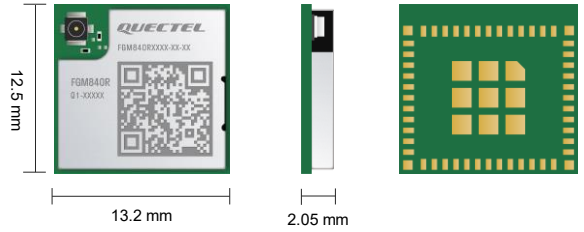


Quectel FGM840R

Wi-Fi 4 & BLE 5.4 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. The module supports IEEE 802.11a/b/g/n protocol and BLE 5.4, covers 2.4 GHz & 5 GHz frequency bands, and has built-in 512 KB RAM and 4 MB Flash to meet the needs of high-speed data processing.

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.

In QuecOpen® solution, the module supports up to 20 GPIO interfaces, which can be multiplexed as SPI, I2C, ADC, PWM, SDIO, SWD 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 5.4 and Wi-Fi pairing via Bluetooth
- ✓ Built-in 512 KB SRAM , 4 MB flash
- ✓ Supports up to 20 GPIOs for SPI, I2C, ADC, PWM, SDIO, SWD and USB functions in QuecOpen® solution
- ✓ RF coaxial connector or pin antenna interface (Optional)
- ✓ Wide operating temperature range: -40 °C to +85 °C
- ✓ USB Ethernet access solution



IEEE 802.11a/b/g/n



2.4 GHz & 5 GHz
Dual-band



BLE 5.4



Large Memory



Compact Size



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

Wi-Fi 4 & BLE 5.4		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 5.4	
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	
Temperature Range			
Operating Temperature		-40 °C to +85 °C	
Storage Temperature		-45 °C to +95 °C	
Certification			
Regulatory		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 ①		UART/ GPIO/ SPI/ I2C/ PWM/ ADC/ SDIO/ SWD/ 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	Operating Temperature	Antenna	Development Board (Only for Debugging)
FGM840RAAMD-4X-04	-40 °C to +85 °C	4th generation RF coaxial connector	FGM840RAATB-4X-04
FGM840RAAMD-0L-04	-40 °C to +85 °C	Pin antenna interface	FGM840RAATB-0L-04

NOTE:
①: See hardware design manual for details of the module interfaces.