

SX-SDMAX6E

Tri-Band Connectivity: Wi-Fi 6/6E & Bluetooth® Combo Module

(2.4/5/6 GHz) | SDIO Interface

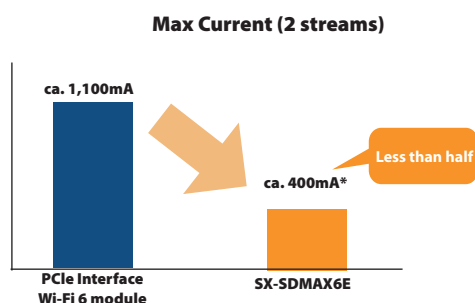
Optimized for low power and reliable performance

Product Overview

The SX-SDMAX6E is a tri-band Wi-Fi 6E + Bluetooth® v6.1 combo module engineered for medical, industrial, and mission-critical embedded applications where reliable, low-latency wireless connectivity is essential. Powered by NXP's IW623 chipset, the module delivers 2x2 high-speed performance for demanding applications such as image and video streaming, while also supporting 1x1 low-power operation to maximize battery life in portable or wearable devices.

Key Features & Benefits

Low Power SDIO Interface



* This product is still in development and subject to change

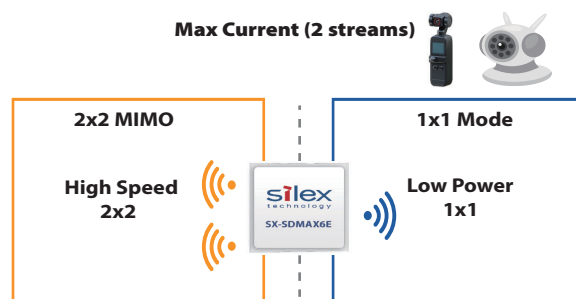
- Utilizes the SDIO 3.0 host interface for efficient integration and reduced power consumption in embedded and portable systems.
- Delivers stable, high-performance connectivity, in congested Wi-Fi conditions and supports smooth roaming for mobile devices.

Reliable Wireless Performance



- Supports Wi-Fi 6E (6 GHz band), providing interference-free communication and increased capacity in congested environments.
- IEEE.802.11k/v/r fast roaming ensures seamless transitions between access points, maintaining stable connectivity while on the move.

Configurable Antenna Options



- 2X2 MIMO Mode: Supports high data throughput for demanding applications such as video streaming and image transfer.
- 1x1 Mode: Optimized for low power consumption, reducing energy use to less than half of 2x2 operation, ideal for portable battery-driven devices.

Wi-Fi and Bluetooth Integration



Combines Wi-Fi 6E and Bluetooth® 6.1 in a single combo module with a dedicated Bluetooth antenna for simultaneous communication.

Consolidates Wi-Fi and Bluetooth functionality within a single tri-band module, optimizing PCB real-estate, simplifying RF design and reducing BOM complexity.

Specifications

Product Name	SX-SDMAX6E-2530S SX-SDMX6E-M2
Chipset	NXP IW623
Host Interface	WLAN: SDIO3.0 Bluetooth®: UART
Wi-Fi Standard	IEEE 802.11a/b/g/n/ac/ax (1x1 or 2x2)
Frequency	2.4 GHz, 5 GHz, 6 GHz
Bandwidth	(2.4 GHz): 20MHz/40MHz (5 GHz): 20MHz/40MHz/80MHz (6 GHz): 20MHz/40MHz/80MHz
Bluetooth®	Bluetooth® v6.1
Antenna Connector	SX-SDMAX6E-2530S: RF PAD x 3 SX-SDMAX6E-M2: MHF1 x 3
Operating Voltage	SX-SDMAX6E-2530S: Main Power Supply: 3.3V or 1.8V IO Power Supply: 3.3V or 1.8V SX-SDMAX6E-M2 Main Power Supply: 3.3V IO Power Supply: 1.8V
Operating Environment	Temperature: -40~+85°C Humidity: 15~80%RH (without condensation)
Storage Conditions	Temperature: -40~+90°C Humidity: 10~85%RH (without condensation)
Dimensions	SX-SDMAX6E-2530S: 17 x 18 x 2.65mm SX-SDMX6E-M2: 22 x 30.0 x 4.45mm
Form Factor	SX-SDMAX6E-2530S: 49-pin LGA (Direct Solder) SX-SDMX6E-M2: M.2 Card Type 2230-S3-E

Quality & Longevity

Designed, developed and manufactured in Japan at Silex's Keihanna headquarters, the SX-SDMAX6E reflects our commitment to exceptional quality and reliability. Backed by over 20 years of industrial wireless expertise, Silex delivers products built to perform in demanding environments. We also ensure long-term supply continuity through careful component lifecycle management, supporting our customer's needs throughout their product lifecycles.



Driver & Development Support

NXP
Gold
Partner

As an NXP Semiconductors Gold Partner, Silex has collaborated closely with NXP from the early development of the IW623 chipset. This partnership allows us to deliver optimized driver software that enhances performance, stability, and ease of integration.

To accelerate your evaluation process, Silex offers:

- free drivers for the reference program platform
- comprehensive support for software, hardware, wireless certification, and production

*Product evaluation kit details will be announced in 2026.

Product Lineup



SX-SDMAX6E-2530S
(Surface Mount)



SX-SDMAX6E-M2
(M.2 Connector Type)

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