Quectel FC64E

Wi-Fi&Bluetooth Module
Compact LCC Package

19.9 mm

18.0 mm

2.1 mm
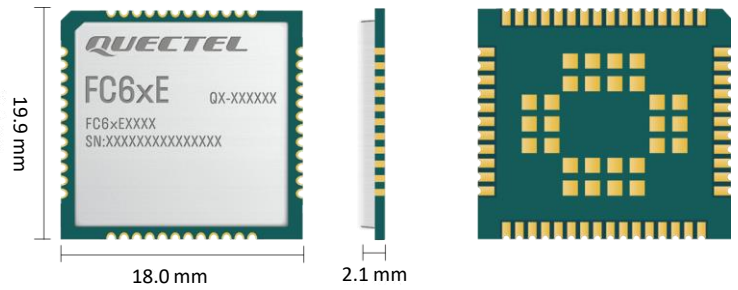
FC64E is a high-performance Wi-Fi 6 and BLE (Bluetooth 5.2) module in LCC package. It can be used to establish WLAN and Bluetooth connections. Supporting 2 × 2 + 2 × 2 MIMO, it provides a maximum data rate up to 1774.5 Mbps.

With a compact and unified form factor of 19.9 mm × 18.0 mm × 2.1 mm, FC64E is an ideal Wi-Fi/Bluetooth solution for size-sensitive applications, and helps customers reduce product size and optimize application design cost. The surface-mount technology enhances its durability and robustness, and the LCC package ensures that the module can be easily embedded into size-constrained applications and provide reliable connectivity with these applications. The advanced package allows for large-scale automated manufacturing which has strict requirements on cost and efficiency.

Designed with a reliable PCIe 3.0 interface to provide WLAN capability, FC64E achieves low-power and high-speed data transmission. This, coupled with its compact size and extended temperature range, enables the module to meet Wi-Fi/Bluetooth application design requirements in industrial, consumer and automotive fields.

Key Features

- ✔ Wi-Fi&Bluetooth module supporting 2.4 GHz, 5 GHz and BLE (Bluetooth 5.2)

- ✔ Support DBS

- ✔ Support PCIe 3.0 interface, which provides higher data transmission rate and lower power consumption

- ✔ Fast time-to-market: simple design minimizes design-in time and development efforts

- ✔ Wide operating temperature range (-30°C to +85°C)

Ultra Compact Size

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

BLE (Bluetooth 5.2)

Operating Temperature Range: -30 °C to +85 °C

Version: 1.0.0 | Status: Preliminary

Wi-Fi&Bluetooth	FC64E
Region	Global
Function	Wi-Fi 2.4 GHz/5 GHz, 2 × 2 + 2 × 2 MIMO
WLAN	IEEE 802.11a/b/g/n/ac/ax
Bluetooth Standard	BLE (Bluetooth 5.2)
2.4 GHz Channel Bandwidth	20/40 MHz
5 GHz Channel Bandwidth	20/40/80/160 MHz
DBS	Supported
Modulation Mode	DBPSK/DQPSK/CCK/BPSK/QPSK/QAM
Temperature Range	
Operating Temperature Range	-30 °C to +85 °C
Data Rate (Max.)	
802.11a	54 Mbps
802.11b	11 Mbps
802.11g	54 Mbps
802.11n	600 Mbps
802.11ac	866 Mbps
802.11ax	1774.5 Mbps
Interfaces	
PCIe	× 1
PCM	× 1
UART	× 1
WLAN_EN	Supported
BT_EN	Supported
Wi-Fi/BT Antenna Interface	ANT_WIFI0, ANT_WIFI1, ANT_BT (Optional)
Electrical Characteristics	
Power Supply Voltage	0.95/1.35/1.95/1.8/2.2/3.3 V (Optional)
I/O Power Supply Voltage	1.8 V
Consumption	Max. 5.6 W (Non-signaling Mode)
General Features	
Encryption Mode	WPA3
Operation Mode	AP/STA
Size	19.9 mm × 18.0 mm × 2.1 mm
Weight	TBD
Certifications	
Regulatory	**China:** SRRC* **Europe:** CE* **America:** FCC* **Japan:** JATE*/TELEC*

Note:
  *: under development

QUECTEL

Wi-Fi&Bluetooth		FC64E	

RF Performance

(2.4 GHz)	Receiving Sensitivity	(2.4 GHz)	Transmitting Power
802.11b/1 Mbps	-95 dBm	802.11b/1 Mbps	18 dBm
802.11b/11 Mbps	-87 dBm	802.11b/11 Mbps	18 dBm
802.11g/6 Mbps	-91 dBm	802.11b/6 Mbps	17 dBm
802.11g/54 Mbps	-70 dBm	802.11g/54 Mbps	15 dBm
802.11n/1SS MCS0	-91 dBm	802.11n/HT20 MCS0	17 dBm
802.11n/1SS MCS7	-70 dBm	802.11n/HT20 MCS7	14 dBm
802.11n/2SS MCS0	-88 dBm	802.11n/HT40 MCS7	13.5 dBm
802.11n/2SS MCS7	-67 dBm	802.11ax/HE20 MCS0	17 dBm
802.11ax/1SS MCS0	-91 dBm	802.11ax/HE20 MCS11	11 dBm
802.11ax/1SS MCS11	-60 dBm	802.11ax/HE40 MCS11	10.5 dBm
802.11ax/2SS MCS0	-88 dBm		
802.11ax/2SS MCS11	-57 dBm		
(5 GHz)	Receiving Sensitivity	(5 GHz)	Transmitting Power
802.11a/6 Mbps	-90 dBm	802.11a/6 Mbps	16 dBm
802.11a/54 Mbps	-71 dBm	802.11a/54 Mbps	14 dBm
802.11n/1SS MCS0	-90 dBm	802.11n/HT20 MCS0	16 dBm
802.11n/1SS MCS7	-70 dBm	802.11n/HT20 MCS7	13 dBm
802.11n/2SS MCS0	-87 dBm	802.11n/HT40 MCS7	12.5 dBm
802.11n/2SS MCS7	-67 dBm	802.11ac/VHT20 MCS0	16 dBm
802.11ac/1SS MCS0	-89 dBm	802.11ac/VHT20 MCS8	12 dBm
802.11ac/1SS MCS9	-65 dBm	802.11ac/VHT40 MCS9	11 dBm
802.11ac/2SS MCS0	-86 dBm	802.11ac/VHT80 MCS9	10.5 dBm
802.11ac/2SS MCS9	-62 dBm	802.11ac/VHT160 MCS9	10 dBm
802.11ax/1SS MCS0	-89 dBm	802.11ax/HE20 MCS0	16 dBm
802.11ax/1SS MCS11	-60 dBm	802.11ax/HE20 MCS11	10 dBm
802.11ax/2SS MCS0	-86 dBm	802.11ax/HE40 MCS11	9.5 dBm
802.11ax/2SS MCS11	-57 dBm	802.11ax/HE80 MCS11	9 dBm
		802.11ax/HE160 MCS11	8.5 dBm