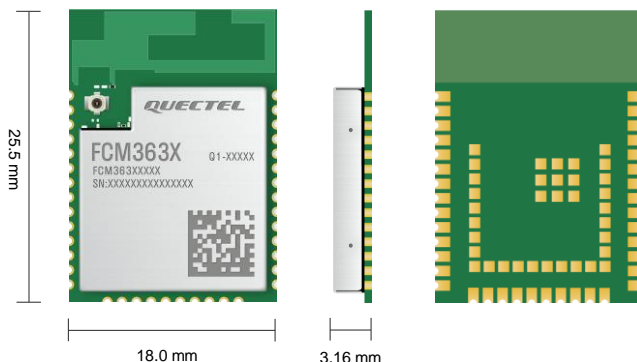


Quectel FCM363X

Wi-Fi 6 & BLE 5.4 Module Compact LCC + LGA Package



FCM363X is a cutting-edge MCU Wi-Fi and Bluetooth module launched by Quectel. It boasts a high-performance processor (ARM Cortex-M33) with a frequency of up to 260 MHz and supports IEEE 802.11a/b/g/n/ac/ax protocol and BLE 5.4. The module features built-in 1.2 MB SRAM and 8 MB flash, ensuring efficient performance. The module also offers optional PSRAM expansion for more complex applications. In addition, it complies with WPA-PSK, WPA2-PSK and WPA3-SAE security standards, providing an AES-128 encryption algorithm.

FCM363X is in LCC + LGA form factor with an ultra-compact package size of 25.5 × 18.0 × 3.16 mm, which optimizes the size and cost for end-products and is compatible with diverse designs.

FCM363X supports GPIO, SDIO, UART, USB, SPI and JTAG interfaces by default and I2C, I2S, ADC, LCD and PWM interfaces in QuecOpen® solution, 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.

FCM363X supports QuecOpen® solution and standard AT commands, with a compact protocol, and can realize efficient product development for customers.



Key Features

- ✓ Wi-Fi 6 module, 2.4 GHz & 5 GHz Wi-Fi bands, 1 × 1 antenna
- ✓ Bluetooth Low Energy (BLE 5.4)
- ✓ Large memory, 1.2 MB SRAM and 8 MB flash
- ✓ PSRAM expansion (optional)
- ✓ Supports GPIO, SDIO, UART, USB, SPI, JTAG and etc.
- ✓ RF coaxial connector, PCB antenna (optional)



IEEE
802.11a/b/g/n/ac/ax



BLE 5.4



Large Memory



Compact Size



LCC + LGA
Form Factor



Multiple
Interfaces



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

Quectel FCM363X

Wi-Fi 6 & BLE 5.4		FCM363X	
WLAN Protocol	IEEE 802.11a/b/g/n/ac/ax		
Wi-Fi Frequency Band	2.4 GHz/5 GHz		
Wi-Fi Modulation Mode	DSSS/OFDM/DBPSK/DQPSK/CCK/BPSK/QPSK/16QAM/64QAM/256QAM		
Wi-Fi Operating Mode	AP/ STA		
Bluetooth Protocol	BLE 5.4		
Encryption Mode	WPA-PSK/WPA2-PSK/WPA3-SAE/AES-128		
Internet Protocol	IPv6/ IPv4		
Kernel	ARM Cortex-M33 processor (up to 260 MHz)		
SRAM	1.2 MB		
Flash	8 MB		
PSRAM Expansion (optional)	up to 8 MB		
Dimensions	25.5 mm × 18.0 mm × 3.16 mm		
Weight	Approx. 1.51 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		
	Australia/New Zealand: RCM		
	China: SRRC		
Others	Japan: JATE/TELEC		
	Bluetooth		
Interfaces			
Antenna (Interface)	× 1 (RF coaxial connector, PCB antenna) (Optional)		
Other Interfaces ^①	UART/USB/SDIO*/SPI/JTAG/SWD/I2C/I2S/ADC/LCD/PWM, etc		
Electrical Features			
Power Supply Voltage	3.14–3.46 V, Typ. 3.3 V		
Wi-Fi Performance			
2.4 GHz	Receiver Sensitivity		Transmit Power
	802.11b/1 Mbps	-96 dBm ±2 dB	19 dBm ±2 dB
	802.11b/11 Mbps	-87 dBm ±2 dB	19 dBm ±2 dB
	802.11g/6 Mbps	-90 dBm ±2 dB	18 dBm ±2 dB
	802.11g/54 Mbps	-73 dBm ±2 dB	17 dBm ±2 dB
	802.11n/HT20 MCS 0	-90 dBm ±2 dB	18 dBm ±2 dB
	802.11n/HT20 MCS 7	-71 dBm ±2 dB	16 dBm ±2 dB
	802.11ax/HE20 MCS 0	-90 dBm ±2 dB	18 dBm ±2 dB
	802.11ax/HE20 MCS 9	-66 dBm ±2 dB	15 dBm ±2 dB
5 GHz	Receiver Sensitivity		Transmit Power
	802.11a/6 Mbps	-90 dBm ±2 dB	18 dBm ±2 dB
	802.11a/54 Mbps	-73 dBm ±2 dB	16 dBm ±2 dB
	802.11n/HT20 MCS 0	-90 dBm ±2 dB	18 dBm ±2 dB
	802.11n/HT20 MCS 7	-71 dBm ±2 dB	15.5 dBm ±2 dB
	802.11ac/VHT20 MCS 0	-90 dBm ±2 dB	18 dBm ±2 dB
	802.11ac/VHT20 MCS 8	-67 dBm ±2 dB	14.5 dBm ±2 dB
	802.11ax/HE20 MCS 0	-88 dBm ±2 dB	18 dBm ±2 dB
	802.11ax/HE20 MCS 9	-65 dBm ±2 dB	13.5 dBm ±2 dB
Bluetooth Performance			
Receiver Sensitivity		Transmit Power	
BLE (1 Mbps)	-97 dBm ±3 dB	8 dBm ±3 dB	
BLE (2 Mbps)	-95 dBm ±3 dB	8 dBm ±3 dB	
BLE (S = 2)	-98 dBm ±3 dB	8 dBm ±3 dB	
BLE (S = 8)	-104 dBm ±3 dB	8 dBm ±3 dB	

Ordering Code	PSRAM Expansion	LFRC Crystal	Antenna	Development Board (Only for Debugging)
FCM363XABMD-0P-08	-	-	PCB antenna	FCM363XABTB-0P-08
FCM363XABMD-4X-08	-	-	4th generation RF coaxial connector	FCM363XABTB-4X-08* FPC antenna: YF0029CA
FCM363XACMD-0P-08	Supported	Supported	PCB antenna	FCM363XACTB-0P-08

NOTE:

- ①: See hardware design manual for details of the module interfaces.
- * : Under development.