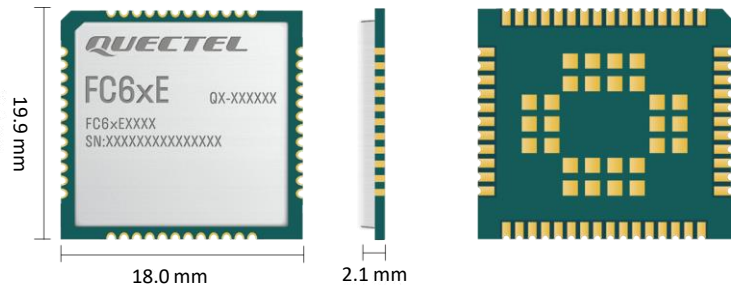


# Quectel FC65E

## Wi-Fi&Bluetooth Module Compact LCC Package



FC65E is a high-performance Wi-Fi 6E and BLE (Bluetooth 5.2) module in LCC package. It can be used to establish WLAN and Bluetooth connections. Supporting 2 × 2 MIMO, it provides a maximum data rate up to 2400 Mbps.

With a compact and unified form factor of 19.9 mm × 18.0 mm × 2.1 mm, FC65E 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 that has strict requirements on cost and efficiency.

Designed with a reliable PCIe 3.0 interface to provide WLAN capability, FC65E 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 6 GHz triple-band and BLE (Bluetooth 5.2)
- ✓ 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



BLE (Bluetooth 5.2)



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

Wi-Fi&Bluetooth		FC65E
Region	Global	
Function	Wi-Fi 2.4 GHz/5 GHz/6 GHz , 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	
6 GHz Channel Bandwidth	20/40/80/160 MHz	
DBS	Not Supported	
Modulation Mode	DBPSK/DQPSK/CCK/BPSK/QPSK/QAM	
<b>Temperature Range</b>		
Operating Temperature Range	-30 °C to +85 °C	
<b>Data Rate (Max.)</b>		
802.11a	54 Mbps	
802.11b	11 Mbps	
802.11g	54 Mbps	
802.11n	300 Mbps	
802.11ac	1732 Mbps	
802.11ax	2400 Mbps	
<b>Interfaces</b>		
PCIe	× 1	
PCM	× 1	
UART	× 1	
WLAN_EN	Supported	
Bluetooth_EN	Supported	
Wi-Fi/Bluetooth Antenna Interface	ANT_WIFI0, ANT_WIFI1, ANT_BT (Optional)	
<b>Electrical Characteristics</b>		
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. 3.5 W (Non-signaling Mode)	
<b>General Features</b>		
Encryption Mode	WPA3	
Operation Mode	AP/STA	
Size	19.9 mm × 18.0 mm × 2.1 mm	
Weight	TBD	
<b>Certifications</b>		
Regulatory	<b>China:</b> SRRC* <b>Europe:</b> CE* <b>America:</b> FCC* <b>Japan:</b> JATE*/TELEC*	

Note:

\*: under development

**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	802.11g/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/6 GHz)	Receiving Sensitivity	(5 GHz/6 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