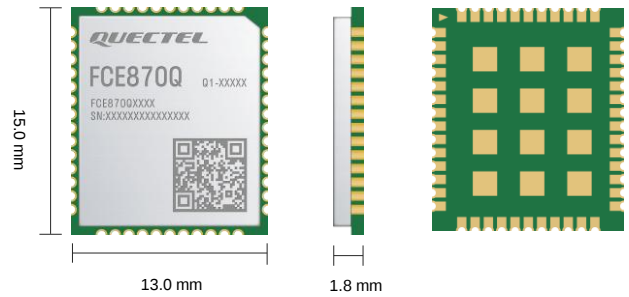


Quectel FCE870Q

2.4/ 5/ 6 GHz Wi-Fi Bands

2 × 2 MIMO

Wi-Fi 7 & Bluetooth 6.0 Module



FCE870Q is a highly integrated module supporting Wi-Fi 7 and Bluetooth 6.0.

With 4K-QAM and 320 MHz bandwidth, FCE870Q delivers a peak data rate of 5.8 Gbps. Meanwhile, it supports ultra-low latency for real-time response. FCE870Q supports 320 MHz enhanced Multi-Link Single Radio (eMLSR) technology, bringing faster data rate, much lower latency and higher network reliability to users.

FCE870Q features dual-mode Bluetooth with LE Audio support, delivering compatibility for 2 Mbps Bluetooth Low Energy (BLE) and BLE Long Range communications, while enabling High Accuracy Distance Measurement (HADM) for precision location tracking.

The higher data rate, lower latency and enhanced network reliability makes FCE870Q suitable for OTT, high-definition video, AR/VR, etc.



Key Features

- ✓ 2.4 GHz/ 5 GHz/ 6 GHz Wi-Fi bands and Bluetooth 6.0
- ✓ 4096QAM
- ✓ 320 MHz bandwidth
- ✓ 320 MHz enhanced Multi-Link Single Radio (eMLSR)
- ✓ Ultra-low latency
- ✓ Multi-User Multiple Input Multiple Output
- ✓ Wide operating temperature range: -30 °C to +85 °C



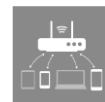
Bluetooth 6.0



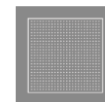
eMLSR



Ultra-low Latency



MU-MIMO



4K-QAM



320 MHz
Bandwidth

Quectel FCE870Q

Wi-Fi 7 & Bluetooth 6.0		FCE870Q
WLAN Protocol	IEEE 802.11a/b/g/n/ac/ax/be	
Wi-Fi Frequency Band	2.4 GHz/ 5 GHz/ 6 GHz	
Wi-Fi Antenna	Pin antenna interface	
Wi-Fi Modulation Mode	DBPSK/ DQPSK/ CCK/ BPSK/ QPSK/ 16QAM/ 64QAM/ 256QAM/ 1024QAM/ 4096QAM/ OFDMA	
2.4 GHz Channel Bandwidth	20 MHz/ 40 MHz	
5 GHz Channel Bandwidth	20 MHz/ 40 MHz/ 80 MHz/ 160 MHz	
6 GHz Channel Bandwidth	20 MHz/ 40 MHz/ 80 MHz/ 160 MHz/ 320 MHz	
Encryption Mode	WPA/ WPA2/ WPA3	
Wi-Fi Operating Mode	AP/ STA	
Bluetooth Protocol	Bluetooth 6.0	
Dimensions	15.0 mm × 13.0 mm × 1.8 mm	
Weight	Approx. 0.75 g	
Temperature Range		
Operating Temperature	-30 °C to +85 °C	
Physical Rate (Max.)		
802.11a	54 Mbps	
802.11b	11 Mbps	
802.11g	54 Mbps	
802.11n	300 Mbps	
802.11ac	1732 Mbps	
802.11ax	2400 Mbps	
802.11be	5800 Mbps	
Interfaces		
PCIe 3.0	× 1 (for Wi-Fi)	
PCM	× 1 (for Bluetooth audio)	
UART	× 1 (for Bluetooth)	
TSF* (optional)	× 1 (for Wi-Fi)	
PTA* (optional)	× 1	
Electrical Features		
Power Supply Voltage	VBAT: 3.0–3.6 V, Typ. 3.3 V VDD_IO: 1.71–1.89 V, Typ. 1.8 V	
Power Consumption	Max. current at Tx mode: 1140 mA @ VBAT	
Certifications		
Regulatory	Europe: CE America: FCC China: SRRC Canada: IC Australia/New Zealand: RCM	

Model	Ordering Code	TSF*/ PTA* Interface	Antenna	Development Board (Only for Debugging)
FCE870Q	FCE870QAAMD	-	Pin antenna interface	FCE870QAAM2
FCE870Q	FCE870QABMD	Supported	Pin antenna interface	FCE870QABM2

NOTE:
*: Under development.