

INDUSTRIAL PRODUCT DATASHEET

Wio-WM6108 Wi-Fi HaLow mini-PCle Module

Wio-WM6108 Wi-Fi HaLow Mini-PCle Module: long-range, low-power Wi-Fi HaLow connectivity for large-scale IoT deployments.

SKU

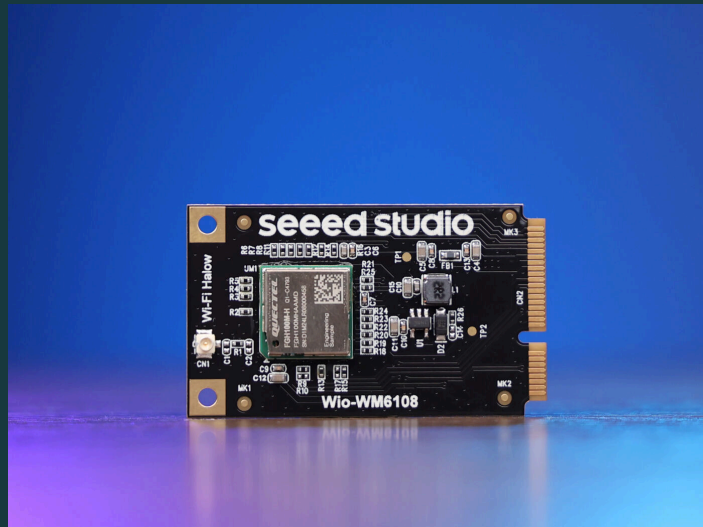
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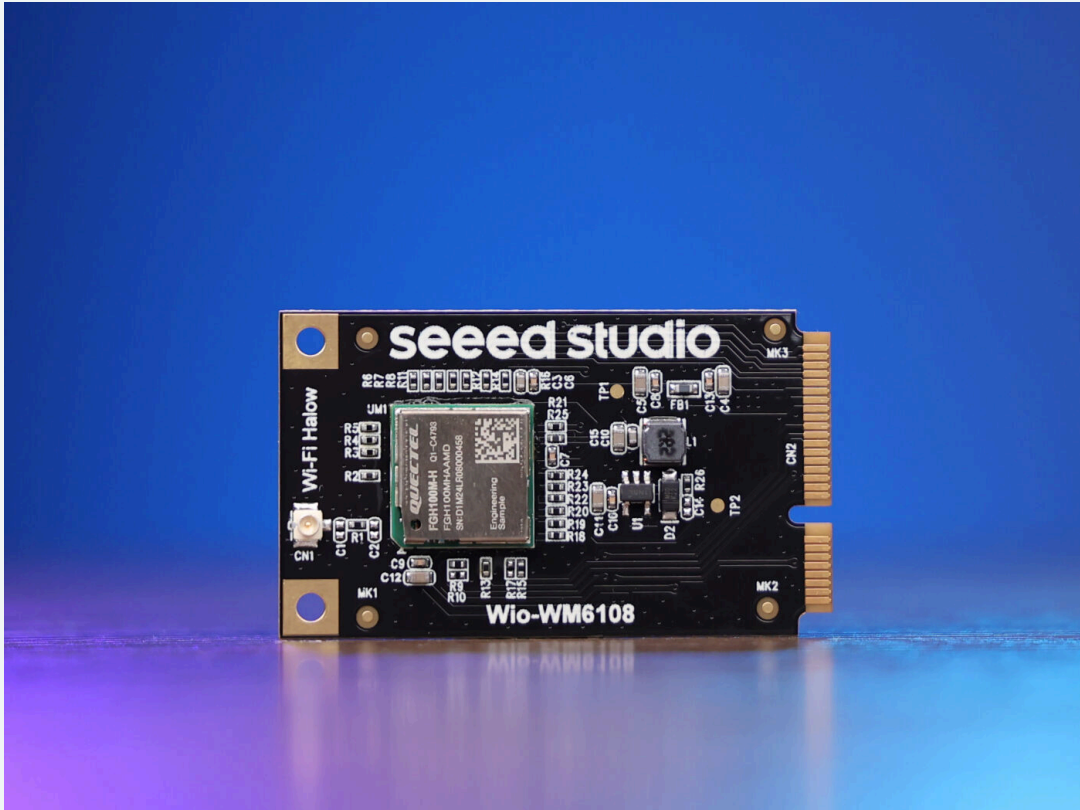
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PRICE

\$14.90(Excl. VAT)



Overview



The Wio-WM6108 Wi-Fi HaLow Mini-PCIE Module, powered by Quectel FGH100M-H, provides long-range IEEE 802.11ah connectivity in the 902-928 MHz band with coverage up to 1 km and low power consumption. Supporting hundreds of simultaneous connections with robust WPA3 security, it is ideal for smart home, industrial, and smart city IoT applications.

Key Features

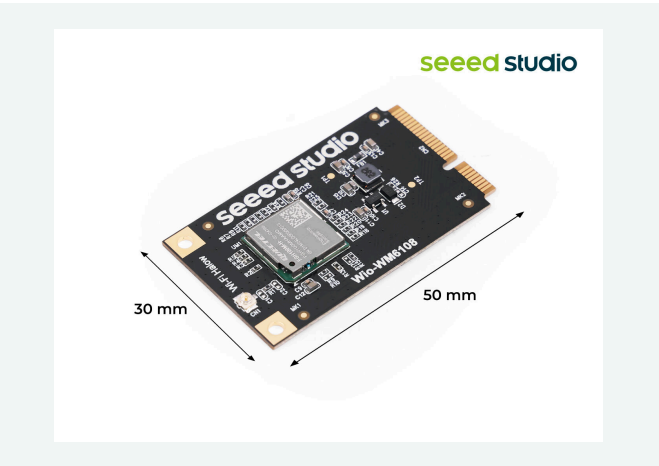
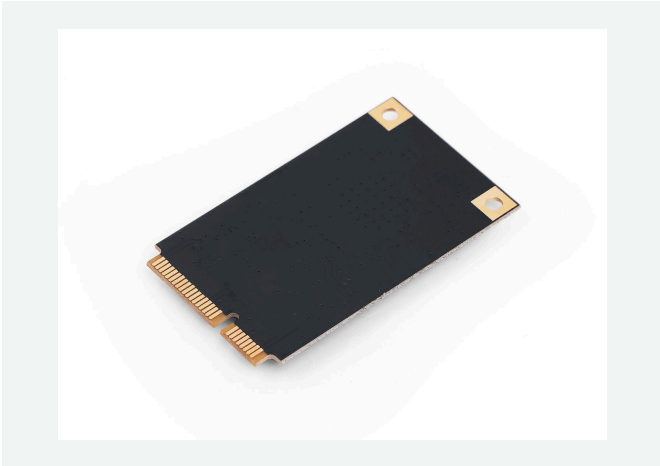
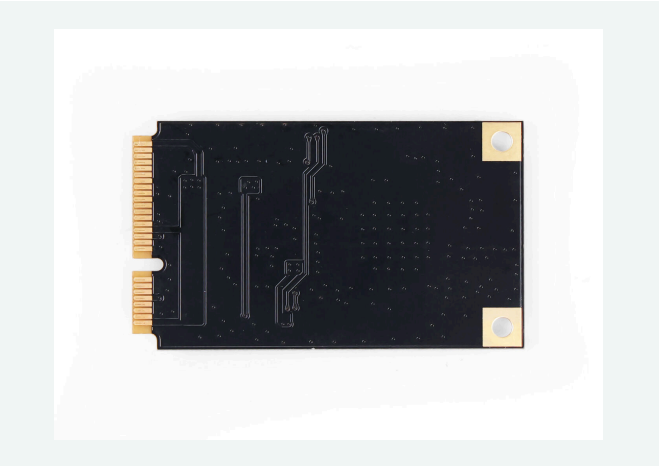
Note:

- To ensure full functionality, the Wio-WM6108 Wi-Fi HaLow mini-PCIe Module requires the [WM1302 Raspberry Pi Hat](#) for proper integration. We recommend purchasing both together to guarantee seamless setup and optimal performance.
- Wi-Fi HaLow is an open, standard Wi-Fi technology operating in the license-exempt Sub-1 GHz range.
- You may need to prepare additional antennas suitable for WiFi-HaLow use. Here are the verified, recommended antenna models [2.6dBi Long Range Antenna](#) and [SMA to I-PEX Antenna Cable](#).

The Wio-WM6108 Wi-Fi HaLow Mini-PCIe Module, powered by the Quectel FGH100M-H, is a long-range, low-power Wi-Fi HaLow module. Operating in the 902-928 MHz frequency band, it offers excellent penetration and coverage, making it ideal for smart home and IoT applications. Featuring the industry-standard Mini-PCIe form factor, it's ideal for industrial and embedded applications where reliable connectivity and space efficiency are essential.

- **Long-Range Connectivity:** Complies with IEEE 802.11ah standard, operating in 902-928 MHz frequency band, providing coverage up to 1 km with superior penetration performance.
- **Low Power Consumption:** Optimized power efficiency design, making it ideal for power-sensitive IoT applications.
- **Large-Capacity Access:** Supports up to hundreds of simultaneous device connections to the same Wi-Fi access point - ideal for large-scale IoT deployments.
- **Robust Security:** Implements comprehensive security features including AES, SHA-256, SHA-384, SHA-512, and WPA3 encryption.
- **Mini-PCIe Form Factor:** Utilizing the industry-standard Mini-PCIe interface, this module enables straightforward integration into existing systems. The standardized form factor makes it an ideal choice for industrial and embedded applications, offering both reliable performance and installation convenience.

Product Gallery



Specification

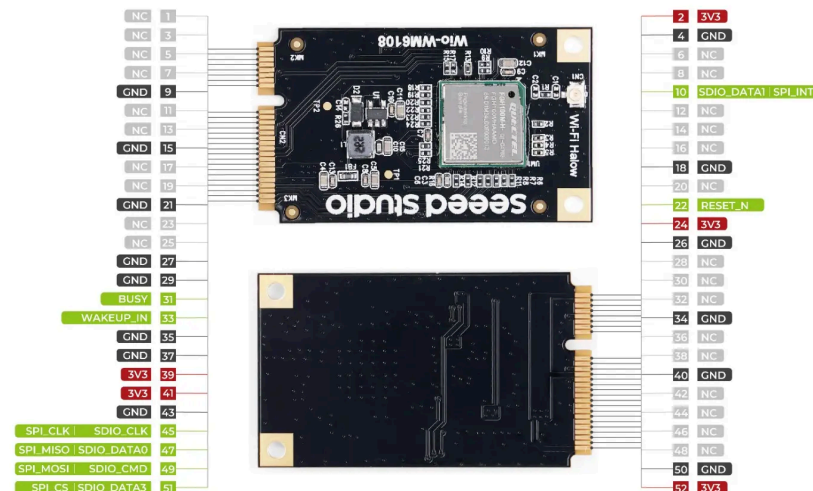
Parameters	Details
WLAN Protocol	IEEE 802.11ah
Wi-Fi Frequency Band	902-928 MHz

Wi-Fi Antenna	1 x 1
Wi-Fi Modulation Mode	OFDM,BPSK, QPSK, 16QAM, 64QAM
Encryption Mode	AES, SHA-256, SHA-384, SHA-512, WPA3
Wi-Fi Operating Mode	AP/ STA
Operating Temperature Range	-30 °C to +85 °C
Extended Temperature Range	-40 °C to +85 °C
Physical Rate (Max.)	802.11ah: 32.5 Mbps
Power Supply Voltage	VBAT: 3.0–3.6 V, typ. 3.3 V
I/O Power Supply Voltage	VDD_IO: 1.62–3.6 V, typ. 1.8/3.3 V
FEM Power Supply Voltage	VDD_FEM: 3.0–5.25 V, typ. 5 V

Hardware Overview

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Wio-WM6108 Wi-Fi HaLow mini-PCle Module Pinout



Applications

- Smart Home Devices
- Industrial Automation Control
- Smart City Infrastructure
- Agricultural IoT Monitoring
- Environmental Monitoring Systems

Part List

Wio-WM6108 Wi-Fi HaLow Mini-PCIe Module	x1
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Compliance & Logistics



HSCODE	8517799000
USHSCODE	8517620090
UPC	
EUHSCODE	8517180000
COO	CHINA

FCC Requirement

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

15.21

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy.

If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Resource Links

- <https://www.seeedstudio.com/Wio-WM6108-Wi-Fi-HaLow-mini-PCIe-Module-p-6394.html>
- [Quectel FGH100M-H Specification](#)
- [Quectel FGH100M Hardware Design](#)
- [Quectel Linux Wi-Fi HaLow User Guide](#)
- [Wio-WM6108 Wi-Fi HaLow Module Schematic](#)

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