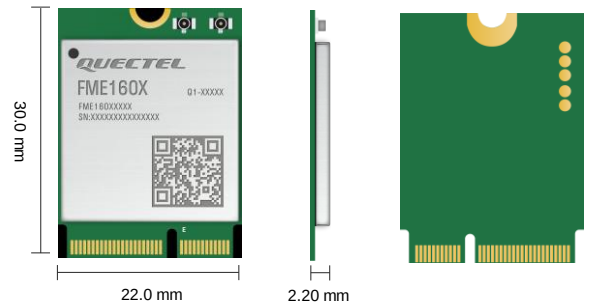


Quectel FME160X

Wi-Fi 6 & Bluetooth 5.4 Module M.2 2230 KEY-E Package



FME160X is a high-performance Wi-Fi 6 and Bluetooth 5.4 module featuring 2T2R, designed in M.2 2230 KEY-E form factor. It can be used for WLAN and Bluetooth connections, delivering a maximum data rate up to 1201 Mbps.

With an ultra-compact size of 22.0 mm × 30.0 mm × 2.20 mm, the module optimizes the size and cost for end-products, which fully meets the demands of size-sensitive applications.

The M.2 KEY-E form factor makes this module an ideal solution for rugged designs, enabling easy integration into space-constrained applications while delivering reliable connectivity.

FME160X is a low-power, cost-effective Wi-Fi and Bluetooth module that operates in the 2.4 GHz and 5 GHz Wi-Fi bands. Additionally, it supports Classic Bluetooth (BR + EDR) and BLE (Bluetooth Low Energy). With its compact form factor, low power consumption, wide temperature range, and high reliability, FME160X is particularly suitable for laptop applications.



Key Features

- ✓ 2.4 GHz and 5 GHz Wi-Fi bands and Bluetooth 5.4
- ✓ PCIe 2.0 interface that supports higher data transmission rate and enables lower power consumption
- ✓ M.2 2230 KEY-E package
- ✓ Wider operating temperature range: -20 °C to +80 °C



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



Bluetooth 5.4



PCIe 2.0 Interface



Ultra-compact Size



Operating Temperature
Range:
-20 °C to +80 °C



M.2 Package

Wi-Fi 6 & Bluetooth 5.4		FME160X
WLAN Protocol	IEEE 802.11a/b/g/n/ac/ax	
Wi-Fi Frequency Band	2.4 GHz/5 GHz	
Wi-Fi Antenna	2 × 2	
Wi-Fi Modulation Mode	DSSS/CCK/BPSK/QPSK/DBPSK/DQPSK/16QAM/64QAM/256QAM/1024QAM/OFDMA	
2.4 GHz Channel Bandwidth	20 MHz/40 MHz	
5 GHz Channel Bandwidth	20 MHz/40 MHz/80 MHz	
Encryption Mode	WEP, WPA, WPA2, WPA3-SAE, WAPI ①	
Wi-Fi Operating Mode	AP/STA	
Bluetooth Protocol	Bluetooth 5.4	
Dimensions	22.0 mm × 30.0 mm × 2.20 mm	
Weight	Approx. 3.02 g	
Temperature Range		
Operating Temperature	-20 °C to +80 °C	
Physical Rate (Max.)		
802.11a	54 Mbps	
802.11b	11 Mbps	
802.11g	54 Mbps	
802.11n	300 Mbps	
802.11ac	866.7 Mbps	
802.11ax	1201 Mbps	
Interfaces		
PCIe 2.0	× 1 (for Wi-Fi)	
PCM	× 1 (for Bluetooth)	
USB	× 1 (for Bluetooth)	
Wi-Fi/Bluetooth Antenna	× 2 (ANT_WIFI0/BT, ANT_WIFI1)	
Electrical Features		
Power Supply Voltage	VCC: 3.0–3.6 V, Typ. 3.3 V	
Power Consumption	Max. current at Tx mode: 323.92 mA @ VCC	
Certifications		
Regulatory (Planning)	Europe: CE America: FCC Canada: IC China: SRRC Australia/New Zealand: RCM	

NOTE:
①: WAPI is supported in Linux system and not supported in Windows system.

Quectel FME160X

Wi-Fi 6 & Bluetooth 5.4		FME160X		
Wi-Fi Performance				
		Transmit Power (Typ.)	Receiver Sensitivity (Typ.)	
2.4 GHz	802.11b/1 Mbps	18 dBm	-100 dBm	
	802.11b/11 Mbps	18 dBm	-92 dBm	
	802.11g/6 Mbps	18 dBm	-95 dBm	
	802.11g/54 Mbps	15 dBm	-79 dBm	
	802.11n/HT20 MCS 0	18 dBm	-95 dBm	
	802.11n/HT20 MCS 7	15 dBm	-77 dBm	
	802.11n/HT40 MCS 0	18 dBm	-92 dBm	
	802.11n/HT40 MCS 7	15 dBm	-74 dBm	
	802.11ax/HE20 MCS 0	18 dBm	-95 dBm	
	802.11ax/HE20 MCS 11	13 dBm	-66 dBm	
	802.11ax/HE40 MCS 0	18 dBm	-92 dBm	
	802.11ax/HE40 MCS 11	13 dBm	-64 dBm	
5 GHz	802.11a/6 Mbps	18 dBm	-92 dBm	
	802.11a/54 Mbps	15 dBm	-76 dBm	
	802.11n/HT20 MCS 0	18 dBm	-92 dBm	
	802.11n/HT20 MCS 7	15 dBm	-75 dBm	
	802.11n/HT40 MCS 0	18 dBm	-89 dBm	
	802.11n/HT40 MCS 7	15 dBm	-71 dBm	
	802.11ac/VHT20 MCS 0	18 dBm	-92 dBm	
	802.11ac/VHT20 MCS 8	14 dBm	-70 dBm	
	802.11ac/VHT40 MCS 0	18 dBm	-89 dBm	
	802.11ac/VHT40 MCS 9	14 dBm	-65 dBm	
	802.11ac/VHT80 MCS 0	18 dBm	-85 dBm	
	802.11ac/VHT80 MCS 9	14 dBm	-62 dBm	
	802.11ax/HE20 MCS 0	18 dBm	-92 dBm	
	802.11ax/HE20 MCS 11	12 dBm	-64 dBm	
	802.11ax/HE40 MCS 0	18 dBm	-90 dBm	
	802.11ax/HE40 MCS 11	12 dBm	-61 dBm	
	802.11ax/HE80 MCS 0	18 dBm	-85 dBm	
	802.11ax/HE80 MCS 11	12 dBm	-57 dBm	
Bluetooth Performance				
		Transmit Power (Typ.)	Receiver Sensitivity (Typ.)	
BR (GFSK)		5 dBm	-94 dBm	
EDR (π/4-DQPSK)		5 dBm	-94 dBm	
EDR (8-DPSK)		5 dBm	-89 dBm	
BLE (1 Mbps)		5 dBm	-98 dBm	
BLE (2 Mbps)		5 dBm	-96 dBm	
BLE (S = 2)		5 dBm	-102 dBm	
BLE (S = 8)		5 dBm	-105 dBm	
Model	Ordering Code	Antenna	Temperature Range	Development Board (Only for Debugging)
FME160X	FME160XAAMD	Two antennas	-20 °C to +80 °C	FME160XAAMD

