Product Description

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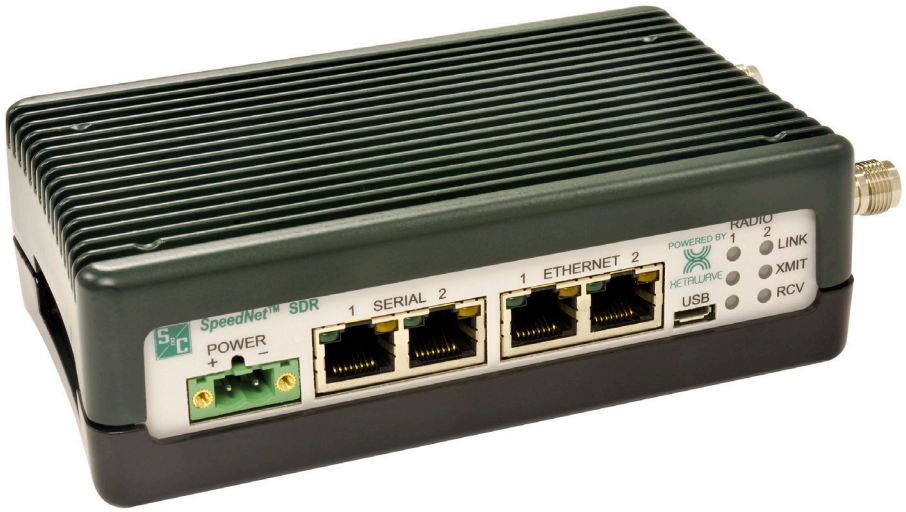

Qualified Persons

⚠ WARNING

The equipment covered by this publication must be installed, operated, and maintained by qualified persons who are knowledgeable in the installation, operation, and maintenance of radios in electric power distribution equipment, along with the associated hazards. A qualified person is a radio technician who is qualified to install transmission-power-limited radio equipment per FCC Part 90, and who is trained and competent in:

- The skills and techniques necessary to distinguish exposed live parts from nonlive parts of electrical equipment.
- The skills and techniques necessary to determine the proper approach distances corresponding to the voltages to which the qualified person will be exposed.
- The proper use of the special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools for working on or near exposed energized parts of electrical equipment.

These instructions are intended only for such qualified persons. They are not intended to be a substitute for adequate training and experience in safety procedures for this type of equipment.

Read this Instruction Sheet

Thoroughly and carefully read this instruction sheet before installing or operating your S&C SpeedNet SDR Software Defined Radio. The latest version is available online in PDF format at **sandc.com/Support/Product-Literature.asp**.

Retain this Instruction Sheet

This instruction sheet should be available for reference wherever the SpeedNet SDR Software Defined Radio is to be used. Retain this instruction sheet in a location where you can easily retrieve and refer to it.

Proper Application

⚠ CAUTION

The equipment in this publication must be selected for a specific application. The application must be within the ratings furnished for the equipment.

Warranty

The standard warranty contained in seller's standard conditions of sale, as set forth in Price Sheets 150 and 155, applies to S&C SpeedNet SDR Software Defined Radios, except that the first paragraph of said warranty is replaced by the following:

(1) General: Seller warrants to purchaser for a period of two years from the date of shipment that the equipment delivered will be of the kind and quality specified in the contract description and will be free of defects of workmanship and material. Should any failure to conform to this warranty appear under proper and normal use within two years after the date of shipment the seller agrees, upon prompt notification thereof and confirmation that the equipment has been stored, installed, operated, inspected, and maintained in accordance with recommendations of the seller and standard industry practice, to correct the nonconformity either by repairing any damaged or defective parts of the equipment or (at seller's option) by shipment of necessary replacement parts.

The above special warranty does not apply to ateway communication devices applied with SpeedNet SDR Software Defined Radios.

End user is granted a nontransferable, non-sublicensable, nonexclusive license to use the software furnished with SpeedNet SDR Software Defined Radios only upon acceptance of all the terms and conditions of the seller's end user license agreement set forth in Price Sheet 155.

General

This instruction sheet provides an overview of the SpeedNet SDR Software Defined Radio and its security features.

Introduction

SpeedNet SDR Radios are routing nodes for power-distribution monitoring and control networks. To protect the integrity of these networks and the data routed through them, the SpeedNet SDR Radios are designed with security features, such as user-access controls and network-data encryption.

System Requirements

The following are required to configure your SpeedNet SDR Radio:

- A serial or Ethernet (10/100 BaseT) connection point.
- A 12-Vdc power supply for the radio.
- Browser software installed on your computer.

Connections and Indicator Lamps

As shown along the right side in Figure 1, the side panel of the radio has connectors for the antenna. The front panel has the 12-Vdc power supply plug connector, and the RS-232 serial and Ethernet ports. The Ethernet interface features "auto-crossover," which allows you to make Ethernet connections using either straight or crossover Ethernet cables.

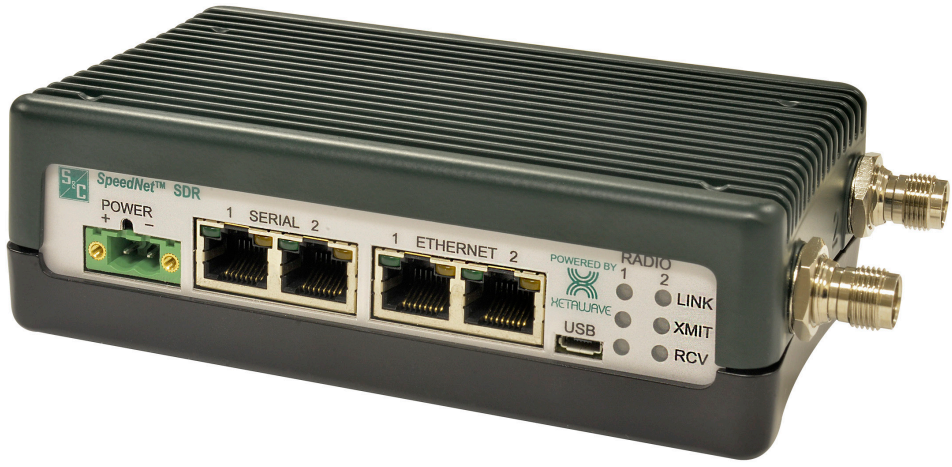

Figure 1. SpeedNet SDR Radio front panel.

Table 1. SpeedNet SDR Radio Connectors

Connector	Description
Antenna	TNC Antenna Connector
Power	12-Vdc polarized connector
Serial	RS-232, RS-422, and RS-485 Serial Ports
Ethernet	RJ-45 Ethernet Port
USB	Micro USB Port

As shown in Figure 1 on page 3, the front panel of the radio has the following LED indicators:

The **LINK** LED shows radio power and link state. A red **LINK** LED indicates that the radio has power but is not linked. A green **LINK** LED indicates that the radio has power and is linked. Radios configured to Point-to-Multipoint Master Radio always show a green **LINK** LED. All other radio configurations show a red **LINK** LED upon power up until the radio link is established. When the link is established, the **LINK** LED becomes green. If the link is dropped, then the **LINK** LED returns to red.

The **XMIT** LED flashes red every time the radio transmits data.

The **RCV** LED flashes green when the radio is receiving and decoding an RF packet.

Because of the high speed of the embedded microprocessor and communications, all status LEDs can turn on and off very quickly. In some cases, the LEDs turn on and off so quickly that the LEDs appear to be on but dimly lit. This behavior indicates that events are happening in very quick succession. A good example is the **XMIT** LED changing intensity from dim red to bright red to off. This indicates many small packets in quick succession (dim red), followed by many large packets with almost continuous transmissions (bright red), then no transmissions (off).

Table 2. SpeedNet SDR Radio LED Indicators

Indicator	Color	Description
LINK	Red	Power on, no Radio Frequency (RF) Link
LINK	Green	Active RF Link
XMIT	Red	Active RF Transmit
RCV	Green	Active RF Receive

Upon power up, the green LED on Serial Port 1 is illuminated and remains on. This is the Power Indictor LED for the product and also means the CPU is running properly. During the boot process, the serial port yellow LEDs indicate the Linux Kernel is loaded and running. Once the Linux Kernel has booted, the solid yellow LEDs are turned off. Yellow LEDs on Serial ports now indicate the mode of operation of the port. Serial ports configured as data ports for Serial Services will have a yellow LED that remains off. Serial ports configured as console ports for logging into the radio will have a yellow LED that blinks every 3 seconds.