

SX-PCEBE

Next Generation Wi-Fi 7 plus Bluetooth® v5.4 Combo Module

2.4 GHz, 5 GHz, 6 GHz Tri-band Connectivity for Industrial and Medical Applications

Product Overview

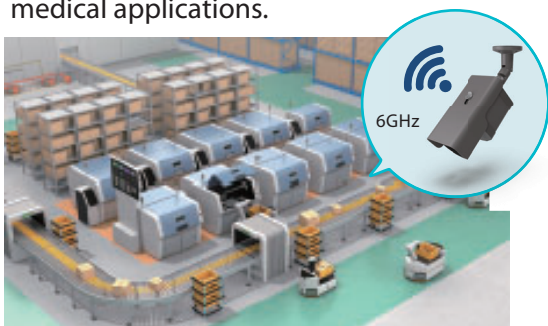
The SX-PCEBE is a rugged, industrial-grade embedded wireless LAN module powered by the Qualcomm QCC2076 chipset. It delivers reliable, high-speed communication using the latest Wi-Fi 7 standard (IEEE 802.11be). This module ensures seamless, stable wireless connectivity for a wide range of applications, including industrial and medical data communication, as well as video and image transmission for machine vision, remote monitoring cameras, and diagnostic imaging equipment. Additionally, the SX-PCEBE supports the 6 GHz frequency band, offering enhanced performance with minimal radio interference, ensuring reliable communication in even the most demanding environments.

Key Features

Stable communication with 6 GHz band support

6 GHz Communication

The 6 GHz band offers numerous channels and is free from noise in 2.4 GHz and 5 GHz, ensuring stable communication for critical data in industrial and medical applications.



Standard form factors for seamless integration

M.2 Card

Surface Mount Types

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Camera



Robots



AGV/AMR

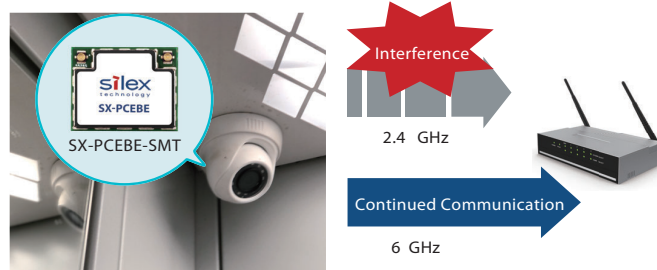


Diagnostic Imaging
Devices

Redundant communication ensures data integrity and enhances reliability

Multi-Link Operation

Wi-Fi 7's multi-link operation enables communication redundancy by simultaneously using two frequency bands. If interference disrupts one band, communication continues on the other, enhancing reliability for devices like cameras that transmit continuous data.



Two high-speed concurrent streams for simultaneous communication

This product enables simultaneous communication on 2.4 GHz, 5 GHz, or 6 GHz frequencies, with two streams per band for high-speed, concurrent data transfer.



Specifications

Product Name	SX-PCEBE-SMT SX-PCEBE-M2
Chipset	QCC2076
Host Interface	WLAN: PCI Express 3.0 Bluetooth® USB 1.1
Wi-Fi Specification	IEEE 802.11a/b/g/n/ac/ax/be (2x2)
Frequency	2.4 GHz, 5 GHz, 6 GHz
Bandwidth	(2.4 GHz): 20MHz, 40MHz (5 GHz): 20MHz, 40MHz, 80MHz, 160MHz (6 GHz): 20MHz, 40MHz, 80MHz, 160 MHz
Bluetooth®	Bluetooth® v5.4 BR/EDR/LE/LE 2 Mbps/BLE long range
Antenna Connector	MHF4 Connector: x2
Operating Voltage	3.3V
Operating Environment	Temperature: -40~+85°C Humidity: 15~80%RH (without condensation)
Storage Conditions	Temperature: -40~+85°C Humidity: 15~80%RH (without condensation)
Dimensions	SX-PCEBE-SMT: 22x16x1.8mm SX-PCEBE-M2: 22x30.0x2.6mm
Form Factor	SX-SPEBE-SMT: M.2 LGA Type 1620 SX-PCEBE-M2: M.2 Card Type 2230-S3-E
Certifications	USA, Canada, Europe, UK, Japan * In AP mode, wireless authentication is required for each device in the 6 GHz band

Silex Reference Driver for Easy Integration

Silex provides a fully tested, enhanced and optimized version of the Qualcomm's reference wireless LAN driver, ensuring smooth evaluation and easy porting to your environment.

Evaluation Environment

Silex will provide an evaluation Linux OS image for easy testing of wireless functions.

- **Reference Platform**
 - Raspberry Pi5
- **Features (Linux OS)**
 - Station, Access Point Modes
 - WPA2™/WPA3™ authentication methods
 - IEEE 802.1x (TLS, TTLS, PEAP, LEAP, FAST)
 - WPS2.0, etc.
- **Other tools included in Evaluation Image**
 - Wireless LAN management command – iw Commands
 - Throughput test – iperf
 - Wi-Fi STA/AP function – wpa_supplicant, hostapd
 - DHCP, udhcpd, udhcpc

Product Lineup



SX-SCEBE-SMT



SX-PCEBE-M2

Product Name	Form Factor	MoQ / Lot	Packaging
SX-PCEBE-SMT	M.2 LGA Type 1620	1000 pcs	reel
SX-PCEBE-M2	M.2 Card Type 2230-S3-E	100 pcs	tray
SX-PCEBE-SMT-SP	M.2 LGA Type 1620	1 pc	cut-tape
SX-PCEBE-M2-SP	M.2 Card Type 2230-S3-E	1 pc	box includes 2 antennas

1 Purchase SX-PCEBE-M2-SP

2 antennas included

2 Sign Evaluation License Agreement to receive SX-PCEBE Evaluation Driver Image

<https://www.silextechnology.com/silex-driver-evaluation-license-agreement>

3 Download User's Guide from Silex's Website

<https://www.silextechnology.com/embedded-wireless/sx-pcebe-evaluation>

4 Required Reference Platform and Hardware

Raspberry Pi5 - Refer to the user's guide for additional hardware requirements

5 Start Evaluation

Related Products

Wi-Fi 7 (IEEE 802.11be) Wireless LAN access point module SX-PCEBE-AP

In addition to high speed and efficiency, the high-output transmit power design ensures stable wireless communication over a wide area.



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