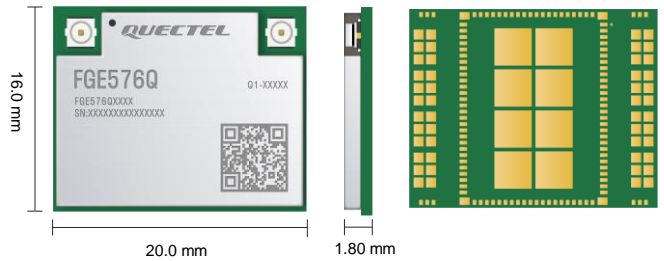# Quectel FGE576Q

2.4/ 5/ 6 GHz Wi-Fi Bands
2 × 2 MIMO, DBS
Wi-Fi 7 & Bluetooth 5.3 Module

FGE576Q is a highly integrated module supporting Wi-Fi 7 and Bluetooth 5.3. FGE576Q supports dual-band simultaneous operation on 2.4 GHz + 5 GHz and 2.4 GHz + 6 GHz. With 4K-QAM and 160 MHz bandwidth, FGE576Q achieves a maximum data rate of 3.6 Gbps. Meanwhile, it supports ultra-low latency for real-time response.

FGE576Q also integrates dual Bluetooth and supports LE audio, Bluetooth Low Energy (BLE) with a maximum date rate of 2 Mbps and BLE Long Range.

Multi-Link Operation (MLO) is one unique feature that allows routers to use multiple wireless bands and channels simultaneously to connect to a Wi-Fi 7 client. FGE576Q supports MLO and brings faster data rate, much lower latency and higher network reliability to users.

The higher data rate, lower latency and enhanced network reliability makes FGE576Q suitable for the cloud gaming, 8K A/V streaming, AR/VR, industrial IoT and telemedicine.

Key Features

- ✔ 2.4 GHz/ 5 GHz/ 6 GHz Wi-Fi bands and Bluetooth 5.3
- ✔ Dual Band Simultaneous
- ✔ 4096 QAM
- ✔ Multi-Link Operation
- ✔ Ultra-low Latency
- ✔ Multi-User Multiple Input Multiple Output
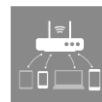- ✔ Wide operating temperature range: -20 °C to +70 °C
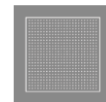
Dual Band Simultaneous

Multi-Link Operation

Ultra-low Latency

MU-MIMO

4K-QAM

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

Version: 1.0.0 | Status: Preliminary

Wi-Fi 7 & Bluetooth 5.3	FGE576Q http://www.quectel.com
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	2 × 2 + 2 × 2
Wi-Fi Modulation Mode	DBPSK/DQPSK/CCK/BPSK/QPSK/QAM
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
Encryption Mode	WPA3
Wi-Fi Operating Mode	AP/ STA
Bluetooth Protocol	Bluetooth 5.3
Dimension	16.0 mm × 20.0 mm × 1.8 mm
Weight	TBD
Temperature Range	
Operating Temperature	-20 °C to +70 °C
Data Rate (Max.)	
802.11a	54 Mbps
802.11b	11 Mbps
802.11g	54 Mbps
802.11n	600 Mbps
802.11ac	1732 Mbps
802.11ax	3000 Mbps
802.11be	3600 Mbps
Interfaces	
PCIe 3.0	× 1 (for Wi-Fi)
PCM	× 1 (for Bluetooth)
UART	× 1 (for Bluetooth)
Wi-Fi/Bluetooth Antenna	× 2
Electrical Features	
Power Supply Voltage	VBAT: 3.0–3.6 V, Typ. 3.3 V
Power Consumption	Max. current at Tx mode: TBD @ VBAT
Certifications	
Regulatory (Planning)	**Europe:** CE **America:** FCC **Canada:** IC **China:** SRRC **Korea**: KC **Japan:** TELEC **Australia/New Zealand:** RCM

Model	Ordering Code	Antenna	DBS	Development Board (Only for Debugging
FGE576Q	FGE576QAAMD	Two antennas	Supported	FGE576QAAM2

QUECTEL