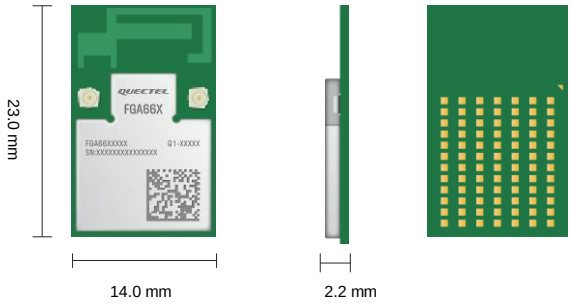
Quectel FGA66X

Wi-Fi 6 & BLE 5.4 & IEEE 802.15.4 Module



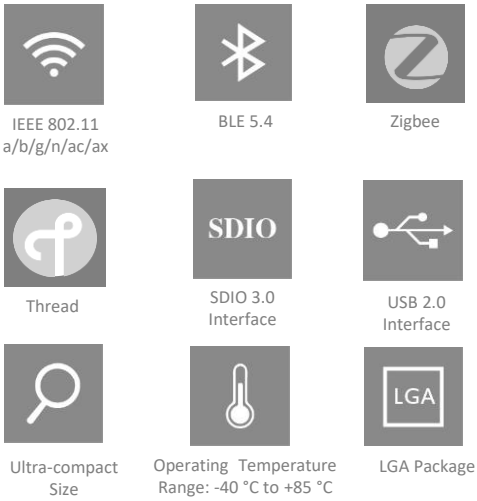
FGA66X is a high-performance Wi-Fi 6, BLE 5.4 and IEEE 802.15.4 module in LGA package launched by Quectel. Under the IEEE 802.11ax standard protocol, it supports MCS 0–MCS 9 rates in an 20 MHz bandwidth with 256QAM supported. The module is designed with a reliable SDIO 3.0 or USB interface to provide WLAN capability.

With an ultra-compact size of 23.0 mm × 14.0 mm × 2.2 mm, FGA66X optimizes the size and cost for end-products, which fully meets the demands of size-sensitive applications.

Surface-mount Technology (SMT) makes FGA66X an ideal solution for durable and rugged designs. The low profile and small size of LGA package ensure that the module can be easily embedded into size-constrained applications and provide reliable connectivity with these applications. The advanced package, integrated shielding cover and the laser-engraved label with better heat dissipation and indelible markings allow for large-scale automated manufacturing that has strict requirements on cost and efficiency. Coupled with its compact size and wide operating temperature range, FGA66X is suitable for a variety of smart home and industrial applications.

Key Features

- 2.4 GHz/ 5 GHz Wi-Fi bands, BLE 5.4
- IEEE 802.15.4 (Thread, Zigbee)
- SDIO 3.0/ USB 2.0 interface that support higher data transmission rate and enable lower power consumption
- Faster time-to-market: simple design minimizes design-in time and development efforts
- Wide operating temperature range: -40 °C to +85 °C
- 4th generation RF coaxial connector, PCB antenna (optional)



Version: 1.0.0 | Status: Preliminary

Quectel FGA66X

Wi-Fi 6 & BLE 5.4 & IEEE 802.15.4	FGA66X
WLAN Protocol	IEEE 802.11 a/b/g/n/ac/ax
Wi-Fi Frequency Band	2.4 GHz/ 5 GHz
Wi-Fi Antenna	1 × 1
Wi-Fi Modulation Mode	DSSS/ OFDM/ DBPSK/ DQPSK/ CCK/ BPSK/ QPSK/ 16QAM/ 64QAM/ 256QAM
Encryption Mode	WPA2/ WPA3
Wi-Fi Operating Mode	AP/ STA
IEEE 802.15.4	Thread/ Zigbee
Bluetooth Protocol	BLE 5.4
Dimensions	23.0 mm × 14.0 mm × 2.2 mm
Weight	Approx. 1.12 g
Temperature Range	
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +90 °C
Physical Rate (Max.)	
802.11a	54 Mbps
802.11b	11 Mbps
802.11g	54 Mbps
802.11n	72.2 Mbps
802.11ac	86.7 Mbps
802.11ax	114.7 Mbps
Interfaces	
Wi-Fi Antenna ①	× 1 (4th generation RF coaxial connector, PCB antenna) (Optional)
Bluetooth/IEEE 802.15.4 Antenna	× 1 (4th generation RF coaxial connector)
SDIO 3.0 ②	× 1 (for Wi-Fi)
USB 2.0 ②	× 1 (for Wi-Fi & Bluetooth)
UART ②	× 1 (for Bluetooth)
SPI	× 1 (for IEEE 802.15.4)
Electrical Features	
Power Supply Voltage	VBAT_3V3: 3.14–3.46 V, Typ. 3.3 V
I/O Power Supply Voltage	VDDIO: • 3.14–3.46 V, Typ. 3.3 V • 1.71–1.89 V, Typ. 1.8 V
VDDIO_RF Power Supply	VDDIO_RF: • 3.14–3.46 V, Typ. 3.3 V • 1.71–1.89 V, Typ. 1.8 V
SDIO_VDD Power Supply	SDIO_VDD: • 3.14–3.46 V, Typ. 3.3 V • 1.71–1.89 V, Typ. 1.8 V
Power Consumption	Max. current at Tx mode: • TBD @ 3.3 V • TBD @ 1.8 V
Certifications	
Regulatory (Planning)	**Europe:** CE **America:** FCC **China:** SRRC

Model	Ordering Code	Antenna	Interface	Development Board (Only for Debugging)
FGA66X	FGA66XABMD	Two antennas	Wi-Fi application: SDIO 3.0 Bluetooth application: UART	FGA66XABM2
FGA66X	FGA66XACMD	Two antennas	Wi-Fi & Bluetooth application: USB 2.0	FGA66XACM2

NOTE:

1. ①: Wi-Fi antenna can be selected through software configuration.
2. ②: The module can support SDIO interface or USB interface, but they cannot be utilized simultaneously. When using the USB interface, the SDIO and UART interfaces need to be kept open. You can choose the corresponding module model according to the actual application. For details, please contact Quectel Technical Support.

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