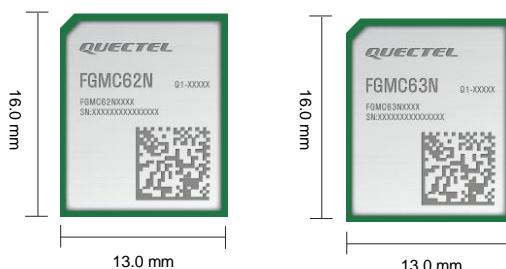




Quectel FGMC62N & FGMC63N

Wi-Fi 6/6E & BLE 5.4 Module Compact LGA Package



FGMC62N and FGMC63N are cutting-edge MCU Wi-Fi 6/6E and BLE 5.4 modules launched by Quectel. The modules boast a high-performance processor (ARM Cortex-M33) with the frequency of up to 192 MHz and support IEEE 802.11a/b/g/n/ac/ax and BLE 5.4 protocols. The modules feature built-in 768 KB SRAM, 2 MB ROM and 4 MB flash, ensuring efficient performance. In addition, they comply with WPA, WPA2, and WPA3 security standards.

FGMC62N and FGMC63N are in LGA form factor with the ultra-compact package size of 16.0 mm × 13.0 mm × 1.7 mm, which optimize the size and cost for end-products and are compatible with diverse designs.

The modules support up to 48 GPIOs in Open solution, which can be multiplexed into interfaces such as SDIO, UART, SPI*, I2C*, TDM*, PWM*, ADC*, DMIC* and Analog MIC*, 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.

The modules support Open solution and standard AT commands, with a compact protocol, and can realize efficient product development for customers.



Key Features

- ✓ Wi-Fi 2.4 GHz/ 5 GHz/ 6 GHz, 1 × 1 antenna
- ✓ Bluetooth Low Energy (BLE 5.4)
- ✓ Large memory, 768 KB SRAM, 2 MB ROM and 4 MB flash
- ✓ Supports up to 48 GPIOs for SDIO, UART, SPI*, I2C*, TDM* PWM*, ADC*, DMIC* and Analog MIC* interfaces in Open solution
- ✓ Wider operating temperature range: -40 °C to +85 °C



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



BLE 5.4



Large Memory



Compact Size



LGA Form Factor



Multiple Interfaces



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

Version: 1.0.0 | Status: Preliminary

Quectel FGMC62N & FGMC63N

Wi-Fi 6/6E & BLE 5.4	FGMC62N	FGMC63N
WLAN Protocol	IEEE 802.11a/b/g/n/ac/ax	IEEE 802.11a/b/g/n/ac/ax
Wi-Fi Frequency Band	2.4 GHz/ 5 GHz	2.4 GHz/ 5 GHz/ 6 GHz
Wi-Fi Modulation Mode	DSSS/ OFDM/ DBPSK/ DQPSK/ CCK/ BPSK/ QPSK/ 16QAM/ 64QAM/ 256QAM/ 1024QAM	DSSS/ OFDM/ DBPSK/ DQPSK/ CCK/ BPSK/ QPSK/ 16QAM/ 64QAM/ 256QAM/ 1024QAM
Wi-Fi Operating Mode	AP/ STA	AP/ STA
Bluetooth Protocol	BLE 5.4	BLE 5.4
Encryption Mode	WPA/ WPA2/ WPA3	WPA/ WPA2/ WPA3
Internet Protocol	IPv6	IPv6
Chipset	CYW55912	CYW55913
Kernel	ARM Cortex-M33 processor (up to 192 MHz)	ARM Cortex-M33 processor (up to 192 MHz)
SRAM	768 KB	768 KB
ROM	2 MB	2 MB
Flash ^①	4 MB	4 MB
Dimensions	16.0 mm × 13.0 mm × 1.7 mm	16.0 mm × 13.0 mm × 1.7 mm
Weight	Approx. 0.76 g	Approx. 0.76 g
Temperature Range		
Operating Temperature	-40 °C to +85 °C	-40 °C to +85 °C
Storage Temperature	-45 °C to +95 °C	-45 °C to +95 °C
Certification		
Regulatory	Europe: CE* America: FCC* Canada: IC* Australia/New Zealand: RCM* China: SRRC* Japan: TELEC*/ JATE*	Europe: CE* America: FCC* Canada: IC* Australia/New Zealand: RCM* China: SRRC* Japan: TELEC*/ JATE*
Interfaces		
Antenna Interface	× 1 (Pin antenna interface)	× 1 (Pin antenna interface)
Other Interfaces ^②	SDIO/ UART/ SPI*/ I2C*/ TDM*/ PWM*/ ADC*/ DMIC*/ Analog MIC*	SDIO/ UART/ SPI*/ I2C*/ TDM*/ PWM*/ ADC*/ DMIC*/ Analog MIC*
Electrical Features		
Power Supply Voltage	3.13–3.6 V, Typ. 3.3 V 1.71–1.89 V, Typ. 1.8 V	3.13–3.6 V, Typ. 3.3 V 1.71–1.89 V, Typ. 1.8 V

NOTE:

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

Quectel FGMC62N & FGMC63N

Wi-Fi 6/6E & BLE 5.4		FGMC62N		FGMC63N	
Wi-Fi Performance					
		Transmit Power	Receiver Sensitivity	Transmit Power	Receiver Sensitivity
2.4 GHz	802.11b/1 Mbps	18 dBm ±2.5 dB	-98 dBm ±2.5 dB	18 dBm ±2.5 dB	-98 dBm ±2.5 dB
	802.11b/11 Mbps	18 dBm ±2.5 dB	-89 dBm ±2.5 dB	18 dBm ±2.5 dB	-89 dBm ±2.5 dB
	802.11g/6 Mbps	18 dBm ±2.5 dB	-94 dBm ±2.5 dB	18 dBm ±2.5 dB	-94 dBm ±2.5 dB
	802.11g/54 Mbps	17 dBm ±2.5 dB	-77 dBm ±2.5 dB	17 dBm ±2.5 dB	-77 dBm ±2.5 dB
	802.11n/HT20 MCS 0	18 dBm ±2.5 dB	-94 dBm ±2.5 dB	18 dBm ±2.5 dB	-94 dBm ±2.5 dB
	802.11n/HT20 MCS 7	16 dBm ±2.5 dB	-75 dBm ±2.5 dB	16 dBm ±2.5 dB	-75 dBm ±2.5 dB
	802.11ax/HE20 MCS 0	18 dBm ±2.5 dB	-94 dBm ±2.5 dB	18 dBm ±2.5 dB	-94 dBm ±2.5 dB
	802.11ax/HE20 MCS 11	15 dBm ±2.5 dB	-63 dBm ±2.5 dB	15 dBm ±2.5 dB	-63 dBm ±2.5 dB
5 GHz	802.11a/6 Mbps	18 dBm ±2.5 dB	-91 dBm ±2.5 dB	18 dBm ±2.5 dB	-91 dBm ±2.5 dB
	802.11a/54 Mbps	16 dBm ±2.5 dB	-75 dBm ±2.5 dB	16 dBm ±2.5 dB	-75 dBm ±2.5 dB
	802.11n/HT20 MCS 0	18 dBm ±2.5 dB	-91 dBm ±2.5 dB	18 dBm ±2.5 dB	-91 dBm ±2.5 dB
	802.11n/HT20 MCS 7	15 dBm ±2.5 dB	-73 dBm ±2.5 dB	15 dBm ±2.5 dB	-73 dBm ±2.5 dB
	802.11ac/VHT20 MCS 0	18 dBm ±2.5 dB	-91 dBm ±2.5 dB	18 dBm ±2.5 dB	-91 dBm ±2.5 dB
	802.11ac/VHT20 MCS 8	14 dBm ±2.5 dB	-69 dBm ±2.5 dB	14 dBm ±2.5 dB	-69 dBm ±2.5 dB
	802.11ax/HE20 MCS 0	18 dBm ±2.5 dB	-91 dBm ±2.5 dB	18 dBm ±2.5 dB	-91 dBm ±2.5 dB
	802.11ax/HE20 MCS 11	13 dBm ±2.5 dB	-61 dBm ±2.5 dB	13 dBm ±2.5 dB	-61 dBm ±2.5 dB
6 GHz	802.11a/6 Mbps	-	-	18 dBm ±2.5 dB	-90 dBm ±2.5 dB
	802.11a/24 Mbps	-	-	16 dBm ±2.5 dB	-82 dBm ±2.5 dB
	802.11ax/HE20 MCS 0	-	-	17 dBm ±2.5 dB	-90 dBm ±2.5 dB
	802.11ax/HE20 MCS 11	-	-	10 dBm ±2.5 dB	-58 dBm ±2.5 dB
Bluetooth Performance					
		Transmit Power	Receiver Sensitivity	Transmit Power	Receiver Sensitivity
BLE (1 Mbps)		8 dBm ±2.5 dB	-96 dBm ±2.5 dB	8 dBm ±2.5 dB	-96 dBm ±2.5 dB
BLE (2 Mbps)		8 dBm ±2.5 dB	-93 dBm ±2.5 dB	8 dBm ±2.5 dB	-93 dBm ±2.5 dB
BLE (S = 2)		8 dBm ±2.5 dB	-103 dBm ±2.5 dB	8 dBm ±2.5 dB	-103 dBm ±2.5 dB
BLE (S = 8)		8 dBm ±2.5 dB	-109 dBm ±2.5 dB	8 dBm ±2.5 dB	-109 dBm ±2.5 dB

Ordering Code	Flash	Operating Temperature Range	Antenna	Development Board (Only for Debugging)
FGMC62NAAMD-0L-04	4 MB	-40 °C to +85 °C	Pin antenna interface	FGMC62NAATB-0L-04
FGMC63NAAMD-0L-04	4 MB	-40 °C to +85 °C	Pin antenna interface	FGMC63NAATB-0L-04