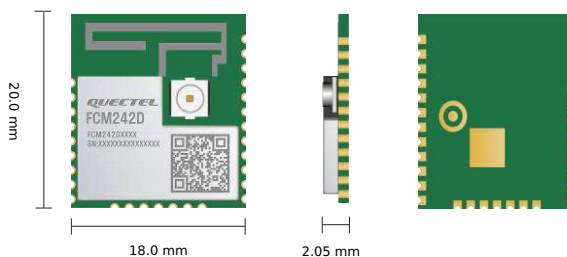


Quectel FCM242D

Wi-Fi 4 & BLE 5.2 Module, Small Size LCC Package



FCM242D is a high-performance MCU Wi-Fi and Bluetooth combo module released by Quectel, processor frequency up to 160 MHz, supports IEEE 802.11b/g/n protocols and BLE 5.2, with 288 KB RAM and 2 MB Flash.

FCM242D in surface-mount LCC package, ultra-compact dimensions 20.0 mm × 18.0 mm × 2.05 mm, to best meet terminal product demands of small-size module products, compatible with a variety of structural designs.

FCM242D conforms to WPA-PSK, WPA2-PSK, and WPA3-PSK security protocol standard, supports true random number generator (TRNG, True Random Number Generator) and AES-128 hardware encryption algorithm, supports secure firmware and Flash encryption.

The module natively supports UART and GPIO; in the QuecOpen® solution, it can be repurposed as SPI, I2C, ADC and PWM interfaces, with multiple low-power modes and long-connection keep-alive mechanisms, enabling flexible and broad use in smart home and industrial IoT applications, meeting various

scenario requirements.

FCM242D supports QuecOpen® solution and AT command set, with a lean protocol stack architecture, helping customers achieve high-efficiency, low-cost product development.



Product Features

✓ Wi-Fi 4 module, 2.4 GHz single-band, 1 × 1 antenna

✓ BLE 5.2

✓ Built-in 2 MB Flash

✓ In QuecOpen® solution supports up to 17 GPIOs, can be reused as SPI, I2C, ADC and PWM interfaces

✓ RF coaxial connector, external pin antenna, PCB antenna (optional)

✓ Wide operating temperature range: -40 °C ~ +105 °C



IEEE 802.11b/g/n



BLE 5.2



Operating temperature range:
-40 °C ~ +105 °C



Compact size



LCC package



Rich peripheral
interfaces

Wi-Fi 4 & BLE 5.2		FCM242D	
WLAN Protocol	IEEE 802.11b/g/n		
Wi-Fi Frequency Band	2.4 GHz		
Wi-Fi Modulation	DBPSK/ DQPSK/ CCK/ BPSK/ QPSK/ 16QAM/ 64QAM		
Wi-Fi Operating Modes	AP/ STA		
Bluetooth Protocol	BLE 5.2		
Encryption Modes	WPA-PSK/ WPA2-PSK/ WPA3-PSK/ AES-128/ TRNG		
Network Features	IPv4/ IPv6		
Core	ARM968 (main frequency up to 160 MHz)		
RAM	288 KB		
Flash	2 MB ^①		
Module Dimensions	20.0 mm × 18.0 mm × 2.05 mm		
Weight	Approx. 1.09 g		
Temperature Range			
Operating Temperature	-40 °C ~ +105 °C		
Storage Temperature	-45 °C ~ +115 °C		
Certification			
Mandatory Certification	China: SRRC Europe: CE USA: FCC Canada: IC Australia/New Zealand: RCM		
Interfaces			
Antenna interface	× 1 (First-generation RF coaxial connector, external pin antenna, PCB antenna) (optional)		
Peripheral interface	UART/ GPIO/ SPI/ I2C/ ADC/ PWM		
Electrical characteristics			
Power supply voltage	3.0~3.6 V, typical 3.3 V		
RF performance			
		Receiver sensitivity (typical)	Transmit power (typical)
2.4 GHz	802.11b/1 Mbps	-99 dBm	17 dBm
	802.11b/11 Mbps	-91 dBm	17 dBm
	802.11g/6 Mbps	-91 dBm	15 dBm
	802.11g/54 Mbps	-77 dBm	14 dBm
	802.11n/HT20 MCS 0	-91 dBm	14 dBm
	802.11n/HT20 MCS 7	-73 dBm	13 dBm
BLE	125 kbps	-102 dBm	7 dBm
	500 kbps	-97 dBm	7 dBm
	1 Mbps	-97 dBm	7 dBm
	2 Mbps	-95 dBm	7 dBm

Procurement code	Operating temperature	Storage temperature	Antenna	Development board (debug only)
FCM242DAAMD-1X-02	-40 °C to +105 °C	-45 °C to +115 °C	Gen 1 RF coaxial connector	FCM242DAATB-1X-02
FCM242DAAMD-0L-02	-40 °C to +105 °C	-45 °C to +115 °C	External pin antenna	FCM242DAATB-0L-02
FCM242DAAMD-0P-02	-40 °C to +105 °C	-45 °C to +115 °C	PCB antenna	FCM242DAATB-0P-02

Note:

- ^①: If you have other Flash specification requirements, please contact Quectel sales.
- ^②: Interface details can refer to the module hardware design manual.