802.11a/b/g Wireless and Ethernet LAN Adapter

SX-550

Embedded Wireless and Wired Networking for OEM devices

The Most Powerful and Secure Way to Implement Wireless Capabilities

The advantages of wireless networking are obvious. But as an OEM device manufacturer, how can you easily and securely implement wireless capabilities in your devices?

The solution is the silex SX-550 Module, the first embedded networking solution that supports all of the major wireless networking standards – 802.11a, 802.11b, and 802.11g – as well as 100Base-T and 10Base-T wired Ethernet. The SX-550 provides the most extensive network security capabilities in the industry, so it can be used in virtually any application or environment that requires wireless communications.

The SX-550 increases your bottom line by reducing your time to market, making your products more competitive, and lessening the need for in-house wireless expertise. It enables you to easily add wired or wireless network connectivity to your devices with such features as:

- *Two serial ports.* The SX-550 provides two serial ports that can be to connect to RS-232, UART, or SPI interfaces in your device. These ports operate at speeds up to 921Kbps with full modem controls.
- *Ethernet and wireless versions.* The SX-550 is available in models with wired Ethernet only, or with both Ethernet and 802.11a/b/g wireless capabilities. The two models are program compatible, so you do not need to develop separate software in order to support both.
- *Java Virtual Machine (available Q3 2006)*. The Java Virtual Machine enables you to program the SX-550 to perform custom local applications, such as data filtering or device monitoring/control, independent of a computer system or the network.
- *10 general purpose input/output (GPIO) signals*. The GPIOs can be used for custom applications like driving LEDs and sensing switches, or for modem signals in conjunction with the serial ports.
- *Serial Port emulation software.* The SX-550 includes software that emulates a standard Windows™ COM port (for example, COM3). This allows you to use your existing Windows-based applications without any changes.
- *Ethernet bridge mode.* The SX-550 can be configured as a transparent bridge between Ethernet and 802.11a/b/g. This allows an Ethernet-enabled device to communicate wirelessly with modifications required to your existing software.
- *Power management.* The SX-550 consumes very little power during inactive periods, making it ideal for battery powered applications.
- *Anntena diversity.* The SX-550 has two U.FL antenna connectors for improved quality of transmission and reception.
- *Easy to use.* The SX-550 features a compact form factor with through-holes for flexible mounting options. A 40-pin connector header for the serial and GPIO signals simplifies the hardware interface to your device.

An available developer's kit provides the required hardware, software tools and documentation for OEM customers to easily integrate the TROY550 module in their equipment. The developer's kit includes value-added programmable features, such as APIs for custom SNMP and Email notification on the network. For example, you can use the available GPIOs to eliminate the need for an additional processor and therefore to reduce cost.

Highly Secure

The SX-550 includes enterprise-level security features including access control lists, complete protocol and application enable/disable control, read and write configuration passwords, and SNMP community name configuration. The wireless models also add 802.1x Extensible Authentication Protocol (EAP) with Tunneled Transport Layer Security (TTLS) or Lightweight Extensible Authentication Protocol (LEAP); Protected Extensible Authentication Protocol (PEAP); Open System or Shared Key support with Wired Equivalent Privacy (WEP) encoding; WPA (Wi-Fi Protected Access) Personal (WPAPSK) and Enterprise modes, which utilize improved encryption via the Temporal Key Integrity Protocol (TKIP); and WPA2, which adds Advanced Encryption Standard (AES).

Easy to Manage

The SX-550 is easy to configure and offers several options for management. In addition to a built-in web browser interface, silex provides ExtendView, a Windows utility for easy configuration and management. A console accessible via TELNET or the UART is available for more sophisticated diagnostics and configuration. The SX-550 is also compatible with the Simple Network Management Protocol (SNMP) for compatibility with most popular network management systems. In addition to supporting SNMP MIB's I & II, silex has a proprietary MIB for providing complete customization and monitoring. The SX-550 firmware is stored in flash memory, which means it can be easily updated.

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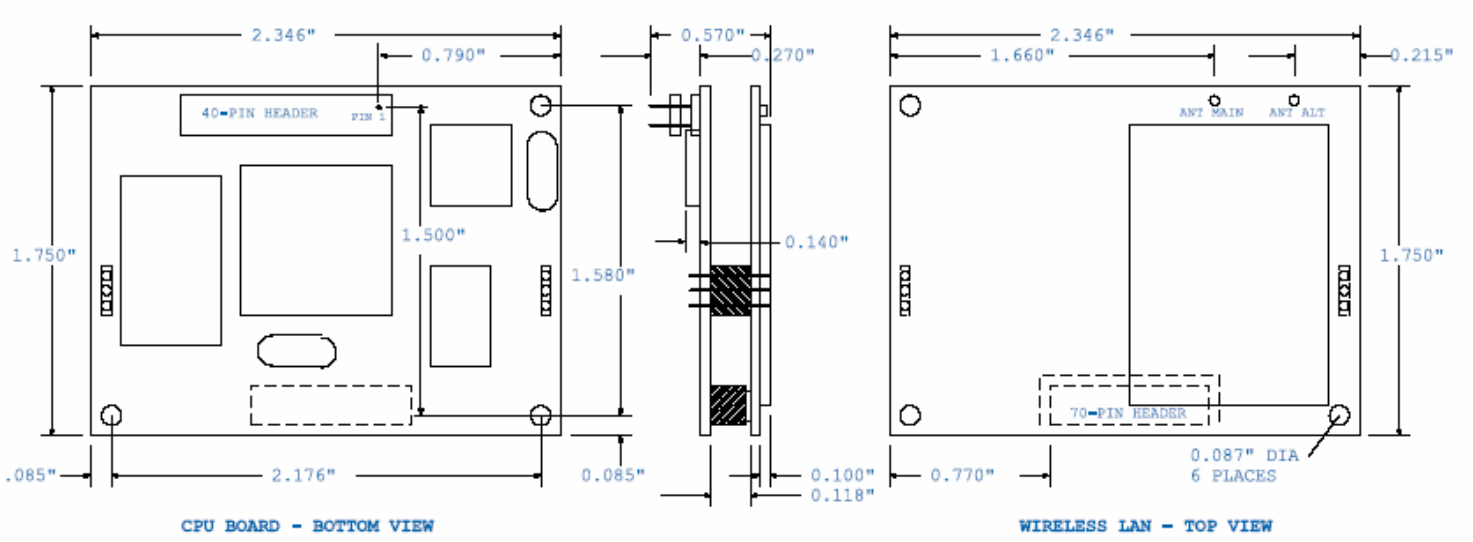
silex SX-550 Module Diagram



OEM Interface

The OEM interface allows OEMs to add functionality via a daughtercard. Power is also input via this header. This is a 40-pin 0.05" pitch surface-mount header

Pin	Signal	Pin	Signal
1	TPRX+	2	TPTX+
3	TPRX-	4	TPTX-
5	SWITCH	6	LED_1
7	AVDD	8	+3.3VDC
9	UART0_RXD	10	GPIO_9
11	UART0_TXD	12	GPIO_10
13	GND	14	+3.3VDC
15	UART0_RTS	16	UART0_CTS
17	UART1_RTS	18	UART1_CTS
19	GND	20	GND
21	UART1_TXD	22	UART1_RXD
23	GND	24	RESET_N
25	SPI_CS	26	SPI_CLK
27	+3.3VDC	28	GND
29	GPIO_1	30	SPI_SDO
31	GPIO_2	32	SPI_SDI
33	+3.3VDC	34	GND
35	GPIO_3	36	GPIO_4
37	GND	38	GND
39	GPIO_5	40	GPIO_6

Specifications

Serial Ports

Two serial UART ports are be accessible via the OEM header. Each port consists of 4 logic signals Transmit Data, Receive Data, Request To Send and Clear To Send. Baud rates to 921.6 Kbaud are supported. 6 GPIOs are configurable for use for DTR, DSR, DCD on each port.

Console Ports

One of the serial UART ports can be configured as a console port via firmware.

General Purpose I/O Signals

10 of the general purpose signals of the CN210 Processor are accessible via the OEM header. They can be used for driving LED's, receiving switch input or as general purpose signals that allow the user to monitor or control via the silex software interface. External pull-ups are required for customization.

Power Input

Power is input to the main module via the OEM header. +3.3VDC +/- 10% is supplied through this header.

Power Management

Power consumption for the main module is less than 3 Watts in the normal power mode. For low power mode, consumption is less than 1.2 watts

Environmental Temperature

- Operating Temperature: 0° to 50° C
- Storage Temperature: -20° to +70° C
- Maximum temperature change per hour: 20° C

Relative Humidity

- Operating: 10% to 90% non-condensing
- Storage: 10% to 90% non-condensing

Altitude

- Operating: 3.1 km
- Storage: 9 km

Shock

- MIL-STD-202F (Method 213B) to 50 G's

Vibration

- MIL-STD-202F (Method 204D) to 15 G's

Standards Compliance

- RS232, serial interfaces
- 802.11 a/b/g for the wireless version
- 802.3i (10Base-T) and 802.3u (100Base-TX) Ethernet
- RFC 2217

Ordering Information

For your specific configuration and its corresponding part number, call silex at 1-866-765-8761 (U.S. toll-free) or +1 801-748-1199 (other countries).