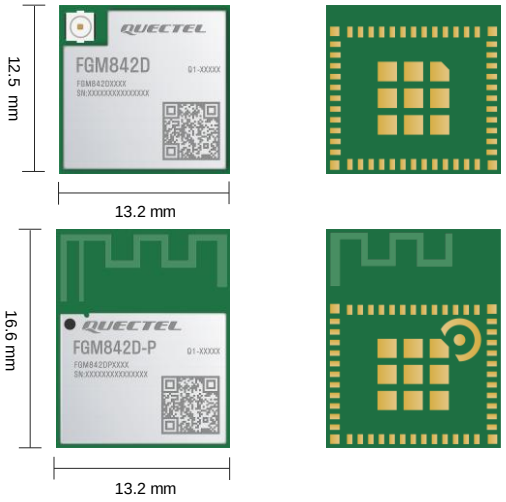
Quectel FGM842D Series

Wi-Fi 4 & BLE 5.2 Module
Compact LGA Package



FGM842D is a series of the cutting-edge MCU Wi-Fi and Bluetooth Combo module launched by Quectel. It boasts a high-performance processor (ARM968) with a frequency of up to 160 MHz and supports IEEE 802.11b/ g/ n protocol and BLE 5.2. The module features built-in 288 KB RAM and 2 MB flash or 4 MB flash.

The module is in an LGA form factor with an ultra-compact package size, which optimizes the size and cost for end-products and is compatible with diverse designs.

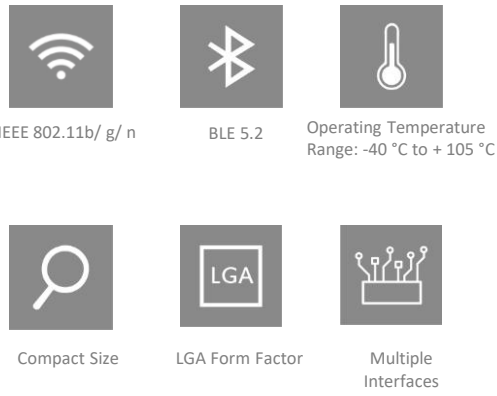
The module complies with WPA-PSK, WPA2-PSK and WPA3-SAE security standards, supports TRNG (True Random Number Generator) and AES-128 encryption algorithm, and supports secure firmware and flash encryption.

The module supports UART and GPIO interfaces by default and supports SPI, I2C, ADC and PWM functions in QuecOpen® solution and many low power consumption modes and keep-alive mechanism, which provide flexibility and versatility for a range of applications, especially in smart homes and industrial IoT scenarios.

The module supports QuecOpen® solution and standard AT commands, with a compact protocol, and can realize efficient product development for customers.

Key Features

- Wi-Fi 4 module, single band (2.4 GHz) Wi-Fi, 1 × 1 antenna
- Bluetooth Low Energy (BLE 5.2)
- Built-in 288 KB RAM and 2 MB flash or 4 MB flash
- Supports up to 19 GPIOs for SPI, I2C, ADC and PWM interfaces in QuecOpen® solution
- RF coaxial connector (IPEX Gen 4), pin antenna interface, PCB antenna (optional)
- Wide operating temperature range: -40 °C to + 105 °C



Version: 1.3 | Status: Released

Quectel FGM842D Series

Wi-Fi 4 & BLE 5.2	FGM842D	FGM842D-P
WLAN Protocol	IEEE 802.11b/ g/ n	IEEE 802.11b/ g/ n
Wi-Fi Frequency Band	2.4 GHz	2.4 GHz
Wi-Fi Modulation Mode	DSSS/ CCK/ BPSK/ QPSK/ 16QAM/ 64QAM	DSSS/ CCK/ BPSK/ QPSK/ 16QAM/ 64QAM
Wi-Fi Operating Mode	AP/ STA	AP/ STA
Bluetooth Protocol	BLE 5.2	BLE 5.2
Encryption Mode	WPA-PSK/ WPA2-PSK/ WPA3-SAE/ AES-128/ TRNG	WPA-PSK/ WPA2-PSK/ WPA3-SAE/ AES-128/ TRNG
Internet Protocol	IPv4, IPv6	IPv4, IPv6
Kernel	ARM968 (up to 160 MHz)	ARM968 (up to 160 MHz)
RAM	288 KB	288 KB
Flash	2 MB/ 4 MB ①	2 MB/ 4 MB ①
Dimensions	12.5 mm × 13.2 mm × 1.8 mm	16.6 mm × 13.2 mm × 1.8 mm
Weight	Approx. 1.05 g	Approx. 1.14 g
Temperature Range		
Operating Temperature	-40 °C to +105 °C	-40 °C to +105 °C
Storage Temperature	-45 °C to +115 °C	-45 °C to +115 °C
Certifications		
Regulatory/ Conformance	**Europe:** CE **America:** FCC **Canada:** IC **China:** SRRC **South Korea:** KC **Taiwan, China:** NCC **Japan:** JATE/ TELEC **Australia/ New Zealand:** RCM	**Europe:** CE **America:** FCC **Canada:** IC **China:** SRRC **South Korea:** KC **Taiwan, China:** NCC **Japan:** JATE/ TELEC **Australia/ New Zealand:** RCM
Interfaces		
Other Interfaces ②	UART/ GPIO/ SPI/ I2C/ ADC/ PWM	UART/ GPIO/ SPI/ I2C/ ADC/ PWM
Antenna Interface	× 1, RF coaxial connector (IPEX Gen 4) or pin antenna interface (optional)	× 1, PCB antenna
Supply Voltage		
Power Supply Voltage	3.0 V–3.6 V, Typ. 3.3 V	3.0 V–3.6 V, Typ. 3.3 V
Wi-Fi Performance		

		Receiver Sensitivity (Typ.)	Transmit Power (Typ.)	Receiver Sensitivity (Typ.)	Transmit Power (Typ.)
2.4 GHz	**802.11b/ 1 Mbps**	-98 dBm	18 dBm	-98 dBm	18 dBm
	802.11b/ 11 Mbps	-90 dBm	18 dBm	-90 dBm	18 dBm
	802.11g/ 6 Mbps	-90 dBm	16 dBm	-90 dBm	16 dBm
	802.11g/ 54 Mbps	-76 dBm	15 dBm	-76 dBm	15 dBm
	802.11n/ HT20 MCS 0	-90 dBm	15 dBm	-90 dBm	15 dBm
	802.11n/ HT20 MCS 7	-72 dBm	14 dBm	-72 dBm	14 dBm

Bluetooth Performance

	Receiver Sensitivity (Typ.)	Transmit Power (Typ.)	Receiver Sensitivity (Typ.)	Transmit Power (Typ.)
BLE (1 Mbps)	-96 dBm	6 dBm	-96 dBm	6 dBm
BLE (2 Mbps)	-94 dBm	6 dBm	-94 dBm	6 dBm
BLE (S = 2)	-96 dBm	6 dBm	-96 dBm	6 dBm
BLE (S = 8)	-101 dBm	6 dBm	-101 dBm	6 dBm

Model	Ordering Code	Flash	Dimensions	Antenna	Development Board (Only for Debugging)
FGM842D	FGM842DAAMD-4X-02	2 MB	12.5 mm × 13.2 mm × 1.8 mm	RF coaxial connector (IPEX Gen 4)	FGM842DAATB-4X-02
FGM842D	FGM842DAAMD-4X-04	4 MB	12.5 mm × 13.2 mm × 1.8 mm	RF coaxial connector (IPEX Gen 4)	FGM842DAATB-4X-04
FGM842D	FGM842DAAMD-0L-02	2 MB	12.5 mm × 13.2 mm × 1.8 mm	Pin antenna interface	FGM842DAATB-0L-02
FGM842D	FGM842DAAMD-0L-04	4 MB	12.5 mm × 13.2 mm × 1.8 mm	Pin antenna interface	FGM842DAATB-0L-04
FGM842D-P	FGM842DPAAMD-0P-02	2 MB	16.6 mm × 13.2 mm × 1.8 mm	PCB antenna	FGM842DPAATB-0P-02
FGM842D-P	FGM842DPAAMD-0P-04	4 MB	16.6 mm × 13.2 mm × 1.8 mm	PCB antenna	FGM842DPAATB-0P-04

NOTE:

1. ①: Contact Quectel Technical Support if you need a flash of other specifications.
2. ②: See hardware design manual for details of the module interfaces.

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