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# UPS SNMP/Web Adapter

## USER'S GUIDE

### FCC Radio/TV Interference Notice

The UPS SNMP/Web Adapter Card and the External UPS SNMP/Web Adapter have been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a domestic environment. Both these devices generate, use and can radiate radio frequency energy and, if not installed in accordance with the instruction manual, may cause harmful interference to radio communications. The user must use shielded cables and connectors with these products. Any modifications to these products not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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# Chapter 1

## Introduction

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Congratulations on the purchase of your new UPS SNMP/Web Adapter. Your UPS SNMP/Web Adapter will connect your UPS to your LAN. This will allow you to monitor and control the UPS from any PC on the LAN, using either:

- SNMP protocol and popular SNMP network management platforms such as HP OpenView, IBM NetView, etc., or
- A Web browser.

## System Requirements

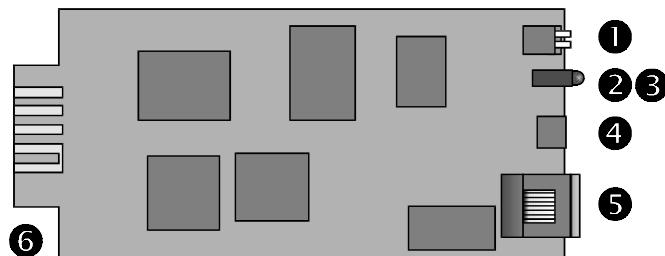
### UPS SNMP/Web Adapter Card

- Tripp Lite UPS with a standard card slot.
  - Ethernet networking environment using the TCP/IP protocol.
  - SNMP-based management station such as:
    - HP OpenView,
    - IBM NetView
    - Sun SunNet Manager,
    - Novell ManageWise
- OR-**
- Web browser supporting HTML frames, forms and Java, such as:
    - Netscape Navigator 3.0 or later
    - MS Internet Explorer 4.0 or later
  - For “Terminal Mode” configuration, a terminal emulation (communication) package.

### External UPS SNMP/Web Adapter

- UPS with a standard serial port.
  - Ethernet networking environment using the TCP/IP protocol.
  - SNMP-based management station such as:
    - HP OpenView
    - IBM NetView
    - Sun SunNet Manager
    - Novell ManageWise
- OR-**
- Web browser supporting HTML frames, forms and Java, such as:
    - Netscape Navigator 3.0 or later
    - MS Internet Explorer 4.0 or later.
  - For “Terminal Mode” configuration, a terminal emulation (communication) package.

## Details - Adapter Card



*Figure 1:- UPS SNMP/Web Adapter Card*

Item	Description
1	DIP Switches. (See DIP switch table, p. 3).
2	Red Error LED.
3	Yellow Link LED.
4	Humidity/Temperature Sensor Connector (PS2).
5	10 Base-T (UTP RJ45) Ethernet Connector.
6	UPS Slot Connector.

## Details - External Adapter



*Figure 2:- UPS SNMP/Web External Adapter*

Item	Description
1	Power Connector.
2	UPS Serial Port.
3	Terminal Serial Port.
4	DIP Switches. (See DIP switch table, below).
5	LEDs.
6	Humidity/Temperature Sensor Connector (PS2).
7	10 Base-T (UTP RJ45) Ethernet Connector.

## DIP Switch Table (Both Models)

DIP Switch Table		
SW1	SW2	Description
off	off	Normal Operation
off	on	Reserved
on	on	Reserved
on	off	Terminal configuration mode

## **Package Contents**

The following items should be included in your package. If any items are missing, contact your dealer immediately.

### **Adapter Card**

- UPS SNMP/Web Adapter Card
- CD-ROM including
  - MIBs
  - Owner's manual
  - Configuration cable

### **External Adapter**

- External UPS SNMP/Web Adapter
- CD-ROM including
  - MIBs
  - Owner's manual
- Power adapter
- UPS cable
- Configuration cable



## Chapter 2

# Configuration

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Your UPS Adapter can be configured for use with many different LAN setups and for many different applications. This chapter explains the procedures and settings used in UPS Adapter configuration.

## Selecting an IP Address

You must choose an IP address for your UPS Adapter before connecting it to your network. The IP address must be unique to the UPS Adapter, and it must be in the same address block as the computer(s) it will communicate with. For example, if the computer(s) it will communicate with are in the 192.168.x.x block, you might choose the IP address 192.168.1.1 for your UPS Adapter.

## Terminal Mode Configuration

Before your UPS Adapter can communicate over your LAN, it must be assigned an IP address via terminal mode configuration using a direct **serial cable connection** and a terminal (communication) program. Other UPS Adapter settings may also be configured in terminal mode.

Terminal mode configuration must be done BEFORE installing the UPS Adapter in your LAN. The procedure is as follows:

1. If using the Adapter Card, turn the UPS OFF. If using the External Adapter, disconnect it from the power supply.
2. Set the DIP switches on the UPS Adapter to the *Configuration* position. (Switch 1 ON, Switch 2 OFF).
3. Connect the "Terminal" serial port on the UPS Adapter to the serial port on your PC or terminal.
4. Configure the VT100 compatible terminal (communication) program with the following settings:

Setting	Value
Baud rate	9600
Data	8 bits
Parity	none
Stop Bit	1
Flow control protocol	None

5. Set the terminal program to use the correct serial port. (COM 1 or as appropriate)
6. If using the Adapter Card, turn the UPS ON. If using the External Adapter, connect it to the power supply. The configuration program should now start.
7. Select "Network Configuration", option 1, from the first menu.
8. Select "Change IP Address", option 1, from the resulting submenu.
9. Enter the IP address you have chosen for your UPS Adapter.
10. Exit the configuration program.\*
11. If using the Adapter Card, turn the UPS OFF. If using the External Adapter, disconnect it from the power supply.
12. Remove the serial cable, and set the Adapter's DIP switches to normal operation mode (Both switches OFF.) The UPS Adapter is now ready to be connected to your LAN.

\* Or configure other UPS Adapter settings as explained in this chapter.

## Other Terminal Mode Configuration Options

Besides setting the IP address of your UPS Adapter, you may use terminal mode configuration to set up other functions of the UPS Adapter. The menu options presented through terminal mode configuration are explained below.

### 1. Network Configuration

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Select this main menu option to view a submenu where you can configure the UPS Adapter's settings necessary for LAN communication.

#### Network Configuration Submenu Options

<b>Change IP Address</b>	The default value of the UPS Adapter's IP Address is 0.0.0.0. Before connecting the UPS Adapter to an LAN you must select a different IP Address using this menu option. Later you may use this menu option to reconfigure the IP Address.  If this setting is changed, all LAN connections are lost and must be reestablished with the new address.
<b>Change Net Mask</b>	Enter the network mask for the segment to which the UPS Adapter is attached. If you don't have a router, leave this at 255.255.255.0
<b>Change Gateway Address</b>	If a router is installed on the network segment, enter its address here. Otherwise, leave this at 0.0.0.0
<b>Change HTTP User Name</b>	If you want the UPS Adapter to require users to enter a specific user name in order to access it, use this menu option to enter the user name.
<b>Change HTTP Password</b>	If you want the UPS Adapter to require users to enter a password in order to access it, use this menu option to enter the password.
<b>Exit Network Setup</b>	Select this menu option to return to the main menu.

### 2. NMS Configuration

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Select this main menu option to configure your UPS Adapter to communicate with its Network Management Stations (NMS). Up to four NMS may be assigned to the UPS Adapter. For each NMS, enter the following information:

<b>IP Address</b>	The IP address of the NMS.
<b>Community String</b>	If the NMS is assigned a Community, enter it here. Otherwise, leave this field blank.
<b>Access</b>	Assign the NMS either RO (read-only access) or RW (read-write access) to the UPS Adapter. NMS with RO access may not change UPS Adapter settings.

### 3. Trap Host Configuration

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Select this main menu option to configure your UPS Adapter to communicate with its Trap Hosts, which will receive SNMP Traps sent by the UPS Adapter. Up to ten Trap Hosts may be assigned to the UPS Adapter. For each Trap Host, enter the following information:

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<b>IP Address</b>	The IP address of the Trap Host.
<b>Community String</b>	If the Trap Host is assigned a Community, enter it here. Otherwise, leave this field blank.
<b>Trap Ctrl</b>	Enables/disables the Adapter sending Traps to this Trap Host.
<b>Authent</b>	Enables/disables warning this Host of illegal SNMP activity, i.e. UPS commands or information requests from addresses or communities not established in the NMS setup section.

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#### 4. Change Agent Date/Time

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Select this main menu option to view a submenu where you can configure the UPS Adapter's internal calendar and clock.

##### Change Agent Date/Time Submenu Options

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<b>Change Date</b>	Enter today's date in the format DD/MM/YYYY.
<b>Change Time</b>	Enter the current time in the format HH/MM/SS. Enter the hour in 24 hour format: 3 AM would be 03, while 3 PM would be 15.

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#### 5. Exit Setup

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Select this main menu option to exit the configuration program.

## **Installing the UPS Adapter in a LAN**

### **To Install the UPS SNMP/Web Adapter Card**

1. Turn the UPS OFF.
2. Insert the UPS SNMP/Web Adapter Card into the UPS accessory slot (see UPS manual for location.)
3. Connect the UPS SNMP/Web Adapter Card to your LAN, using a 10 BaseT UTP connector.
4. Turn the UPS ON.

### **To Install the External UPS SNMP/Web Adapter**

1. Turn the UPS OFF.
2. Using a standard serial cable, connect the serial port on the UPS to the “UPS” serial port on the External UPS SNMP/Web Adapter.
3. Connect the External UPS SNMP/Web Adapter to your LAN, using the 10BaseT UTP connector.
4. Connect the power supply to the External UPS SNMP/Web Adapter.
5. Turn the UPS ON.



## Chapter 3

# SNMP

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Your UPS SNMP/Web Adapter allows a UPS to be managed by SNMP tools, using the UPS SNMP Agent and the UPS SNMP MIB.

The UPS SNMP Agent is in the UPS SNMP/Web Adapter's SNMP firmware. It responds to standard SNMP commands (*get*, *get next* and *set*) and will generate SNMP traps (messages) if configured to do so.

The MIB (Management Information Base) determines what parameters can be monitored and controlled.

### MIB (Management Information Base)

The UPS SNMP MIB must be installed on each management station that will monitor the UPS.

#### To install the MIB

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- Copy the .MIB file from CD or download to a directory on your system.
- Use the *Import-Compile* command of your SNMP Management program to import the .MIB file.

## Chapter 4

# Browser Interface

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You may monitor and control a UPS system with an UPS SNMP/Web Adapter using an Internet browser.

The UPS Adapter generates navigable HTML pages. The HTML pages are updated to match the UPS's status every 30 seconds; the browser refreshes the displayed information automatically. To update the information on a page sooner, have your browser reload the page.

## Establishing a Connection

To connect to the UPS Adapter:

1. Start your browser.
2. In the *Address* field, enter the following:

`http://IP_Address`

Where IP\_Address is the IP Address of the UPS Adapter.

e.g.

<http://192.168.1.1>

3. The Log On Page will then appear.

## To Log On to the UPS Adapter

The first page your browser will display is the Log On Page. To continue to the UPS Adapter's other Web pages:

1. If you have not configured your UPS Adapter to require a user name or password for access, simply hit the *Submit Logon* button to continue.
2. If your Web Card is configured to require a user name and/or password for access, enter them here before hitting the *Submit Logon* button to continue.

## Navigating the UPS Adapter's Web Pages

After you have passed the Log On page, your browser will display a Navigation Bar on the left of your browser window. This Navigation Bar contains links to the different interface pages accessible through your browser, described in the following section. Initially, the right side of your browser window will display the Status Page by default. To load another page in this area, click on that page's Navigation Bar link.

**Note:** You may input values on some of the UPS Adapter's pages. After typing in values on one of these pages, you **MUST** hit the *Submit* button at the bottom of the page to send the values to the UPS Adapter.

# Interface Pages

## Status Page

This page shows commonly useful information about the UPS:





**Note:** A value of *N/A (Not Applicable)* in any of the fields indicates that your UPS model does not support that data variable.

Field	Definition
<b>Manufacturer</b>	The UPS's maker.
<b>UPS Model</b>	The UPS's model.
<b>Card Uptime</b>	How much time has elapsed since the Web Card was last enabled.
<b>Power Source</b>	"Utility" if the UPS is receiving nominal utility power, "Battery" if the UPS is supplying power from battery reserves, "Bypass" if the unit is in bypass mode (see UPS manual), "Off" if the UPS is off, "UPS Boost" if the UPS is correcting low voltage utility power, "UPS Reduce" if the UPS is correcting high voltage utility power.
<b>Load</b>	Normally "OK"; "Overload" if the total power draw of the equipment the UPS supports on battery is greater than the UPS's output VA rating.
<b>Battery</b>	Normally "OK"; "Battery Low" If the battery's charge is nearly exhausted.
<b>Estimated Runtime</b>	A rough calculation of how long the UPS can operate on battery power given the current load and battery charge.
<b>Input Voltage</b>	The voltage of the current the UPS is receiving from the utility.
<b>Input Frequency</b>	The frequency of the current the UPS is receiving from the utility.
<b>Load Percent</b>	The percentage of the UPS's maximum output capacity being used to support a load.
<b>Battery Voltage</b>	The voltage level of the UPS's battery(ies).
<b>Battery Capacity</b>	The percentage of battery charge remaining.
<b>Battery Age</b>	The elapsed time since the battery(ies) were installed.
<b>Recent Events</b>	A abbreviated list of UPS events (alarms, outages, etc.) that have occurred recently.



## Variables Page

This page shows the current value of all the operating variables your UPS can communicate. Each variable is marked with one of four indicator icons:

Icon	Indication
	<b>Normal:</b> An operating variable within its usual range.
	<b>Informational:</b> An UPS variable that differs from model to model and does not change due to operating conditions.
	<b>Critical:</b> An operating variable outside its usual range.
	<b>Warning:</b> An UPS condition requiring user attention.

Different UPS models have different communication capabilities. Depending on your UPS model, the variables on the Variable Page may include some or all of the following:

Variable	Definition
<b>Nominal Input Voltage</b>	AC voltage the UPS is designed to accept.
<b>UPS Mode</b>	“Line” if the UPS is receiving utility power, “Invert” if the UPS is supplying power from battery reserves, “Bypass” if the unit is in bypass mode (see UPS manual), “Off” if the UPS is off.
<b>Input Voltage</b>	AC Voltage the UPS is receiving.
<b>Minimum Input Voltage</b>	Weakest AC voltage that the UPS will accept before switching to battery reserves.
<b>Maximum Input Voltage</b>	Strongest AC voltage that the UPS will accept before switching to battery reserves.
<b>Frequency</b>	AC frequency that the UPS is designed to accept.
<b>Output Load</b>	Percentage of the UPS's maximum inverter output capacity being used by devices connected to the system's battery-supported outlets.
<b>Load State</b>	“OK” if Output Load is less than 100% of output capacity, “Overload” if it equals or exceeds 100%.
<b>UPS Output Status</b>	Indicates if UPS output is on or off.
<b>Battery Age</b>	Time elapsed since UPS batteries were changed.
<b>Nominal Battery Voltage</b>	DC voltage the UPS is designed to accept.
<b>Battery Voltage</b>	DC voltage the UPS is receiving.
<b>Battery Capacity</b>	Percentage of the battery's charge remaining.
<b>Battery Voltage Condition</b>	“OK” if more than 50% of the UPS's battery charge remains, “Low” if 25-50% remains and “Very Low” if less than 25% remains.
<b>Temperature (°F/°C)</b>	UPS system's internal temperature.
<b>Self Test Date</b>	Date of last UPS self test.
<b>Self Test Status</b>	Results of last UPS self test.
<b>UPS Firmware Version</b>	UPS system's operating system as read by the adapter.
<b>Model</b>	UPS system's model as read by the adapter.
<b>Protocol</b>	UPS system's communications as read by the adapter.
<b>Date UPS Installed</b>	Set by user on the UPS Settings page.
<b>UPS Location</b>	Set by user on the UPS Settings page.
<b>UPS Name</b>	Set by user on the UPS Settings page.
<b>UPS Serial Number</b>	Set by user on the UPS Settings page.

<b>Contact Name</b>	Set by user on the UPS Settings page.
<b>Contact Number</b>	Set by user on the UPS Settings page.

## Event Log Page

This page displays a list of the most events your UPS has experienced.

The list's first column, Date/Time, tells exactly when the event occurred in a Day/Month/Year Hour:Second format.

The second column, System Message, gives a brief description of the event.

By hitting the *Save Log* button at the bottom of the page, you can save the current log to the UPS Adapter's memory. Later, if other events have occurred and pushed the saved events off the page, you may hit the *Restore Log* button to view the events in the log you saved again. *Clear Log* erases the log entries shown, but not the saved entries..

## Attached Devices Page

Depending on your UPS system's capabilities, you may be able to turn it and perhaps its individual outlets or groups of outlets on and off from this screen.

To turn your UPS completely off or on, click on the on/off buttons labeled "Main Power" in the upper center of the page. The colored circle next to these buttons indicates the current status of the UPS: green for on, red for off.

If your UPS system's outlets can be turned on and off separately, more on/off buttons and colored circles will appear in a table on this page. These buttons correspond to your UPS's outlets or load banks. In the fields next to them you may type labels describing which load each set of buttons controls. Click on the "Cycle" button to reset devices by turning the outlet(s) off, then on again.

Colored circles without buttons may appear in the table; these represent outlets on your UPS that cannot be individually controlled.

## Control Page

From this page you can issue direct commands to your UPS by selecting a command from the list shown, then pressing the "Execute Command" button. Depending on your UPS's capabilities, some or all of the following commands may be on the list shown:

Command	Effect
<b>TURN ON UPS</b>	Starts the UPS. Power will be ON at the UPS's outlets. Depending on your UPS model, it may or may not be able to "cold-start" in battery mode when utility power is unavailable; see your UPS owner's manual.
<b>TURN OFF UPS</b>	Shuts the UPS down. Power will be OFF at the UPS's outlets. Depending on your UPS, it may or may not continue to charge its battery if utility power is available; see your UPS owner's manual.
<b>REBOOT UPS</b>	Turns the power at the UPS's outlets OFF briefly, then ON again. Useful for resetting connected equipment.
<b>RESET MIN/MAX VOLTAGE</b>	Clears the UPS's memory of the lowest and highest voltages it has received from its utility input.
<b>INITIATE SELF TEST</b>	Runs the UPS's built-in diagnostics.

## Agent Configuration Page

On this page you may configure your UPS Adapter for use with your network and your SNMP devices. After making changes to these settings, scroll down to the buttons at the bottom of the page. You may press the "Reset" button to clear your changes, or the

“Save Settings” button to send your changes to the UPS Adapter. If you select the “Reboot Agent on Submit” option, the UPS Adapter will reboot using the new settings when the “Save Settings” button is pushed.

**SNMP Card Setup** allows you to change your UPS Adapter's network settings.

SNMP Setup Option	Usage
<b>IP Address</b>	Used to change the UPS Adapter's IP address. When this setting is changed, all LAN connections are lost and must be re-established using the new address.
<b>Net Mask</b>	Enter the network mask for the segment to which the UPS Adapter is attached. If you don't have a router, leave this at 255.255.255.0.
<b>Gateway</b>	If a router is installed on the UPS Adapter's network segment, enter its address here. Otherwise, leave this at 0.0.0.0.
<b>User Name</b>	To require that a user name be entered to log on to the UPS Adapter, enter the name here.
<b>Password</b>	To require that a password be entered to log on to the UPS Adapter, enter the word here.

**NMS Setup** allows you to configure your UPS Adapter to communicate with its Network Management Stations (NMS). Up to four NMS may be assigned to the UPS Adapter. For each NMS, enter the following information:

NMS Setup Option	Usage
<b>NMS [#]</b>	Enter the IP address of the NMS.
<b>Community</b>	If the NMS is assigned a Community, enter its name here. Otherwise leave this field blank.
<b>Access</b>	Assign the NMS either RO (read-only access) or RW (read-write access) to the UPS Adapter. NMS with RO access may not change UPS Adapter settings.

**Trap Receivers Setup** allows you to configure your UPS Adapter to communicate with its Trap Hosts, which will receive SNMP Traps sent by the UPS Adapter. Up to ten Trap Hosts may be assigned to the UPS Adapter. For each Trap Host, enter the following information:

Trap Receivers Setup Option	Usage
<b>TR [#]</b>	The IP address of the Trap Host.
<b>Community</b>	If the Trap Host is assigned a Community, enter it here. Otherwise, leave this field blank.
<b>Enable Traps</b>	Enables/disables the Adapter sending Traps to this Trap Host.
<b>Authenticate</b>	Enables/disables warning this Host of illegal SNMP activity, i.e. UPS commands or information requests from addresses or communities not established in the NMS setup section.

**Email Configuration Setup** allows you to configure your UPS Adapter to send notifications to up to three addresses via e-mail. Press the “Send Test Email” button after making changes to verify that the new settings work.

Email Configuration Setup Option	Usage
<b>Email Server Address</b>	The IP address of the email server the UPS Adapter will use.
<b>Email Server Port</b>	The port number of the email server the UPS adapter should use.
<b>From Address</b>	The return address that should appear on the email the UPS Adapter will send.
<b>Email Recipients</b>	Up to three email addresses that will receive notifications.

## UPS Settings Page

On this page you may enter information that will make it easier to identify and manage the connected UPS. The information you enter here will be displayed on the Variables page. After making changes to these settings, scroll down to the buttons at the bottom of the page. You may press the “Reset” button to clear your changes, or the “Submit” button to send your changes to the UPS Adapter.

SNMP Setup Option	Usage
<b>Battery Installed Date</b>	When you install the UPS or change its internal battery, enter the date here.
<b>UPS Installed Date</b>	When you install the UPS, enter the date here.
<b>UPS Location</b>	Identify the UPS by location.
<b>UPS Name</b>	Identify the UPS by function or by another distinguishing feature.
<b>UPS Serial Number</b>	The manufacturer's serial number from the UPS's label.
<b>Contact Name</b>	Name of the repair technician.
<b>Contact Number</b>	Contact information for repair technician.

## Event Actions Page

From this page you can configure your UPS to shut down in response to any, all or none of the following power and/or operating conditions:

Condition	Definition
<b>On Battery</b>	The UPS is providing power to connected equipment from battery.
<b>Low Battery</b>	UPS battery power is below 25% of its total capacity.
<b>Overload</b>	The combined power draw of all connected equipment exceeds the UPS system's output rating.
<b>Battery Below 50%</b>	UPS battery power is below 50% of its total capacity.
<b>High Temperature</b>	The UPS system's internal temperature is above its normal operating range.

To configure the UPS to shut down in response to one of these actions, first select the type of shutdown desired:

Shutdown	Definition
<b>UPS system</b>	The UPS will turn off.
<b>None</b>	The UPS will not shut down due to this event.

Next, set a shutdown delay of up to 60 minutes in the format mm:ss. This is how much time will elapse between the event and the shutdown. A shutdown delay gives users a chance to save files and shut equipment down gracefully.

## Set Time Page

Set the UPS Adapter's internal clock to local time from this page. Selecting the button “Automatically adjust for daylight savings time” will set the internal clock to gain or lose an hour when appropriate to match local daylight savings time.

After making changes to these settings, scroll down to the buttons at the bottom of the page. You may press the “Reset” button to clear your changes, or the “Submit” button to send your changes to the UPS Adapter.

## Thresholds Page

This page displays a list of UPS operating variables that your Web Card monitors, showing the critical values—Thresholds—that have been set for each variable. If the UPS crosses over one of these Threshold values, the Web Adapter registers the crossing as a Critical Event (see **Events Page**), possibly triggering an Event Action (see **Event Actions Page**). The Critical Event will reset if the Web Card senses the variable crossing back over the Threshold value. The variables are:

**Note:** A value of *N/A (Not Applicable)* in any of the fields indicates that your UPS model does not support that data variable.

Threshold	Threshold Crossed If
<b>Battery Installed Date</b>	If the batteries are several years old. If the UPS’s battery(ies) are changed, this threshold value should be set to the date of the change in the format MM/DD/YY.
<b>Battery Capacity lower threshold</b>	If the UPS battery(ies) have less than the designated percentage of their full power capacity remaining.
<b>Input Voltage lower threshold</b>	If the input voltage drops below the chosen voltage.
<b>Input Voltage upper threshold</b>	If the input voltage climbs above the chosen voltage.
<b>Temperature lower threshold</b>	If the operating temperature drops below the chosen degrees Fahrenheit.
<b>Temperature upper threshold</b>	If the operating temperature climbs above the chosen degrees Fahrenheit.
<b>UPS Load upper threshold</b>	If the combined power draw of all equipment connected to the system’s UPS-connected outlets climbs above the specified percentage of the UPS’s maximum output capacity.
<b>UPS Nominal input voltage</b>	If the utility power the UPS is plugged into drops below the specified voltage.
<b>UPS Nominal battery voltage</b>	If the voltage of the UPS’s battery(ies) drops below the specified voltage.

## Environmental Page

This page displays the prevailing environmental parameters in the vicinity of your UPS. You may set high and low limits on these parameters; if local conditions go outside these limits, your Web Adapter registers a Warning Event (see **Events Page**), possibly triggering an Event Action (see **Event Actions Page**). The Warning Event will reset if the parameter returns inside the limits.

**Note:** *The conditions shown on this page are only accurate if you have connected a Tripp Lite EnviroSense device to your UPS Adapter.*

Parameter	Definition
Temperature (F)	The temperature near the UPS in degrees Fahrenheit.
Humidity (%)	Relative humidity near the UPS.

The Environment Page also shows the status of the four dry contacts on the UPS's EnviroSense. Each dry contact can be connected to a smoke detector, alarm or other device (see EnviroSense instructions for details).

You may type a description of how each contact is being used on this page. You may also set whether a contacts' normal state is Open or Closed. If a contact switches out of its normal state, your Web Adapter registers a Warning Event (see **Events Page**), possibly triggering an Event Action (see **Event Actions Page**). The Warning Event will reset if the contact reverts to its normal state.



## Chapter 5

# Troubleshooting

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This chapter covers some common problems you may encounter during the configuration and normal operation of the UPS SNMP/Web Adapter. Whenever a problem is encountered:

- Make sure that the UPS SNMP/Web Adapter is turned on.
- Check all connections and make sure they are secure.
- Refer to the following problems and implement any recommended solutions.
- If, after trying the recommended steps, the problem persists, contact your dealer for technical support.

### **Problem 1**    **Unable to *ping* or connect to the adapter.**

#### **Solution 1**

1. Check all network connections.
2. Ensure that your PC and the UPS adapter are on the same network segment. (If you don't have a router, this must be true.)
3. It may be that your "arp table" contains invalid entries. You can clear the "arp table" by rebooting, or by typing the following command at the command prompt or *Run* dialog box.: `arp -d <IP Address>`
4. You can connect to the UPS Adapter ONLY if your PC and the UPS Adapter are using IP Addresses from the same address block. Normally, private LANs use IP Addresses from ONE of the following blocks, which are reserved for this purpose:  
10.0.0.0 - 10.255.255.255  
172.16.0.0 - 172.31.255.255  
192.168.0.0 - 192.168.255.255

If your LAN is using a different address block than your UPS Adapter, you will NOT be able to connect to the UPS Adapter via the LAN.

In this case, your choices are:

- Use *Terminal Mode* configuration to set the UPS Adapter's IP Address (See page 5).
- Change your PC's IP Address to allow connection via the LAN as explained below.

#### **To Check Your Current IP Address**

Use *Control Panel-Network* to check the *Properties* for the TCP/IP protocol for your Network Adapter Card.

**To Connect if Your IP Address Range is Different**

If your current IP Address is NOT within the 192.168.x.x range, follow this procedure:

- Temporarily change your PC's IP Address so that it is within the same range as your UPS Adapter's range. (Choose any address which is not in use.) Also, make sure the Network Mask is set to 255.255.255.0
- Connect to the UPS Adapter using your browser (see page 11) and set the Adapter's IP address so that it is within the range used by your LAN. You will lose the connection with the UPS Adapter after changing the IP Address.
- Re-set your PC's IP Address to its old value, and re-establish the connection to the UPS Adapter using its new IP Address. You can then complete the configuration.

**Problem 2**    **The IP Address of the UPS Adapter is unknown.**

**Solution 2**    Remove the UPS Adapter from your LAN, and use *Terminal Mode Configuration* (see page 5) to view and set the IP Address.

**Problem 3**    **Unable to perform SNMP *get* operations.**

**Solution 3**    Check the SNMP settings stored in the UPS Adapter. The IP Address of the PC you are using must be entered in one of the *SNMP - Manager IP Address* fields, with *Read* or *Read/Write* permission. The *Community String* on the PC and UPS Adapter must match.

**Problem 4**    **Unable to perform SNMP *set* operations.**

**Solution 4**    Check the SNMP settings stored in the UPS Adapter. The IP Address of the PC you are using must be entered in one of the *SNMP - Manager IP Address* fields, with *Read/Write* permission. The *Community String* on the PC and UPS Adapter must match.

**Problem 5**    **Unable to receive traps at your management station.**

**Solution 5**    Check the *SNMP - Trap Receiver* settings in the UPS Adapter. The IP Address of the PC you are using must be entered in one of the *SNMP - Trap Receiver IP Address* fields. The *Community String* on the PC and UPS Adapter must match.

**Problem 6**    **Unable to use AutoDiscover to find the agent from your management station.**

**Solution 6**    Check the access control table in the UPS SNMP Adapter. The Manager IP Address needs to have *write* permission in the access control table.

**Problem 7**    **The HTTP interface displays an error message:**

**Action   \_ \_ \_ \_   Fail**

**Solution 7**    This may be normal, and not an error condition. If the previous command is not yet finished, another command can not be executed. You must wait until the previous command has finished.

## Appendix A

# Specifications

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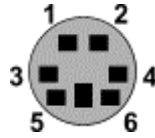
UPS SNMP/Web Adapter Card	
CPU	Intel 80186-25
Memory	ROM/RAM: 512Kbytes NVRAM: 2Kbytes
Power Consumption:	< 4 Watts
Power Input:	12 VDC regulated
Size:	130mm (L) x 60mm (W)
Ethernet Connector:	10 BaseT RJ-45 phone jack
LEDs:	2
DIP Switches:	2
Temperature/Humidity Connection	PS/2 connector
RS-232	1 “Golden Finger” connector

External UPS SNMP/Web Adapter	
CPU	Intel 80186-40
Memory	ROM/RAM: 512Kbytes NVRAM: 2Kbytes
Power Consumption:	< 7 Watts
Power Input:	External plug pack 12V DC regulated
Size:	118mm (L) × 89mm (W) × 23mm (H)
Ethernet Connector:	10 BaseT RJ-45 UTP
LEDs:	2
DIP Switches:	2
Temperature/Humidity Connection	PS/2 connector
RS-232	1 male DB-9 connector

<b>Environmental Specifications—Both Models</b>
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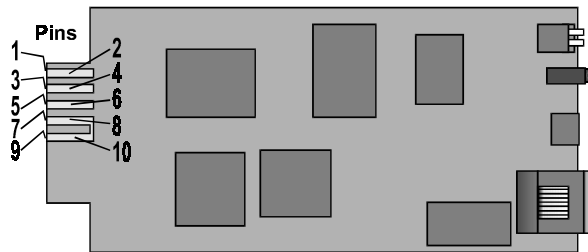
Operating Temperature:	0~40 degrees C
Storage Temperature:	-10~70 degrees C
Shipping Temperature:	-40~70 degrees C
Operating Humidity:	10~80 percent
Storage Humidity:	5~90 percent
Shipping Humidity:	5~100 percent

## PS/2 Connector



PS/2 Connector Pins		
Pin	Name	Description
1	GND	Ground
2	+9V or +12V	Power
3		Not used
4		Not used
5	Tx	Serial transmit
6	Rx	Serial receive

## Serial Port – Adapter Card



*Figure 3:- Pin Assignments*

PIN	Name	Description
1	GND	+12V GND
2	+12V	+12V Power
3	RXDUPS	Connect to UPS Tx signal
4	TXDUPS	Connect to UPS Rx signal
5	RXDPC	Connect to terminal Tx signal
6	TXDPC	Connect to terminal Rx signal
7	Not used	
8	SNMPSIG	SNMP card detect, connect to pin-10
9	GND	+12V GND
10	+VCC	Provided by UPS

## Serial Port – External Adapter

Pin	Signal Name	Type
1	Carrier Detect (CD)	In
2	Receive (Rx)	In
3	Transmit (Tx)	Out
4	Data Terminal Ready	Out
5	Signal Ground (GND)	Power
6	Data Set Ready (DSR)	In
7	Request to Send (RTS)	Out
8	Clear to Send (CTS)	In
9	Ring Indicator (RI)	In