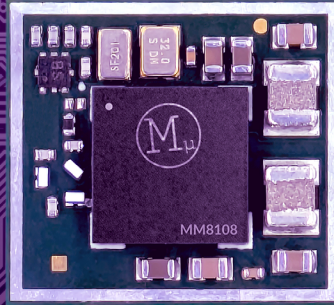




Morse Micro
reaching farther™



PRODUCT BRIEF

MM8108-MF15457

Industry-leading Sub-1 GHz Wi-Fi HaLow/802.11ah Module for Global Deployment

Wi-Fi HaLow (pronounced "HEY-low") is the first global Wi-Fi standard (IEEE 802.11ah) specifically designed to meet the needs of the Internet of Things (IoT). This open standard wireless network technology operates in the sub-1 GHz license-exempt RF bands, specifically in the 850 MHz to 950 MHz range, which means it doesn't incur ongoing monthly costs like cellular or mobile network connections. By operating in the sub-1 GHz range, this low-power wireless protocol can connect devices over much longer distances and provides significantly higher throughput than traditional Wi-Fi.

Morse Micro, the leading provider of Wi-Fi HaLow solutions, offers several Wi-Fi HaLow connectivity options. The MM8108-MF15457 is a fully integrated Wi-Fi HaLow module designed to showcase the best features of our second-generation MM8108 Wi-Fi HaLow System on Chip (SoC).

The MM8108-MF15457 supports WPA3 and includes all standard security features necessary for Wi-Fi HaLow product

certifications. It complies with IEEE 802.11ah, supporting PHY rates of up to 43.3 Mbps and output power of up to 26 dBm.

The MM8108 SoC features an ultra-high linearity integrated low-noise amplifier (LNA) that provides exceptional receive sensitivity, while the integrated power amplifier (PA) offers world-leading transmitter efficiency. These innovations result in an advanced transceiver design that offers outstanding long-range RF performance, coupled with low power consumption, ensuring compatibility with all global Wi-Fi HaLow regulatory environments out of the box.

With a compact footprint of only 11 mm x 10 mm and a wide range of host interface options - including USB 2.0 High-Speed, SDIO 2.0, and SPI - the MM8108-MF15457 is easy to integrate into next-generation IoT devices.

Features



Ultra-long-range, low-power Wi-Fi HaLow module for IoT applications



Radio supporting worldwide sub-1 GHz bands (850-950 MHz) and 26 dBm max output power



Single-stream max PHY rate of 43 Mbps at 8 MHz with 256-QAM



Extremely high efficiency integrated PA with 35% efficiency at the maximum 26 dBm (400 mW) output power



1/2/4/8 MHz channel bandwidth in the sub-1 GHz license exempt bands worldwide



Compact 11 mm x 10 mm footprint



USB 2.0 High-Speed, SDIO 2.0 and SPI host interface options

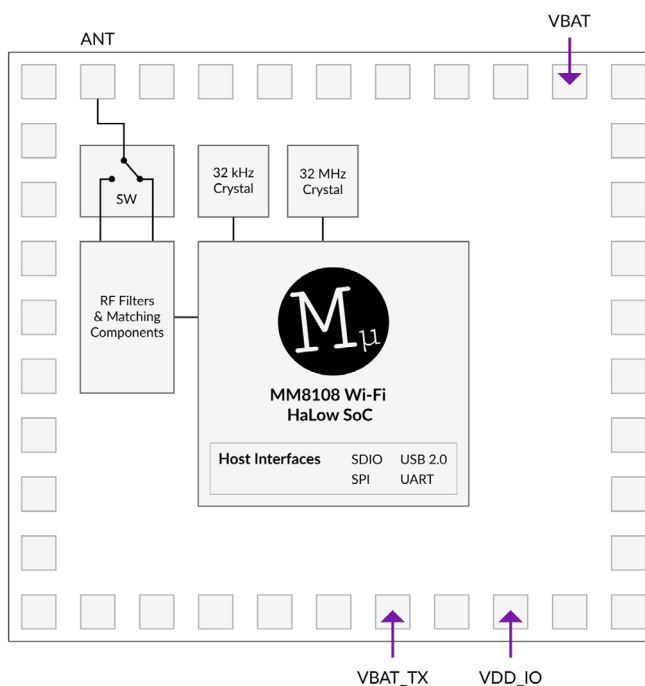


Wide spectrum of security features including WPA3

Applications

- ✓ Long range security cameras
- ✓ Smart grid and AMI 2.0
- ✓ Smart city networks
- ✓ Smart buildings
- ✓ Long-range APs
- ✓ Smart door locks and access control
- ✓ Smart home automation and connected appliances
- ✓ Smart agricultural sensors
- ✓ Retail or warehouse smart shelving

MM8108 Wi-Fi HaLow Module Block Diagram



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 / -98
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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