

SX-590-1402

Enterprise 802.11ac System on Module for Embedded Applications (FIPS 140-2 Certified & TAA Compliant)

Enable FIPS product embedding Wi-Fi interface with NIST approved security



The SX-590-1402 is FIPS 140-2 high-performance Serial/Ethernet to secure 802.11ac Wi-Fi module. OEMs benefit from reduced upfront engineering effort and time to market;

- FIPS product development by “FIPS Inside” approach*
- No need for a development of a wireless LAN driver and security supplicant
- Adopting the module with modular certifications for North America, Europe and Japan

The SX-590-1402 features NXP’s power efficient and cost optimized applications processor, the i.MX 6ULL featuring an ARM Cortex-A7 core, 802.11ac radio, a complete TCP/IP network protocol stack, and an optimized QCA9377 wireless radio driver and security supplicant in a self-contained hardware package.

* FIPS validation of SX-590-1402 is in progress

Key Features

• FIPS 140-2 cryptographic operation

Wireless LAN connectivity is established by FIPS 140-2 certified authentication and encryption. End-to-end applications, TCP port service, eCable client service and so on, are securely established by TLS encryption.

- Wi-Fi security by WPA2-PSK AES CCMP encryption.
- TCP port serial and eCable client services with TLS encryption
- Secure firmware update over HTTPS
- Secure connection to configuration web GUI over HTTPS
- Secure boot from signed firmware

• Low Power consumption

SX-590-1402 uses a low power CPU, i.MX 6ULL, which reduces the over all system power consumption. It also supports additional power management features which help reduce power usage during periods of inactivity.

• Fast Boot

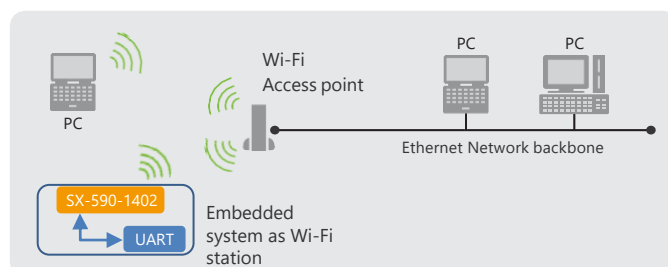
Hardware boot times between 10 – 15 seconds

Connectivity Examples

• Serial connection over Wireless/Wired LAN

■ Infrastructure mode:

An embedded serial port can be accessed through Wi-Fi access point.



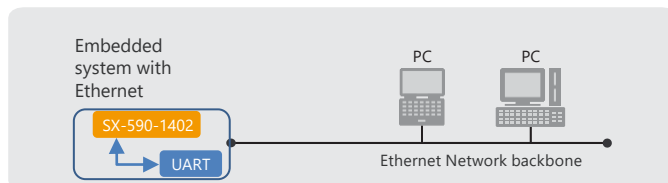
■ AP mode:

The SX-590-1402 adds access point capability and accessibility to an embedded serial port.



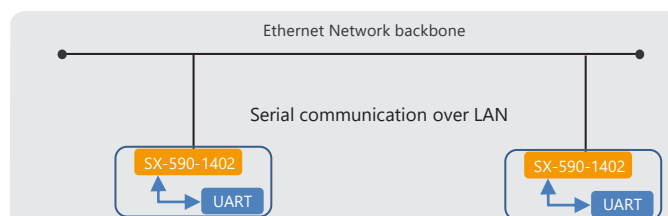
■ Wired LAN:

The SX-590-1402 supports 10Base-T / 100Base-T interface to access to an embedded serial port.



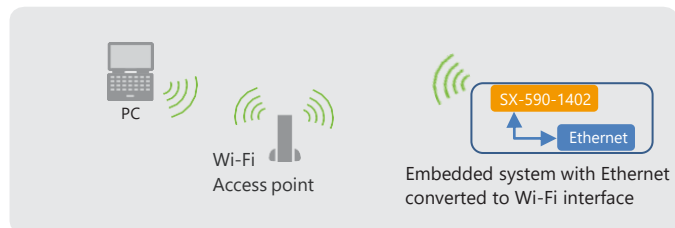
■ eCable mode:

Embedded serial devices communicate with each other through SX-590-1402’s network interface. One acts as receiver and the other acts as transmitter. The eCable mode client service operates in TLS encrypted mode when FIPS 140-2 mode is enabled.



• Wi-Fi adapter utilizing existing Ethernet port

An Ethernet port on a SoC (System-on-Chip) can be converted to Wi-Fi interface by SX-590-1402 Ethernet to Wi-Fi bridge feature.



Application

Medical Equipment



Office Equipment in Government facilities



Evaluation Kit

The Sillex **SX-590-1402-EVK-WWR** makes it easy to evaluate the hardware/software of our SX-590-1402 system module.

■ Items

- SX-590-1402
- Interface board
- WLAN Pole antenna
- RS-232C cable
- LAN cable
- USB cable
- AC adapter



■ Function

- WLAN features
- Serial over network
- Ethernet to Wi-Fi bridge

FIPS compliant off-the-shelf product

Serial Device Server/Ethernet Wi-Fi Bridge SD-330AC-1402

- FIPS 140-2 product enabled by SX-590-1402
- Serial to Ethernet / Wi-Fi communication
- Ethernet to Wi-Fi bridge

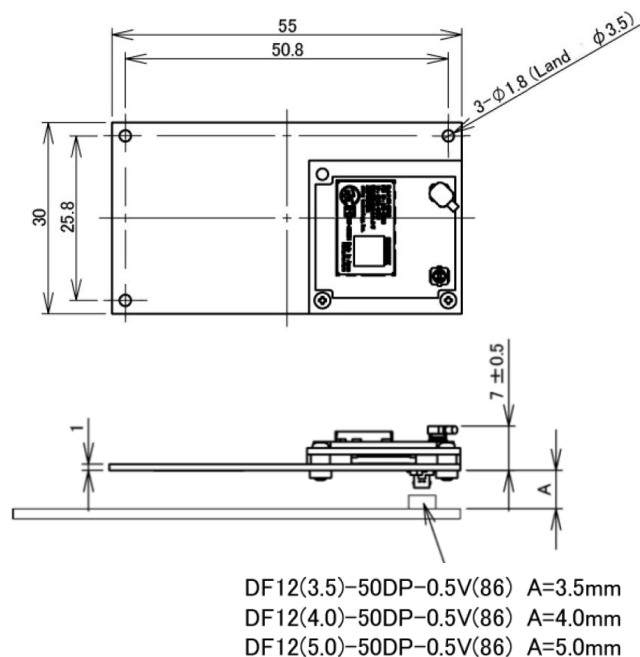


Specification

Product Name	SX-590-1402
CPU	NXP i.Mx6ULL ARM Cortex-A7, 528MHz
Memory	32MB ROM / 128MB DDR3 RAM
Radio Module	SX-SDMAC (QCA9377-3)
Radio Specification	802.11a/b/g/n/ac (1T x 1R)
Operating System	Linux
Wi-Fi security	FIPS mode WPA2-PSK (AES) Non-FIPS mode Open (128bit) / WPA-PSK (AUTO) / WPA2-PSK (AES)
Interfaces	UART/Ethernet/GPIO/SDIO
Connector	50 pin connector DF 12-50DS-0.5V (86) (HIROSE)
Operating Voltage	5V +/- 5%
Operating Temperature	-40 to +85 degrees C
Dimensions	55mm x 30mm x 9.25mm* (W x H x D)
Modular Certifications	FCC / IC / CE / MIC

* Minimum height using lowest profile mating connector.

Dimensional specification



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