

SX-510 Serial Device Server for Medical Device Networking

802.11 a/b/g Wireless and Ethernet Connectivity



The Simple Way to Network Medical Devices

The SX-510 serial device server is specifically designed to connect medical devices that have a serial port to an 802.11 a/b/g wireless or 10Base-T/100Base-T wired network. Unlike conventional serial device servers, the SX-510 meets major medical regulatory requirements with an IEC 60601-1 safety rated medical power supply, plus compliance with the IEC 60601-2:2001 medical EMC standard and the ANSI/IEEE Std. C95.1-1999 SAR standard for human exposure to radio frequency fields. It also meets UL/CSA 60950-1 and EN60950 safety requirements, and it includes an IP-21 rated enclosure. The SX-510 can therefore be used for networking a wide range of medical devices, even in situations that require close proximity to the human body.

Although the SX-510 is designed primarily to enable networking for medical devices, it can also be used in almost any other device networking application where user safety is a significant concern.

Applications

The SX-510 can provide wireless and wired networking capabilities for medical devices such as:

- Cardiovascular (ECG/EKG) monitors
- Pulse oximeters
- Infusion pumps
- Clinical laboratory equipment

In fact, almost any type of medical device with a serial port can be easily network enabled by using an SX-510.

Secure

Security is a major issue in hospitals, especially given the HIPAA requirements for patient privacy. The SX-510 includes enterprise-level security features such as access control lists, complete protocol and application enable/disable control, read and write configuration passwords, and SNMP community name configuration.

The SX-510 also features the most extensive wireless security in the industry, with support for WPA2-Enterprise (802.11i), WPA2-PSK, WPA-Enterprise, WPA-PSK, and WEP 64/128. Unlike most competitors, the SX-510 also supports 802.1x authentication with EAP-FAST, PEAP, LEAP, TLS, and TTLS.

Easy to Use and Manage

The SX-510 includes a complete TCP/IP network stack, that allows it to be easily accessed and controlled over the network. The included Serial Port Emulator software allows you to configure virtual serial ports on a Windows system (for example, COM3) that redirect all of the data out to the SX-510 over the network, thereby allowing you to continue use of your current applications without modification. Alternatively, you can easily send and receive data to/from the SX-510 over the network from application programs via TCP sockets.

The SX-510 includes a built-in web browser interface for configuration and management. The Silex ExtendView Windows utility provides additional management capabilities, including the ability to configure multiple SX-510s simultaneously. A console accessible via TELNET or the serial port is available for more sophisticated diagnostics and configuration. For direct M2M control, the SX-510 supports AT modem-style commands and in-band transmission of console commands.

The SX-510 serial device server is compatible with the Simple Network Management Protocol (SNMP) for compatibility with most popular network management systems.

Tested for Maximum Compatibility

Silex wireless serial device servers have been tested extensively to support the security methods used in leading access points and RADIUS servers. Like all Silex wireless products, the SX-510 has proven roaming capabilities based on our experience with some of the world's largest wireless local area networks.

SX-510 Specifications

Dimensions

110.58 x 7.26 x 25.52 mm (4.35 x 3.08 x 1.00 inches), not including connectors

Weight

140 g (5 oz)

Operating Temperature

0° to 50° C (Storage Temperature -20° to 70° C)

Maximum Temperature Change Per Hour

20° C Relative Humidity, Operating
0% to 90% non-condensing

Relative Humidity, Storage

10% to 90% non-condensing

Altitude

3.1km (operating; 9km (storage)

Serial Interface

RS232C/RS-422/RS-485 (DSUB9) x 1 port; up to 921Kbps

Ethernet Interface

10Base-T and 100Base-T (autosensing)

Wireless Interface

802.11b/g; 54, 48, 36, 24, 18, 11, 9, 6, 5.5, 2, and 1 Mbps; 2.4GHz ISM band; 802.11a: 54, 48, 36, 24, 18, 11, 9, and 6Mbps; 5GHz ISM band

Power Supply

Supplied from included AC adaptor (100-240VAC, 50/60Hz) or through pin 9 on DBSUB9 connector

Antennas

Two (2) internal diversity antennas

Electrical

500mA@+5V max (wired models); 600mA@+5V max (wireless)

Supported Protocols

TCP, IP, UDP, ARP, Telnet, ICMP, SNMP, DHCP, BOOTP, Auto IP, HTTP, SMTP, TFTP, SLP, DNS, Dynamic DNS, RFC2217

Regulatory Compliance

FCC, IC & CE Class B EMC standards; FCC Part 15 subpart C and E, IC & CE wireless standards; UL 60950-1 (CSA mark), CSA 60950-1, EN60950 safety standards; IEC60601-1-2:2007, EN60601-1-2 medical EMC standards; ANSI/IEEE Std. C95.1-1999, RSS-102 SAR standard; RoHS/WEEE environmental standards; IP21 rated enclosure; IEC 60601-1 rated power supply

Management and Utilities

Serial Port Emulator, ExtendView (GUI), Web Browser Interface, Command Line Console (accessible via serial port or TELNET), SNMP MIB I and II, Firmware Download via TCP/IP (Update IP utility, master or slave mode TFTP, BOOTP with multiple server download), On-Line HELP

Wireless Security

WPA and WPA2 (personal and enterprise modes), PAP, MS-CHAPv2, 802.1x EAP with TLS/TTLS/ LEAP/PEAP/FAST, WEP

Wired Security

802.1x EAP with TLS/TTLS/PEAP/FAST

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