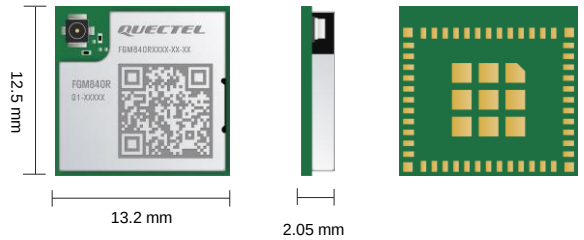




Quectel FGM840R

Wi-Fi 4 & BLE 5.0 Module

Compact LGA Package



FGM840R is a cutting-edge MCU Wi-Fi and Bluetooth combo module launched by Quectel. It has a built-in Cortex-M33&M23 dual-core processor with a main-core frequency of up to 200 MHz. It supports IEEE 802.11a/b/g/n protocol and BLE 5.0, supports 2.4 GHz & 5 GHz frequency bands, and has built-in 512 KB RAM and 4 MB Flash.

The module is in a LGA form factor with an ultra-compact package size of 12.5 mm × 13.2 mm × 2.05 mm, 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 comprehensive security such as TRNG (True Random Number Generator) , AES-128, TrustZone, Secure Boot and flash encryption.

The module supports up to 20 GPIO interfaces, which can be multiplexed as UART, SPI, I2C, ADC, PWM, SDIO and USB functions, 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, 2.4 GHz & 5 GHz Wi-Fi bands, 1 × 1 antenna
- ✓ BLE 5.0 and Wi-Fi pairing via Bluetooth
- ✓ Built-in 512 KB SRAM , 4 MB flash
- ✓ Supports up to 20 GPIOs for UART, SPI, I2C, ADC, PWM, SDIO and USB functions in QuecOpen® solution
- ✓ RF coaxial connector or pin antenna interface (Optional)
- ✓ Wide operating temperature range: -40 °C to +85 °C



IEEE 802.11 a/b/g/n



2.4 GHz & 5 GHz
Dual Band



BLE 5.0



Large Memory



Compact Size



Operating Temperature:
-40 °C to +85 °C

Wi-Fi 4 & BLE 5.0		FGM840R	
WLAN Protocol		IEEE 802.11 a/b/g/n	
Wi-Fi Frequency Band		2.4 GHz, 5 GHz	
Wi-Fi Modulation Mode		DBPSK/ DQPSK/ CCK/ BPSK/ QPSK/ 16QAM/ 64QAM	
Wi-Fi Operating Mode		AP/ STA	
Bluetooth Protocol		BLE 5.0	
Encryption Mode		WPA-PSK, WPA2-PSK, WPA3-SAE, AES-128, DES, SHA, TrustZone, Secure Boot, etc.	
Internet Protocol		IPv4	
Kernel		ARM Cortex-M33&M23 （main core frequency up to 200 MHz）	
RAM		512 KB	
Flash		4 MB	
Dimensions		12.5 mm × 13.2 mm × 2.05 mm	
Weight		Approx. 0.72 g or 0.70 g (Optional)	
Temperature Range			
Operating Temperature		-40 °C to +85 °C	
Storage Temperature		-45 °C to +95 °C	
Certification			
Regulatory ①		Europe: CE America: FCC Canada: IC China: SRRC Australia/New Zealand: RCM	
Interfaces			
Antenna Interface		× 1 (4 th generation RF coaxial connector or pin antenna interface) (Optional)	
Other Interfaces ②		UART/ SPI/ I2C/ PWM/ ADC/ SDIO/ USB, etc.	
Electrical Features			
Power Supply Voltage		3.0—3.6 V, typ. 3.3 V	
RF Performance			
		Receiver Sensitivity	Transmit Power
2.4 GHz	802.11b/1 Mbps	-99 dBm ±2 dB	18 dBm ±2 dB
	802.11b/11 Mbps	-90.5 dBm ±2 dB	18 dBm ±2 dB
	802.11g/6 Mbps	-94 dBm ±2 dB	18 dBm ±2 dB
	802.11g/54 Mbps	-77.5 dBm ±2 dB	17 dBm ±2 dB
	802.11n/HT20 MCS 0	-94 dBm ±2 dB	18 dBm ±2 dB
	802.11n/HT20 MCS 7	-75 dBm ±2 dB	16 dBm ±2 dB
5 GHz	802.11a/6 Mbps	-94 dBm ±2 dB	16 dBm ±2 dB
	802.11a/54 Mbps	-76.5 dBm ±2 dB	14 dBm ±2 dB
	802.11n/HT20 MCS 0	-94 dBm ±2 dB	16 dBm ±2 dB
	802.11n/HT20 MCS 7	-74.5 dBm ±2 dB	13 dBm ±2 dB
BLE	1 Mbps	-100 dBm ±3 dB	4.5 dBm ±3 dB
	2 Mbps	-96 dBm ±3 dB	4.5 dBm ±3 dB

Ordering Code	Weight	Operating Temperature	Antenna	Development Board (Only for Debugging)
FGM840RAAMD-4X-04	0.7 g	-40 °C to +85 °C	4th generation RF coaxial connector	FGM840RAATB-4X-04
FGM840RAAMD-0L-04	0.72 g	-40 °C to +85 °C	Pin antenna interface	FGM840RAATB-0L-04

NOTE:
①: Certifications are in progress. Contact Quectel sales If you have other certification needs.
②: See hardware design manual for details of the module interfaces.