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PRODUCT BRIEF

MM8108-EKH01-01 Evaluation Kit

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



Overview

The MM8108-EKH01-01 development platform leverages the power of Linux to provide out-of-the-box Wi-Fi HaLow® connectivity. Built on the Raspberry Pi 4 single-board computer, the platform integrates the MM8108 Wi-Fi HaLow module, unlocking new edge computing and IoT connectivity possibilities.

The EKH01-01 platform gives developers access to the unique attributes of Wi-Fi HaLow technology. Its 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 for diverse development project needs. An optional camera module expands the platform's capabilities, enabling vision-based applications and edge intelligence exploration.

The EKH01-01 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 EKH01-01 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 MM8108
- OS: Linux OpenWRT
- 1dBi antenna
- Power adapter
- Option of adding camera to the evaluation kit for additional testing (p/n: MM8108-EKH01-01-CAM)
- Interface
 - Micro HDMI for display outputs
 - USB type-C for power supply
 - USB-A ports for serial console access
 - Ethernet ports
 - Headphone jack

MM8108-EKH01-01 Development Platform Key Features



Raspberry Pi 4 Model B
based development
platform with MM8108
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



Metal enclosure to optimise
the RF performance

Applications

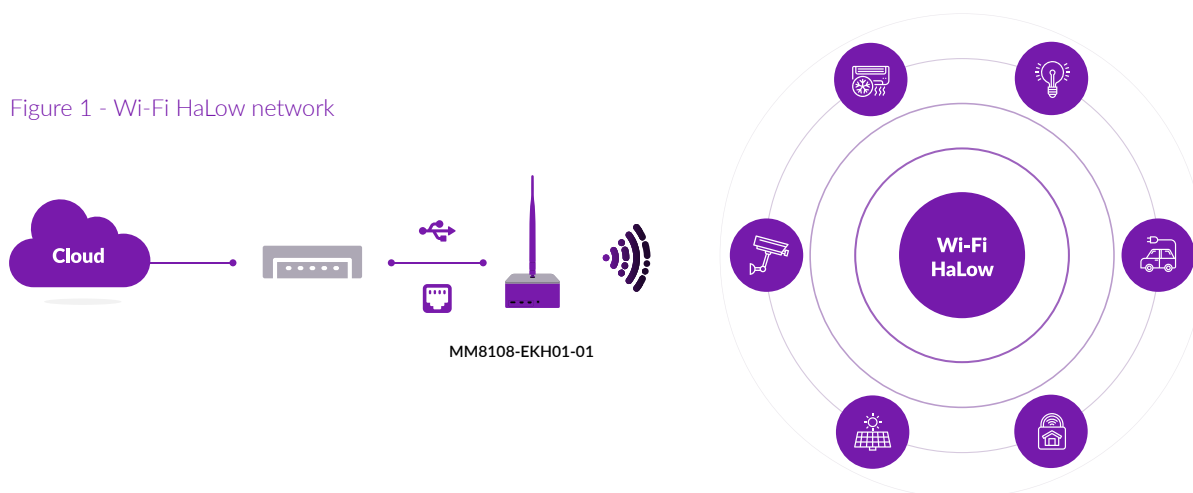
- ✓ Long-range APs
- ✓ Mesh APs
- ✓ Smart city networks
- ✓ Video cameras
- ✓ Public safety monitoring
- ✓ Smart home automation and connected appliances
- ✓ Environmental monitoring

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).

With the MM8108-EKH01-01 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	PHY data rate (Mbps) / Minimum receive sensitivity (dBm)			
	1 MHz	2 MHz	4 MHz	8 MHz
10	0.1 / -107	—	—	—
0	0.3 / -106	0.7 / -103	1.5 / -102	3.3 / -97
1	0.7 / -104	1.4 / -101	3.0 / -99	6.5 / -95
2	1.0 / -102	2.2 / -99	4.5 / -97	9.8 / -93
3	1.3 / -99	2.9 / -96	6.0 / -94	13 / -90
4	2.0 / -96	4.3 / -93	9.0 / -90	20 / -87
5	2.7 / -92	5.8 / -89	12 / -86	26 / -83
6	3.0 / -90	6.5 / -87	14 / -85	29 / -81
7	3.3 / -89	7.2 / -86	15 / -83	33 / -80
8	4.0 / -85	8.9 / -82	18 / -79	39 / -76
9	4.4 / -83	—	20 / -78	43 / -74

For more product information: www.morsemicro.com

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