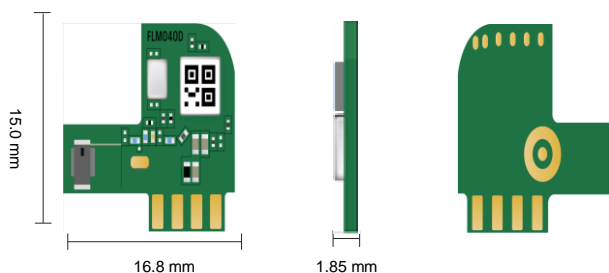


# Quectel FLM040D

## Wi-Fi 4 & BLE 5.2 Module Compact DIP Package



FLM040D is a cutting-edge MCU Wi-Fi and Bluetooth module launched by Quectel. It boasts a high-performance processor with a frequency of up to 120 MHz and supports IEEE 802.11b/g/n protocol and BLE 5.2. The module features built-in 256 KB RAM, 2 MB or 4 MB flash, ensuring efficient performance. In addition, it complies with WPA-PSK, WPA2-PSK and WPA3-SAE security standards.

FLM040D is in a DIP form factor with an ultra-compact package size of 15.0 mm × 16.8 mm × 1.85 mm, which optimizes the size and cost for end-products and is compatible with diverse designs.

The module supports multiple interfaces, including UART, GPIO, ADC and PWM, 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. It is especially suitable for smart bulb lamps and other small form factor, high temperature IoT devices.

The module supports the QuecOpen® solution and has a compact protocol stack, allowing for efficient product development.



### Key Features

- ✓ Wi-Fi 4 module, single band (2.4 GHz) Wi-Fi, 1 × 1 antenna
- ✓ BLE 5.2 and Bluetooth pairing
- ✓ Large memory, 256 KB RAM, 2 MB or 4 MB flash
- ✓ Supports UART, GPIO, ADC and PWM interfaces
- ✓ Ceramic antenna
- ✓ High stability, high reliability and full compatibility



IEEE 802.11b/g/n



BLE 5.2



Large Memory



Compact Size



Operating Temperature  
Range: -40 °C to +105 °C

# Quectel FLM040D

Wi-Fi 4 & BLE 5.2		FLM040D	
WLAN Protocol	IEEE 802.11b/g/n		
Wi-Fi Frequency Band	2.4 GHz		
Wi-Fi Modulation Mode	BPSK/ QPSK/ CCK/ 16QAM/ 64QAM		
Wi-Fi Operating Mode	AP/ STA		
Bluetooth Protocol	BLE 5.2		
Encryption Mode	WPA-PSK/ WPA2-PSK/ WPA3-SAE		
Internet Protocol	IPv6		
Kernel	ARM968 (up to 120 MHz)		
RAM	256 KB		
Flash	2 MB/ 4 MB <sup>①</sup>		
Dimension	15.0 mm × 16.8 mm × 1.85 mm		
Weight	Approx. 0.55 g		
Temperature Range			
Operating Temperature	-40 °C to +105 °C		
Storage Temperature	-45 °C to +115 °C		
Certification			
Regulatory	<b>Europe:</b> CE <b>America:</b> FCC <b>The UK:</b> UKCA <b>Canada:</b> IC <b>China:</b> SRRC <b>Australia/New Zealand:</b> RCM		
Interfaces			
Antenna Interface	× 1 (Ceramic antenna)		
Other Interfaces <sup>②</sup>	UART/ GPIO/ ADC/ PWM		
Electrical Features			
Power Supply Voltage	3.0–3.6 V, Typ. 3.3 V		
RF Performance			
		Receiving Sensitivity	Output Power
2.4 GHz	802.11b/1 Mbps	-96 dBm ±2 dB	16 dBm ±2 dB
	802.11b/11 Mbps	-87 dBm ±2 dB	16 dBm ±2 dB
	802.11g/6 Mbps	-90 dBm ±2 dB	15 dBm ±2 dB
	802.11g/54 Mbps	-73.5 dBm ±2 dB	14 dBm ±2 dB
	802.11n/HT20 MCS 0	-89 dBm ±2 dB	14 dBm ±2 dB
	802.11n/HT20 MCS 7	-71 dBm ±2 dB	13 dBm ±2 dB
BLE	1 Mbps	-95 dBm ±2 dB	6 dBm ±2 dB

Ordering Code	Flash	Operating Temperature Range	Antenna	Development Board (Only for Debugging)
FLM040DAAMD-0C-04	4 MB	-40 °C to +105 °C	Ceramic antenna	FLM040DAATB-0C-04
FLM040DAAMD-0C-02	2 MB	-40 °C to +105 °C	Ceramic antenna	-

**NOTE:**

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