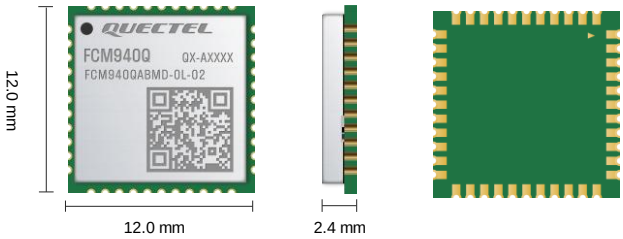
Quectel FCM940Q

Wi-Fi 4 Module



FCM940Q is a high-performance Wi-Fi 4 module launched by Quectel, featuring an ARM Cortex-M4F processor with a frequency of up to 60 MHz. It supports IEEE 802.11 a/b/g/n protocols and offers dual-band connectivity (2.4 GHz/ 5 GHz). The module features built-in 640 KB SRAM and 1.5 MB flash memory.

FCM940Q is in a LCC form factor with an ultra-compact size of 12.0 mm × 12.0 mm × 2.4 mm and supports pin antenna, which optimizes the size and cost for end-products and is compatible with diverse designs.

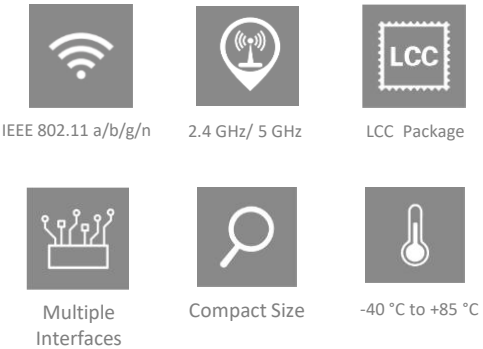
The module complies with security protocols such as WPA/WPA2/WPA3-SAE/WPA2-WPA3 mixed mode, supports hardware encryption algorithms including PRNG, SHA, HMAC, and TEE, and offers security features like Secure Boot and Secure Debug.

With support for up to 15 GPIOs, which can be multiplexed as UART, SPI, and I2C interfaces in an Open solution, FCM940Q enables flexible and broad applications in smart home and industrial IoT scenarios.

Additionally, FCM940Q incorporates an advanced power management scheme capable of intelligently adjusting power consumption.

Key Features

- Wi-Fi 4, 2.4/ 5 GHz dual-band, 1 × 1 antenna
- 640 KB SRAM, 1.5 MB flash
- LCC package
- 15 GPIOs
- Pin antenna interface
- Wide operating temperature range: -40 °C to +85 °C



Quectel FCM940Q

Wi-Fi 4	FCM940Q
WLAN Protocol	IEEE 802.11 a/b/g/n
Wi-Fi Frequency Band	2.4 GHz/ 5 GHz
Wi-Fi Modulation Mode	BPSK/ QPSK/ CCK/ 16QAM
Wi-Fi Operating Mode	AP/ STA
Encryption Mode	WPA/ WPA2/WPA3-SAE/WPA2-WPA3 mixed mode
Internet Protocol	IPv4, IPv6
Antenna	Pin antenna interface
Kernel	ARM Cortex-M4F (60 MHz)
SRAM	640 KB
Flash	1.5 MB
Dimensions	12.0 mm × 12.0 mm × 2.4 mm
Weight	Approx. 0.61 g
Temperature Range	
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-45 °C to +95 °C
Certification	
Regulatory	**America:** FCC **Canada:** IC
Interfaces	
Antenna Interface	× 1 (Pin antenna interface)
Other Interfaces ①	UART/ SPI/ I2C, etc.
Supply Voltage	
Power Supply Voltage	2.6–3.6 V, typ. 3.3 V
RF Performance	

		Receiver Sensitivity	Transmit Power	EVM	Freq Offset
2.4 GHz	802.11b/1 Mbps	-99 dBm ±2 dB	11 dBm ±2 dB	< -10dB	±15 ppm
	802.11b/11 Mbps	-90 dBm ±2 dB	10 dBm ±2 dB	< -10dB	±15 ppm
	802.11g/6 Mbps	-92 dBm ±2 dB	11 dBm ±2 dB	< -5dB	±15 ppm
	802.11g/24 Mbps	-84 dBm ±2 dB	10 dBm ±2 dB	< -16dB	±15 ppm
	802.11n/HT20 MCS 0	-92 dBm ±2 dB	11 dBm ±2 dB	< -5dB	±15 ppm
	802.11n/HT20 MCS 3	-83 dBm ±2 dB	10 dBm ±2 dB	< -16dB	±15 ppm
5 GHz	802.11a/6 Mbps	-90 dBm ±2 dB	11 dBm ±2 dB	< -5dB	±15 ppm
	802.11a/24 Mbps	-82 dBm ±2 dB	10 dBm ±2 dB	< -16dB	±15 ppm
	802.11n/HT20 MCS 0	-90 dBm ±2 dB	11 dBm ±2 dB	< -5dB	±15 ppm
	802.11n/HT20 MCS 3	-80 dBm ±2 dB	10 dBm ±2 dB	< -16dB	±15 ppm

Ordering Code	Flash	Operating Temperature Range	Antenna	Development Board (Only for Debugging)
FCM940QAAMD-0L-02	1.5 MB	-40 °C to +85 °C	Pin antenna interface	FCM940QAATB-0L-02
FCM940QABMD-0L-02	1.5 MB	-40 °C to +85 °C	Pin antenna interface	FCM940QABTB-0L-02

NOTE:

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

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