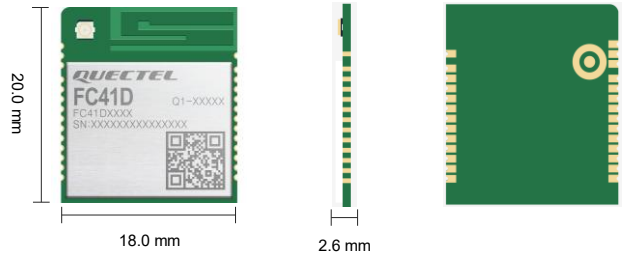


Quectel FC41D

Wi-Fi 4 & Bluetooth 5.2 Module Compact LCC Package



FC41D 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 Bluetooth 5.2. The module features built-in 256 KB RAM and 2 MB/ 4 MB flash, ensuring efficient performance. In addition, it complies with WPA-PSK, WPA2-PSK and WPA3-SAE security standards.

FC41D is in an LCC form factor with an ultra-compact package size of 20.0 mm × 18.0 mm × 2.6 mm, which optimizes the size and cost for end-products and is compatible with diverse designs.

FC41D supports multiple interfaces including UART, SPI, I2C, ADC and PWM, and 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.

FC41D supports the QuecOpen® solution and standard AT commands, has a compact protocol stack. FC41D supports a variety of public cloud services, and can realize efficient product development for customers.



Key Features

- ✓ Wi-Fi 4 module, single band (2.4 GHz) Wi-Fi, 1 × 1 antenna
- ✓ Bluetooth 5.2 and Bluetooth pairing
- ✓ Large memory, 256 KB RAM and 2 MB/ 4 MB flash
- ✓ Supports up to 19 GPIOs for UART, SPI, I2C, ADC and PWM functions in QuecOpen® solution
- ✓ RF coaxial connector (IPEX Gen 4), external antenna pin, PCB antenna (optional)
- ✓ High stability, high reliability and full compatibility



IEEE 802.11b/ g/ n



Bluetooth 5.2



Large Memory



Compact Size



LCC Form Factor



Multiple Interfaces



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

Wi-Fi 4 & Bluetooth 5.2		FC41D		
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		Bluetooth 5.2		
Encryption Mode		WPA-PSK/ WPA2-PSK/ WPA3-SAE		
Internet Protocol		IPv6 (Only supported in QuecOpen® solution)		
Kernel		ARM968 (up to 120 MHz)		
RAM		256 KB		
Flash		2 MB/ 4 MB ①		
Dimension		20.0 mm × 18.0 mm × 2.6 mm		
Weight		Approx. 1.51 g		
Temperature Range				
Operating Temperature Range		-40 °C to +85 °C		
Storage Temperature Range		-45 °C to +95 °C		
Certification				
Regulatory/ Conformance		Europe: CE America: FCC Canada: IC Brazil: Anatel China: SRRC Australia/ New Zealand: RCM South Korea: KC Japan: TELEC Taiwan, China: NCC		
Others		Bluetooth		
Interfaces				
Antenna Interface		× 1 (RF coaxial connector (IPEX Gen 4), external antenna pin, PCB antenna) (optional)		
Other Interfaces ②		UART/ SPI/ I2C/ PWM/ ADC		
Electrical Features				
Power Supply Voltage		3.0–3.6 V, Typ. 3.3 V		
RF Performance				
		Receiving Sensitivity (Typ.)		Output Power (Typ.)
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	-91 dBm ±2 dB		15 dBm ±2 dB
	802.11g/54 Mbps	-74 dBm ±2 dB		14 dBm ±2 dB
	802.11n/HT20 MCS 0	-90 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)
FC41DAEMD	2 MB	-40 °C to +85 °C	External antenna pin	FC41DAATB-KIT
FC41DAFMD	2 MB	-40 °C to +85 °C	RF coaxial connector (IPEX Gen 4)	-
FC41DAGMD	2 MB	-40 °C to +85 °C	PCB antenna	FC41DAGTB
FC41DAHMD	4 MB	-40 °C to +85 °C	PCB antenna	FC41DAHTB

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

