Spring 2025 Release

When it **Absolutely Must** Connect

Next Generation Wi-Fi 7 plus Bluetooth®v 5.4 Combo Module SX-PCEBE



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

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 6GHz frequency band, offering enhanced performance with minimal radio interference, ensuring reliable communication in even the most demanding environments.

Features

Stable communication with 6GHz band support

6GHz Communication

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



Standard form factors for seamless integration

M.2 Card **Surface Mount Type**

In addition to the versatile M.2 type, we offer a compact surface-mount option, ideal for medical equipment with limited space and cameras.

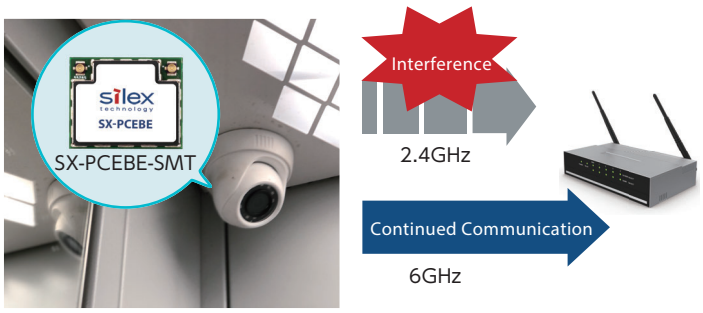


Camera Robots AGV/AMR Diagnostic Imaging Devices

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 2.4GHz, 5GHz, or 6GHz frequencies, with two streams per band for high-speed, concurrent data transfer.



Wi-Fi 7 + Bluetooth® v 5.4
WLAN Combo Module

SX-PCEBE

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 (2×2)
Frequency	2.4GHz、5GHz、6GHz
Bandwidth	2.4GHz ：20MHz、40MHz 5GHz ：20MHz、40MHz、80MHz、160MHz 6GHz ：20MHz、40MHz、80MHz、160MHz
Bluetooth® Spec	Bluetooth® 5.4 (BR/EDR/LE/LE 2 Mbps/BLE long range)
Antenna Connector	MHF4 Connector：x2
Voltage	3.3V
Operating Temp	Temperature：-40 ～ 85℃ Humidity：15～80%RH (No Condensation)
Storage Conditions	Temperature：-40 ～ 85℃ Humidity：15～80%RH (No Condensation)
Dimensions	SX-PCEBE-SMT ：20.0×16.0×1.8 mm SX-PCEBE-M2 ：22.0×30.0×2.6 mm
Form Factor	SX-PCEBE-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 on the 6GHz band.

* Product is still in development, specifications are subject to change without notice.

Product Lineup



SX-PCEBE-SMT



SX-PCEBE-M2

Product Name	Form Factor	MoQ / Lot	Packaging
SX-PCEBE-SMT	M.2 LGA Type 1620	1000pcs	reel
SX-PCEBE-M2	M.2 Card Type 2230-S3-E	100pcs	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

【SX-PCEBE Web Page】
https://www.silextechnology.com/connectivity-solutions/embedded-wireless/sx-pcebe

【SX-PCEBE-AP Web Page】
https://www.silextechnology.com/connectivity-solutions/embedded-wireless/sx-pcebe-ap

Silex Reference Driver for Easy Integration

Silex provide 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**
  - NXP's Layerscape LS1043A Reference Design Board (LS1043ARDB-PD)
- **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

1. **Purchase SX-PCEBE-M2-SP**
   - 2 Antennas Included
2. **Sign Evaluation License Agreement**
   - Available Online. Contact Sales for more Information
3. **Download from Silex Website**
   - Various documents, Linux OS image (including Silex reference driver)
4. **Reference Platform Required**
   - LS1043ARDB-PD
5. **Start Evaluation**

Related Prodcuts

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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ISO 14001 JQA-EM3813

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