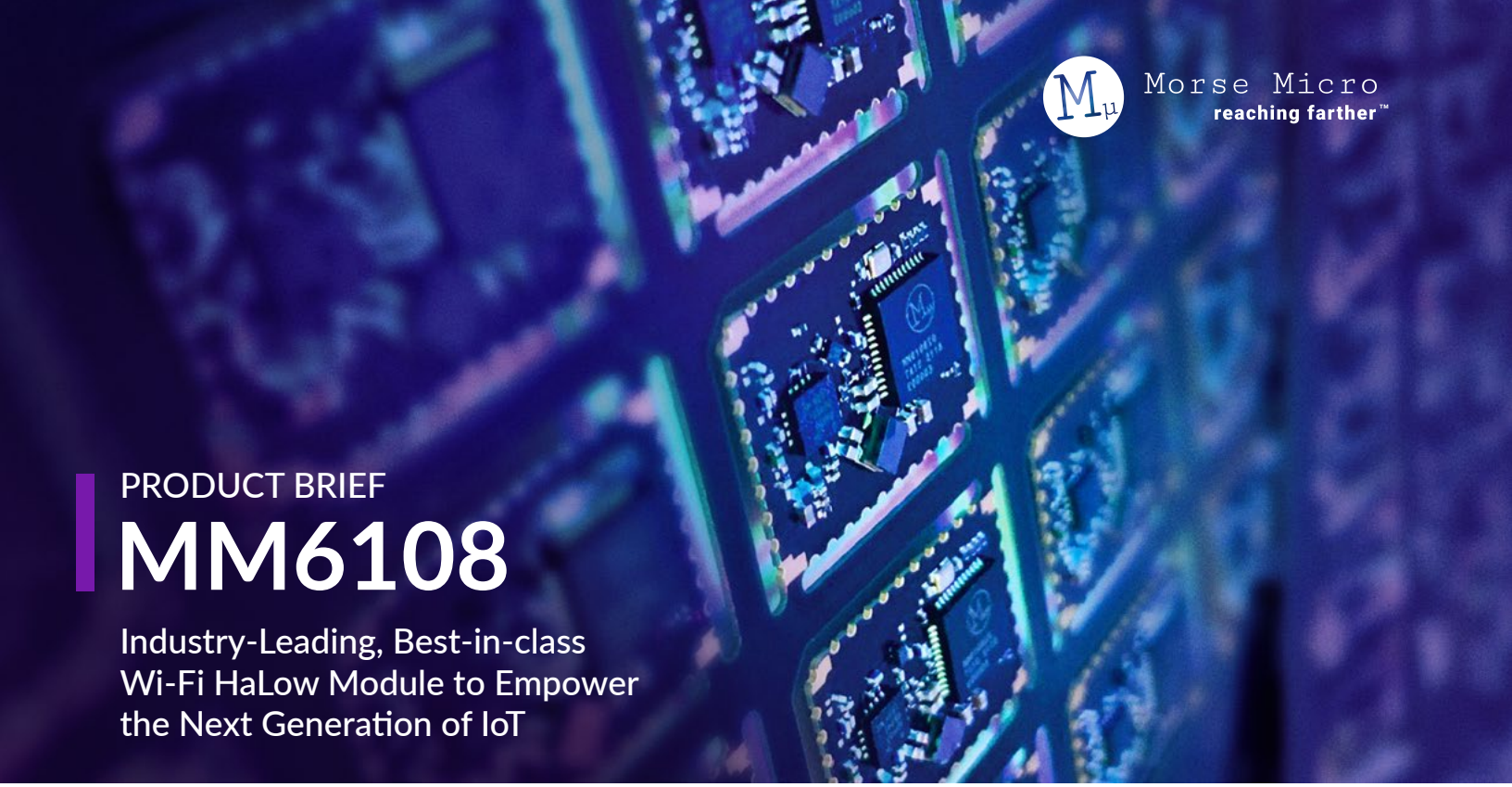

Morse Micro
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PRODUCT BRIEF

MM6108

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

Overview

The MM6108-MF08651-US Wi-Fi HaLow® module is built from the ground up to satisfy the long-reach, low-power, security, and scalability demands of today's challenging IoT environments. Designed in compliance with the IEEE 802.11ah standard, this Wi-Fi HaLow module is poised to redefine Wi-Fi connectivity for the IoT. Wi-Fi HaLow overcomes the limitations of traditional Wi-Fi by operating on narrow frequency bands, enabling signals to penetrate transmission obstacles while providing unmatched wireless performance in noisy environments. These benefits enable 10x the range, 100x the coverage area, and 1000x the volume of traditional Wi-Fi technologies.

The Wi-Fi HaLow module features Morse Micro's award-winning MM6108 system-on-chip (SoC) device. This single-chip Wi-Fi HaLow solution incorporates the low-power radio, PHY and MAC and offers data rates that range from tens of Mbps to hundreds of Kbps at the farthest range. The radio supports flexible operation in worldwide sub-GHz ISM bands between 850 MHz and 950 MHz.

The low-power MM6108 SoC design, combined with the IEEE 802.11ah standard, enables extended sleep times and lower power consumption for battery-operated client devices, achieving longer battery life than other existing IEEE 802.11a/b/g/n/ac/ax generations. The MM6108 RF interface provides the option to use on-chip amplification for typical low-power, low-cost IoT devices, or an additional external PCB-mounted power amplifier (PA) or front-end module (FEM) for ultra-long-reach applications.

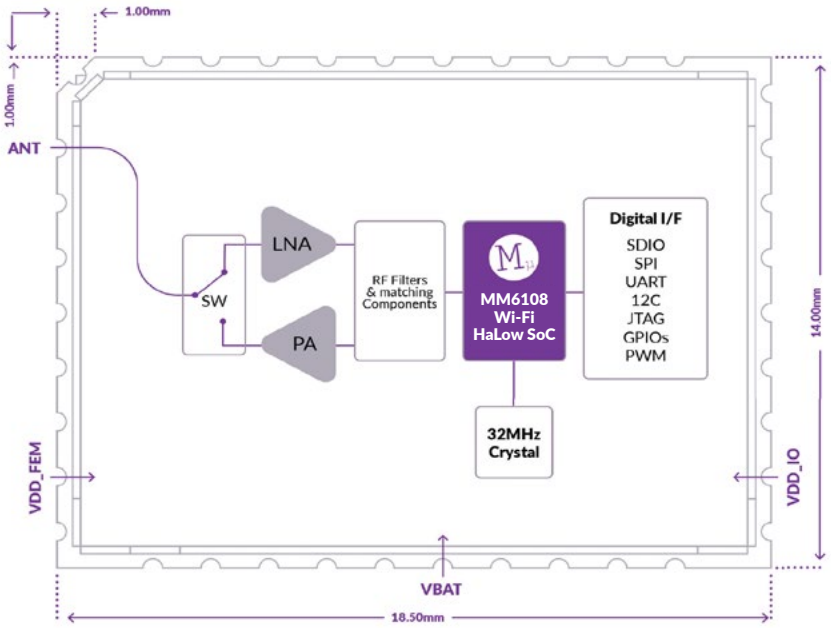
Features

- Ultra-long-range, low-power Wi-Fi HaLow module for IoT applications
- Radio supporting worldwide sub 1 GHz bands
- Single-stream max data rate of 32.5 Mbps
- 802.11ah OFDM PHY supporting WFA Wi-Fi HaLow certification
- 802.11ah MAC supporting WFA Wi-Fi HaLow certification
- Power management unit (PMU) supporting ultra-low-power operation
- SDIO 2.0 and SPI host interface options
- GPIO/UART/I2C/PWM peripheral options
- Wide spectrum of security features including WPA3
- 1/2/4/8 MHz channel bandwidth

Applications

- Surveillance cameras and sensors
- Cloud connectivity
- Building automation systems (BAS)
- Machine performance monitors and sensors
- Building access control & security
- Drone video and navigation communications
- Rural internet access
- Utility smart meter and intelligent grids
- Industrial automation controls
- Smart home automation
- Wi-Fi HaLow access points and bridges
- Wi-Fi HaLow client adapters/dongles
- Smart city networks

MM6108 Wi-Fi HaLow Module Block Diagram



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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