SkyX® E230 Hardware Installation Guide:

Includes the XR10-E230 and SS10-E230

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PACKETEER®

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Overview

1.1 Documentation

This document describes the hardware-related aspects of installing and operating SkyX Gateways and Servers whose model numbers end in E230, including the SkyX Gateway XR10-E230 and the SkyX Server SS10-E230.

This document does not contain information about configuring and administering the SkyX software that runs on SkyX devices. For that information, consult the edition of the *SkyX User's Guide* appropriate to the version of SkyX software running on your SkyX device. See Appendix C for a guide to SkyX documentation.

1.2 Warranty Caution

SkyX Gateways and Servers do not contain user-serviceable parts. Opening the chassis voids the product warranty. For more information about the warranty, see Appendix A.
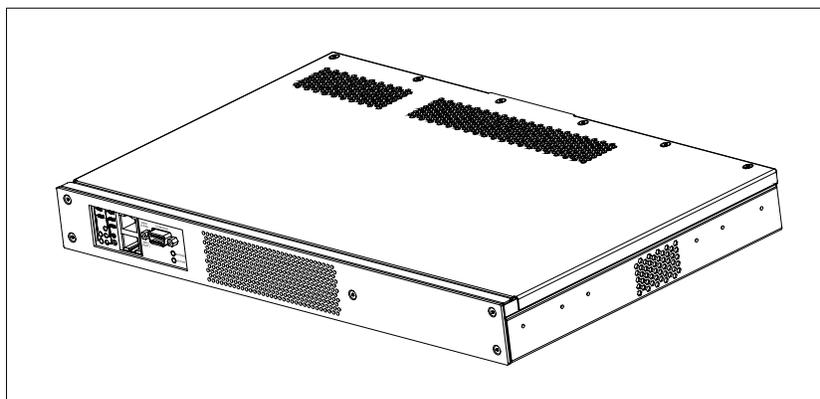
Figure 1:   SkyX E230 Model

1.3 Software Requirements

SkyX E230 models, including the XR10-E230 and SS10-E230, require SkyX software version 4.1.4 or later.

1.4 Items Included with the SkyX Gateway and Server

Each SkyX E230 package includes the items listed below and illustrated in Figure 2.

SkyX System	One SkyX Gateway XR10-E230 or one SkyX Server SS10-E230.
Documentation	Installation and user guides included on CD, and a quick start guide included in hardcopy.
Cables	One DB-9 female to DB-9 female null modem serial cable for connecting the SkyX device to a PC running a terminal emulation program. (See Section 2.5.5.)
	One Category 5e Ethernet crossover cable. (See Section 2.6.)
	One U.S. power cable. (International users may need to consult their local distributor and substitute a power cable suitable for use in their location. In any case, the SkyX device requires a power cable with an IEC320-C13 connector.)
Brackets	Two mounting brackets with screws for mounting the SkyX device in a 19-inch rack. (See Section 2.3.)
Feet	Feet for placing the SkyX device on a desktop or other flat surface. (See Section 2.4.)

SkyX E230 Model

DB-9 to DB-9 Null Modem Serial Cable

Category 5e Ethernet Crossover Cable

Power Cable

Brackets

Quick Start Guide

This quick start guide is for use with SkyX Gateways and SkyX Servers running SkyX software version 6.0 or later. The guide contains all the information most users need to complete the initial configuration of a SkyX device for use in a network. However, if you would like additional information about the hardware-related aspects of your SkyX device, see the appropriate SkyX hardware installation guide. If you would like additional information about selecting a network location for your SkyX device, or additional information about configuring and administering your SkyX device, see the current SkyX user's guide.

Quick Start Guide

Feet

Installation and User's Guide on CD

Figure 2:   Equipment and Documentation

1.5 Front Panel

The front panel of a SkyX E230 system includes an Operator Control Panel (OCP) which you can use to control and monitor a number of functions. The components of the panel are described below and illustrated in Figure 3.

ON LED	On when power to the system is stable.
HDU LED	Flashes when the system accesses the flash drive.
CRIT LED	This LED is not used.
MAJ LED	On if the system temperature reaches more than 140° F (60° C) or if a fan fails. **Caution** ・ If the **MAJ** LED is lit, power the system off and contact SkyX support or your SkyX distributor.
MIN LED	On if the Ethernet circuit switches from "Active" mode to "Bypass" mode. (See Section 2.9.)
eth0 (LAN) Port	10/100 Ethernet port.
eth1 (SAT) Port	10/100 Ethernet port.
Green Ethernet LEDs	Off if there is an invalid link at the Ethernet port. On if there is a valid link at the Ethernet port. Flashing if the link at the Ethernet port is valid and if activity is present.
Yellow Ethernet LEDs	Off if traffic at the Ethernet port is 10 Mbps. On if traffic at the Ethernet port is 100 Mbps.
Reset switch	Resets the system.
CONSOLE	Console port, RS-232 (DB-9). (See Section 2.5.5.)
BYPASS LED	On if the Ethernet circuit is in bypass mode. (See Section 2.9.)
ACTIVE LED	On if the Ethernet circuit is in active mode. (See Section 2.9.)

Figure 3:   Operator Control Panel

1.6 Back Panel

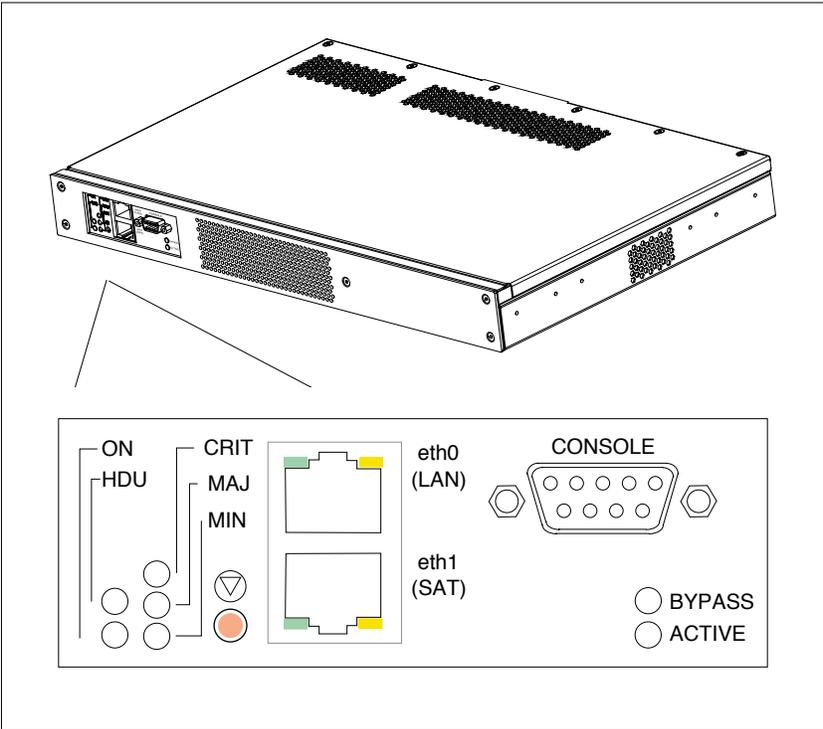The back panel of the SkyX E230 model includes a power input connector and a main power switch as shown in Figure 4. The procedures for powering the E230 on and off are described in Sections 2.7 and 2.8.
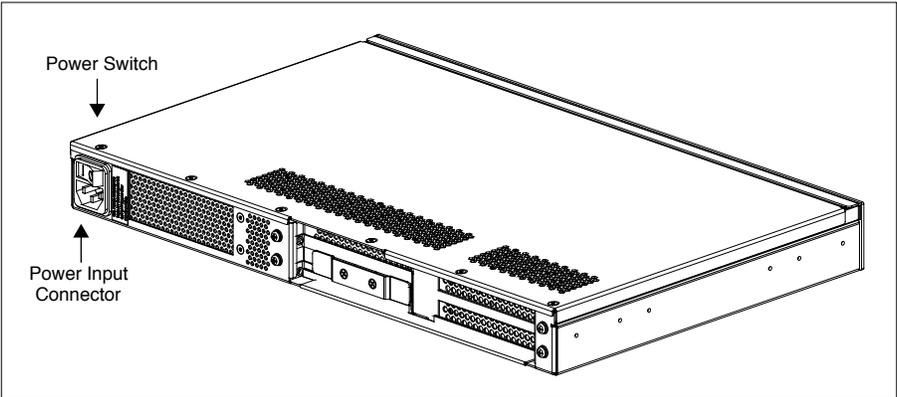

Figure 4:   Back Panel

1.7 Specifications

Specifications in the following table are typical of the XR10-E230 and SS10-E230, but are subject to change. If necessary, an updated specifications sheet will be included with your SkyX device. If you require precise specifications before making a purchase, please contact Mentat.

Category	XR10-E230 and SS10-E230
Warranty	1-year
Capacity	Link speeds up to 10 Mbps
After Power Failure	Same status as before power failure
Network Interface	2 x 10/100BaseT Ethernet
Terminal Interface	RS-232 serial interface
AC Input Voltage	Auto ranging, 100-120/200-240 VAC
AC Input Frequency	47 to 63 Hz (50 to 60 Hz nominal)
Maximum AC Input Current	2.9A (115VAC); 2.9A (230VAC)
Typical Power Draw	15 watts @ 110VAC; 25 watts @ 240VAC
Dimensions	16.72"W x 10.65"D x 1.75"H (1 U) (42.5 cm x 27.0 cm x 4.45 cm)
Mounting	Rack mounting brackets included
Typical Weight	8.8 lbs. (4 kg)
Operating Temperature	32˚ F to 122˚ F (0˚ C to 50˚ C)
Operating Humidity	5% to 95% non-condensing
Storage Temperature	-40˚ F to 149˚ F (-40˚ C to 65˚ C)
Storage Humidity	5% to 95%
Estimated MTBF[a]	83,400 hours at 77˚ F (25˚ C)

a. Estimates of Mean Time Between Failures have been prepared in general accordance with Telcordia Issue 6 Method 1, Case 3. The estimates are provided to assist in maintenance planning, and they do not supersede or affect the published warranty. They exclude mechanical wearout for components such as fans. As shown, the estimates apply to an XR10-E230 or SS10-E230 with an inlet air temperature of 77˚ F (25˚ C).

Chapter 2

Installation and Operation

This chapter describes the hardware-related aspects of installing and operating a SkyX Gateway or Server. The chapter includes the following sections:

- Section 2.1, "Additional Equipment Needed."
- Section 2.2, "Site Requirements."
- Section 2.3, "Rackmounting the Gateway or Server."
- Section 2.4, "Placing the Gateway or Server on a Desktop."
- Section 2.5, "Accessing the SkyX GUI or SkyX Console."
- Section 2.6, "Connecting to a Network."
- Section 2.7, "Powering On the SkyX Gateway or Server."
- Section 2.8, "Powering Off the SkyX Gateway or Server."
- Section 2.9, "Operating in Active and Bypass Modes."
- Section 2.10, "Cleaning the Air Vents."

For information about selecting a network location for your SkyX equipment, and for information about configuring and administering SkyX software, see the *SkyX User's Guide*.

2.1 Additional Equipment Needed

- If you wish to use the SkyX Graphical User Interface (GUI), you will need to supply a PC or other host which is running a web browser such as Internet Explorer or Firefox, and which is able to access the SkyX device over your local network. (The SkyX GUI is only available with SkyX software v6.0 and later.)

- If you need to access the console of the SkyX device via its serial port, you will need to supply equipment such as a PC running terminal emulation software. See Section 2.5 to determine if you will need direct console access.

- If your SkyX device is mounted in an oversized rack (larger than 19 inches), you will need to supply appropriate brackets.

- For some SkyX installations, you will need straight-through Ethernet cables rather than the crossover Ethernet cable supplied with your SkyX device. See Section 2.6 for more information.

- If you connect the SkyX device to an ASCII terminal or a modem, you will need to supply the terminal or modem and a DB9-to-DB25 modem cable. See Section 2.5.5.

2.2 Site Requirements

In terms of physical placement, choose a location for the SkyX device that complies with the environmental specifications in Section 1.7. Also do the following:

- Provide a minimum clearance of three inches at the front and rear of the device to allow air to circulate.
- Do not block air vents on the top, front, side, or rear of the device.
- Do not place the device in a location where dirt or dust might clog the air vents or damage internal components.
- Do not install the device in direct heat or sunlight that might cause the device to over-heat and fail.
- Choose a location that is physically stable and can support the weight of the device.

2.3 Rackmounting the Gateway or Server

The SkyX accessory kit includes a set of brackets that can be used to mount the SkyX device in a standard 19-inch rack.

Caution • Do not use screws with a shaft length of more than 0.375 inches (0.9525 cm) to attach brackets to the SkyX chassis.

To rack-mount the SkyX device at the front rails of a standard-sized 19-inch rack, with the front panel of the SkyX device facing forward, attach one bracket to each side of the SkyX chassis with three screws per bracket as shown in Figure 5. After attaching the brackets, use four screws to install the SkyX device into a standard 19-inch rack as shown in Figure 6.
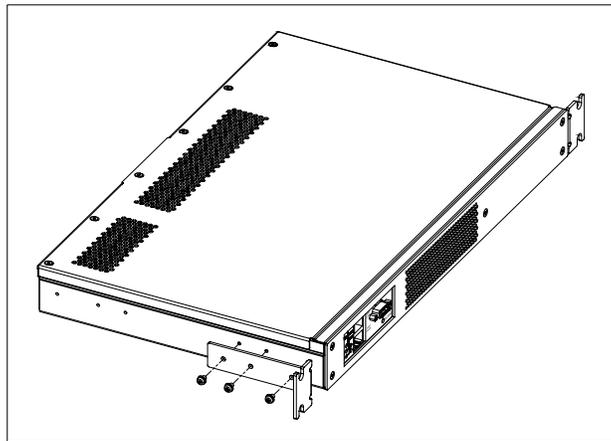
Figure 5:   Attaching Front-Mount Brackets
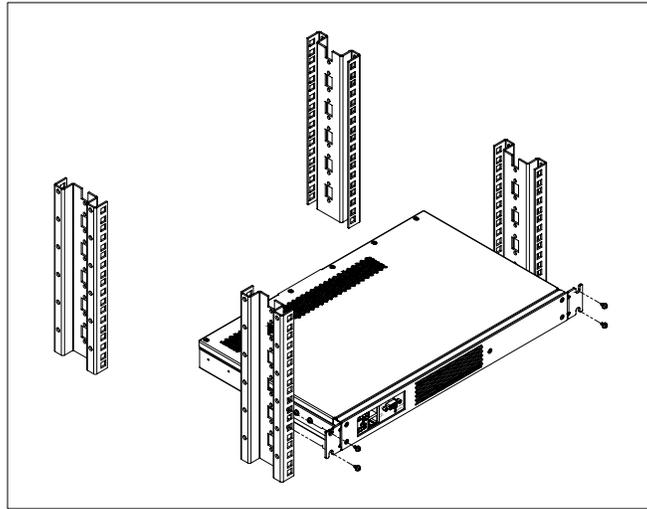
Figure 6:   Installing the SkyX Device into a Rack

2.4 Placing the Gateway or Server on a Desktop

If you plan to place the SkyX device on a desktop or other flat surface, attach the four sup-
plied feet to the bottom panel of the SkyX chassis. To do so, place the SkyX device upside
down, peel the feet from their paper liner and firmly adhere the self-adhesive feet to the
bottom panel of the chassis as shown in Figure 7.
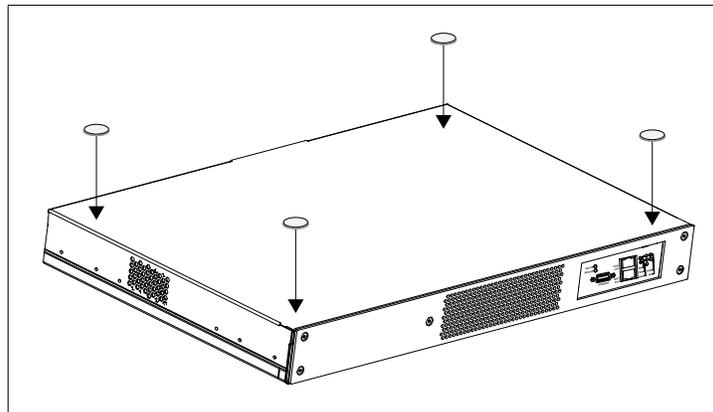
Figure 7:   Installing Feet onto the Bottom Panel

2.5 Accessing the SkyX GUI or SkyX Console

As described below, methods vary for accessing a SkyX device for installation, configuration, and maintenance, depending upon the version of SkyX software and other factors.

2.5.1 Access Methods Available with SkyX Software v6.0 and Later

For the *first-time* configuration of a SkyX device running SkyX software version 6.0 or later, you may use either method "1" or method "2" listed here. For *subsequent* configuration of a SkyX device, you may use any of the three methods listed here.

1. Use the SkyX Graphical User Interface (GUI) via an Ethernet connection, as described in Section 2.5.4.

   If you are using SkyX software v6.0 or later, we recommend you use the SkyX GUI rather than the CLI to access a SkyX device. You may fully configure a SkyX device for most network topologies, including hub and spoke topologies, by using the SkyX GUI. There are a few network topologies and specialized commands which require using the SkyX CLI instead of the GUI. These topologies and CLI commands are typically used only in consultation with SkyX technical support to handle exceptional situations. Even if you ultimately need to use the CLI, you may nevertheless find it convenient to complete the initial configuration of a SkyX device via the SkyX GUI, and then transition to CLI access via Telnet or SSH for final configuration.

2. Use the SkyX Command Line Interpreter (CLI) via a console terminal connected to the SkyX device's RS-232 port. Console connections are described in Section 2.5.5.

    If you are using SkyX software v6.0 or later, there are only two situations in which it is mandatory that you access a SkyX device directly via its console and the CLI. One is to recover from a forgotten password, and the other is to recover from a corrupt software image. These are rare events which you may never encounter.

3. Use the SkyX CLI via Telnet or SSH.

    For security, Telnet and SSH access to the SkyX CLI are disabled by default and thus cannot be used for the *first-time* configuration of a SkyX device. During configuration, you may enable Telnet and SSH access and thereafter use either of them.

2.5.2 Access Methods Available with SkyX Software v5.0 and Earlier

The SkyX GUI was introduced with SkyX software v6.0, so it is not available for SkyX devices running SkyX software v5.0 or earlier. For the *first-time* configuration of a SkyX device running SkyX software v5.0 or earlier, you must use method "A" listed here. For *subsequent* configuration of a SkyX device running SkyX software v5.0 or earlier, you may use either method "A" or "B."

A. Use the SkyX Command Line Interpreter (CLI) and Configuration Dialog via a console terminal connected to the SkyX device's RS-232 port. Console connections are described in Section 2.5.5.

B. Use the SkyX CLI (and Configuration Dialog, as appropriate) via Telnet.

For security, Telnet access to the SkyX device is disabled by default and thus cannot be used for the *first-time* configuration of a SkyX device. During configuration, you may enable Telnet access and thereafter use it.

2.5.3 Summary of Access Methods

The following table summarizes various situations in which different versions of SkyX software require the use of a console terminal, or will allow access via the SkyX GUI, Telnet, or SSH.

SkyX Software Version	Activity	Access via SkyX GUI	Access to SkyX CLI via SkyX Console	Access to SkyX CLI via Telnet	Access to SkyX CLI via SSH
SkyX v1 - v5	Initial configuration.	no	yes	no	no
	Subsequent configuration and maintenance (after initial configuration).	no	yes	yes	no
	Booting into the SkyX Permanent Recovery Image to recover from a forgotten password or a corrupt software image.	no	yes	no	no
	Rare topologies and specialized commands (entered after initial configuration).	no	yes	yes	no
SkyX v6	Initial configuration.	yes	yes	no	no
	Subsequent configuration and maintenance (after initial configuration).	yes	yes	yes	yes
	Booting into the SkyX Permanent Recovery Image to recover from a forgotten password or a corrupt software image.	no	yes	no	no
	Rare topologies and specialized commands (entered after initial configuration).	no	yes	yes	yes

2.5.4 Accessing the SkyX GUI

NOTE: Section 2.5.4 applies only to SkyX devices which are running SkyX software version 6.0 or later. The SkyX GUI described in Section 2.5.4 is not included with earlier versions of SkyX software.

As described in Steps 1-6 below, to access a SkyX device's GUI, you use the SkyX device's `eth0` port to place the SkyX device in an appropriate location on your network, and you then use a browser running on a PC or other host to display the SkyX GUI. To allow initial access to the SkyX GUI, the SkyX device is pre-configured with an IP address of 10.10.10.10, but once you log into the SkyX GUI at the 10.10.10.10 address, one of the first prompts will allow you to change that address to the permanent IP address the SkyX device will be using in its final location in your network.

1.   Select a PC with a browser such as Internet Explorer or Firefox that can be used to display the SkyX GUI.

2.   Make sure the network settings of the PC are configured so it can access both (A) the SkyX device's temporary pre-configured IP address of 10.10.10.10 and (B) the long-term IP address you will be assigning the SkyX device during initial configuration. (For an example of how to configure your PC's network settings, see the current *SkyX User's Guide*.)

Alternate Step 2

Use this alternate step only if you cannot use the 10.10.10.10 IP address referenced in Step 2.

If for some reason you are not able even temporarily to access the SkyX device via its pre-configured 10.10.10.10 IP address (for instance, if you already have another device on your network with that address), you may change the pre-configured 10.10.10.10 address prior to logging in at the SkyX GUI. Making this change requires that you connect a console terminal to the CONSOLE port of the SkyX device. (For a description of how to connect a console terminal to your SkyX device, see Section 2.5.5.) When you connect a console terminal to an unconfigured SkyX device running SkyX software version 6.0 or later, a special "first-time" dialog will be presented automatically on the console, during which you will be asked to log in as "`admin`," complete three start-up steps, change the 10.10.10.10 address to an alternate IP address that is accessible by your PC, and enter a network mask. After that, when the "`skyx>`" prompt appears on the console screen, you should type "`save`" and press the ENTER key. Then at the next "`skyx>`" prompt, type "`shutdown`", press the ENTER key, wait until the "`halt>`" prompt appears, and then power off the SkyX device. After that, disconnect the console cable and continue with Step 3 below.

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3.   Use an Ethernet cable to connect the `eth0` port of the SkyX device to your network so the SkyX device can be reached by your PC. (To decide whether to use a crossover Ethernet cable or a straight-through Ethernet cable, see Section 2.6.)

4.   At this point in the sequence, you do not have to connect a cable to the `eth1` port of your SkyX device. Instead, when you reach the SkyX *Installation > IP Addresses*

GUI page, that page will indicate whether your particular installation needs to use the `eth1` port, and, if so, how you should connect it.

5. Power on the SkyX device. Then wait several seconds for one or two beeps that occur at the start of the bootup sequence. About one minute *after* the beep(s), the bootup sequence should be complete, and you may then continue with Step 6.

6. Enter `https://10.10.10.10` in the URL space of your PC's browser (or enter the alternate address if you used Alternate Step 2). When you do so, the login page of the SkyX GUI will be displayed in your browser. See the *SkyX User's Guide* for an explanation of how to log into and use the GUI. The *SkyX User's Guide* also contains additional options related to Steps 1-5 as listed above.

2.5.5 Connecting to a Console Terminal

If your SkyX device is running SkyX software v.6.0 or later, then we recommend you use the SkyX GUI, as explained in Section 2.5.4, to access the SkyX device for *first-time* configuration and also for continued configuration, fine tuning, and maintenance. However, if your SkyX device is running SkyX software v5.0 or earlier, then for *first-time* configuration, you must access the SkyX device via a console terminal connected through the SkyX device's RS-232 console port using one of the following three devices:

1. A PC running a terminal emulation program (see Section 2.5.5.1).

2. An ASCII terminal (see Section 2.5.5.2).

3. A standard telephone modem attached through a telephone line to a PC running a terminal emulation program (see Section 2.5.5.3).

2.5.5.1 Connecting to a PC Running a Terminal Emulator

If you wish to connect the SkyX device to a PC running terminal emulation software, use the supplied DB-9 female to DB-9 female null-modem serial cable. Connect the cable to the `CONSOLE` port on the SkyX device and to a serial port on the PC (see Figure 8).

Configure the PC emulation software for 9600 baud, 8 data bits, no parity, 1 stop bit, terminal type VT100, and disable hardware flow control.
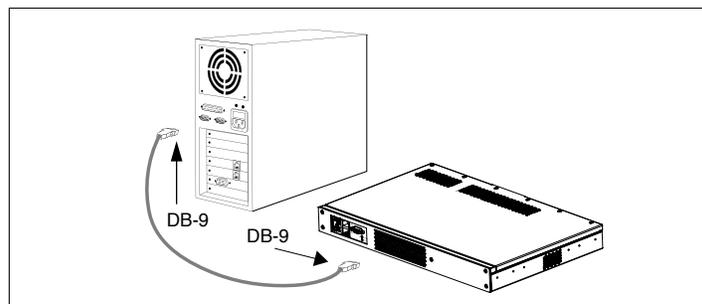

Figure 8:   Connecting to a PC

2.5.5.2 Connecting to an ASCII Terminal

If you wish to connect the SkyX device to an ASCII terminal, use a DB-9 female to DB-25 male modem cable that you supply. Connect the cable to the CONSOLE port on the SkyX device and to the MODEM port on the ASCII terminal (see Figure 9).

NOTE: It may be necessary to insert a gender changer or possibly even a null modem plug between the terminal's DB-25 port and the male DB-25 connector on the modem cable. All terminals are slightly different, so it is a good idea to consult the documentation for the terminal being used before trying to attach it to the SkyX CONSOLE port.

Configure the terminal for 9600 baud, 8 data bits, no parity, 1 stop bit, terminal type VT100, and disable hardware flow control.
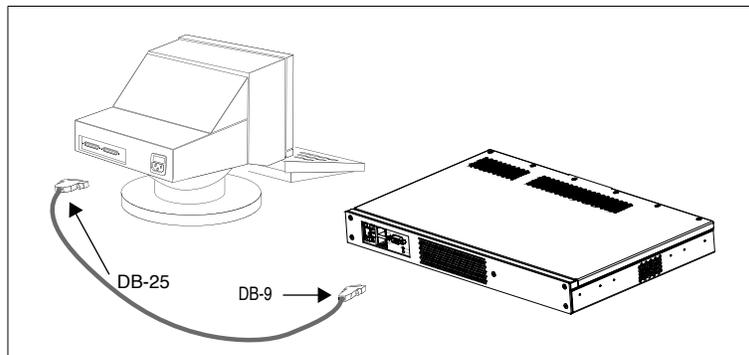

Figure 9:   Connecting to an ASCII Terminal

2.5.5.3 Connecting to a Console Terminal with a Modem

If you wish to connect the SkyX device to a telephone modem, use a DB-9 female to DB-25 male modem cable that you supply. Connect the cable to the CONSOLE port on the SkyX device and to the RS-232 port on the modem (see Figure 10).

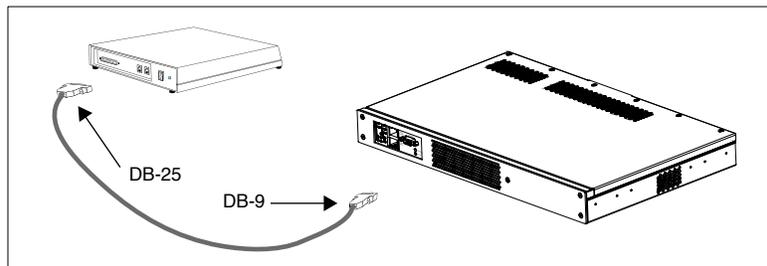Configure the modem for 9600 baud, 8 data bits, no parity, and 1 stop bit.

Figure 10:   Connecting to a Modem

2.5.5.4 Console Port Specifications

Pinouts for the DB-9 male RS-232 console port (DTE) located on the front panel of the SkyX device are shown in Figure 11.
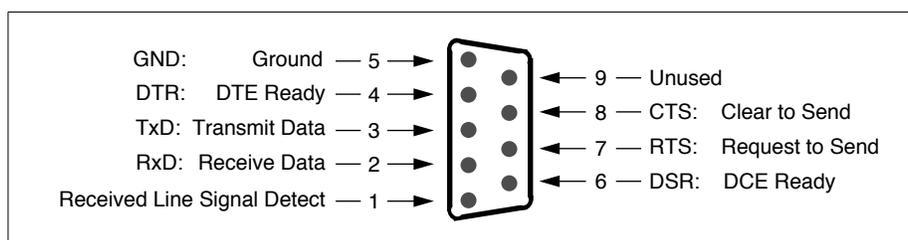

Figure 11: Pinouts for the DB-9 Console Port

2.5.5.5 Troubleshooting the Console Terminal

If there is no output on the console terminal, first verify that you hear an audible "beep" from the SkyX device within approximately ten seconds after turning on its power. If you do not hear a beep, contact SkyX technical support as described in Section 3.2.

Next, verify that the cabling and configuration of your terminal or terminal emulator match the procedures and settings described in Section 2.5.5.1, 2.5.5.2, or 2.5.5.3, as appropriate. If possible, confirm that your terminal or terminal emulator works with another SkyX device and with other equipment. If the problem occurs with only one SkyX device, then contact SkyX technical support as described in Section 3.2.

2.6 Connecting to a Network

SkyX XR10-E230 and SS10-E230 models each have two 10/100BaseT Ethernet adapters with RJ-45 ports. The two ports are on the front panel, labeled eth0 and eth1, and are used to connect the SkyX device to the network. Depending upon where the SkyX device is placed in your network and how it is configured, you will use one or both of the Ethernet ports. (NOTE: As described in Section 2.5.4, for first-time access via the SkyX GUI, you must use the eth0 port. Thereafter, if you configure the SkyX device with two IP addresses for two-interface router mode, the GUI will be accessible through either of the addresses.)

For detailed information about choosing a location in your network for the SkyX device, and for determining whether you will use one or both SkyX ports, see the *SkyX User's Guide*.

To determine whether to use crossover or straight-through Ethernet cable, consider the following:

- Use crossover Category 5e or Category 5 Ethernet cable to connect a SkyX device via one of its Ethernet ports directly to the Ethernet port on a router.
- Use straight-through Category 5e or Category 5 Ethernet cable to connect a SkyX device via one of its Ethernet ports to an Ethernet hub or switch.

Whether you use a crossover cable or a straight-through cable, the Ethernet cable must meet, at a minimum, 100Base-TX and EIA 568 standards. Standard Category 5 Ethernet cable, in which three pairs of wire are used to send and receive, and the fourth pair is used for collision detection, typically meets these standards. The cable should not exceed 100 meters, or 328 feet, in length.

2.7 Powering On the SkyX Gateway or Server

Warning • Before connecting to a power source, ensure that the voltage supply is within the ranges specified in Section 1.7. Failure to observe these precautions will result in damage to the SkyX device and may result in injury.

Warning • The SkyX device is designed for connection to a grounded outlet. Ensure it is connected to earth ground when in use. To reduce the risk of electrical shock and damage to your equipment, do not disable or override this feature.

Use the following sequence to power on the XR10-E230 or SS10-E230.

1. Place the main power switch on the back panel of the SkyX device in the off position (0).

2. Connect the power cable to the power connector on the back panel of the SkyX device and to an adequate, grounded power outlet.

3. Set the power switch on the back panel of the SkyX device to the on position (1).

To log in after powering on the SkyX device, see the instructions in the configuration chapter of the *SkyX User's Guide*.

2.8 Powering Off the SkyX Gateway or Server

Use one of the two following sequences to power off the SkyX device:

Using the SkyX GUI	Using the SkyX CLI
A. First, shut down the SkyX operating system by navigating to the *Maintenance > Shutdown/Reboot* page of the SkyX GUI. On that page, select the *Shutdown* option and click the *Apply* button.	A. First, shut down the SkyX operating system by typing `shutdown` at the `skyx>` prompt and pressing ENTER.
B. Wait approximately five to ten seconds for the SkyX device to shut down the operating system. You may then set the power switch on the back panel of the SkyX device to the off position (0).	B. After five or ten seconds, when the `halt>` prompt appears on the console screen, set the power switch on the back panel of the SkyX device to the off position (0).

2.9 Operating in Active and Bypass Modes

SkyX E230 models can operate in either *active* mode or *bypass* mode. In active mode, a SkyX device directs the flow of packets through its Ethernet ports, and processes them for improved performance. In bypass mode, the SkyX device allows packets to flow into its eth0 port and out its eth1 port, but does not direct or process the packets. This allows packets to continue flowing even if the SkyX device fails.

The bypass switch is controlled by a watchdog timer. If the watchdog timer expires because of software or hardware failure, the SkyX device's Ethernet ports will automatically switch from active mode into bypass mode. If the SkyX device is operating in bypass mode, it will remain in bypass mode until the device is rebooted.

The following table notes some of the differences between active mode and bypass mode.

Flow of Packets	**Active Mode** · In active mode, each of the SkyX device's Ethernet ports operates independently and packets are routed through the SkyX device's CPU.
	Bypass Mode · In bypass mode, packets that are sent to the SkyX device's eth0 port will flow directly to the device's eth1 port without being routed to the device's CPU. The bypass function operates electrically like a Category 5 crossover cable. That is, if the SkyX device is plugged in between two hubs and is in bypass mode, electrically it will be as if there were a Category 5 crossover cable connecting the two ports of the hubs.
Packet Processing	**Active Mode** · In active mode, packets are processed by SkyX software.
	Bypass Mode · In bypass mode, packets are not processed by SkyX software.
LED Status	**Active Mode** · In active mode, the ACTIVE LED on the OCP is illuminated in green.
	Bypass Mode · In bypass mode, if there is power to the SkyX device, the BYPASS LED on the OCP will be illuminated in amber, and the MIN LED will be illuminated in red. If there is no power to the SkyX device, bypass mode is in effect, but no LEDs are illuminated.

2.10 Cleaning the Air Vents

If dust accumulates at the external air vents on the top, front, and side panels of the SkyX device as shown in Figure 12, use a vacuum cleaner to remove the dust.

Warning • Do not remove the cover of the SkyX device to clean the air vents. Doing so is not necessary and will void your warranty.
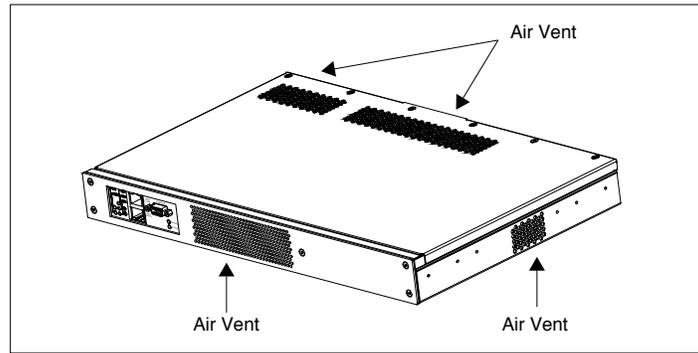
Figure 12:   Cleaning Air Vents

Further Information and Tech Support

Chapter 3 explains how to obtain additional information and technical support for the SkyX Gateway and Server.

3.1 Sources of Documentation and Technical Support

You will find SkyX documentation and directions for obtaining SkyX technical support via email or telephone at the following site:

```
http://www.packeteer.com/support
```

3.2 Technical Support

One year of technical support is included free of charge with the purchase of a SkyX Gateway or Server. Extended warranty programs are available through Packeteer, Mentat, or your local distributor.

3.3 Before You Contact SkyX Technical Support

Before you contact SkyX technical support, please gather the following information:

1. A description of your problem.

2. The serial number(s) of your SkyX Gateway(s) or Server(s).

3. Output from the `version` command at each SkyX unit.

4. Details about your satellite link, e.g., type of hardware, link characteristics, etc.

5. The SkyX system's report of its current and saved configurations. These reports can be found via either of the following methods:

   - In the SkyX GUI, open the *Maintenance > Display* page, run both the *Current* and the *Saved* options on the page, and either copy and paste the results into an email, or save the results as a text file.

- At the SkyX CLI, run the `display current` and `display saved` commands, and either copy and paste the results into an email, or save the results as a text file. (One way to record the results is to use the `save` command to save the current configuration to a file on a remote host and attach that file to your email.)

If you are having a problem that could be the result of routing or configuration errors, also gather as much of the following as possible:

6. Sufficient detail about your network topology to permit support engineers to know how your network is configured.

7. Information about your routers, e.g., routing table output analogous to what the SkyX `ip-route show` command produces.

If you are experiencing performance problems, please do the following:

8. See the troubleshooting chapter of the *SkyX User's Guide* and use the procedures described there to gather whatever information you can.

9. In addition, you should enable full output from the SkyX logging facility by setting the `debug-level` to `2` and then starting or restarting SkyX processing. This will be necessary if support engineers direct you to look for specific information in the console logs. You can set the `debug-level` to `2` via either of the following methods:

    - At the SkyX GUI, go to the *Advanced > SkyX* page, and on that page, disable SkyX processing (unless it's already disabled), and set the *Trace detail level* to *all*. Then re-enable SkyX processing. This process has the effect of setting the `debug-level` to `2`.
    - At the SkyX CLI, disable SkyX processing by entering the `skyx abort` command (unless SkyX processing is already off), enter the command `skyx set debug-level 2`, and then re-enable SkyX processing with the `skyx on` command.

Appendix A

Licensing and Warranties

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Regulatory Information

Appendix B documents the compliance of the SkyX XR10-E230 and SS10-E230 with the requirements of regulatory agencies.

B.1   Federal Communications Commission Notice

This equipment generates, uses, and may emit radio frequency energy. The equipment has been type tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC rules, which are designed to provide reasonable protection against such radio frequency interference. Operation of this equipment in a residential area may cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Any modifications to this device–unless expressly approved by the manufacturer–can void the user's authority to operate this equipment under part 15 of the FCC rules.

The use of shielded cables when connecting to the I/O interface ports is required to ensure compliance with EMC regulations and standards.

B.2   Canadian Notice

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

B.3   Avis Canadien

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

B.4   Proper Disposal of Packeteer Products

To reduce waste and to protect the environment from hazardous materials, waste electrical equipment must be disposed of properly.

The crossed-out wheelie bin symbol pictured here and labeled on Packeteer products (purchased after August 13, 2005) is a reminder that electrical equipment should not be mixed in with general trash or disposed of in a landfill. Once your Packeteer product or component has reached its end-of-life, you should dispose of it through a reputable, licensed hazardous materials processor.

If you are located in one of the European Union Member States, please refer to the product's end user license agreement for further information regarding the proper disposal, reporting, and/or return of the product to Packeteer.

For additional information and to obtain return instructions, please go to the Packeteer website at `http://www.packeteer.com/program/recycling`.

Figure 13:   WEEE Symbol

Finding Documentation

To determine which SkyX documentation supports various versions of SkyX software and SkyX hardware, consult the four tables below.

Table 1: Documentation for SkyX Gateway Software

SkyX Gateway Software Versions	SkyX Gateway Software Documentation
v1.0-19990428 through v1.0-19990722	*SkyX Gateway User's Guide*, 1st Ed.
v1.0-19990916 through v1.0-20000313	*SkyX Gateway User's Guide*, 2nd Ed.
v1.5.0 through v1.5.3	*SkyX Gateway User's Guide*, 3rd Ed.
v2.0.0 through v2.0.2	*SkyX Gateway User's Guide*, 4th Ed.
v2.0.3 and v2.0.4	*SkyX Gateway User's Guide*, 5th Ed.
v3.0.0 and v3.0.1	*SkyX Gateway User's Guide*, 6th Ed.
v3.0.2 through v3.1.1	*SkyX Gateway User's Guide*, 7th Ed.
v4.0.0 and v4.1.0	*SkyX User's Guide*, 9th Ed.
v4.1.1 through v5.0.0	*SkyX User's Guide*, 10th Ed.
v6.0	*SkyX User's Guide*, 11th Ed.
v6.1	*SkyX User's Guide*, 12th Ed.

Table 2: Documentation for SkyX Server Software

SkyX Server Software Versions	SkyX Server Software Documentation
v2.0.4S	*SkyX Server User's Guide*, 1st Ed.
v3.0.0S through v3.0.4S	*SkyX Server User's Guide*, 2nd Ed.
v3.1.1 and v3.1.2	*SkyX Server User's Guide*, 2nd Ed.
v4.0.0 and v4.1.0	*SkyX User's Guide*, 9th Ed.
v4.1.1 through v5.0.0	*SkyX User's Guide*, 10th Ed.
v6.0	*SkyX User's Guide*, 11th Ed.
v6.1	*SkyX User's Guide*, 12th Ed.

Table 3:   Documentation for SkyX Gateway Hardware

SkyX Gateway Hardware	SkyX Gateway Hardware Documentation
Serial Number beginning with **SMI**	*SkyX Gateway User's Guide*, 1st or 2nd Ed.
Serial Number beginning with **TS** or **SX**	*SkyX Gateway User's Guide*, 3rd or 4th Ed.
Serial Number beginning with **EK**, **SSC**, **2109173**, or **2109174**	*SkyX Gateway User's Guide*, 5th Ed. or *SkyX E220 Hardware Installation Guide*, 1st, 2nd, 3rd, or 4th Ed.
Serial Number beginning with **P120445** or **1120445**	*SkyX E200 Hardware Installation Guide*, 1st or 2nd Ed.
Serial Number beginning with **2121289**	*SkyX E230 Hardware Installation Guide*, 1st or 2nd Ed.

Table 4:   Documentation for SkyX Server Hardware

SkyX Server Hardware	SkyX Server Hardware Documentation
Serial Number beginning with **EK**, **SSC**, **2109173**, or **2109174**	*SkyX Server User's Guide*, 1st Ed. or *SkyX E220 Hardware Installation Guide*, 1st, 2nd, 3rd, or 4th Ed.
Serial Number beginning with **P120445** or **1120445**	*SkyX E200 Hardware Installation Guide*, 1st or 2nd Ed.
Serial Number beginning with **2121289**	*SkyX E230 Hardware Installation Guide*, 1st or 2nd Ed.

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