

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

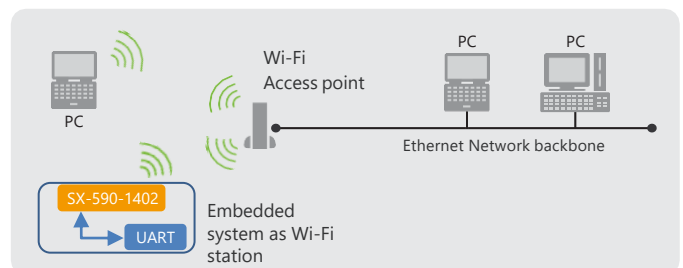
Hardware boot times between 10 – 15 seconds

Connectivity Examples

Serial connection over Wireless/Wired LAN

Infrastructure mode:

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



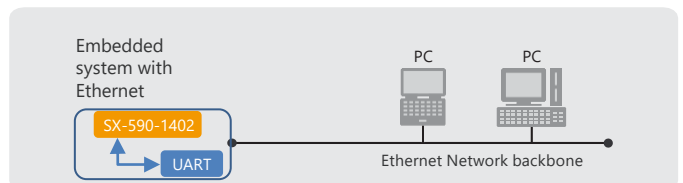
AP mode:

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



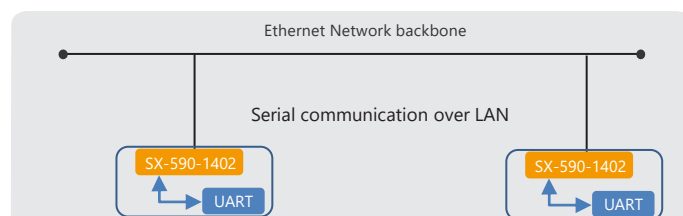
Wired LAN:

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



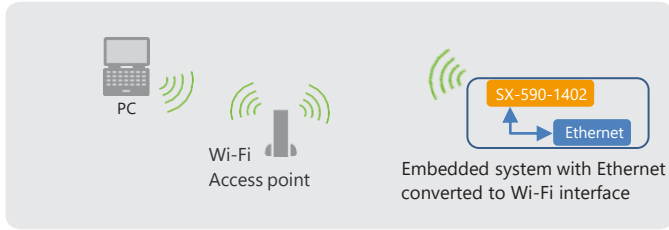
eCable mode:

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 Equipme



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

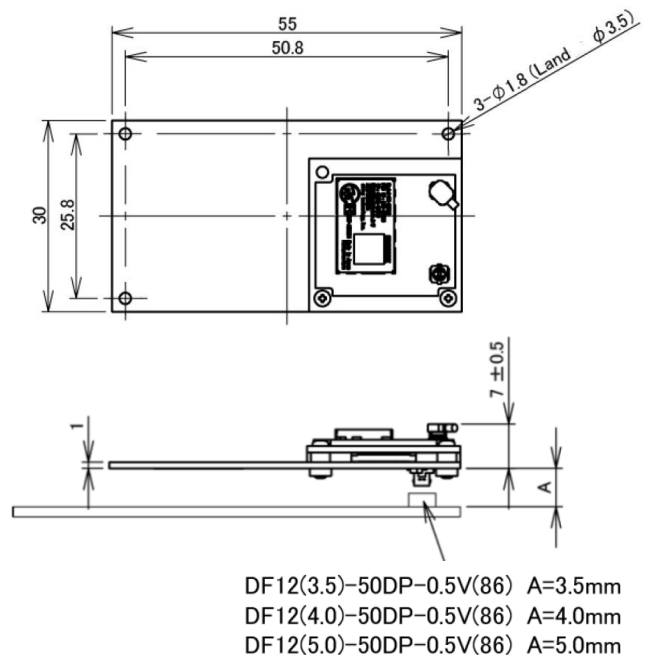


Specification

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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