

IPL T PCS4 IPL T PCS4i

IP Link Power Control Interfaces



Extron

Safety Instructions

Safety Instructions • English

WARNING: This symbol, , when used on the product, is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

ATTENTION: This symbol, , when used on the product, is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

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VORSICHT: Dieses Symbol , auf dem Produkt soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.

Weitere Informationen über die Sicherheitsrichtlinien, Produkthandhabung, EMI/EMF-Kompatibilität, Zugänglichkeit und verwandte Themen finden Sie in den Extron-Richtlinien für Sicherheit und Handhabung (Artikelnummer 68-290-01) auf der Extron-Website, www.extron.com.

Instrucciones de seguridad • Español

ADVERTENCIA: Este símbolo, , cuando se utiliza en el producto, avisa al usuario de la presencia de voltaje peligroso sin aislar dentro del producto, lo que puede representar un riesgo de descarga eléctrica.

ATENCIÓN: Este símbolo, , cuando se utiliza en el producto, avisa al usuario de la presencia de importantes instrucciones de uso y mantenimiento estas están incluidas en la documentación proporcionada con el equipo.

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Instructions de sécurité • Français

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ATTENTION : Ce pictogramme, , lorsqu'il est utilisé sur le produit, signale à l'utilisateur des instructions d'utilisation ou de maintenance importantes qui se trouvent dans la documentation fournie avec l'équipement.

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Istruzioni di sicurezza • Italiano

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ATTENZIONE: Il simbolo, , se usato sul prodotto, serve ad avvertire l'utente della presenza di importanti istruzioni di funzionamento e manutenzione nella documentazione fornita con l'apparecchio.

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UWAGI: Ten symbol, , gdy używany na produkt, jest przeznaczony do ostrzegania użytkownika ważne operacyjne oraz instrukcje konserwacji (obsługi) w literaturze, wyposażone w sprzęt.

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Инструкция по технике безопасности • Русский

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ВНИМАНИЕ: Данный символ, , если указан на продукте, предупреждает пользователя о наличии важных инструкций по эксплуатации и обслуживанию в руководстве, прилагаемом к данному оборудованию.

Для получения информации о правилах техники безопасности, соблюдении нормативных требований, электромагнитной совместимости (ЭМП/ЭДС), возможности доступа и других вопросах см. руководство по безопасности и соблюдению нормативных требований Extron на сайте Extron: , www.extron.com номер по каталогу - 68-290-01.

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注意:  产品上的这个标志意在提示用户, 设备随附的用户手册中有重要的操作和维护(维修)说明。

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경고: 이 기호 ⚠가 제품에 사용될 경우, 제품의 인클로저 내에 있는 접지되지 않은 위험한 전류로 인해 사용자가 감전될 위험이 있음을 경고합니다.

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안전 가이드라인, 규제 준수, EMI/EMF 호환성, 접근성, 그리고 관련 항목에 대한 자세한 내용은 Extron 웹 사이트(www.extron.com)의 Extron 안전 및 규제 준수 안내서, 68-290-01 조항을 참조하십시오.

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NOTE: For more information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the [Extron Safety and Regulatory Compliance Guide](#) on the Extron website.

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VCCI-A

Battery Notice

This product contains a battery. **Do not open the unit to replace the battery.** If the battery needs replacing, return the entire unit to Extron (for the correct address, see the Extron Warranty section on the last page of this guide).

CAUTION: Risk of explosion. Do not replace the battery with an incorrect type. Dispose of used batteries according to the instructions.

ATTENTION : Risque d'explosion. Ne pas remplacer la pile par le mauvais type de pile. Débarrassez-vous des piles usagées selon le mode d'emploi.

Conventions Used in this Guide

Notifications

The following notifications are used in this guide:

CAUTION: Risk of minor personal injury.

ATTENTION : Risque de blessure mineure.

ATTENTION:

- Risk of property damage.
- Risque de dommages matériels.

NOTE: A note draws attention to important information.

TIP: A tip provides a suggestion to make working with the application easier.

Software Commands

Commands are written in the fonts shown here:

```
^ARMerge Scene,,0p1 scene 1,1 ^B 51 ^W^C.0  
[01] R000400300004000080000600 [02] 35 [17] [03]  
[Esc] [X1] * [X17] * [X20] * [X23] * [X21] CE ←
```

NOTE: For commands and examples of computer or device responses used in this guide, the character “0” is the number zero and “O” is the capital letter “o.”

Computer responses and directory paths that do not have variables are written in the font shown here:

```
Reply from 208.132.180.48: bytes=32 times=2ms TTL=32  
C:\Program Files\Extron
```

Variables are written in slanted form as shown here:

```
ping xxx.xxx.xxx.xxx -t  
SOH R Data STX Command ETB ETX
```

Selectable items, such as menu names, menu options, buttons, tabs, and field names are written in the font shown here:

From the **File** menu, select **New**.
Click the **OK** button.

Specifications Availability

Product specifications are available on the Extron website, www.extron.com.

Extron Glossary of Terms

A glossary of terms is available at <http://www.extron.com/technology/glossary.aspx>.

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Introduction

This section gives an overview of the IPL T PCS4 and IPL T PCS4i Power Control Interfaces and describes their features. The following topics are covered:

- [About this Guide](#)
- [About the IPL T PCS4 and IPL T PCS4i](#)
- [Features](#)
- [Application Diagrams](#)

About this Guide

This user guide contains information about the Extron IPL T PCS4 and IPL T PCS4i Power Control Interfaces, including explanations of how to install, configure, and operate them. Unless otherwise specified, IPL T PCS4 and PCS4 refer to both product versions throughout this guide.

About the IPL T PCS4 and IPL T PCS4i

The Extron IPL T PCS4 and IPL T PCS4i IP Link Power Control Interfaces are Ethernet-based power management devices that can control power and schedule and monitor up to four output devices via TCP/IP. The IPL T PCS4i is an international version, configured for 220 VAC with IEC connectors.

The PCS4 can be a stand-alone control device or one of many nodes in a distributed control system environment. It lets you remotely power on and off any attached device and to individually sample and store device power levels. The PCS4 has its own web pages, stored in flash memory within the device.

Features

- **Remotely powering devices on and off** — Centralized management features such as Telnet allow remote powering on and off of projectors, cameras, video conferencing equipment, switchers, and other audio/video equipment.
- **Power level monitoring** — Four 3-prong power output receptacles sense the power level delivered. Each receptacle can sample and store power levels for a device operating in full or standby mode.
- **Individual power threshold settings** — User-defined power thresholds can be set for each receptacle. Each threshold can be associated with one or more actions, such as activation of the alarm relay, e-mail notification, and so on. When power exceeds or falls below a stored threshold, the programmed actions are performed.
- **Power-up sequencing** — Power-up sequencing eliminates power surges at start-up. When the IPL T PCS4 restarts, the receptacles are powered on sequentially, separated by a user-configurable delay. (The factory default delay time is 1 second.) The attached devices are powered up in ascending order from receptacle 1 through 4.

NOTE: The IPL T PCS4 powers up only those devices that were previously powered on when the restart occurred.

- **Grouping of receptacles** — To support dual powered devices by controlling them simultaneously, two or more receptacles can be grouped together. Grouping and ungrouping can be done via the front panel, TCP ports using Simple Instruction Set (SIS) commands, or the internal web pages.
- **Detection device (alarm relay)** — This relay on the rear panel can be connected to a relay-controllable siren or other detection device, and can be programmed to react at specified power level thresholds. The alarm relay can be configured for either normally open or normally closed state, which activates the attached alarm device when power drops or increases beyond a specified amount. E-mail messages can be generated based on alarm relay conditions.
- **Internet communication** — The PCS4 uses standard Ethernet and TCP/IP communication protocols, including ARP (Address Resolution Protocol), DHCP (dynamic host configuration protocol), TCP/IP (Transmission Control Protocol/Internet Protocol), Telnet, and HyperText Transfer Protocol (HTTP).
- **Embedded web page serving** — The IPL T PCS4 has 900 KB of internal flash memory for storing user-customizable web pages and configuration settings. Nonproprietary programming (HTML and JavaScript™) is available, as well as other programming methods.
- **Security** — Built-in multilevel security provides user control over access to devices attached to the PCS4. Appropriate security is provided by password protection for Administrator and User levels.

NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an absolute system reset, the passwords convert to the default, which is **extron**.

- **Mounting** — The PCS4 can be placed on a tabletop (four rubber feet are provided and can be attached). Optional hardware for mounting the unit under a desktop or podium or on a rack shelf is not included, but can be ordered separately.

Application Diagrams

The following application diagrams show examples of how devices can be connected to the IPL T PCS4 in different environments.

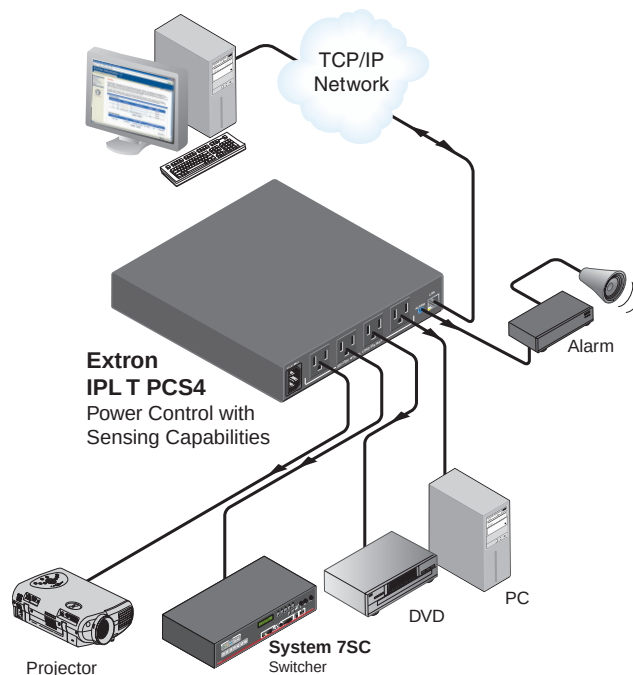


Figure 1. Diagram for IPL T PCS4 (14 AWG Power Cord Required in US)

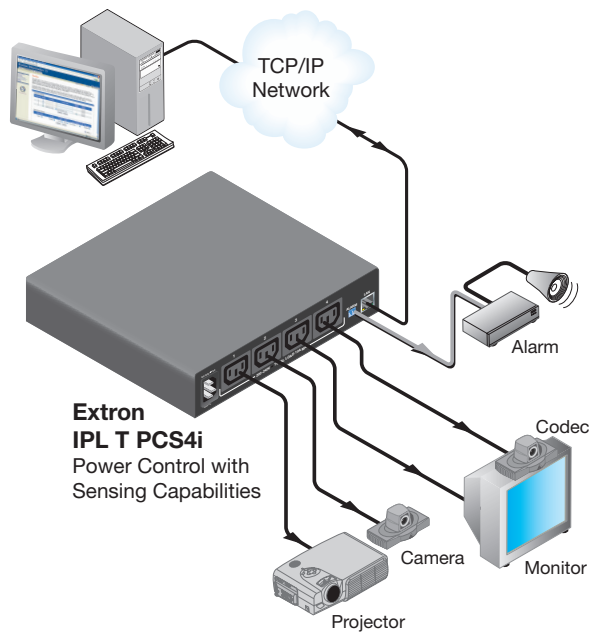


Figure 2. Connection Diagram for IPL T PCS4i

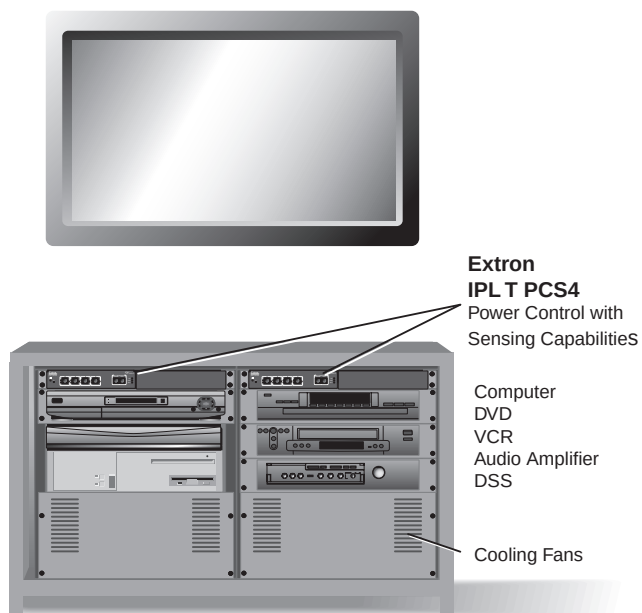


Figure 3. Illustration of an IPL T PCS4 in a Home Entertainment Center

Installation and Rear Panels

This section contains installation and cabling instructions for the PCS4. The following topics are discussed:

- [Installation Overview](#)
- [Rear Panels](#)
- [Setting Up the LAN Port](#)
- [Connecting the Devices](#)

Installation Overview

To install and set up an IPL T PCS4 interface, follow these steps:

1. Turn off all of the equipment. Make sure that the video sources (DSS, cable boxes, or other devices), the IPL interface, the output devices (monitors, VCRs, projectors, and so on), and the controller are all turned off and disconnected from the power source.
2. If desired, mount the PCS4 interface (see [Mounting the IPL T PCS4 Interface](#) starting on page 53).
3. Plug the PCS4 power cord into an AC outlet.
For the 120 VAC version, use the supplied 14 AWG IEC power cord.
4. Connect an active LAN Ethernet cable to the RJ-45 port on the rear panel to establish a link to the network.
5. Set up an IP address for the PCS4 (see [HTML Configuration and Control](#) starting on page 16 or [SIS Programming and Control](#) starting on page 42).
6. Plug the desired devices into the power receptacles on the PCS4 rear panel.
7. Press the front panel buttons to power on the receptacles.
8. Turn on the output devices.
9. Configure the PCS4 interface through the front panel, Telnet, or the web pages, then access the unit using an Internet browser.

Rear Panels

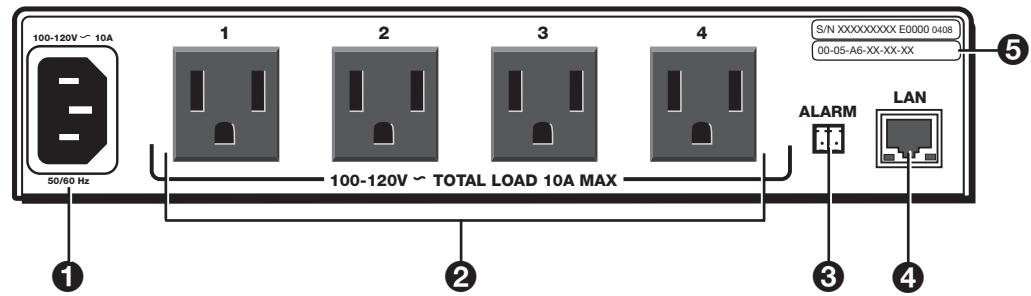


Figure 4. IPL T PCS4 Rear Panel (120 VAC)

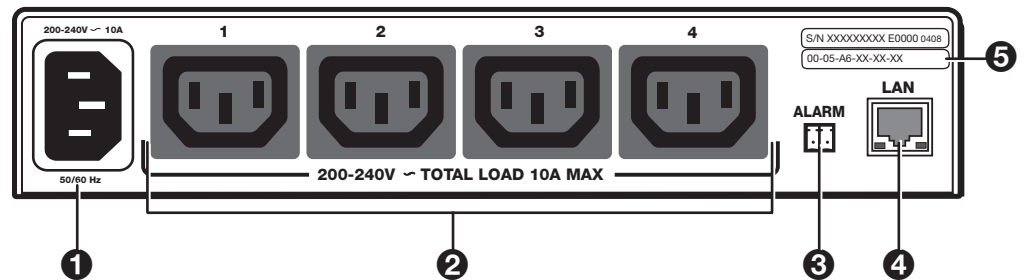
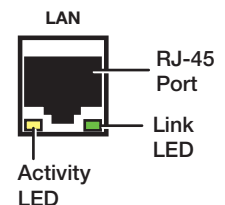


Figure 5. IPL T PCS4i Rear Panel (220 VAC)

- 1 Power connector** — Connect a power cord from the AC power supply to this male IEC power input receptacle.

NOTE: For the IPL T PCS4, use the supplied 14 AWG IEC power cord (part number **27-407-01**).

- 2 Output receptacles** — Connect power cords from up to four devices to these three-prong female U. S. (IPL T PCS4) or IEC (IPL T PCS4i) power output receptacles.
- 3 Alarm relay** — Connect a relay-controllable detection device to this single-pole, single-throw relay connector. (The default condition for this relay is normally open.)
- 4 LAN connector and LEDs** — An Ethernet connection can be used on an ongoing basis to monitor and control the PCS4 (and the devices connected to it).
- RJ-45 port** — Plug a patch cable into this RJ-45 female socket, and connect the other end to a network switch, hub, router, or PC.
 - Link LED** — This green LED lights to indicate a good network connection.
 - Activity LED** — This yellow LED blinks to indicate network activity.
- 5 UID # label** — Contains the unique User ID number (MAC address) of the unit (for example, 00-05-A6-00-00-01).



Setting Up the LAN Port

LAN Port Cabling

- For 10Base-T (10 Mbps) networks, use a Category 3 or better cable.
- For 100Base-T networks, use a Category 5 cable.
- Use a straight-through cable to connect to a switch, hub, or router.
- Use a crossover cable to connect directly to a PC. Wire the connector as shown in the tables below.

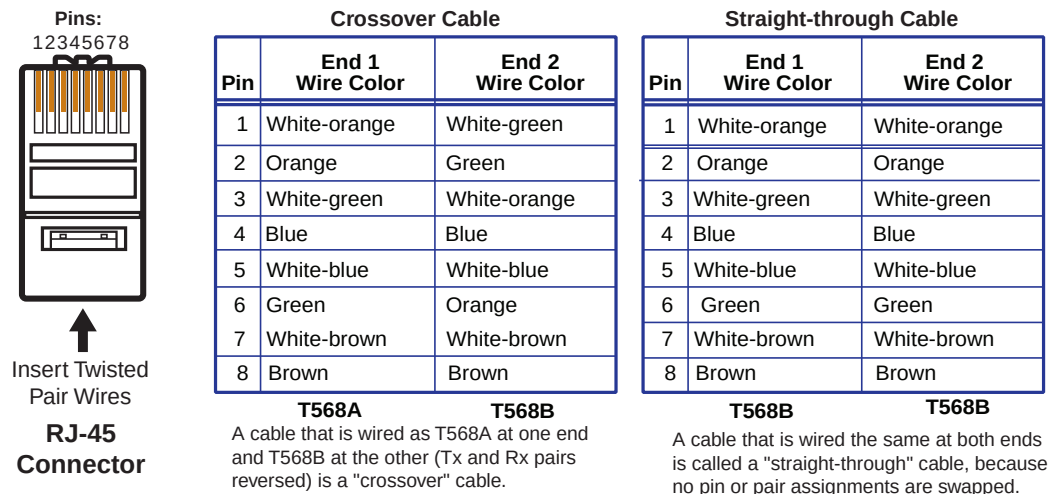


Figure 6. RJ-45 Connector Wiring

Configuring the LAN Port

You need to configure the LAN port before using it. You can configure the settings via either SIS commands or the embedded web pages (see [HTML Configuration and Control](#) starting on page 16 or [SIS Programming and Control](#) starting on page 42 for details).

LAN port factory defaults:	
Link speed and duplex:	Auto Detect
Unit IP address:	192.168.254.254
Subnet Mask:	255.255.0.0
Gateway IP address:	0.0.0.0
DHCP:	Off

Connecting the Devices

Connect the cables to the rear panel as follows:

1. Plug the Ethernet cable from your network into the LAN port on the rear panel.
2. Plug the IPL T PCS4 power cord into a wall outlet. All front panel LEDs flash on briefly; only the power and Ethernet LEDs remain lit. (No receptacle lights should remain lit.)

NOTE: A label covers the power receptacle on the IPL T PCS4 (US version), reminding you that you must use the supplied 14 AWG power cord for the PCS4 to function properly. Remove this label before connecting the power cord to the unit.

3. Plug the power cord of each device to be monitored into one of the receptacles on the back panel of the PCS4.
4. If desired, connect a relay-controllable siren or other detection device to the Alarm relay on the rear panel.

NOTE: The alarm relay cannot be set up from the front panel. You must use either SIS commands or the web pages to configure it (see [Power Receptacle Monitoring and Alarm Functions](#) SIS commands on page 46).

Front Panel Features and Operation

This section contains a description of the IPL T PCS4 and IPL T PCS4i front panel features and instructions for setting up the PCS4 using the front panel. The following topics are discussed:

- [Front Panel Features](#)
- [Setting Up the System Using the Front Panel](#)
- [Resetting the Unit](#)

Front Panel Features

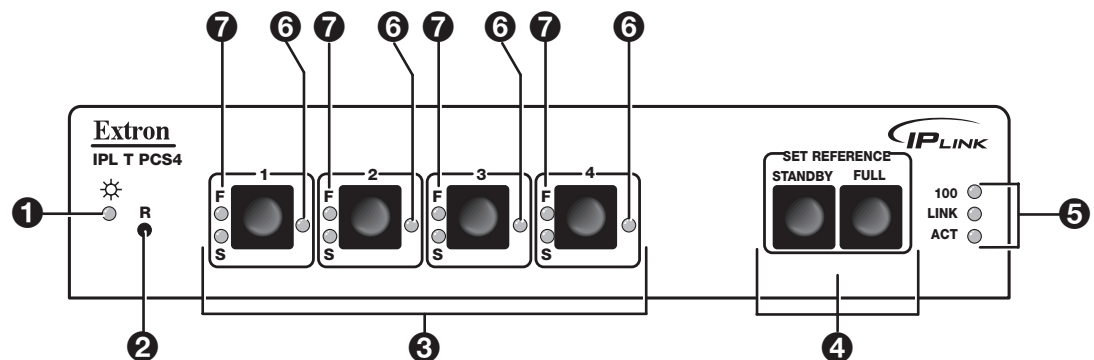


Figure 7. IPL T PCS4 and IPL T PCS4i Front Panel

- 1 Power LED (green)** — When this LED is lit, the PCS4 or PCS4i power control interface is receiving power and is running. When the unit is being reset, this LED blinks the appropriate number of times to indicate the reset mode that has been entered.
- 2 Reset button (recessed)** — Use the tip of a Phillips screwdriver or a pointed stylus to press this recessed button to reset the unit in one of four reset modes (see [Resetting the Unit](#) on page 13 for details on reset modes and on using this button).

NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an absolute system reset, the passwords convert to the default, which is **extron**.

- 3 Power control buttons 1-4** — Press these buttons to switch power on and off to the output receptacle with the corresponding number on the rear panel. These buttons are also used, along with the Set Reference buttons (4), to set the Full and Standby power thresholds.
- 4 Set Reference (Power threshold) buttons** — Press these buttons to set the indicator LEDs for each receptacle to indicate whether the attached devices are operating at Full or Standby power level.

- ⑤ **LAN status LEDs** — These three LEDs show the status of the Ethernet connection as follows:
 - **100** — When lit, indicates a 100 Mbps connection speed. Otherwise, the connection speed is 10 Mbps.
 - **Link** — Indicates that the interface has an active network connection.
 - **Act** — (Activity) Blinks while data is being sent or received.
- ⑥ **Power LEDs (red)** — (One for each receptacle) (see [figure 7](#) on page 8) Indicate that power is being supplied to the attached device.
- ⑦ **Power Management (threshold) LEDs** — (Set of two for each receptacle) After the power thresholds have been set, these LEDs indicate the status of the attached device as follows:
 - **F** — Indicates that power is at or above the Full reference threshold.
 - **S** — Indicates that power is at or above the Standby reference threshold, and below the Full threshold.

Setting Up the System Using the Front Panel

The PCS4 can be set up and operated by using:

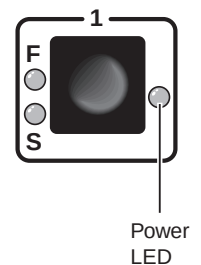
- The front panel controls
- A computer or other device using an Ethernet connection and IP protocol (Telnet or a web browser)

The following system setup procedures can be performed using the front panel, the embedded web pages, or the SIS commands. Some settings can be adjusted only through a host computer, either using SIS commands via Telnet or using the PCS4 embedded web pages. For details on setup and control via Ethernet, see [SIS Programming and Control](#) starting on page 42 or the [HTML Configuration and Control](#) starting on page 16.

Setting Up Power Control

To set up control of power to the devices plugged into the PCS4 receptacles, do the following for each device:

1. On the PCS4 front panel, press and release the **power control** button for the receptacle into which the device is plugged.
The Power LED at the right of the button lights and remains lit while the receptacle is powered on. It is unlit when the receptacle is powered off.
2. Power on the device, using its own power switch.



Setting Power Level Reference Thresholds

You can set the PCS4 to notify you when the power level of a connected device drops from Full to Standby or to None. For each device, you can use front panel controls to set the reference threshold (Full or Standby) at which a notification is triggered.

Until a threshold is set for a receptacle the first time, the status displayed for the receptacle on the web page or given in response to SIS queries is Not Set. Once a threshold has been set, the receptacle status defaults to None if all thresholds are cleared (see [None and Not Set thresholds](#) on page 11).

There are two common types of power for electronic devices: **soft** and **hard**.

- **Soft power** devices normally have three power states: On, Standby, and Off. Such devices include projectors, DVD players, and VCRs.

Example: On soft power devices, the Standby mode allows the unit to be powered to its Full power mode via RS-232 commands or a remote. Pressing a PCS4 receptacle button to Off when the receptacle is connected to a device that supports Standby power causes the device to power off.

- **Hard power** devices normally have two power states: On and Off. These devices include Extron switchers and interfaces.

Example: On Extron switchers, there is no power button or Standby condition, and the unit power can be set only to On and Off from the PCS4 front panel. Therefore, when the power is on, it is at Full power, and can be set for Full reference threshold.

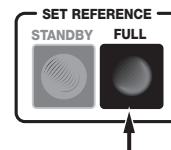
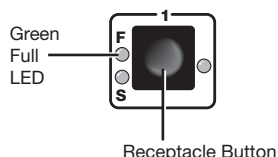
The Full and Standby reference thresholds must be configured with the device attached to the PCS4 receptacle. The thresholds must be set in the correct order, with Full being set first. Follow these steps to set the threshold for each device, using the front panel. (These thresholds also can be configured using the web pages or SIS commands.)

NOTE: The Full threshold must be set first. If Standby is set first, the Standby reference setting is removed by the setting of the Full reference threshold.

1. Connect a device to a power output receptacle on the IPL T PCS4. Make a note of the receptacle number to which you connected it (1 through 4).
2. Press the corresponding front panel button to activate the receptacle. Check to ensure that the **Power** LED for the receptacle is lit.

Setting the Full power threshold

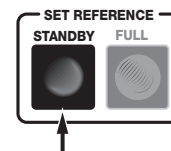
1. Power on the attached device.
2. Press and hold the **Full** button on the PCS4 front panel (see the image at right).
3. While holding the **Full** button, press and release the button for the receptacle into which the device is plugged. Both the F (Full) LED and the S (Standby) LED for the selected receptacle blink twice. Only the Full LED remains lit.



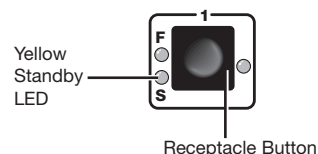
4. Release the **Full** button. The Full threshold for the receptacle is now set.

Setting the Standby power threshold

1. Power off the attached device.
2. Press and hold the **Standby** button (shown at right).



- While holding down the **Standby** button, press and release the receptacle button for the same device for which you set the **Full** threshold (see the illustration at right). The **Standby** LED for the selected receptacle blinks twice and remains lit.



- Release the **Standby** button.
- Repeat steps **1** through **9** for any other receptacles to which you have connected devices to be controlled through the PCS4.

NOTE: Settings that are made via the front panel for power output receptacles and reference thresholds take approximately two minutes to be stored in memory. If you recycle power too soon after settings have been made, the settings are lost.

These threshold settings are preserved if the PCS4 AC power is recycled or if power is removed from an attached device. For example:

If the receptacle is set to...	And the power level...	The receptacle...
Full	drops below the stored threshold	F (Full) led shuts off, and the S (Standby) LED lights.
Standby	drops below the stored Standby threshold	S LED shuts off.
	exceeds the stored Standby threshold	F LED lights.

To indicate that the configuration has been saved, both the Standby LED and the Full LED light and remain lit when those thresholds are selected.

None and Not Set thresholds

When a Full or Standby reference threshold has been set for a receptacle at some time, and neither threshold is detected, a threshold status of **None** appears on the web page or can be the response to SIS queries. **None** also appears if the receptacle is powered off. The **None** threshold is a state that is detected; it cannot be set manually.

If a receptacle has never been set to a Full or Standby reference threshold, its threshold status is shown as **Not Set** on the web page and in response to SIS queries. **Not Set** is the default setting for reference thresholds.

Clearing thresholds

To remove the reference threshold settings from any receptacle:

- Shut off power to the receptacle that you want to clear by pressing its button on the front panel. The red LED to the right of the button shuts off.
- Press and hold the **Standby** or **Full** button while pressing and releasing the receptacle button. All three receptacle LEDs flash twice, indicating that the settings have been cleared.
- Release the **Standby** or **Full** button that you were holding.

If desired, you can now turn power to the receptacle on again by pressing its button.

Grouping Receptacles

Two or more power receptacles can be grouped so that both their connected devices can be controlled simultaneously. To group receptacles using the front panel, follow these steps for each receptacle:

1. Place the receptacle in configuration mode by pressing and holding its receptacle button for 2 seconds. The green Power LED on the front panel flashes continually, indicating that the unit is in configuration mode.
2. Press each receptacle button repeatedly to cycle through the available group selections, indicated by the LEDs beside the button, until you arrive at the setting you want for the receptacle:
 - **No LEDs lit** — No groups (The receptacle will not be part of any grouping.)
 - **S LED lit** — Group 1
 - **F LED lit** — Group 2
 - **Red (power) LED lit** — Group 3
3. Press either the **Standby** or the **Full** button to exit configuration mode.

Ungrouping receptacles

To remove a receptacle from a grouping:

1. Place the receptacle in configuration mode by pressing and holding its button for two seconds, until the green power LED flashes continually.
2. Press the receptacle button repeatedly until none of its LEDs are lit (indicating no groups).
3. Press the **Standby** or **Full** button to exit configuration mode.

Front Panel Security Lockout (Executive Mode)

When the PCS4 is in executive mode, it does not accept commands from the front panel. If any button is pressed while the unit is in executive mode, the Power LED flashes three times, indicating that the input from the front panel is not being accepted.

To enter or exit executive mode, press and hold the Standby and Full buttons simultaneously for 2 seconds. The front panel Power LED flashes three times to indicate that the mode has been switched.

NOTE: If power to the PCS4 is recycled while the unit is in executive mode, the PCS4 remains in executive mode.

Resetting the Unit

There are four ways to reset the PCS4 unit (called modes 1, 3, 4, and 5 for the sake of comparison with other Extron IPL products). Reset the unit by pressing the Reset button on the front panel (see **Front Panel Features** on page 8 for the button location). This button is recessed; it can be accessed with a pointed stylus or small Phillips screwdriver.

ATTENTION:

- The reset modes described on the following pages break all TCP/IP connections by closing all sockets to the unit.
- Les modes de réinitialisation décrits aux pages suivantes annulent toutes les connexions TCP/IP en fermant tous les ports de l'unité.

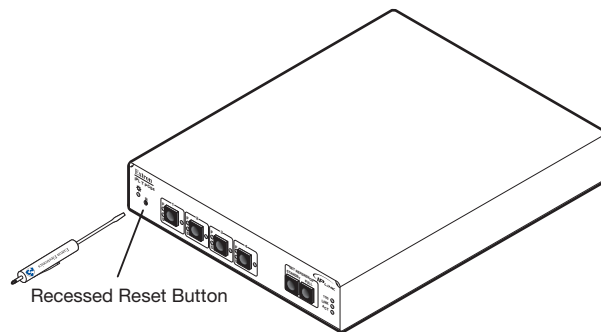


Figure 8. Reset Button

ATTENTION:

- Review the reset modes carefully. Use of the wrong reset mode may result in unintended loss of flash memory programming or a unit reboot.
- Analysez minutieusement les différents modes de réinitialisation. Appliquer le mauvais mode de réinitialisation peut causer une perte inattendue de la programmation de la mémoire flash, une reconfiguration des ports ou une réinitialisation du processeur.

NOTES:

- If the **Reset** button is continually held in, the LEDs pulse (blink) every 3 seconds, and the PCS4 is put in a different mode, corresponding to the underscored notes in modes 3 through 5. The mode 5 LED blinks three times, the third blink indicating that it is the last mode.
- The reset modes are separate functions, not a progression from mode 1 to mode 5.
- The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an absolute system reset (mode 5), the passwords convert to the default, which is **extron**.

Mode 1

Activation	Hold in the Reset button while applying power to the unit.
Result	Returns the unit to the default base firmware that was shipped with the PCS4 from the factory. Event scripting does not start when the unit is powered on in this mode.
Purpose and notes	Use mode 1 to remove a version of firmware if incompatibility issues arise. All user files and settings are maintained. User web pages may not work if you are using an earlier firmware version.

NOTE: After a mode 1 reset, the factory-installed firmware version remains in effect only until the unit is powered off. After a power cycle, the PCS4 returns to the firmware that was installed prior to the mode 1 reset.

Mode 3

Activation	Hold the Reset button in until the Power LED blinks once (approximately 3 seconds). Release it, then immediately press it again momentarily (for less than 1 second). NOTE: Nothing happens if the momentary press does not occur within 1 second.
Result	Turns events on or off, depending on their current state. During resetting, the reset LED flashes two times if events are starting and three times if events are stopping.
Purpose and notes	This mode is used for troubleshooting.

Mode 4

Activation	Hold the Reset button in until the Power LED blinks twice (approximately 6 seconds). Release it, then immediately press it again momentarily (for less than 1 second). The Power LED blinks four times in quick succession, confirming a mode 4 reset. NOTE: Nothing happens if the momentary press does not occur within 1 second.
Result	Reset mode 4 does the following: • Enables ARP program capability. • Sets the IP address back to factory IP settings. • Sets the subnet mask back to factory default. • Sets the gateway address back to factory default. • Sets port mapping back to factory default. • Turns DHCP off. • Turns events off.
Purpose and notes	Mode 4 enables you to set IP address information using ARP and the MAC address.

Mode 5

Activation	Hold in the Reset button until the Power LED blinks three times (approximately 9 seconds). Release it, then immediately press it again momentarily (for less than 1 second). The power LED blinks four times in quick succession, confirming a mode 5 reset. NOTE: Nothing happens if the momentary press does not occur within 1 second.
Result	Performs a complete reset to factory defaults (except for the firmware).
Purpose and notes	Mode 5 is useful if you want to start over with control software configuration and to replace events. This reset also removes the initial serial number passwords and sets them to extron.

HTML Configuration and Control

The IPL T PCS4 must be configured before use, or it cannot control other devices. In addition to using the buttons on the PCS4 front panel, you can configure and control the PCS4 via any computer attached to a LAN by using the embedded web pages or SIS commands. This section describes the web pages and provides instructions for using them to configure the IPL T PCS4 series interfaces. Topics include:

- [Configuring the Hardware](#)
- [Using the Embedded Web Pages](#)
- [Custom Web Pages](#)
- [A/V Device Power Control](#)

Configuring the Hardware

To function together, both the computer and the PCS4 must be configured correctly. The computer must be network-capable with the proper protocols, and the PCS4 must be set up so it can be connected to a LAN (local area network). Note that some settings can be configured only via Internet protocol.

For your computer to communicate with the PCS4, it must be equipped with a network interface card and an HTML browser. To allow your computer to work with Extron Ethernet-controlled products, the TCP/IP protocol must be installed and properly configured.

Setting Up the Computer Using ARP

The Address Resolution Protocol (ARP) command provides a quick way to set up an IP address for the PCS4, using your computer. The ARP commands tell your computer to associate the PCS4 Media Access Control (MAC) address with an IP address that you assign. After entering the ARP command, enter a ping command to access the PCS4 at its new address to confirm the address has been successfully changed.

1. Obtain a valid IP address for your PCS4 from your network administrator.
2. Obtain the PCS4 MAC address (UID#) from the label on its rear panel. The MAC address should have the following format:
`00-05-A6-xx-xx-xx`
where x can be a letter or a number.
3. If the PCS4 has never been configured and is still set for factory defaults, skip to step 4. If not, perform a mode 4 system reset to restore the factory-set values (see [Resetting the Unit](#) on page 13 for the resetting procedure).

NOTE: The PCS4 must be configured with the factory default IP address (192.168.254.254) before you execute the ARP command, as described below.

4. On the computer, access the command prompt, then enter `arp -s`, the desired new IP address for the PCS4, a space, and finally the PCS4 MAC address (taken from the label on the rear panel). For example:

```
arp -s 10.13.170.15 00-05-A6-00-0A-90
```

A space must separate `arp` from the hyphen (-).

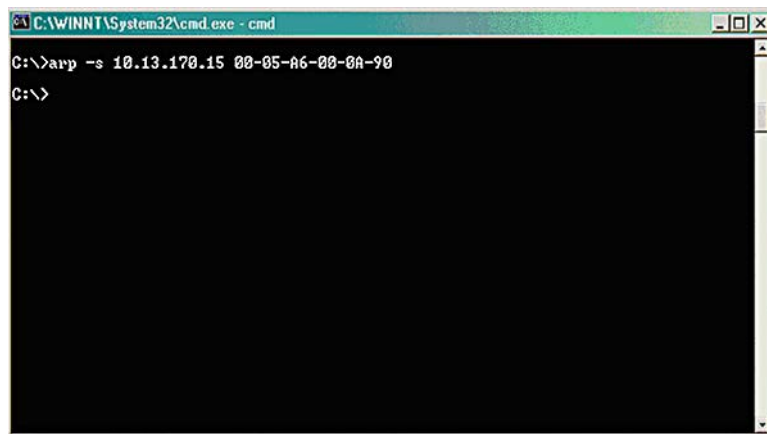


Figure 9. ARP-S Command Screen

NOTE: After the `arp -s` command is issued, the PCS4 changes to the new address and starts responding to ping requests, as described in the next step.

5. To verify that the new address has been set, execute a ping command by entering `ping`, followed by the new IP address, at the command prompt.

NOTE: Ping is a utility or diagnostic tool that tests network connections. It is used to determine if the host has an operating connection and is able to exchange information with another host.

Example: **ping 10.13.170.15**

Ping is a utility or diagnostic tool that tests network connections. It is used to determine if the host has an operating connection and is able to exchange information with another host.

The response should be the new IP address of the PCS4, as shown below.

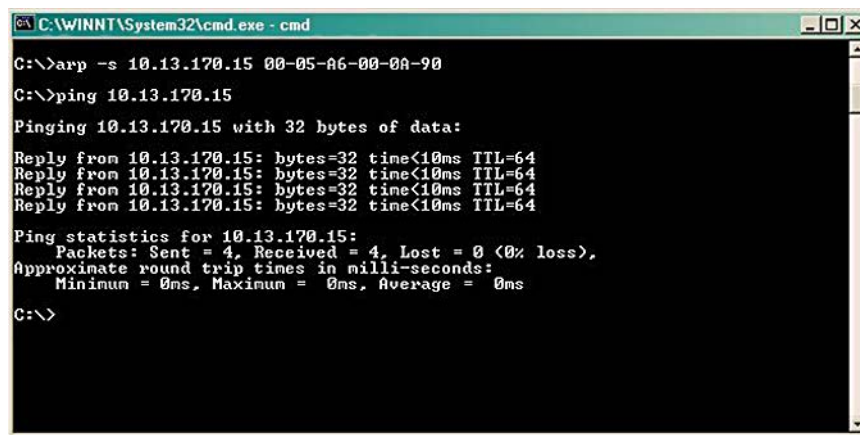


Figure 10. Screen Showing the Ping Command

You can reconnect using either Telnet or a web browser to verify that the update was successful.

6. After verifying that the IP address change was successful, issue the `arp -d` command at the DOS prompt to remove the address from the ARP table. For example:

```
arp -d 10.13.170.15
```

A space must separate `arp` from the hyphen (-).

Setting Up the Computer Using a Web Browser

To set up the PCS4 using a web browser, you must temporarily configure the computer to communicate with the interface. Then you can change the PCS4 default settings (IP address, subnet mask, and [optionally] administrator name and password) in order to use the unit on an intranet (LAN) or on the Internet (WAN). After you have set up the PCS4 for network communication, you can reset the computer to its original network configuration.

NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an absolute system reset, the passwords convert to the default, which is **extron**.

IPL T PCS4 LAN port defaults:

- **PCS4 IP address:** 192.168.254.254
- **Gateway IP address:** 0.0.0.0
- **Subnet mask:** 255.255.0.0
- **DHCP:** Off
- **Link speed and duplex level:** Auto detected

If you use an existing Ethernet LAN intranet, your network administrator can provide you with a unique IP address for the PCS4 or confirm whether you need to set up the PCS4 for Dynamic Host Configuration Protocol (DHCP) to have an address assigned automatically when you sign on.

Setting up the computer for IP communication

Follow these steps to set up communication between your computer and the PCS4.

NOTE: The procedure and illustrations in this section are for Windows XP. For other Windows versions, the screens may appear slightly different.

1. Open the Network Connections page as follows:
 - a. From the **Start** menu, select **My Network Places**.
 - b. From the **Network Tasks** left side-bar menu, select **View Network connections**.
2. Right-click **Local Area Connection**, then select **Properties** from the pop-up menu.

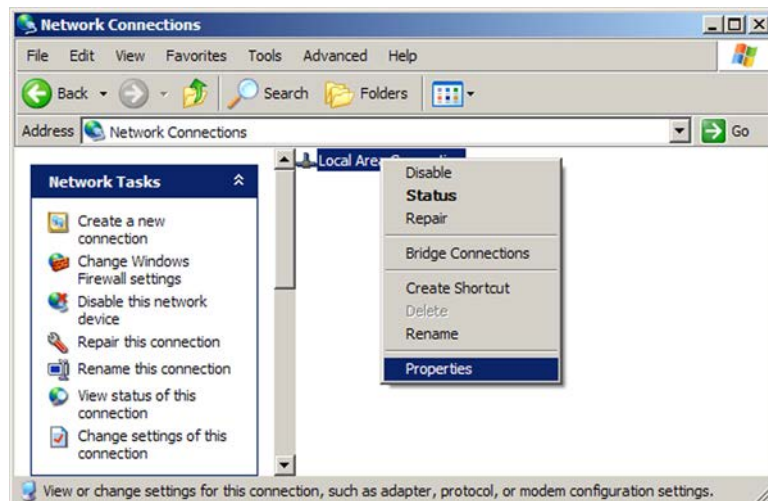


Figure 11. Network Connections Dialog Box

3. Select **Internet Protocol (TCP/IP)**, and click the **Properties** button. If **Internet Protocol (TCP/IP)** is not on the list, it must be added (installed). See your Windows user manual or the Windows online help system for information on how to install the TCP/IP protocol.

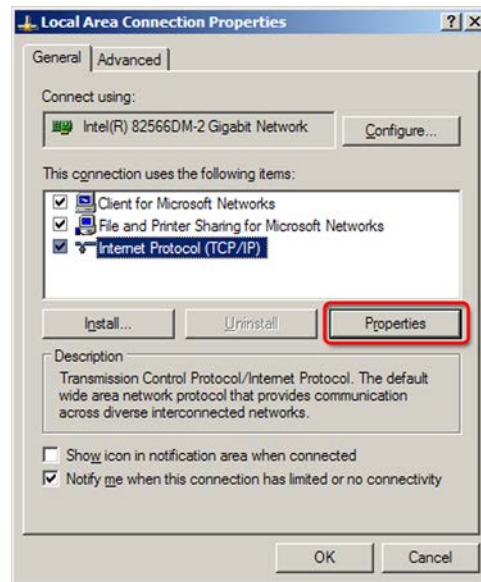


Figure 12. Internet Connection

4. Write down the current IP address of your computer and its subnet mask below. You will need to restore these settings to the computer later.
If an IP address automatically has been selected, make a note of that. If not, write down the following:

IP address :

Subnet mask :

5. Change the IP address of the computer temporarily so that it can communicate with the PCS4.
 - a. Select the **Use the following IP address:** radio button.
 - b. Enter the following values as shown below:
IP address: 192.168.254.253
Subnet mask: 255.255.0.0
Default gateway: Blank or 0.0.0.0
(The temporary IP address differs from the PCS4 factory default by one digit.)

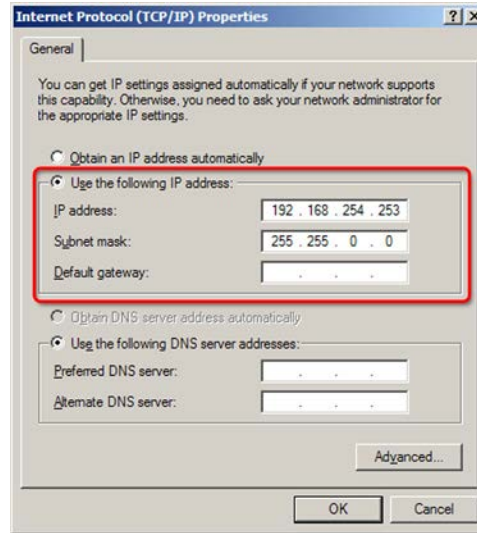


Figure 13. Enter the IP Address

- c. Click **OK** to save the changes, and exit the network setup.
- d. Reboot the computer if required for the changes to become effective.
6. Plug one end of a Category 5, 6, or 6E Ethernet crossover cable into the Ethernet (LAN) connector on the PCS4 rear panel (see [Setting Up the LAN Port](#) on page 6 and [Rear Panels](#) on page 5 for information on the RJ-45 LAN connector wiring). Plug the other end of the Ethernet cable into the Ethernet port on the computer.

NOTE: If you are using a network hub or switch between the computer and the PCS4, use a straight-through Category 5 cable instead of a crossover cable.

7. Set up the PCS4 IP address (see [Configuring the IPL T PCS4 using a web browser](#) for the procedure).

After the PCS4 has been reconfigured, an Ethernet (intranet or Internet) connection can subsequently be used to configure or control it.

NOTE: Both your computer and the PCS4 must be connected to the same LAN. Alternatively, you may use a crossover Ethernet cable to connect the interface directly to your computer Ethernet card.

8. After setting the PCS4 IP address, restore the previous IP configuration of the computer by following steps **1**, **2**, **3**, and **5** but using the original IP address settings that you wrote down in step **4**.

Configuring the IPL T PCS4 using a web browser

The default web pages that are preloaded on the PCS4 are compatible with popular web browsers such as Internet Explorer (version 5.5 or higher).

NOTE: The following instructions assume that you have already configured the Windows-based computer, connected it to the PCS4 LAN port, and powered on the interface.

1. Obtain a valid IP address, subnet mask, and gateway address for the PCS4 from your network administrator.
2. Launch a web browser (such as Internet Explorer) on the connected computer (for which you set up the network configuration earlier), and enter the PCS4 default address, `http://192.168.254.254`, in the address box. The PCS4 default web page is displayed.

3. Select the **Configuration** tab, then select **System Settings** from the side bar menu on the left of the screen. A configuration System Settings web page appears. A typical settings screen is shown below.

IP Link Default Web Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://10.13.197.52

Extron Electronics

Status Configuration File Management

Logged on: Admin Log Off 800.633

System Settings
Port Settings
Passwords
Email Alerts
Firmware Upgrade

www.extron.com

System Settings

Below are your Unit's basic System Settings. Most units will work with the default IP Settings without making any changes. If you require help changing your settings, please refer to the user guide.

IP Settings

Unit Name: IPL-T-PCS4-00-16-06

DHCP: ☐ On ☒ Off

IP Address: 10.13.197.52

Gateway IP Address: 10.13.0.100

Subnet Mask: 255.255.0.0

MAC Address: 00-05-A6-00-16-06

Firmware: 1.00

Model: IPL T PCS4

Part Number: 60-544-07

Submit Cancel

Date/Time Settings

Date: 4/16/2004

Time: 3:12 PM

Zone: (GMT-08:00) Pacific Time (US & Canada), Tijuana

Daylight Savings: ☒ On ☐ Off

Submit Cancel

Figure 14. Example of a Default System Settings Page

4. IP, gateway, and subnet mask addresses follow standard naming and numbering conventions and protocol (*nnn.nnn.nnn.nnn*). The IP network administrator should provide the addresses to be used with this interface.

Enter the new IP address assigned for the PCS4, the corresponding subnet mask, and gateway address, then click **Submit**.

The PCS4 takes approximately 2 minutes to store the new settings. After the IP address is changed, your computer loses communication with the PCS4 and a screen appears, indicating that the page cannot be displayed.

5. Close the browser.
6. After changing the PCS4 IP settings, change your computer TCP/IP settings back to their original configuration, and reboot if necessary. You are now able to access the PCS4 web pages to configure the front panel.

Using the Embedded Web Pages

The PCS4 features an embedded web server, which includes factory set web pages. These pages can be replaced with user-designed files, but the default web pages provide many basic features for monitoring, configuring, and controlling the PCS4 via a web browser. This section provides an overview of the embedded web pages. To access the web pages:

1. Launch a web browser (for example, Internet Explorer®) on your connected computer.
2. On the browser Address line, enter the PCS4 IP address. If a password has been set, the Enter Network Password dialog box opens.

NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an absolute system reset, the passwords convert to the default, which is **extron**.

If no password has been set, the PCS4 web page opens, displaying the **System Status** page. Skip steps **3** and **4**.

3. In the **User Name** field on the password window, enter text of your choice, or leave the **User Name** field blank.

A Windows-style dialog box titled "Connect to 10.13.197.50". It features a blue header bar with a key icon. The main area is light gray and contains the text "IPL T PCS4i". Below this, there are two input fields: "User name:" with a dropdown menu showing "dalance@extron" and "Password:" with a masked field of seven dots. A checkbox labeled "Remember my password" is checked. At the bottom are "OK" and "Cancel" buttons.

Figure 15. Password Prompt Window

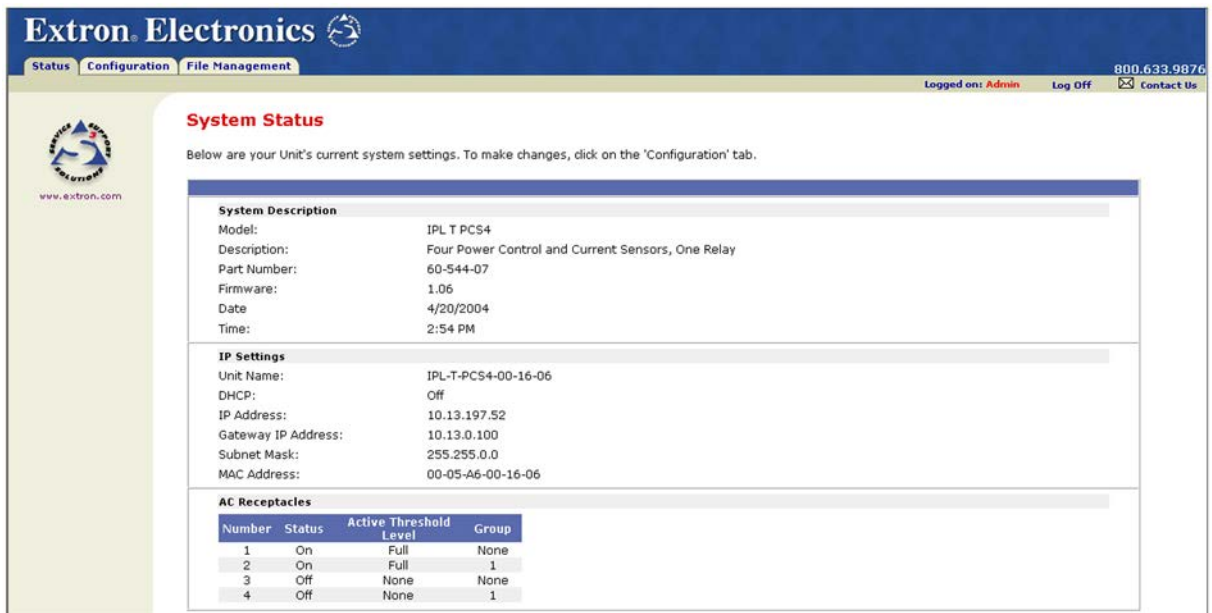
4. Enter the administrator password in the **Password** field, and click **OK**. The PCS4 web page is displayed.

NOTES:

- Passwords must contain 4 to 12 alphanumeric characters. Symbols and spaces are not allowed, and the passwords are case sensitive.
- Administrators have access to all of the web pages and are able to make changes to settings. Users can access only the System Status page.

Viewing the System Status

The System Status web page, accessed by clicking the **Status** tab, provides information on the current settings. Changes must be made via the Configuration web pages or SIS commands (see **SIS Programming and Control** on page 42). Personnel who have user access can view this page but cannot access the Configuration or File Management pages to make changes. Figure 17 shows an IPL T PCS4 System Status web page.

The screenshot shows the Extron Electronics website interface. At the top is a blue header with the Extron logo and navigation tabs: "Status", "Configuration", and "File Management". The "Status" tab is selected. Below the header, there's a status bar showing "Logged on: Admin", "Log Off", and "Contact Us". The main content area is titled "System Status" in red. Below this, a message says: "Below are your Unit's current system settings. To make changes, click on the 'Configuration' tab." The settings are organized into three sections: "System Description", "IP Settings", and "AC Receptacles".

System Description			
Model:	IPL T PCS4		
Description:	Four Power Control and Current Sensors, One Relay		
Part Number:	60-544-07		
Firmware:	1.06		
Date:	4/20/2004		
Time:	2:54 PM		

IP Settings			
Unit Name:	IPL-T-PCS4-00-16-06		
DHCP:	Off		
IP Address:	10.13.197.52		
Gateway IP Address:	10.13.0.100		
Subnet Mask:	255.255.0.0		
MAC Address:	00-05-A6-00-16-06		

AC Receptacles			
Number	Status	Active Threshold Level	Group
1	On	Full	None
2	On	Full	1
3	Off	None	None
4	Off	None	1

Figure 16. System Status Web Page

The System Status page displays information in the following categories:

- **System Description:** Includes product model, a brief description, part number, and firmware version, plus the current date and time.
- **IP Settings:** Displays the unit name, IP address, MAC address, and all other current IP settings.
- **AC Receptacles:** For each receptacle, shows whether the receptacle is turned on or off; the current power level threshold setting (Full, Standby, Not Set, or None); whether the receptacle is part of a group; and the alarm state.
- **Current Schedule:** Shows the day of the week and the time that any receptacle has been scheduled to power on and off.

Configuration

There are seven Configuration web pages, which only administrators can access. They are listed in the side-bar menu at the left of the Configuration screen. The following sections discuss the tasks that you can perform on these screens.

Specifying system settings

On the System Settings screen, you can set the date and time, and change the IP address information for the PCS4. To change the available system settings:

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System Settings

Below are your Unit's basic System Settings. Most units will work with the default IP Settings without making any changes. If you require help changing your settings, please refer to the user guide.

IP Settings

Unit Name: IPL-T-PCS4i-00-26-27

DHCP: ☐ Off ☒ On

IP Address: 10.13.197.50

Gateway IP Address: 10.13.0.100

Subnet Mask: 255.255.255.0

MAC Address: 00-05-A6-00-26-27

Firmware: 1.07

Model: IPL T PCS4i

Part Number: 60-544-09

Submit Cancel

Date/Time Settings

Date: 12/14/2004

Time: 3:37 PM

Zone: ((GMT-08:00) Pacific Time (US & Canada), Tijuana)

Daylight Savings: ☒ Off ☐ USA ☐ Europe ☐ Brazil

Submit Cancel

Figure 17. System Settings Screen on the Configuration Tab

1. On the Configuration page, select **System Settings** from the side-bar menu at the left edge of the screen. The System Settings screen appears, displaying either the factory default information for your PCS4, or the settings submitted most recently.
2. Enter your new information in the IP Settings section or select the date and time from the menus in the Date/Time Settings section.

IP settings

The following settings are available in the IP Settings section:

- **Unit Name:** The default is the product name followed by the last six digits of the MAC address. You can give the unit a new name (such as **LightsOn&Off** or **BoardroomA-PCS4**) consisting of up to 24 alphanumeric characters including the hyphen (-).

NOTE: The first character must be an alpha character, and the last character cannot be a hyphen. The unit name is not case-sensitive.

- **DHCP:** DHCP is a communications protocol that assigns addresses on the local network automatically. Select the **On** or **Off** radio button to enable or disable DHCP.
- **IP Address:** You can enter a new network address consisting of four sets of up to three digits, separated by periods (*nnn.nnn.nnn.nnn*).
- **Gateway IP Address:** A gateway is a device that connects your network with others that may be using different, incompatible communications protocols. You can enter your gateway address (obtained from your network administrator), using the same format that is used for the IP Address. (If there is no gateway, this field defaults to **0.0.0.0**.)
- **Subnet mask:** The subnet mask is used to split IP networks into a series of subgroups (subnets). The mask is a binary pattern that is matched up with the IP address to turn part of the host ID address field into a field for subnets. You can enter a new subnet mask address using the same format that is used for the IP Address.

Date and time settings

The following settings are available in the Date/Time Settings section.

NOTE: This section lets you set the date and time on your PCS4 unit. However, the passage of time is not reflected in the Date and Time fields on the web page. The screen continues to display the settings you entered and does not increment them as time passes. However, the PCS4 itself continues to keep the correct time internally, enabling you to schedule power on and off for the receptacles.

- **Date:** Select month, day, and year from the pull-down menus.
- **Time:** Select hours, minutes, and **AM** or **PM** from the pull-down menus.
- **Zone:** From the pull-down menu, select the time zone for the PCS4 location (number of hours offset from Greenwich mean time).
- **Daylight Savings:** Daylight savings time (DST) is a one-hour offset that is observed in some countries. You can select a radio button to set the PCS4 for daylight savings time for the US, Europe, or Brazil; or select **Off** to disable it.

The following daylight savings periods are observed:

- **US** — Starts the second Sunday in March and ends the first Sunday in November.
 - **Europe** — Starts the last Sunday in March and ends the last Sunday in October.
 - **Brazil** — Starts the third Sunday in October and ends the third Sunday in February. (Equatorial Brazil does not observe DST.)
3. When you have made all the desired changes in one section, click the Submit button at the bottom of the section. The new IP settings are displayed at the right of the fields in which you entered them. The new date and time settings are displayed in the fields in which you entered or selected them.
 4. Follow steps **2** and **3** to make changes in the other section, if desired.

Clicking **Cancel** in either section restores the previous settings, if the values you entered have not been submitted.

Assigning passwords

The Passwords screen allows you to assign passwords to the administrator and user access levels. The administrator password gives access to all IPL T PCS4 web pages, enabling the administrator to configure the PCS4.

The user password provides access only to the System Status web page. If you are logged in as user, you see only the **Status** tab with the System Status screen. You cannot make any configuration changes.

NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an absolute system reset, the passwords convert to the default, which is **extron**.

To assign passwords:

1. On the Configuration page, select **Passwords** from the side-bar menu.
2. Enter the new administrator password in the **Administrator Password** field.

NOTE: Passwords must contain 4 to 12 alphanumeric characters. Symbols and spaces are not allowed, and the passwords are case sensitive.

3. In the **Re-enter Admin Password** field, enter the same password again to confirm it.
4. If you want to assign a user password, enter it in the **User Password** field.

NOTE: You cannot assign a User password unless an administrator password has either been assigned or is being assigned at the same time.

5. Reenter the same user password in the **Re-enter User Password** field.

Figure 18. Passwords Screen with Administrator and User Passwords Entered

6. Click **Submit** to set the passwords.

Removing passwords

NOTE: Deleting the administrator password also deletes the user password.

To remove a password:

1. On the Configuration page, select **Passwords** from the sidebar menu.
2. In the **Administrator Password**, the **User Password**, or both fields, delete the characters that are there, and press the <Spacebar> on your computer keyboard to enter a space.
3. Repeat step 2 in the **Re-enter Admin Password**, the **Re-enter User Password**, or both fields.
4. Click **Submit**.

Entering e-mail addresses for alerts

If you have created scheduled events or monitoring tasks on the PCS4, you can write an e-mail alert with a message corresponding to that event or task (for example, a change in power level for one of the attached devices). The e-mail alert can notify up to 48 recipients at one time; the Email Alerts screen lets you enter up to 48 e-mail addresses.

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Email Alerts

The settings below will allow you to configure your unit to send email alerts. Click 'Edit' and enter the email address to send a message to, and the file name that contains the message. File names must be alpha-numeric and are limited to 7 characters including the .eml file extension. Click 'Save' to save the change.

Email Settings

Mail IP Address: 10.1.0.5 Edit

Domain Name: extron.com

	Email Address	File Name	
1.	dlance@extron.com	1.eml	Save
2.			Edit
3.			Edit
4.			Edit
5.			Edit
6.			Edit
7.			Edit
8.			Edit
9.			Edit
10.			Edit
11.			Edit
12.			Edit
13.			Edit
14.			Edit
15.			Edit
16.			Edit
17.			Edit
18.			Edit
19.			Edit

Figure 19. E-mail Alerts Screen (Upper Portion)

To edit notification e-mail addresses:

1. On the side-bar menu on the **Configuration** tab, click **Email Alerts**.
2. On the **Email Alerts** screen, click the **Edit** button located to the right of the **Mail IP Address** and **Domain Name** fields. The screen goes into **Edit** mode, and the **Edit** button changes to **Save**.
3. Enter your mail server IP address and your domain name in the appropriate fields (this information is available from your network administrator).
4. Click **Save** to save the information.
5. Click the **Edit** button at the end of the first address row in which you want to enter a new address or edit the existing one. The **Edit** button changes to **Save** (see figure 20).
6. Enter the e-mail address of the alert recipient in the numbered box in the **Email Address** column.
7. In the **File Name** column, enter the name (seven characters maximum) of the file containing the alert message. The message file name must have the extension **.eml**.

NOTE: Due to the seven-character limit for full file names, it is recommended that you use numeric file names (for example, 1.eml, 24.eml, and so forth). Numeric titles reduce the characters in the file name and assist in keeping the alert files organized. However, alphabetic titles are permitted.

8. Click the **Save** button beside the file name that you entered. The e-mail alert information is saved on the PCS4, and the Save button becomes Edit again.
9. Repeat steps 5 through 8 for each e-mail recipient address that you want to add or edit.

Upgrading firmware

The Firmware Upgrade screen lets you browse to locate and upload a new version of firmware for your unit. The uploaded file must have the file extension **.S19**.

NOTE: The PCS4 .S19 file is not the same as the .S19 files of other products and is not interchangeable with the firmware upgrade files of any other product.

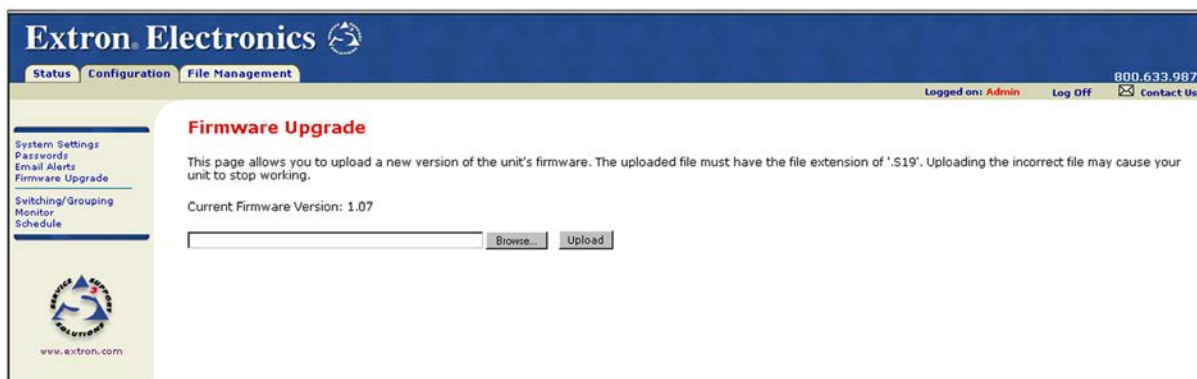


Figure 20. Firmware Upgrade Screen

To upload a new version of firmware:

1. On the side-bar menu of the **Configuration** tab, click **Firmware Upgrade**. The Firmware Upgrade screen is displayed, showing the version of firmware that is currently loaded.
2. Click **Browse** to open a Windows file selection window.
3. On the file selection window, locate the new firmware version file on your server and double-click it. (Firmware files must have the extension .S19.) The firmware file name and path are displayed in the Current Firmware Version section on the Firmware Upgrade screen.
4. Click **Upload**. When the firmware upgrade is complete, the Power LED on the unit blinks three times.

NOTE: If you attempt to upload a file with an extension other than .S19, the PCS4 recognizes it as invalid and ignores it, reverting to the factory installed firmware version.

Managing receptacles

On the Switching/Grouping screen, you can switch power on and off to each individual receptacle, group the receptacles together, and power each group on and off. You can also view the threshold settings (Full, Standby, None, or Not Set) indicating the device power level at which the alarm relay will be activated for each receptacle.

NOTE: You cannot set the reference thresholds on this screen. This can be done only from the IPL T PCS4 front panel or via SIS commands. See **Setting Power Level Reference Thresholds** on page 9 or **SIS Programming and Control** on page 42 for information on setting thresholds from the front panel or via SIS commands.

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Switching/Grouping

Using the radio buttons below, you have the ability to power on or off any individual receptacle. Receptacles can also be grouped by selecting the appropriate radio button. All selection must be confirmed by clicking the submit button. The threshold reading will show the status of the receptacle or if the threshold levels have not been configured it will indicate "not set".

Receptacle	Power	Threshold Status	Group Number
1	☐ On ☒ Off	Not Set	☒ None ☐ 1 ☐ 2 ☐ 3
2	☒ On ☐ Off	Not Set	☒ None ☐ 1 ☐ 2 ☐ 3
3	☒ On ☐ Off	Not Set	☒ None ☐ 1 ☐ 2 ☐ 3
4	☒ On ☐ Off	Not Set	☒ None ☐ 1 ☐ 2 ☐ 3

Submit Cancel Refresh

Figure 21. Switching/Grouping Screen

Switching power to receptacles on and off

To turn power to receptacles on and off:

1. On the Configuration tab, select **Switching/Grouping** from the side-bar menu.
2. In the Power column, select the **On** or **Off** radio button beside the number of each receptacle that you want to switch. If you want to switch a group of receptacles, select **On** or **Off** for one of the receptacles in that group (see Grouping receptacles, below).
3. Click **Submit** to put your changes into effect.

NOTE: If you turn power on by pressing the receptacle button on the front panel while this screen is displayed, the screen does not change to reflect your actions until you click Refresh.

Grouping receptacles

You may want to group two or more receptacles together to ensure that they are switched on or off at the same time. You can create up to three groups. To group receptacles:

1. Locate the number of the first receptacle that you want to group.
2. In the **Group Number** column, select the radio button for the group number (**1**, **2**, or **3**) to which you want to assign the receptacle.
3. Repeat steps **1** and **2** for the rest of the receptacles that you want to group with the first one.
4. When you have made all desired grouping selections, click **Submit**.

NOTE: After receptacles have been grouped, any power selection that you make for one of the grouped receptacles is also performed on the others in that group when you click **Submit**.

If you do not want to group a receptacle with any others, select **None** for it.

Monitoring the receptacles and setting the alarm

The Monitor screen on the **Configuration** tab lets you monitor each receptacle for any change in its power or its reference threshold condition (full or standby power). You can also configure the alarm relay and set up the alarm to sound, send an e-mail notification, or both if any condition at a receptacle changes.

This screen is updated continually. In addition, you can update it by clicking **Refresh**. **Refresh** also removes any settings that have been entered but have not been submitted, and returns the entire screen to the settings that were saved previously.

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Monitor

The page below is the control for monitoring settings and alarm relay settings. A receptacle may be monitored for a change in either a receptacle power or reference threshold condition. Once you have completed your selections, click the submit button to save the monitoring settings. When a monitored condition has been detected and if a valid e-mail address is entered, an e-mail will be sent with the status of the receptacle and the alarm status will be updated. A silence button will appear and will allow the user to manually turn off the alarm.

In the Alarm Relay Settings section, a user can change the initial state, the action of the relay alarm, the duration (if applicable) and the condition and/or elapsed time to cancel the alarm. All actions can be cancelled either by a selected conditional change or by an expired elapsed time. Click the submit button to save the alarm relay settings.

Monitoring Settings

Receptacle	Enable	Condition	Send E-mail	Activate Relay	Alarm Status
1	☒	Receptacle: Off	DLance@extron.com	☒	active
2	☐	Receptacle: Off		☐	inactive
3	☐	Receptacle: Off		☐	inactive
4	☐	Receptacle: Off		☐	inactive

Submit Cancel

Alarm Relay Settings

Initial State	Action	Duration (seconds) ON	Duration (seconds) OFF	Cancel Alarm when:	Duration
Open	Oscillate	0.25s	0.25s	Any Change	1 min

Submit Cancel

Refresh

Figure 22. Monitor Screen

To set up receptacle monitoring and configure the alarm, follow these steps:

1. On the side-bar menu on the **Configuration** tab, click **Monitor**.
2. In the Monitoring Settings, the Alarm Relay Settings section, or both, enter your selections (described in the following sections).
3. When you are finished making selections in one section, click the **Submit** button at the bottom of the section to implement your changes.

If you want to undo all the entries you made in this section, click **Cancel** instead of **Submit**.

Monitoring Settings section

In this section, you can specify the following settings for each receptacle by making selections in the row beside its number.

- **Enable:** Select the check box in this column to initiate monitoring of the receptacle. If this box is not checked, all the other fields in the row are unavailable for selection.
- **Condition:** From the pull-down menu, select the condition that will be monitored. Options include receptacle or device power on or off; Full, Standby, or None power threshold levels; or any change in conditions at the receptacle.
- **Send E-mail:** Enter an e-mail address to which the PCS4 will send a preconfigured notification if the selected condition is met.

- **Activate Relay:** Select this check box to specify that the relay alarm will sound (activate) if the selected condition is met. If this box is not selected, any changes you make to the alarm relay settings are ignored.
- **Alarm status:** Indicates whether or not the PCS4 has detected the condition that is being monitored. This column can display the following:
 - **Inactive** — Appears when the receptacle is not being monitored, or the condition being monitored has not been detected.
 - **Active** — Appears in red when the PCS4 detects the condition for which the receptacle is being monitored. In addition, a **Silence** button appears at the right of the status, and a pulsing red light icon appears by the number of the receptacle for which the condition was met.
 - **Silenced** — Appears in red when you click the **Silence** button to clear the monitored condition. In addition, the pulsing red light icon is replaced by an exclamation point icon (!).

To reset the alarm status, deselect and reselect the **Enable** check box for the receptacle being monitored, then click **Submit**. The Alarm Status column displays **inactive** again and the ! icon is removed.

Alarm Relay Settings section

In this section, you can configure the alarm relay by making selections in the following fields.

NOTE: The **Activate Relay** check box must be selected for these settings to take effect.

- **Initial State:** Select **Open** or **Closed** from the pull-down menu for the initial state of the alarm relay. (The default is **Open**.)
- **Action:** From the pull-down menu, select the way in which the alarm will respond when activated. This depends on the relay setting in the **Initial State** column.
 - **Activate** — Steady tone if the initial state of the relay is set to On. If the initial state is set to Off, this option turns the alarm relay off.
 - **Pulse** — Alarm turns on for the selected duration of seconds, then stops.
 - **Oscillate** — The alarm is on for a specified duration of seconds, then off for a specified period, producing an intermittent tone.
- **Duration (seconds):** From the pull-down menus, select the length (in seconds) of the alarm tone action selected in the Action section (**Pulse** or **Oscillate** only).
 - For **Pulse**, you can set the length of the single tone (**On** menu).
 - For **Oscillate**, you can set the length of the repeating tone (**On** menu) and the amount of time between tones (**Off** menu).
- **Cancel Alarm when:** From one of the following menus, select the condition that will stop the alarm tone.
 - **Condition Changes** — Select the type of change in conditions that will make the alarm stop sounding. (Selecting **Manual** specifies that the tone will not stop without user intervention via the front panel, the powered device, or SIS commands.)
 - **Duration** — Select the number of minutes the alarm will continue to sound before it shuts off.

Scheduling power to receptacles

The Schedule screen on the **Configuration** tab lets you schedule when power to the receptacles is turned on and off. You can schedule receptacles individually to turn on or off at desired times, or you can select a group of receptacles to turn on or off at one time. Clicking the **Clear Schedule** button deletes all schedules. You may want to set up your schedule for a week at a time, or a day at a time.

To access the Schedule screen, click **Schedule** on the side-bar menu on the Configuration screen.

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Schedule

Schedule

The table below indicates the current set schedule. Receptacles can be turned on or off at a desired time individually or by group selecting the desired row/column heading. When clicking on the links below, the appropriate selection menu for scheduling will appear. Clicking the 'Set' button will cause the changes to take effect. The 'Clear Schedule' button will eliminate all schedules. When choosing the time, there is an option for canceling the schedule by selecting the '-' for both hours and minutes and clicking the set button.

Set Schedule For

Receptacle 2: Power ON: 1 :00 PM

Sun ☐ Mon ☒ Tue ☐ Wed ☐ Thu ☒ Fri ☐ Sat ☐ Set

Receptacle	Power	Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	On	-	5:00 AM	5:00 AM	5:00 AM	5:00 AM	-	-
	Off	-	6:30 PM	5:30 PM	6:30 PM	5:30 PM	-	-
2	On	-	-	-	-	-	-	-
	Off	-	-	-	-	-	-	-
3	On	-	-	-	-	-	-	-
	Off	-	-	-	-	-	-	-
4	On	-	-	-	-	-	-	-
	Off	-	-	-	-	-	-	-

Clear Schedule Refresh

Figure 23. Schedule Screen Showing Fields for Individual Receptacle Scheduling

Scheduling an individual receptacle

To schedule power on and off to an individual receptacle, follow these steps:

1. Locate the number of the receptacle that you want to schedule, and click **On** or **Off** in the **Power** column beside it. A Set Schedule For section opens, displaying the selected receptacle number, the power selection (**On** or **Off**), and menus from which to select the hour, minute, and **AM** or **PM**. (figure 24 shows the Schedule screen with a Set Schedule For section displayed for receptacle 2, with power on at 1:00 pm Monday and Thursday.)
2. From the pull-down menus, select the time (hour and minutes and **AM** or **PM**) at which you want power turned on or off to the selected receptacle.
3. Select the check boxes for the days of the week you want the receptacle to be turned on, off, or both at the time you specified.
4. When finished, click **Set** to save your settings for that receptacle.
5. Repeat steps 1 through 4 for the remaining power schedule setting for the receptacle you just scheduled, or for other receptacles that you want to schedule.

Scheduling receptacles by day of the week

There are two types of schedules that you can set up for one day of the week. The two setup procedures are described below.

All receptacles on and off:

Follow this procedure to select both the powering on and powering off times for all desired receptacles on one day of the week.

1. Click on a day of the week at the top of a column in the scheduling table. Two Set Schedule For sections open, one for Power On and one for Power Off. These sections contain pull-down menus for selecting powering on and off times as well as check boxes for selecting the receptacles you want to schedule.

Schedule

The table below indicates the current set schedule. Receptacles can be turned on or off at a desired time individually or by group selecting the desired row/column heading. When clicking on the links below, the appropriate selection menu for scheduling will appear. Clicking the 'Set' button will cause the changes to take effect. The 'Clear Schedule' button will eliminate all schedules. When choosing the time, there is an option for canceling the schedule by selecting the '-' for both hours and minutes and clicking the set button.

Set Schedule For

Tuesday: Power ON: 7 : 00 AM

Receptacle: 1 ☐ 2 ☐ 3 ☒ 4 ☒ **Set**

Tuesday: Power OFF: - : - AM

Receptacle: 1 ☐ 2 ☐ 3 ☐ 4 ☐ **Set**

Scheduling

Receptacle	Power	Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	On	-	8:00 AM	-	-	-	-	-
	Off	-	5:00 PM	-	-	-	-	-
2	On	-	8:00 AM	-	-	-	-	-
	Off	-	5:00 PM	-	-	-	-	-
3	On	-	-	-	-	-	-	-
	Off	-	-	-	-	-	-	-
4	On	-	-	-	-	-	-	-
	Off	-	-	-	-	-	-	-

[Clear Schedule](#) [Refresh](#)

Figure 24. Schedule Screen Showing Fields for Daily Receptacle Scheduling

2. In either the Power On or Off section, select the hours, minutes, and **AM** or **PM** from the menus; and select the check boxes for the receptacles that you want to schedule.
3. In the section in which you made your selections, click **Set** to enter your choices. The section closes.
4. If desired, repeat steps 2 and 3 in the other Set Schedule For section.

If you do not want to make selections in the remaining Set Schedule For section, click **Refresh** to close the section.

NOTE: If you do not click **Set** before making any selections in the other field, the second field selections override those that you entered in the first.

5. Repeat steps 1 through 4 for any additional days that you want to schedule.

One receptacle, power on or off:

Follow this procedure if you want to schedule only powering on or powering off of only one receptacle on one day.

1. In the scheduling table, click on the time displayed or the - symbol in the cell beside On or Off for the receptacle number that you want to set, in the column for the day you want to schedule. A Set Schedule For section appears.

In the following illustration, the red box indicates the cell that was selected: receptacle 2, powering off, on Tuesday.

Set Schedule For

Receptacle 2: Tuesday: Power OFF: : : AM

Scheduling

Receptacle	Power	Current Schedule						
		Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	On	8:00 AM	8:00 AM	8:00 AM	8:00 AM	8:00 AM	8:00 AM	8:00 AM
	Off	4:00 AM	5:00 PM	-	-	-	-	-
2	On	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM
	Off	5:10 AM	5:00 PM	-	-	-	-	-
3	On	6:30 AM	-	7:00 AM	-	-	-	-
	Off	4:00 AM	-	4:00 PM	-	-	-	-
4	On	8:00 PM	-	7:00 AM	-	-	-	-
	Off	5:10 AM	-	4:00 PM	-	-	-	-

Figure 25. Set Schedule For Field to Set Powering Off for a Single Receptacle

2. In the Set Schedule For section, select the hour, minutes, and AM or PM from the drop-down menus.
3. Click **Set** to enter your settings. The time that you entered appears in the cell that you selected on the Scheduling table.

File Management

The File Management web page allows you to upload and delete files from the server. File names must contain valid alphanumeric characters and underscores; spaces and special characters (symbols) are not allowed. Only personnel with administrator access can view these pages and make changes.

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File Management

File Management allows you to upload and delete files from the server. File names must contain valid alpha-numeric characters. Spaces and special characters are not allowed. To add a Directory, enter the directory name in the field provided and click 'Add Dir'. Then 'Browse' and upload a file to the new directory. To delete a file or directory, click on the 'Delete' button next to the file or directory name. The 'Delete All' button deletes all contents of the current directory. If the current directory is 'ROOT', all files on the system will be deleted.

Dir: C:\Documents and Settings\Lbitter\My Documents\IPL

Select: All Files: 2 Bytes Left: 480,512

Files	Date	File size	Delete All
EPS			
ipltocs4w-airootkiosk2bw.eps	Thu 16 Dec 2004 21:01:06 GMT	437,671	Delete
PDF			
ipltocs4_bk_cvr.pdf	Thu 16 Dec 2004 21:01:46 GMT	50,797	Delete

Figure 26. File Management Screen with Two Files Uploaded

Uploading files to the web page

The IPL T PCS4 has approximately 900 KB of space for user files to be uploaded. The Bytes Left field shows how much space remains for uploading files.

To upload files:

1. Select the **File Management** tab on the IPL T PCS4 web page.
2. On the File Management screen, click **Browse** to open a Windows file selection window.
3. On the file selection window, locate and select a file to upload. (Only one file at a time can be selected.) The file name and directory path appear in the **Browse** field on the File Management screen.
4. Click **Upload File** while the file is uploading, the button label changes to **Uploading...**

When the uploading is complete, the uploaded file name appears in the Files list with a time stamp showing GMT time, and the button returns to its original state. (Files are listed separately under headings of their extensions.)

Adding a directory

To add a directory or folder to the IPL T PCS4 file system:

1. Enter a name for the directory in the **Dir:** field, following the slash (/).
2. Click **Add Dir**.
3. With the directory name displayed, perform the uploading files procedure described in the previous section to add a file to the directory. The directory name appears at the top of the **Files** column, preceded by a slash (/).

If no files are added to the new directory, it is deleted.

To add more files to the directory, click the directory name to open it, then use the uploading files procedure. To exit the directory, click **(root)**.

Other file management functions

On the File Management screen, you can also do the following:

- Open and view an uploaded file by clicking on its name.
- Delete an uploaded file by clicking the **Delete** button beside it.
- Delete all uploaded files and directories by clicking the **Delete All** button.

Custom Web Pages

On the PCS4, custom web pages are supported. You can determine the layout and appearance of the pages displayed on your screen. Server side includes (SSIs) enable you to obtain information from the unit and display the information on web pages. Query strings allow you to send information and commands to the unit to change its configuration or provide you with feedback (see [Query Strings](#) on page 35).

Server Side Includes (SSIs)

Server sides includes are a type of HTML comment that directs the web server to dynamically generate data for a web page whenever it is requested. SSIs typically use SIS commands to communicate with the products or attached control devices. Using SSIs, you can design and display custom pages, with PCS4 information provided by the SIS commands.

The basic format for an Extron SSI is:

```
<!--#echo var=x-->
```

where *x* is the SIS command to be executed.

When a web page is requested, the web server removes the SSI and replaces it with the answer to the SIS command within quotes.

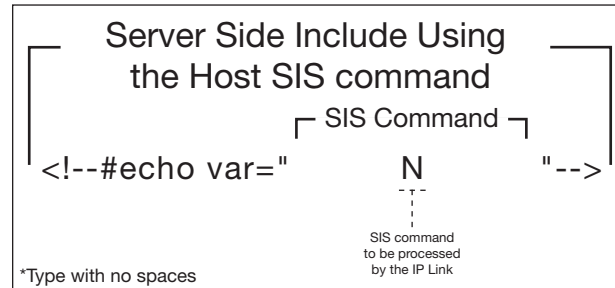


Figure 27. Example of SSI Command

In the figure 28, the N command is used to request the PCS4 part number.

Query Strings

A query string is the portion of a URL that appears after the question mark. The query string contains parameters or instructions for the web server to execute. The basic format for a query string within a link is:

```
<a href=index.html?cmd=x>Receptacle 1</a>
```

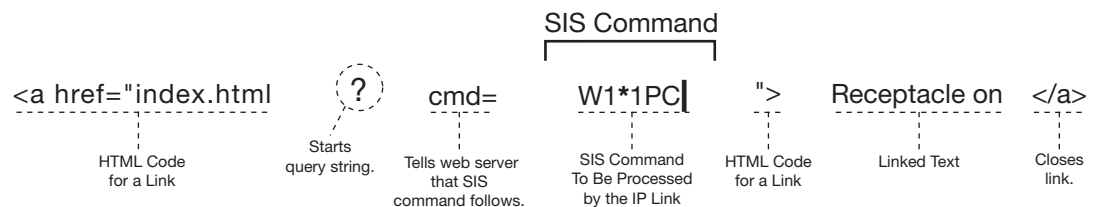
where *x* is the SIS command to be executed.

When a link is accessed on a web page, the URL is passed to the web server to tell it which web page to return to the browser. The portion of the URL after the question mark is the query string, which contains the SIS command that the IPL T PCS4 will remove and execute.

Like SSI formatted commands, query strings can use any valid SIS command.

The query string in figure 29 turns off DHCP on the IP Link device.

URL with a Query String Using an SIS Command



**Enter with no spaces.*

Figure 28. Example of a Query String Command

Code example

Figure 30 shows a practical use for both SSIs and query strings. In this example, the HTML source code contains three SSI commands.

```
<html>
<head><title>Example 1</title></head>
<h2 b>HTML Example #1</h2 b>
<body>
The following lines demonstrate how to read status from the IPLink Product:
IPLink Product Name: <b><!--#echo var="1"--></b>
<br>
IPLink Product Description: <b><!--#echo var="2"--></b>
<br>
IPLink Product Part Number: <b><!--#echo var="N"--></b>
</body>
</html>
```

SSI commands

Figure 29. Web Page HTML Source Code Document Showing SSIs

The SSI commands in figure 31 request the product name, product description, and product part number of an IP Link device.

```
<html>
<head><title>Example 1</title></head>
<h2 b>HTML Example #1</h2 b>
<body>
The following lines demonstrate how to read status from the IPLink Product:
IPLink Product Name: <b>IPL T PCS4</b>
<br>
IPLink Product Description: <b>Four Switched 110v AC Receptacles
with Current Threshold Sensing</b>
<br>
IPLink Product Part Number: <b>60-544-07</b>
</body>
</html>
```

Figure 30. Resulting HTML Source Code Served by an IP Link web Server

In figure 32 the commands executed by the PCS4 in response to SSI references have been replied to, and were implemented when the web page was served to the browser.

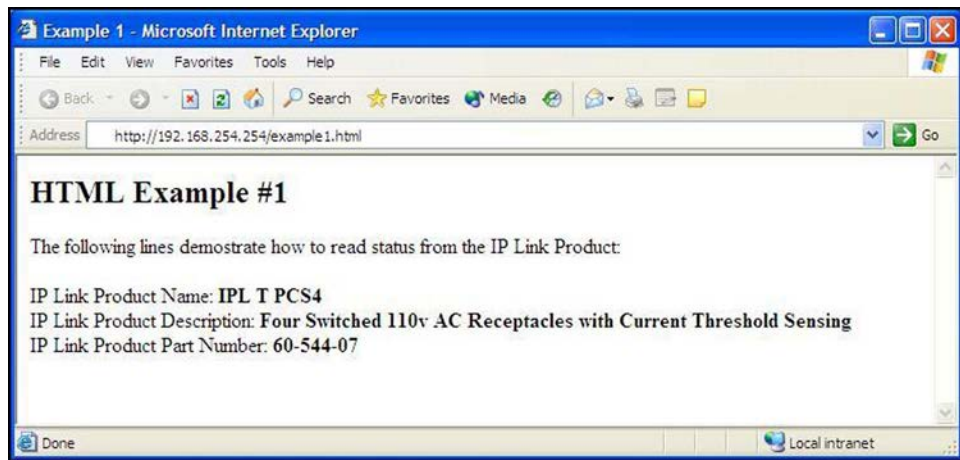


Figure 31. Browser View of Previous HTML Source Code

URL Encoding

URL (Universal Resource Locator) encoding is a method of using ASCII hexadecimal characters to display specific characters in a URL. It is used for several reasons. On some operating systems, certain characters are unsafe or not available, and others are reserved by the HTML or URL specification. URL encoding is used to insure compatibility and functionality with most Internet browsers. As a general rule, use the hexadecimal encoding method shown below when these characters appear in your URLs.

The following types of characters do not require encoding in a URL:

Alphanumerics	0-9 a-z A-Z
Special characters	\$ _ . + ! * () ,
Reserved characters	; / ? : @ = & When used for their reserved purposes, these characters do not require encoding within a URL.

Figure 32. Characters that Do Not Require Encoding

Reserved characters

Reserved characters should not be encoded when they appear in their conventional meaning in a URL. For example, do not encode the slash (/) when using it as part of the URL syntax. Only encode unsafe characters (defined in the table in the next section) in your URLs.

The following table lists reserved characters.

Characters		Hex	Dec
\$	Dollar	24	36
&	Ampersand	26	38
+	Plus	2B	43
,	Comma	2C	44
/	Forward slash (virgule)	2F	47
:	Colon	3A	58
;	Semi-colon	3B	59
=	Equal	3D	61
?	Question mark	3F	63
@	At symbol	40	64

Figure 33. Reserved Characters

Unsafe characters

URLs use some characters for special use in defining their syntax and these characters should be encoded. For various reasons, these characters may possibly be misunderstood within a URL. The following table lists unsafe characters.

Characters		Hex	Dec
	Space	20	32
	Quotation marks	22	34
<	Less than symbol	3C	60
>	More than symbol	3E	62
#	Pound	23	35
%	Percent	25	37
{	Left brace	7B	123
}	Right brace	7D	125
	Vertical bar (pipe)	7C	124
\	Backslash	5C	92
^	Caret	5E	94
~	Tilde	7E	126
[	Left square bracket	5B	91
]	Right square bracket	5D	93
`	Grave accent	60	96

Figure 34. Unsafe Characters

A/V Device Power Control

Power control of A/V devices may be accomplished once the PCS4 interface has been connected and configured. These include web pages and Telnet.

Custom Web Pages

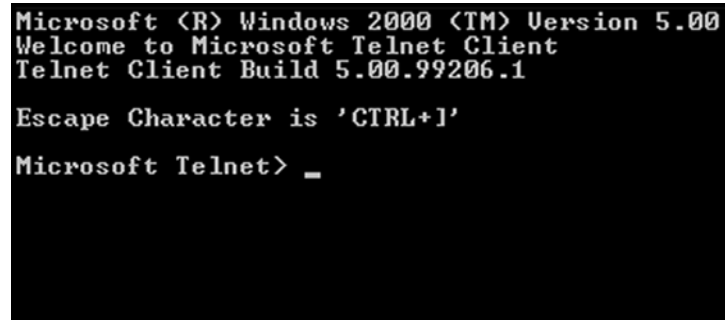
These pages can either be modified versions of the existing web pages, or new web pages developed in the field.

Web page development can be done with a web site development tool such as FrontPage or Dreamweaver. Custom web pages can be loaded using the embedded File Management web page (see [File Management](#) on page 33).

Accessing and Using Telnet (Port 23)

Telnet, short for Telecommunications Network, provides a way for you to connect to a computer or server (in this case, the PCS4 interface) on a network. Once connected via Telnet, you can send ASCII serial commands to configure and monitor the PCS4 settings (see [Command and Response Table for SIS Commands](#) on page 45).

1. Click **Start**, then **Run**, then enter **Telnet**, and click **OK**. The Telnet program starts (see [figure 35](#) on page 39).



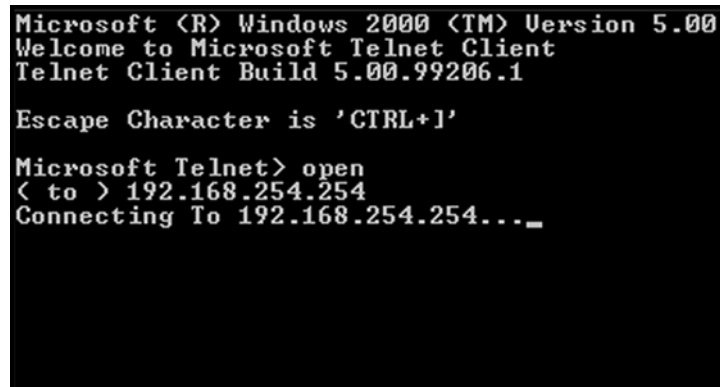
```
Microsoft (R) Windows 2000 (TM) Version 5.00
Welcome to Microsoft Telnet Client
Telnet Client Build 5.00.99206.1

Escape Character is 'CTRL+I'

Microsoft Telnet> _
```

Figure 35. Telnet Command Prompt

2. At the command prompt, enter **open**.
3. At the **<to>** prompt, enter the IP address of the PCS4 unit. (The default IP address is 192.168.254.254. If the address was changed in the setup or configuration process, use the new address.) Telnet defaults to port 23.



```
Microsoft (R) Windows 2000 (TM) Version 5.00
Welcome to Microsoft Telnet Client
Telnet Client Build 5.00.99206.1

Escape Character is 'CTRL+I'

Microsoft Telnet> open
< to > 192.168.254.254
Connecting To 192.168.254.254..._
```

Figure 36. Connecting to the IP Address

4. If passwords were set up for the connected system, you are prompted to log in as an administrator or a user. Otherwise, the system responds with a carriage return and line feed (**<cr/lf>**).

NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an absolute system reset, the passwords convert to the default, which is **extron**.

5. Once you are connected, you can enter SIS commands as desired.
6. When you are finished entering commands to the interface, press **< Ctrl +] >** at the command prompt to exit Telnet.

Troubleshooting

Turn on the equipment in the following order:

1. The PCS4 power control interface
2. The power receptacles on the PCS4
3. The connected output devices

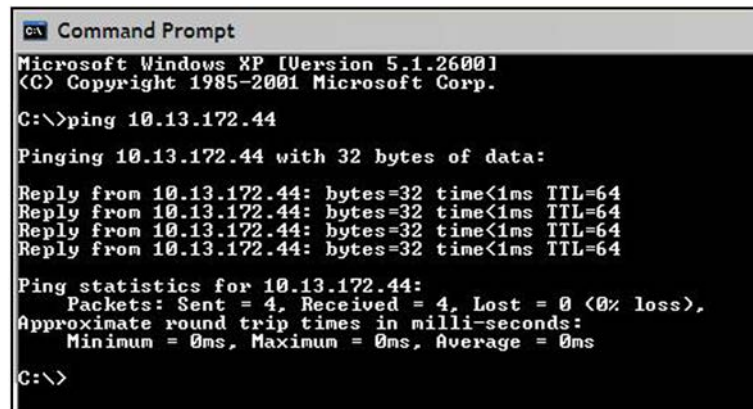
If the output A/V device cannot be powered on, check the following:

Power Connections

1. Make sure that the receptacle for each device is receiving power. The red Power LED of the receptacle lights if the receptacle is powered on. If necessary, press the receptacle button to apply power.
2. Ensure that all devices are plugged in properly to the rear panel of the PCS4 and switched on if applicable.

Network Connections

1. Check the network connections and make adjustments as needed. The Link LED is solid green if a network connection is detected. The yellow ACT LED blinks if there is activity on the network. If these LEDs are not lit, either the cable is faulty or not plugged in, or the wrong type of cable is being used (see [Connecting the Devices](#) on page 7).
2. At the DOS command prompt, try to ping the unit by entering ping and the IP address assigned to your PCS4 (see [Setting Up the Computer Using ARP](#) on page 16). If the PCS4 is connected, you receive the following response to your Ping command:



```
Command Prompt
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\>ping 10.13.172.44

Pinging 10.13.172.44 with 32 bytes of data:

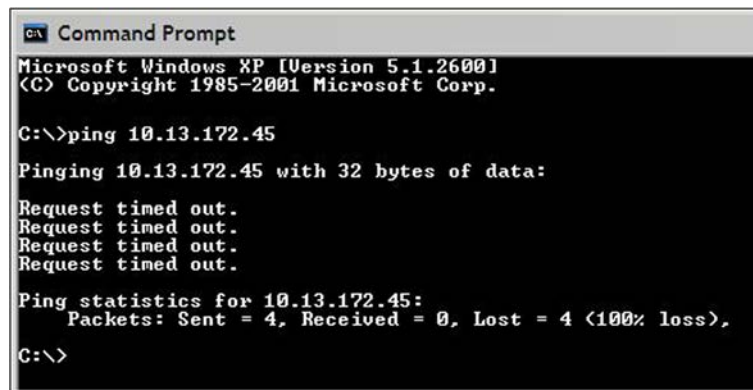
Reply from 10.13.172.44: bytes=32 time<1ms TTL=64
Reply from 10.13.172.44: bytes=32 time<1ms TTL=64
Reply from 10.13.172.44: bytes=32 time<1ms TTL=64
Reply from 10.13.172.44: bytes=32 time<1ms TTL=64

Ping statistics for 10.13.172.44:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

Figure 37. Successful Ping Command Response

If the connection was not made, the following response appears:



```
CA Command Prompt
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\>ping 10.13.172.45

Pinging 10.13.172.45 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 10.13.172.45:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>
```

Figure 38. Response to an Unsuccessful Ping Command

If you get a response indicating that the ping was unsuccessful, do the following:

- Make sure your unit is using the appropriate subnet mask (check with your system administrator).
 - Make sure your computer does not have a software firewall program which might block the IP address of the unit.
3. If contact is established with the unit, but the unit web pages cannot be accessed by your web browser, verify (in the Options or Preferences menu) that your web browser is configured for direct network connection and not set up to use a proxy server.

If you are still experiencing problems, contact the Extron S3 Sales & Technical Support Hotline (see [Extron Warranty](#) on page 60).

Downloading Global Configurator Software

The Global Configurator (GC) software is an alternative to using the web pages to configure and monitor the PCS4. GC is a free asset management software that enables flexible, centralized, web-based power management for A/V systems. Using Global Configurator software, administrators can view the immediate status and power levels of all connected devices, schedule powering on and off of the devices, and configure the alarm triggers.

You can download the latest version of Global Configurator from the Extron website (www.extron.com) as follows:

1. Select the **Products** tab on the Extron website home page.
2. From the sidebar menu at the left of the screen, select **Software**.
3. On the software products page, click **Control Software**.
4. On the Control Software page, scroll to locate Global Configurator and click the **Download** link at right. A login screen appears
5. On the login screen, enter your e-mail address and password.

If you do not have a password, click the **click here** link and fill in the requested information to obtain a password. When you receive your password, proceed to step 6.

6. On the Download Center screen, fill in the requested information and click **Download GVConfigInstallvn.exe**. Follow the instructions on the subsequent screens to complete the download.

SIS Programming and Control

This section provides instructions on using the Extron Simple Instruction Set (SIS) commands, which you can use to set up and control the IPL T PCS4 from a host computer or other control system attached to the rear panel LAN port. The following topics are discussed:

- **Host-to-Interface Communication**
- **Using the Command and Response Table**
- **Command and Response Table for SIS Commands**

As shipped, the PCS4 works as a standalone interface, but cannot control any other devices until it is configured. You can set up and control the PCS4 by using the front panel, the web pages, or SIS commands. Both the web pages and the SIS methods are accessed via Ethernet LAN connection. The LAN port defaults are:

IPL T PCS4 IP address:	192.168.254.254
Gateway IP address:	0.0.0.0
Subnet mask:	255.255.0.0
DHCP:	Off

Host-to-Interface Communication

SIS commands consist of one or more characters per field. No special characters are required to begin or end a command sequence. When the PCS4 determines that a command is valid, it executes the command and sends a response to the host device. All responses from the interface to the host end with a carriage return and a line feed (CR/LF = **↵**), which signals the end of the response character string. (A string is one or more characters.)

Messages Initiated by the IPL T PCS4

When a local event such as a front panel selection or adjustment takes place, the PCS4 responds by sending a message to the host. No response is required from the host. The following PCS4-initiated messages are sent (underlined):

© Copyright 20nn, Extron Electronics, IPL T PCS4 [or -PCS4i], Vn.nn,
60-544-nn **↵**
Www, DD Mmm 2011 HH:MM:SS**↵**

The PCS4 sends the boot and copyright messages when it first powers on and is connected via Telnet or TCP/IP. Vn.nn is the firmware version number; 60-544-nn is the product part number. The current date and time are displayed. If you are using a Telnet connection, the copyright message, date, and time are followed by a password prompt.

Password Information

NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an absolute system reset, the passwords convert to the default, which is **extron**.

The **⏏ Password:** prompt is displayed only if there is a password defined in the unit. It requires a password (administrator level or user level) followed by a carriage return. The prompt is repeated if the correct password is not entered.

If the correct password is entered, the unit responds with **⏏ Login Administrator ⏏** or **⏏ Login User ⏏**, depending on the password entered. If the passwords are the same for both administrator and user, the unit defaults to administrator privileges.

Error Responses

When the PCS4 receives a valid SIS command, it executes the command and sends a response to the host device. If the PCS4 is unable to execute the command because the command is invalid or it contains invalid parameters, it returns an error response to the host.

The error response codes and their descriptions are as follows:

- E12 – Invalid port number
- E13 – Invalid value (the number is out of range/too large)
- E14 – Not valid for this configuration
- E17 – System timed out
- E22 – Busy
- E24 – Privilege violation
- E25 – Device is not present
- E26 – Maximum number of connections has been exceeded
- E27 – Invalid event number
- E28 – Bad filename or file not found

Error Response References

The following superscripted numbers are used within the command descriptions in the Command and Response table to identify commands that may respond as shown:

14	Commands that give an E14 (invalid command for this configuration) response if sent to an IPL product whose power configuration does not support the command
24	Commands that give an E24 (privilege violation) response if you are not logged in at the administrator level
27	Commands that may yield an E27 (invalid event number) response
28	Commands that may give an E28 (file not found) response

Using the Command and Response Table

The PCS4 can be controlled via either a Telnet connection (port 23) or a web browser connection (port 80). The ASCII commands listed in the tables perform the same functions, but they are encoded differently to meet the requirements of each port (Telnet or browser). The ASCII to hexadecimal (HEX) conversion table below is for use with the command and response tables.

ASCII to HEX Conversion Table																Esc 1B	CR 0D	LF 0A
20	!	21	"	22	#	23	\$	24	%	25	&	26	'	27	(	28	)	29
2A	+	2B	,	2C	-	2D	.	2E	/	2F								
30	0	31	1	32	2	33	3	34	4	35	5	36	6	37	7	38	8	39
3A	:	3B	;	3C	<	3D	=	3E	>	3F	?							
40	@	41	A	42	B	43	C	44	D	45	E	46	F	47	G	48	H	49
4A	J	4B	K	4C	L	4D	M	4E	N	4F	O							
50	P	51	Q	52	R	53	S	54	T	55	U	56	V	57	W	58	X	59
5A	Z	5B	[	5C	\	5D	]	5E	^	5F	_							
60	`	61	a	62	b	63	c	64	d	65	e	66	f	67	g	68	h	69
6A	j	6B	k	6C	l	6D	m	6E	n	6F	o							
70	p	71	q	72	r	73	s	74	t	75	u	76	v	77	w	78	x	79
7A	{	7B		7C	}	7D	~	7E	DEL	7F								

Figure 39. ASCII to Hex Conversion Table

The command and response table lists valid ASCII (for Telnet) command codes, the corresponding URL (universal resource locator) encoded (for web browsers) command codes, the interface responses to the host, and a description of the command function or the results of executing the command.

- Upper- and lowercase characters can be used interchangeably in the command field unless otherwise specified.
- Commands may be sent back-to-back without spaces (for example, 2!65V1Z).
- Numbers can be entered as 1, 2, or 3 digits (for example, 8V = 08V = 008V).
- There are a few differences in how to enter the commands, depending on whether you are using Telnet or a web browser.
 - When using these commands through a web browser, you can use the URL reference to shorten the examples. URL refers to the full address of the control interface and web page reference, including all path information (that is, <http://192.168.100.10/myform.htm>).
 - To send any of the commands using a web browser you must prefix them with the full URL followed by ?cmd=.
 - For control via a web browser, all non-alphanumeric characters must be represented as the hexadecimal equivalent, %xx, where xx represents the two-character hex byte. For example, a comma (,) would be represented as %2C. Characters such as %, +, and the space character must be encoded as hex bytes, or they will be misinterpreted by the interface.
 - Some characters differ depending on the method you use to send the commands:

Telnet	Web Browser
Escape (hex 1B)	W (must not be hex encoded)
Carriage return (hex 0D)	Pipe character () (must not be hex encoded)

NOTES:

- With Telnet you can use either an **Escape** command or a **W** command, and the carriage return or the pipe character. With the web browser, you are required to use a **W** command and the pipe character.
- In either method, **Data** = Data that will be directed to a specified port and must be hex encoded if non-alphanumeric.

Common Symbol Definitions

Common Symbol Definitions		
↵	=	Carriage return with line feed (hex 0D 0A)
↵ or	=	Carriage return or pipe symbol (no line feed, hex 0D)
↵	=	Carriage return with no line feed (no line feed, hex 0D) (for URL-encoded commands, use the pipe character, , instead)
Esc	=	Escape key, or hex 1B (use W instead of Esc for web browsers, or at any time)
	=	Pipe (vertical bar) character (URL equivalent to carriage return)
•	=	Space
*	=	Asterisk character (which is a command character, <u>not</u> a variable)

Command and Response Table for SIS Commands

Command	ASCII (Telnet) (Host to Switcher)	URL Encoded (Web) (Host to Switcher)	Response (Switcher to Host)
Power Receptacle Control / Current Sense			
Turn receptacle power on	Esc [X1]*1PC↵	W [X1] %2A 1PC	Cpn [X1]•Ppc1↵
Turn receptacle power off	Esc [X1]*0PC↵	W [X1] %2A 0PC	Cpn [X1]•Ppc0↵
View receptacle power status	Esc [X1] PC↵	W [X1] PC	[X5] ↵
View receptacle current status	Esc [X1] PS↵	W [X1] PS	[X9] ↵
Group receptacles	Esc [X10] ¹ [X10] ² [X10] ³ [X10] ⁴ GP↵	W [X10] ¹ [X10] ² [X10] ³ [X10] ⁴ GP	Pgp [X10] ¹ [X10] ² [X10] ³ [X10] ⁴ ↵
Ungroup receptacles	Esc 0000GP↵	W 0000GP	Pgp0000↵
View receptacles grouping	Esc GP↵	W GP	[X10] ¹ [X10] ² [X10] ³ [X10] ⁴ ↵
Set power up delay	Esc [X16] DT↵	W [X16] DT	Pdt [X16] ↵
View power up delay	Esc DT↵	W DT	[X16] ↵
Set individual full threshold	Esc [X1]*2TH↵	W [X1] %2A 2TH	Ptf [X1] ↵
Set individual standby threshold	Esc [X1]*1TH↵	W [X1] %2A 1TH	Pts [X1] ↵
Clear individual threshold	Esc [X1]*0TH↵	W [X1] %2A 0TH	Ptc [X1] ↵
View threshold setting for all ports	Esc TH↵	W TH	[X9] ¹ , [X9] ² , [X9] ³ , [X9] ⁴ ↵
KEY:			
[X1]	= Port Receptacle	1 - 4	
[X5]	= On or Off status	0 = off or disabled 1 = on or enabled	
[X9]	= Current threshold sense	0 = clear or none 1 = standby 2 = full (Full threshold must be set before standby.)	
[X10]	= Group number	0 = none 1 = yellow 2 = green 3 = red	
		The exponent designates the port number. The color relates to setting groups via the front panel.	
[X16]	= Power-up delay between ports in 1/3-second increments. 1-255 permitted. Default = 3, which equals 1 second.		

Command	ASCII (Telnet) (Host to Switcher)	URL Encoded (Web) (Host to Switcher)	Response (Switcher to Host)
Power Receptacle Control / Current Sense (continued)			
Set Executive mode on	1X	1X	Exe1↵
Set Executive mode off	0X	0X	Exe0↵
View Executive mode	X	X	X5 ↵
Power Receptacle Monitoring and Alarm Functions			
Set alarm conditions	[Esc] X1*X701*X702*X703 SA↵	W X1 %2A X701 %2A X702 %2A X703 SA	Ast X1*X701*X702*X703*X704*X705 ↵
View alarm conditions	[Esc] X1SA↵	W X1 SA	X701*X702*X703*X704*X705 ↵
Monitoring enable or disable	[Esc] X1*X704 SA↵	W X1 %2A X704 SA	Ast X1*X701*X702*X703*X704*X705 ↵
Set Alarm mode	[Esc] X706*X707*X708*X710 MA↵	W X706 %2A X707 %2A X708 %2A X710 MA	Ar1 X706*X707*X708*X708*X710 ↵
View Alarm mode	[Esc] MA ↵	WMA	X706*X707*X708*X708*X710 ↵
KEY:			
X1	= Port Receptacle	1 - 4	
X5	= On or Off status	0 = off or disabled	1 = on or enabled
X701	= Condition that is monitored	0 = receptacle off 1 = receptacle on	2 = reference: None 3 = reference: Standby 4 = reference: Full 5 = any change
X702	= Use alarm relay	0 = no or disable	1 = yes or enable
X703	= E-mail to use	61-64	
X704	= Enable and disable monitoring	0 = disable monitoring	1 = enable monitoring 2 = enable with e-mail
X705	= Alarm status	0 = inactive	1 = active 2 = silenced
X706	= Clear value	0 = condition no longer met 1 = clear with output off 2 = clear with output on	3 = clear with no threshold 4 = clear with standby threshold 5 = clear with full threshold 6 = clear with any change 7 = manual
X707	= Relay polarity	0 = normally open	1 = normally closed
X708	= Time to hold alarm active before canceling	0 = never times out	1-7 = 1 to 7 minutes
X710	= Off timed value	00-15 (in 250 ms increments)	
Power Receptacle Scheduling			
Set scheduling	[Esc] X1*X711*X5*X712 SS↵	W X1 %2A X711 %2A X5 %2A X712 SS	Set X1*X711*X5*X712 ↵
View scheduling	[Esc] X1*X711*X5 SS↵	W X1 %2A X711 %2A X5 SS	X712 ↵
KEY:			
X1	= Port Receptacle	1 - 4	
X5	= On or Off status	0 = off or disabled	1 = on or enabled
X711	= Day of the week	1 = Sunday 2 = Monday 3 = Tuesday 4 = Wednesday 5 = Thursday 6 = Friday 7 = Saturday	
X712	= Time in minutes (0-1440)	0 = 00:00 am (midnight) 1440 = clear schedule	Example: 1439 = 11:59 Use the following formula (in 24-hour time format): (hour x 60) + minutes = time in minutes

Command	ASCII (Telnet) (Host to Switcher)	URL Encoded (Web) (Host to Switcher)	Response (Switcher to Host)
Alarm Relay Functions			
Turn alarm relay ON	1*10←	1 %2A 10	Cpn1•Rly1←
Turn alarm relay OFF	1*00←	1 %2A 00	Cpn1•Rly0←
View alarm relay state	10←	10	X5 ←
Pulse relay	1*3*X63 0←	1 %2A 3 %2A X63 0	Cpn1•Rly1← or Cpn1•Rly0←
Toggle relay	1*20 ←		Cpn1•Rly1← or Cpn1•Rly0←
Ethernet Data Port Commands			
Set current connected port timeout	Esc 0*X69 TC←	W0 %2A X69 TC	Pti0*X69 ←
View current connected port timeout	Esc 0TC←	W0TC	X69 ←
Set global IP port timeout	Esc 1*X69 TC←	W1 %2A X69 TC	Pti1*X69 ←
View global IP port timeout	Esc 1TC←	W1TC	X69 ←
Firmware Version, Part Number, and Information Requests			
NOTE: An asterisk (*) after a version number indicates the version that is currently running. Question marks (?.??) indicate that only the factory firmware version is loaded. A caret (^) indicates the firmware version that should be running; however, a mode 1 reset was executed and the factory default firmware version is currently loaded. An exclamation point (!) indicates corrupted firmware.			
Query firmware version	Q	Q	X11 ←
Query firmware information	1Q	1Q	X11 ←
Query bootstrap version	2Q	2Q	X11 ←
Query factory firmware version	3Q	3Q	X11 plus (web version – model – UL – date and time) ←
Query updated firmware version	4Q	4Q	X11 plus (web version – model – UL – date and time) ←
Query verbose version information	0Q	0Q	Sum of responses from 2Q, 3Q, and 4Q ←
Request interface part number	N	N	60-544-07 or 60-544-09←
Request model name	1I	1I	IPL T PCS4 or IPL T PCS4i←
Request model description	2I	2I	Lists four switched 110 VAC or 220 VAC receptacles with current threshold sensing.←
Request system memory usage	3I	3I	Number of bytes and Kbytes used out of the number of total Kbytes←
Request user memory usage	4I	4I	Number of bytes and Kbytes used out of the number of total Kbytes←
KEY: X11 = Version (typically listed to two decimal places, that is, n.nn) X5 = On or Off status 0 = off or disabled 1 = on or enabled X63 = Pulse time in 20 ms If this parameter is missing or = 0, then pulse length = default (25 = 500 ms). 35565 ms = max. pulse time. per count X69 = (Ethernet only) Number of seconds before timeout on IP connections (min. = 1, max. = 6500, and default = 30 = 300 seconds). If no data is received during the timeout period, the Ethernet connection is closed. Each step is 10 seconds. The response is returned with leading zeros.			

Command	ASCII (Telnet) (Host to Switcher)	URL Encoded (Web) (Host to Switcher)	Response (Switcher to Host)
E-mail Commands			
Configure e-mail events (mailbox) ²⁴ Example:	[Esc] [X45] , [X46] , [X47] CR ←	W [X45] %2C [X46] %2C [X47] CR	Ipr [X45] , [X46] , [X47] ←
	[Esc] 5, jdoe@extron.com, 7.eml CR ←	W5%2Cjdoe%40extron%2Ecom%2C7%2Eeml CR	Ipr5, jdoe@extron.com, 7.eml ←
View e-mail events (mailbox)	[Esc] [X45] CR ←	W [X45] CR	[X46] , [X47] ←
Send e-mail events (file named in mailbox) ²⁴	[Esc] [X45] SM ←	W [X45] SM	Em1 [X46] ←
Send e-mail (using different file) ²⁴	[Esc] [X45] , [X70] , [X47] SM ←	W [X45] %2C [X70] %2C [X47] SM	Em1 [X46] ←
Web Browser-specific Commands			
Read response from last URL cmd	[Esc] UB ←	W UB	<i>Response from command</i> ←
Mail Server Setup Commands			
Set mail server IP, unit domain name ²⁴	[Esc] [X14] , [X15] CM ←	W [X14] %2C [X15] CM	Ipm• [X14] , [X15] ←
View mail server IP, unit domain name	[Esc] CM ←	W CM	[X14] , [X15] ←
IP Setup Commands			
Set the unit name ²⁴	[Esc] [X12] CN ←	W [X12] CN	Ipn• [X12] ←
Set unit name to factory default ²⁴	[Esc] •CN ←	W %20 CN	Ipn• [X49] ←
View unit name ²⁴	[Esc] CN ←		[X12] ←
Set date and time ²⁴	[Esc] [X13] CT ←		Ipn• [X13] ← Example: 11/16/10-10:54:00 ←
KEY: [X12] = Unit name. The name of the PCS4 is a text string of up to 24 characters drawn from the alphabet (A-Z), digits (0-9), and minus sign or hyphen (-). No blank or space characters are permitted as part of a name. No distinction is made between upper and lower case. NOTE: The first character must be a letter. The last character must not be a minus sign or hyphen (-). [X13] = Local date and time format Set format (<i>MM/DD/YY-HH:MM:SS</i>). Example: 11/18/03-10:54:00. Read format (day of week, day month year HH:MM:SS). Example: Tue, 18 Nov 2011 18:19:33. [X14] = IP address Leading zeros in each of four fields are optional in setting values, and they are suppressed in returned values. (nnn.nnn.nnn.nnn) [X15] = E-mail domain name (for example: extron.com) [X45] = E-mail event number (1 - 64) [X46] = E-mail recipient address (for example, JDoe@extron.com) for the person to whom messages will be sent. [X47] = Name (numeral) of e-mail file to be sent; for example: 1.eml, 2.eml, ... 64.eml [X70] = The number (as an optional parameter) that is inserted into the e-mail message if the .eml file has an embedded command (with no parameters).			

Command	ASCII (Telnet) (Host to Switcher)	URL Encoded (Web) (Host to Switcher)	Response (Switcher to Host)
IP Setup Commands (continued)			
View date and time	[Esc] CT←	W CT	[X13] ← Example: Tues , 16 NOV 2011 10:10:54:00 ←
Set GMT offset ²⁴	[Esc] [X3] CZ←	W [X3] CZ	Ipx [X3] ←
View GMT offset	[Esc] CZ←	W CZ	[X3] ←
Set daylight savings time ²⁴	[Esc] [X34] CX←	W [X34] CX	Ipx [X34] ←
View daylight savings time	[Esc] CX←	W CX	[X34] ←
Set DHCP on ²⁴	[Esc] 1 DH←	W 1 DH	Idh 1←
Set DHCP off ²⁴	[Esc] Ø DH←	W Ø DH	Idh Ø←
View DHCP mode	[Esc] DH←	W DH	[X5] ←
Set IP address ²⁴	[Esc] [X14] CI←	W [X14] CI	Ipi • [X14] ←
View IP address	[Esc] CI←	W CI	[X14] ←
View hardware (MAC) address	[Esc] CH←	W CH	[X18] ←
Set subnet mask ²⁴	[Esc] [X19] CS←	W [X19] CS	Ips • [X19] ←
View subnet mask	[Esc] CS←	W CS	[X19] ←
Set gateway IP address ²⁴	[Esc] [X14] CG←	W [X14] CG	Ipg • [X14] ←
View gateway IP address	[Esc] CG←	W CG	[X14] ←
Set verbose mode ²⁴	[Esc] [X22] CV←	W [X22] CV	Vrb [X22] ←
NOTE: The IPL T PCS4 can send out unsolicited information (such as notice of a power level change). This is called a <i>verbose</i> (wordy) relationship between the interface and a connected device. When the IPL T PCS4 is connected to the computer via Ethernet, verbose mode is disabled (by default) in order to reduce the amount of communication traffic on the network. If you want to use the verbose mode with the PCS4 connected via Ethernet, this mode must be set to On each time you reconnect to the network.			
View verbose mode status	[Esc] CV←	W CV	[X22] ←
Get connection listing	[Esc] CC←	W CC	<i>Number of connections</i>
KEY:			
[X3]	= Greenwich Mean Time (GMT) offset value (-12.00 to +14.00) represents the time difference in hours and minutes (±hh:mm) relative to Greenwich, England. The plus sign and leading zero are optional. For example, 5:30 = +05:30.)		
[X5]	= On or Off status 0 = off or disabled 1 = on or enabled		
[X13]	= Local date and time format Set format (<i>MM/DD/YY-HH:MM:SS</i>). Read format (day of week, day month year HH:MM:SS).		Example: 11/18/03-10:54:00. Example: Tue , 18 Nov 2011 18:19:33.
[X14]	= IP address (nnn.nnn.nnn.nnn)	Leading zeros in each of four fields are optional in setting values, and they are suppressed in returned values.	
[X18]	= Hardware (MAC) address (<i>xx-xx-xx-xx-xx-xx</i>).		
[X19]	= Subnet mask (<i>nnn . nnn . nnn . nnn</i>). Leading zeros are optional in setting values in each of four fields, and they are suppressed in returned values.		
[X22]	= Verbose response mode 0 = None (default) 1 = verbose mode 2 = tagged responses to queries 3 = verbose mode and tagged responses to queries		
[X34]	= Daylight saving time (DST) is a 1-hour offset to reflect the time during which clocks are set one hour or more ahead of local standard time, to provide more daylight at the end of the working day. Supported for the U. S. and parts of Brazil and Europe. Example: Time in California is GMT -8:00 from March to November and GMT -7:00 from November to March. DST should be turned off in Hawaii, American Samoa, Guam, Puerto Rico, the Virgin Islands, the eastern time zone portion of the state of Indiana, and the state of Arizona (excluding the Navajo Nation).		

Command	ASCII (Telnet) (Host to Switcher)	URL Encoded (Web) (Host to Switcher)	Response (Switcher to Host)
Password and Security Settings			
NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an absolute system reset, the passwords convert to the default, which is extron .			
Set administrator password ²⁴	[Esc] [X33] CA←	W [X33] CA	Ipa• [X41] ←
Clear administrator password ²⁴	[Esc] •CA←	W %20 CA	Ipa•←
NOTE: A user password cannot be assigned if an administrator password does not exist. If the administrator password is cleared (removed), the user password is also removed.			
View administrator password ²⁴	[Esc] CA←	W CA	[X41] ←
Set user password ^{14 24}	[Esc] [X33] CU←	W [X33] CU	Ipu• [X41] ←
Clear user password ²⁴	[Esc] •CU←	W %20 CU	Ipu•←
View user password ²⁴	[Esc] CU←	W CU	[X41] ←
Query session security level	[Esc] CK←	W CK	[X52] ←
KEY:			
[X33]	= Password	Minimum length = 4 characters, maximum length = 12 characters. No special characters are allowed.	
[X41]	= Reading password.	Responds with four asterisks (****) in place of the password, if a password exists. For the user password, responds with an empty space if no password exists.	
[X52]	= Connection security level	If this parameter is missing or = 0, then pulse length = default (25 = 500 ms). 35565 ms = max. pulse time. 11 = user 12 = administrator	
Remapping Port Designations			
NOTE: Duplicate port number assignments are not permitted, that is, Telnet and web cannot be the same). Entering duplicate port assignments results in an E13 (invalid parameter) error message.			
Set Telnet port map ²⁴	[Esc] port# MT←	W port# MT	Pmt port#←
Reset Telnet port map ²⁴	[Esc] 23MT←	W 23MT	Pmt 00023←
Disable Telnet port map ²⁴	[Esc] 0MT←	W 0MT	Pmt 00000←
View Telnet port map	[Esc] MT←	W MT	port#←
Set web port map ²⁴	[Esc] port# MH←	W port# MH	Pmh port#←
Reset web port map ²⁴	[Esc] 80MH←	W 80MH	Pmh 00080 ←
Disable web port map ²⁴	[Esc] 0MH←	W 0MH	Pmh 00000 ←
View web port map	[Esc] MH←	W MH	port#←
Directory Commands			
Change or create a directory	[Esc] path/directory/CJ←	W path/directory/CJ	Dir•path/directory/←
NOTE: A directory does not truly exist until a file has been copied into the path.			
Move back to root directory	[Esc] /CJ←	W %2F CJ	Dir•/←
Move up one directory	[Esc] ..CJ←	W %2E %2E CJ	

Command	ASCII (Telnet) (Host to Switcher)	URL Encoded (Web) (Host to Switcher)	Response (Switcher to Host)
File Erase Commands			
Erase user-supplied web page or file ^{24, 28}	[Esc] <i>filename</i> EF ←	W <i>filename</i> EF	Del• <i>filename</i> ↵
Erase current directory and its files ^{24, 28}	[Esc] /EF ←	W %2F EF	Dd1↵
Erase current directory and subdirectories ^{24, 28}	[Esc] //EF ←	W %2F %2F EF	Dd1↵
File Listing Commands			
List files from current directory	[Esc] DF ←	W DF	(See below.)
Telnet text responses: <pre> <i>filename</i> x • <i>date/time</i> • <i>length</i>↵ <i>filename</i> x • <i>date/time</i> • <i>length</i>↵ <i>filename</i> x • <i>date/time</i> • <i>length</i>↵ ... <i>space_remaining</i> • <i>Bytes Left</i>↵ </pre> Web responses — HTML sample code: <pre> Var file – new Array (); File [1] = '<i>filename1</i>, <i>date1</i>, <i>filesize1</i>'; File [2] = '<i>filename2</i>, <i>date2</i>, <i>filesize2</i>'; ... File [<i>n</i>] = '<i>filename n</i>, <i>date n</i>, <i>filesize n</i>'; File [<i>n</i>+1] = '<i>space remaining</i>, <i>Bytes left</i>' </pre>			
List files from current directory and below	[Esc] LF ←	W LF	(See below.)
Telnet text responses: <pre> <i>path/directory/filename</i> x • <i>date/time</i> • <i>length</i>↵ <i>path/directory/filename</i> x • <i>date/time</i> • <i>length</i>↵ <i>path/directory/filename</i> x • <i>date/time</i> • <i>length</i>↵ ... <i>space_remaining</i> • <i>Bytes Left</i>↵ </pre> Web responses — HTML sample code: <pre> Var file – new Array (); File [1] = '<i>filename1</i>, <i>date1</i>, <i>filesize1</i>'; File [2] = '<i>filename2</i>, <i>date2</i>, <i>filesize2</i>'; ... File [<i>n</i>] = '<i>filename n</i>, <i>date n</i>, <i>filesize n</i>'; File [<i>n</i>+1] = '<i>space remaining</i>, <i>Bytes left</i>' </pre>			
NOTE: The response to this command is the same as for the List files from current directory command (DF), except that <i>path/directory</i> precedes filenames for files from subdirectories below the current directory.			
Stream Files via Port 80			
Load file to user flash memory ^{24 28}	Use a POST on port 80 followed by the delimited data to be written to the flash file memory.		
Retrieve files from user flash memory ^{24 28}	Send a page GET on port 80 followed by WSF		<i>Raw unprocessed data in file</i>
Example:	http://192.168.254.254/mypage.html?cmd=WSF		

Command	ASCII (Telnet) (Host to Switcher)	URL Encoded (Web) (Host to Switcher)	Response (Switcher to Host)
Stream Files via Telnet			
Load file to user memory ^{24 28}	[Esc] + UF <i>filesize</i> , <i>filename</i> ←		<i>Raw unprocessed data in file up to file size</i> Up1←
Retrieve file from user flash memory ^{24 28}	[Esc] <i>filename</i> SF ←	1B <i>filename</i> SF 0D	Four bytes of <i>file size</i> + <i>raw unprocessed data in file</i>
Reset (Zap) and Erase Commands			
Erase the user flash memory ²⁴ (files only)	[Esc] ZFFF ←	W ZFFF	Zpf←
Reset all device settings to factory default ²⁴	[Esc] ZXXX ←	W ZXXX	Zpx←
Absolute system reset ²⁴	[Esc] ZQQQ ←	W ZQQQ	Zpq←
NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an absolute system reset, the passwords convert to the default, which is extron .			

Mounting Instructions

This section contains the mounting information for the IPL T PCS4 and IPL T PCS4i.

Mounting the IPL T PCS4 Interface

The IPL T PCS4 can be set on a table, mounted on a rack shelf, or mounted under furniture such as a desk, podium, or tabletop.

Tabletop Use

Four self-adhesive rubber feet are included with the PCS4. For tabletop use, attach one foot at each corner of the bottom side of the unit, and place the PCS4 in the desired location.

UL Rack Mounting Guidelines

The following Underwriters Laboratories (UL) guidelines pertain to the safe installation of the IPL T PCS4 or IPL T PCS4i in a rack.

CAUTION:

- **Elevated operating ambient temperature** — If the equipment is installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, install the equipment in an environment compatible with the maximum ambient temperature (TMA = +122 °F, +50 °C) specified by Extron.
- **Reduced air flow** — Install the equipment in a rack so that the amount of air flow required for safe operation of the equipment is not compromised.
- **Mechanical loading** — When mounting the equipment in the rack, ensure that uneven mechanical loading does not cause a hazardous condition.
- **Circuit overloading** — When connecting the equipment to the supply circuit, consider the effect that circuit overloading might have on overcurrent protection and supply wiring. Consider equipment nameplate ratings when addressing this concern.
- **Reliable earthing (grounding)** — Maintain reliable grounding of rack-mounted equipment. Pay particular attention to supply connections other than direct connections to the branch circuit (for example, use of power strips).

Consignes UL pour le montage en rack

Les consignes UL (« Underwriters Laboratories ») suivantes concernent l'installation en rack d'un boîtier IPL T PCS4 ou IPL T PCS4i :

ATTENTION :

- **Température ambiante élevée** — En cas d'installation de l'équipement dans un rack fermé ou composé de plusieurs unités, la température du rack peut être supérieure à la température ambiante. Par conséquent, il est préférable d'installer l'équipement dans un environnement qui respecte la température ambiante maximale (T_{ma}) spécifiée par Extron.
- **Réduction du flux d'air** — Si l'équipement est installé dans un rack, veillez à ce que le flux d'air nécessaire pour un fonctionnement sécurisé de l'équipement soit respecté.
- **Charge mécanique** — Installez l'équipement en rack de manière à éviter toute situation dangereuse causée par le déséquilibre de la charge mécanique.
- **Surcharge électrique** — Lorsque vous connectez l'équipement au circuit d'alimentation, observez la connexion de l'équipement et étudiez les effets possibles d'une surcharge du circuit sur les protections contre les surintensités et les conducteurs d'alimentation. Consultez à cet égard les indications de la plaque d'identification de l'équipement.
- **Mise à la terre** — Assurez-vous que l'équipement est correctement mis à la terre. Accordez une attention particulière aux connexions électriques autres que les connexions directes au circuit de dérivation (ex. : les multiprises).

Rack mounting procedure

Rack mount the interface, if desired, using the RSU 129 Universal Rack Shelf Kit) as follows:

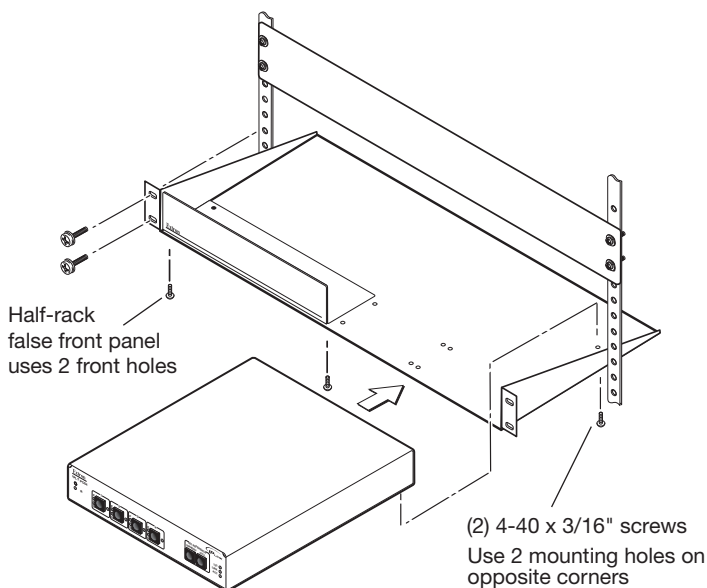


Figure 40. Mounting the IPL T PCS4 on a Rack Shelf

1. If rubber feet have been installed on the bottom of the unit, remove them.
2. Mount the PCS4 on the rack shelf, using two 4-40 x 3/16 inch screws in opposite (diagonal) corners to secure the unit to the shelf.
3. Attach a blank panel or other units to the rack shelf.

4. Insert the shelf into the rack, aligning the holes in the shelf with those in the rack.
5. Secure the shelf to the rack using the supplied machine screws. This shelf can be mounted in the front or in the rear of the rack.

Under-desk Mounting

The PCS4 can also be mounted under furniture, such as a table or podium surface, using the optional under-desk mounting brackets.

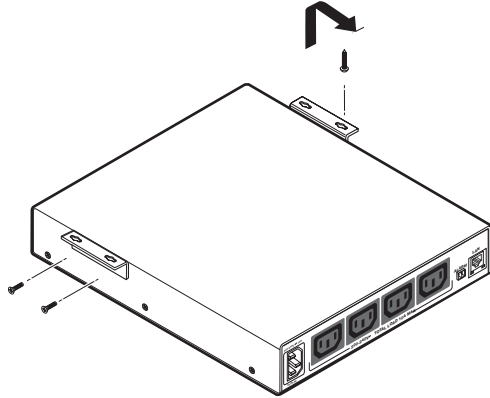


Figure 41. Mounting the IPL T PCS4 under Furniture

1. If rubber feet were previously installed on the bottom of the unit, remove them.
2. Attach the mounting brackets to the unit with the provided machine screws.
3. Insert #8 wood screws into the four pilot holes. Tighten each screw into the mounting surface until slightly less than $\frac{1}{4}$ inch of the screw protrudes.
4. Align the mounting screws with the slots in the brackets, and place the PCS4 against the surface with the screws through the bracket slots.
5. Slide the unit slightly forward or back, then tighten all four screws to secure it in place.

Glossary

This section contains a list of terms that appear in this user guide, with their definitions.

10/100Base-T Ethernet that uses unshielded twisted pair (for example, UTP - Cat 5) cable, in which the amount of data transmitted between two points in a given amount of time is equal to either 10 Mbps or 100 Mbps.

A

Address Resolution Protocol (ARP)

A protocol for assigning an IP address to a device based on the MAC (Media Access Control), or physical machine address of the device, that maintains a table showing the correlation between the two.

Alarm relay A single pole, single throw relay, which can be used with a relay-controllable audible siren or any other alarm.

Alarm status On the PCS4 web page, reflects the state of the monitored condition. It may be inactive, active, or silenced.

AWG (American Wire Gauge)

A standard measurement for wire conductor diameter.

C

Condition A state for which the PCS4 is being monitored. When a monitored condition is met, the PCS4 may sound an alarm or send an e-mail message, depending on how the system has been configured (via the front panel or the Monitor web page). Examples of conditions that can be monitored include Receptacle Off, Any Change, or Reference: None.

Custom web page Any file that can be loaded into an IPL T PCS4 and served by the PCS4 internal web server. The web page provides a way to control and monitor the PCS4 output power receptacles. This is true with or without an accompanying event script. Any number and size of graphics can be used, but if they are too large to fit in the PCS4 nonvolatile memory, you can create web pages so that they can be served from another web server. If you install Microsoft Internet Information Services (IIS) on your desktop, you can serve any page on its hard disk. The IPL T PCS4 functions like a little computer with a web server — you can use it for various web-based tasks.

D

DHCP (Dynamic Host Configuration Protocol)

A standardized client-server IP networking protocol that enables network administrators to centrally and automatically manage the assignment of IP addresses in an organization's network.

Driver A package of commands that generates or is the event script that controls devices.

E

Edison power receptacle

Is a standard power connector. The rear panel of the IPL T PCS4, U. S. version, has four female Edison receptacles into which devices are plugged in order to be monitored, scheduled, and powered on and off by the PCS4.

Ethernet A network protocol that uses MAC addresses to exchange data between computers. Using ARP, with TCP/IP support, Ethernet devices can be connected to the Internet. An Ethernet LAN typically uses unshielded twisted pair (UTP) wires. Ethernet systems provide transmission speeds of 10 Mbps or 100 Mbps. Ethernet is mostly based on the IEEE 802.3 standard.

Executive mode An operating mode in which the IPL T PCS4 does not accept commands from the front panel. Also called front panel security lockout.

F

Firmware Embedded software that is stored permanently in read-only memory (ROM) and contains basic instructions for how the PCS4 operates. Firmware upgrades are periodically made available for uploading via the IPL T PCS4 Firmware Upgrade web page.

Full reference threshold

The point at which a device starts to operate at full power.

H

HTTP (HyperText Transfer Protocol)

A web protocol based on TCP/IP that is used to retrieve hypertext objects from remote web pages.

I

IEC power receptacle

Is a standard power connector. The IPL T PCS4i rear panel has four female IEC receptacles into which devices are plugged in order to be monitored, scheduled, and powered on and off by the PCS4i.

IP (Internet Protocol)

The protocol or standard used to send information from one computer to another on the Internet.

IP address A unique, 32-bit binary number (12 digit decimal number — *nnn.nnn.nnn.nnn*) based on version 4 of the internet protocol (IPv4) that identifies each sender and each receiver of information connected to a LAN, WAN, or the Internet. IP addresses can be static (see **Static IP**) or dynamic (see **DHCP**).

IP net mask/subnet mask

A 32-bit binary number (12 digit decimal number — *nnn.nnn.nnn.nnn*) used on subnets (smaller, local networks) to help the router determine which network traffic gets routed internally to local computers and which network traffic goes out on the Internet.

M

Media Access Control (MAC) Address

A unique hardware number given to devices that connect to the Internet. When your computer or networking device (router, hub, interface, and so on) is connected to the Internet, a table relates the device IP address to its corresponding physical (MAC) address on the LAN.

P

Ping (Packet Internet Groper)

A command that is used to test connectivity between IP devices. The Internet Control Message Protocol (ICMP) echoes Ethernet packets to determine whether a network device is active and what the bidirectional delay is in communicating with it.

Port number

A preassigned address within a server that provides a direct route from the application to the Transport layer or from the Transport layer to the application of a TCP/IP system.

Power level reference threshold

(See [Reference threshold](#).)

R

Reference threshold

The point at which the power level (full or standby) at which a device is operating changes. This threshold is recognized by the IPL T PCS4, which can be configured to sound an alarm whenever a connected device passes this threshold.

Receptacle

A connector on a power supply that is equipped to receive a plug. The IPL T PCS4 has four receptacles into which devices can be plugged, enabling the PCS4 to monitor and schedule power for the connected devices.

S

SIS (Simple Instruction Set) commands

A set of commands developed by Extron that allows control of the PCS4 via the keyboard of a PC with an Ethernet connection. A minimal number of characters are used in these commands and responses.

Standby reference threshold

The point at which a device starts to operate at standby power.

Static IP

An IP address that has been specifically, instead of dynamically (see [DHCP](#)), assigned to a device or system in a network configuration. This type of address requires manual configuration of the actual network device or system and can only be changed manually or by enabling DHCP.

Subnet

(See [Subnetwork](#).)

Subnet address

The portion of an IP address that is specifically identified by the subnet mask as the subnetwork.

Subnet mask

A 32-bit address mask used in IP to identify the bits of an IP address that are used for the subnet address. Using a mask, the router does not need to examine all 32 bits, only those selected by the mask.

Subnetwork

A network that is part of a larger IP network and is identified by a subnet address. Networks can be segmented into subnetworks to provide a hierarchical, multilevel routing structure.

T

TCP (Transmission Control Protocol)

A connection-oriented protocol defined at the Transport layer of the OSI reference model. It provides reliable delivery of data.

TCP/IP (Transmission Control Protocol/Internet Protocol)

The communication protocol (language) of the Internet. Computers and devices with direct access to the Internet are provided with a copy of the TCP/IP program to allow them to send and receive information in an understandable form.

Telnet

A standard terminal emulation utility/protocol that allows a computer to communicate with a remote user/client. A user who wishes to access a remote system initiates a Telnet session using the address of the remote client. The user may be prompted to provide a user name and password if the client is set up to require them. Telnet enables users to log in on remote networks and use those resources as if they were locally connected.

NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an absolute system reset, the passwords convert to the default, which is **extron**.

Threshold

(See [Reference threshold](#).)

Threshold status

Reported on the IPL T PCS4 System Status screen in the AC Receptacles section. It indicates the current reference threshold (Full, Standby, None, or Not Set) for each PCS4 receptacle.

U

UID (User ID)

An optional user name, for which a field is provided on the Enter Password window that opens if a password has been assigned to the PCS4.

NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an absolute system reset, the passwords convert to the default, which is **extron**.

URL (Universal Resource Locator)

The address that lets a resource on the internet be identified, located, and accessed.

Extron Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

**USA, Canada, South America,
and Central America:**

Extron Electronics
1230 South Lewis Street
Anaheim, CA 92805
U.S.A.

Asia:

Extron Asia Pte Ltd
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363
Singapore

Japan:

Extron Electronics, Japan
Kyodo Building, 16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

Europe:

Extron Europe
Hanzeboulevard 10
3825 PH Amersfoort
The Netherlands

China:

Extron China
686 Ronghua Road
Songjiang District
Shanghai 201611
China

Middle East:

Extron Middle East
Dubai Airport Free Zone
F13, PO Box 293666
United Arab Emirates, Dubai

Africa:

Extron South Africa
3rd Floor, South Tower
160 Jan Smuts Avenue
Rosebank 2196, South Africa

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions, or if modifications were made to the product that were not authorized by Extron.

NOTE: If a product is defective, please call Extron and ask for an Application Engineer to receive an RA (Return Authorization) number. This will begin the repair process.

USA: 714.491.1500 or 800.633.9876

Asia: 65.6383.4400

Europe: 31.33.453.4040 or 800.3987.6673

Japan: 81.3.3511.7655

Africa: 27.11.447.6162

Middle East: 971.4.299.1800

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.