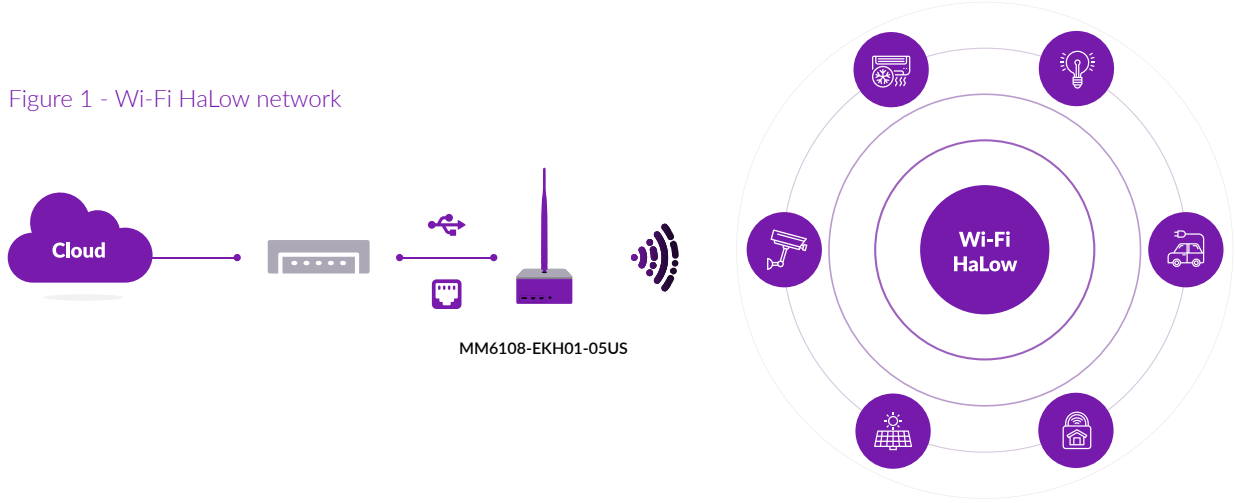
- Long-range APs
- Mesh APs
- Smart city networks
- Video cameras
- Public safety monitoring
- Connected healthcare and wearables
- Smart home automation and connected appliances
- Connected vehicles
- Environmental monitoring

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 the MM6108-EKH01-05US 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 shown 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

For more product information: **www.morsemicro.com**

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