



Wireless Radio Module

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

Tri-band 2Tx2R + BT5.3 PCIe Combo Module

SX-PCEBE



Coming soon!

The SX-PCEBE is the industry's first PCIe Wi-Fi 7 plus Bluetooth (BT) combination module designed to meet high-performance connectivity demands for mission-critical applications. It is powered by Qualcomm's QCC2076 chipset which is a highly integrated System-On-Chip (SoC) supporting Wi-Fi 7 and Bluetooth (BT) 5.3. It supports simultaneous operation on 2.4GHz and 5GHz, or 6GHz, also known as Dual Band Simultaneous (DBS).

Key Features

320 MHz Channels

Wi-Fi 7 can deliver massive throughput gains thanks to a wider channel and capacity gains from 6GHz spectrum. Wi-Fi 7 can deliver peak rates of over 4X increase over Wi-Fi 6E.

Preamble Puncturing

Wi-Fi 7 introduces preamble puncturing to avoid channels with interference, resulting in an ability to use wider channels also in the face of interference.

Multi-Link Operation (MLO)

Wi-Fi 7 introduces several multi-link options that can significantly increase throughput and reduce latency. Wi-Fi operates on multiple bands—2.4GHz, 5GHz, and, with Wi-Fi 6 and 7, 6GHz. Typically, a signal is only a single link transmitted on its own band.

With Wi-Fi 7, multiple links can all be combined into a single connection or switched around as needed to improve speed or reliability.

Modulation Evolution to 4K QAM

Wi-Fi 7 is standardizing an advanced modulation scheme called 4K QAM, which can boost the peak rates to increase throughput, and capacity compared to Wi-Fi systems using 1K QAM modulation.

- ✓ **2X higher throughput**
- ✓ **Deterministic latency, increased efficiency, greater reliability**
- ✓ **20% higher transmission rates**
- ✓ **Reduced transmission overhead**
- ✓ **Enhanced spectral efficiency**



Specifications

SKU's	SX-PCEBE-SMT (M.2 LGA Type 1620) SX-PCEBE-M2 (M.2 Card Type 2230-S3-A-E)
Chipset	QCC2076SPI for FreeRTOS
Host Interface	WLAN : PCIe 3.0 Bluetooth: UART or USB IEEE
WLAN Specifications	802.11a/b/g/n/ac/ax/be (2x2)
Bluetooth Specifications	Bluetooth v5.3
Antenna	MHF4 Connectors: 2
Operating Voltage	3.3V (VIO: 1.8V)
Operating Environment	Temperature: -40 ~ 85 °C
Storage Environment	Temperature: +55 ~ 150 °C
Dimensions	SX-PCEBE-SMT: 16.0mm x 20.0mm SX-PCEBE-M2: 22.0mm x 30.0mm
Target Tx Power	2.4 GHz: 26 dBm 5 GHz: 21 dBm 6 GHz: 23 dBm
Modular Certifications	USA, Canada, Europe, Japan
Recommended Antennas	TE Connectivity (2118907-8)

Wi-Fi Driver Support

OS Support

- Windows
- Linux

Basic Functionality

- Station
- Access Point
- WPA3
- IEEE802.1X (TLS, TTLS, PEAP)
- WPS 2.0*
- Wi-Fi Direct*

*Wi-Fi Alliance certification required separately