Thank You!

Thank you for selecting the APC Network Management Card. It has been designed for many years of reliable, maintenance-free service. APC is dedicated to the development of high-performance electrical power conversion and control products. We hope that you will find this product a valuable, convenient addition to your system.

Please read this manual! It provides important configuration and operating instructions that will help you get the most from your Management Card. For detailed information on installation and set-up, see the Network Management Card Installation and Quick Start Manual provided in printed format, and in PDF format on the Network Management Card utility CD (\doc\Insguide.pdf).
# Contents

**Introduction** ................................................................. 1

**Product Description** ...................................................... 1

- Functionality  1
- Initial set-up  1
- Network management features  2

**Internal Management Features** ........................................ 3

- Overview  3
- Login control  3
- Types of user accounts  3

**Front Panel** ...................................................................... 4

**Watchdog Features** ........................................................... 5

- Overview  5
- Network interface watchdog mechanism  5
- The role of the Default Gateway in resetting the network timer  5

**Control Console** ............................................................... 6

**How to Log In** ................................................................. 6

- Overview  6
- Local (Serial) access  6
- Remote (Telnet) access  6

**How to Recover from a Lost Password** .............................. 7

- Overview  7
- Password-recovery procedure  7

**Main Screen** ................................................................. 8

- Example Main screen  8
- Status and identification information  8

**Control Console Menus** ..................................................... 10

- Main menu  10
- Menu structure  10
- Device Manager option  11
- Network option  11
- System option  11
# Contents

## Web Interface .................................................. 12

**Introduction** ............................................. 12
- Web menu options 12
- Supported Web browsers 12

**How to Log In** ............................................. 13
- Overview 13
- URL address formats 13

**Status Summary Page** .................................... 14
- Example Web page 14
- Status and identification information 14

**Menu Frame** ............................................... 15
- UPS and Environment menus 15
- Events menu 15
- Data menu 15
- Network menu 16
- System menu 16
- Help menu 16
- Links menu 17

## Network Menu .................................................. 18

**Menu Options** ............................................. 18
- Overview 18
- TCP/IP 18
- DNS 18
- Send DNS Query 19
- Ping utility 19
- FTP Server, Telnet and Web 20
- SNMP 21
- Email 21

## System Menu .................................................... 22

**Introduction** ............................................. 22
- Overview 22
- Menu options 22

**Option Settings** ........................................... 23
- User Manager 23
- Identification 23
- Date & Time 24
- Tools 25
- Preferences 25
- Links 25
Contents

Device Manager Menus .................................................. 26

Introduction ................................................................. 26
  Overview  26
  UPS menu options  26

UPS Status ................................................................. 27
  Detailed UPS Status  27
  Utility Voltage Status  28
  Output Power Status  29
  Fault Tolerance (Symmetra or Symmetra 3 Phase UPS)  30
  Battery  30

UPS Diagnostics ........................................................... 31
  Diagnostics  31
  Scheduled UPS self-tests  32

UPS Control ................................................................. 33
  Overview  33

UPS Configuration ........................................................ 34
  Utility Line Settings  34
  Alarm Thresholds (Symmetra or Symmetra 3 Phase UPS)  35
  Shutdown Parameters  36
  General Settings  37
  Reset UPS Defaults  37
  Configure the Multiple/Parallel UPS IP Address
    and Monitor Name (Silicon DP300E series
    UPS only)  37

Module Status (Symmetra or Symmetra 3 Phase UPS) . . . 38
  Menu options  38
  Module status  38

PowerChute® (UPS PowerChute network shutdown). . . . 39
  Overview  39
  Parameters  39
  Maximum-Shutdown-Time negotiation  40

Scheduling (UPS Shutdown) .............................................. 41
  Overview  41
  How to Schedule a Shutdown  41
  How to Edit, Disable, or Delete a Shutdown  42

Environment Menu ........................................................ 43
  Probe status  43
  Contact status  43
  Probe settings  43
  Contact settings  43
# Contents

## Events Menu

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td>44</td>
</tr>
<tr>
<td>Overview</td>
<td>44</td>
</tr>
<tr>
<td>Menu options</td>
<td>44</td>
</tr>
<tr>
<td><strong>Event Log</strong></td>
<td>45</td>
</tr>
<tr>
<td>Logged events</td>
<td>45</td>
</tr>
<tr>
<td>Web Interface</td>
<td>45</td>
</tr>
<tr>
<td>Control Console</td>
<td>45</td>
</tr>
<tr>
<td>How to use FTP to retrieve log files</td>
<td>46</td>
</tr>
<tr>
<td><strong>Event Actions (Web Interface only)</strong></td>
<td>47</td>
</tr>
<tr>
<td>Severity levels</td>
<td>47</td>
</tr>
<tr>
<td>Event Log action</td>
<td>48</td>
</tr>
<tr>
<td>SNMP Traps action</td>
<td>48</td>
</tr>
<tr>
<td>Email action</td>
<td>48</td>
</tr>
<tr>
<td><strong>Event Recipients</strong></td>
<td>49</td>
</tr>
<tr>
<td>Trap Receivers</td>
<td>49</td>
</tr>
<tr>
<td>Email options</td>
<td>49</td>
</tr>
<tr>
<td><strong>Email Feature</strong></td>
<td>50</td>
</tr>
<tr>
<td>DNS servers</td>
<td>50</td>
</tr>
<tr>
<td>SMTP settings</td>
<td>50</td>
</tr>
<tr>
<td>Email Recipients</td>
<td>51</td>
</tr>
<tr>
<td><strong>How to Configure Individual Events</strong></td>
<td>53</td>
</tr>
<tr>
<td>“Event List” page</td>
<td>53</td>
</tr>
<tr>
<td>“Detailed Event Action Configuration” page</td>
<td>53</td>
</tr>
</tbody>
</table>

## Data Menu

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Menu Options</strong></td>
<td>54</td>
</tr>
<tr>
<td>Log option</td>
<td>54</td>
</tr>
<tr>
<td>Configuration option</td>
<td>54</td>
</tr>
</tbody>
</table>

## Security

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td>55</td>
</tr>
<tr>
<td>Port assignments</td>
<td>55</td>
</tr>
<tr>
<td>User Names, Passwords and SNMP Community Names</td>
<td>56</td>
</tr>
</tbody>
</table>
Contents

Troubleshooting ........................................................................ 57

Management Card .................................................................. 57
  Management Card-access problems 57
  SNMP issues 58

How to Correct Communication Lost Problems .................. 59
  Constant Unable to Communicate Problem 59
  Intermittent Unable to Communicate Problem 59

If Problems Persist .................................................................. 60

APC Global Support ................................................................. 61

Product Information ................................................................. 62

Warranty Information ............................................................... 62
  Limited warranty 62
  Obtaining service 62
  Warranty limitations 62

Life-Support Policy ................................................................. 63
  General policy 63
  Examples of life-support devices 63

Specifications .......................................................................... 64
  Electrical 64
  Physical 64
  Environmental 64
  Approvals 64
Introduction

Product Description

Functionality

American Power Conversion’s Network Management Card is a web-based UPS Management product that uses multiple, open standards such as Telnet, HTTP, and SNMP to provide full management of UPS systems. Through the Network Management Card, you can monitor and configure your APC UPS systems to shut down and reboot your computer systems.

The Management Card can be installed into the following APC devices:

- Any Smart-UPS® or Matrix-UPS® model that has an internal expansion slot, as well as any Symmetra®, Symmetra 3 Phase, or Silcon™ DP300E series UPS models
  
  **Note:** A Silcon™ DP300E, which does not have an expansion slot, requires using an Expansion Triple Chassis.

- Expansion Chassis (AP9600)
- Expansion Triple Chassis (AP9604, AP9604R, or AP9604SR)

Initial set-up

You must define three TCP/IP settings for the Management Card before it can operate on the network.

- IP address of the Management Card
- Subnet mask
- IP address of the default gateway

For instructions about how to configure the TCP/IP settings, see the *Network Management Card Installation and Quick Start Manual*, provided in printed form, and in PDF on the APC Network Management Card utility CD (.\doc\Insguide.pdf).

Continued on next page
Network management features

The Management Card, along with other APC products, can perform a variety of tasks. The figure below identifies and briefly describes the network management applications that can work with a UPS that connects to the network through a Management Card.

Note: The Management Card Wizard identified in the following graphic can be used for mass configuration, either serially or over the network. It cannot be used to download firmware upgrades.
Introduction

Internal Management Features

Overview

The Management Card has two internal interfaces which provide menus with options that allow you to manage the UPS, an Environmental Monitor, and the Management Card: the Control Console and the Web Interface. The Management Card’s SNMP interface also allows you to use an SNMP browser with the PowerNet MIB to manage the UPS and an Environmental Monitor.

For more information about the Management Card’s internal user interfaces, see Control Console on page 6 and Web Interface on page 12; for more information about how to use the PowerNet MIB with an SNMP browser, see the PowerNet® SNMP Management Information Base (MIB) Reference Guide which is provided on the APC Network Management Card utility CD (.\doc\Mibguide.pdf)

Login control

Only one user at a time can log into the Management Card to use its internal user interface features. The priority for access is as follows:

- Local access to the Control Console from a computer with a direct serial connection to the Management Card always has the highest priority.
- Telnet access to the Control Console from a remote computer has the next highest priority.
- Web access has the lowest priority.

Note: For information about how SNMP access to the Management Card is controlled, see SNMP on page 21.

Types of user accounts

The Management Card has two levels of access (Administrator and Device Manager), both of which are protected by Password and User Name requirements.

- An Administrator can use all of the management menus available in the Control Console and the Web Interface. The Administrator’s default Password and User Name are both apc.
- A Device Manager can only access the Log option in the Events menu and use the UPS and Environment menus. The Device Manager’s default Password is device, and the default User Name is apc.

For information about how to set Administrator and Device Manager Password and User Name settings, see User Manager on page 23.
Introduction

Front Panel

Features

The following graphic identifies the Network Management Card’s features:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>The device which connects the Management Card to the network is turned off or not operating correctly.</td>
</tr>
<tr>
<td>Flashing Green</td>
<td>The Management Card is receiving data packets from the network at 10 Megabits per second (Mbs).</td>
</tr>
<tr>
<td>Flashing Orange</td>
<td>The Management Card is receiving data packets from the network at 100 Megabits per second (Mbs).</td>
</tr>
</tbody>
</table>

Reset Button. Allows you to reset the Management Card while power is on.

10/100Base-T Port. Used to connect to the Ethernet network.

Link-RX/TX LED. This LED indicates the network status.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>The Management Card has no power.</td>
</tr>
<tr>
<td>Solid Green</td>
<td>The Management Card has valid network settings.</td>
</tr>
<tr>
<td>Flashing Green</td>
<td>The Management Card does not have valid TCP/IP settings.</td>
</tr>
<tr>
<td>Solid Orange</td>
<td>A hardware failure has been detected in the Management Card. Contact APC Technical Support as described in APC Global Support on page 61.</td>
</tr>
<tr>
<td>Flashing Orange</td>
<td>The Management Card is making BOOTP requests. If you do not use a BOOTP server, you need to configure the Management Card’s TCP/IP settings.</td>
</tr>
</tbody>
</table>

Status LED. This LED indicates the status of the Management Card.

1 For information about how to configure the three TCP/IP settings that the Management Card needs to operate on the network, see the Network Management Card Installation and Quick Start Manual provided in printed format, and in PDF format on the APC Network Management Card utility CD (.doc\Insguide.pdf).
## Introduction

### Watchdog Features

<table>
<thead>
<tr>
<th>Overview</th>
<th>The Management Card is designed to recover from unanticipated inputs. Through the use of internal, system-wide watchdog mechanisms, the Management Card can detect most internal problems. When it does, it reboots itself to recover from the internal problem. This results in a System: Warmstart event being recorded in the event log.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Network interface watchdog mechanism</strong></td>
<td>The Management Card implements numerous internal watchdog mechanisms to protect itself from becoming inaccessible over the network. One of these mechanisms ensures that the Management Card can receive network traffic: If within a 9.5-minute period the Management Card does not receive any network traffic (either direct, like SNMP, or broadcast, like an Address Resolution Protocol [ARP] request) then it will assume that there is a problem with its network interface and reboot itself.</td>
</tr>
<tr>
<td><strong>The role of the Default Gateway in resetting the network timer</strong></td>
<td>Most networks will have some level of broadcast traffic which will be received by the Management Card and reset the 9.5-minute timer back to zero. But it is possible (for example, late at night in an accounting department) that the Management Card will not see any traffic for 9.5 minutes. Since it is not desirable for the Management Card to reboot just because the network is quiet, the Management Card will attempt to contact the Default Gateway once every 4.5 minutes. If the gateway is present, it will respond to the Management Card and the 9.5-minute timer will be reset to zero.</td>
</tr>
<tr>
<td></td>
<td>If your application does not require a gateway or does not have one, specify the IP address of a computer on the same subnet which is up and running on the network most of the time. This will have the same effect as configuring a gateway.</td>
</tr>
</tbody>
</table>
## How to Log In

### Overview
You can use either a local (serial) connection, or a remote (Telnet) connection with a computer on the Management Card’s subnet to access the Control Console. Use case-sensitive **User Name** and **Password** entries to log in (by default, `apc` and `apc`, for an Administrator, or `device` and `apc`, for a Device Manager).

### Local (Serial) access
You can use a computer that connects to the Management Card through the serial port at the UPS or chassis to access the Control Console.

1. Select a serial port at the computer to be used for a terminal-emulation connection with the Management Card.
2. Disable any service that currently uses the selected serial port, such as PowerChute *plus* or UNIX Respond.
3. Connect the smart-signaling cable (APC part number 940-0024) that came with the Management Card to the serial port on the computer and to the serial port on the UPS or chassis.
   - **Note:** If the computer uses smart-signaling PowerChute *plus*, a smart-signaling cable (APC part number 940-0024 or 940-1524) is already installed. For simple-signaling, temporarily replace the cable.
4. Run a terminal program, such as HyperTerminal.
5. Configure the serial port for 2400 bps, 8 data bits, no parity, 1 stop bit, and no flow control, then save the changes.
6. Press ENTER to display the **User Name** prompt (you may need to press ENTER two or three times).
7. Enter your **User Name** and **Password**.
   - **Note:** If you cannot remember a **User Name** or **Password**, see **How to Recover from a Lost Password** on page 7.

### Remote (Telnet) access
You can use Telnet to log into the Control Console from any computer on the same subnet as the Management Card.

1. At a command prompt, type `telnet` and the Management Card’s System IP address, and then press ENTER. For an IP address of 159.215.12.114, the command would look like this: `telnet 159.215.12.114`
2. Enter your **User Name** and **Password**.
Control Console

How to Recover from a Lost Password

Overview
If the User Name or Password becomes unknown, you can use a local computer to restore access to a Management Card.

Password-recovery procedure
To recover from a lost Password or User Name, do the following:

1. Select a serial port at the computer to be used for a terminal-emulation connection with the Management Card.
2. Disable any service that currently uses the selected serial port, such as PowerChute plus or UNIX Respond.
3. Connect the smart-signaling cable (APC part number 940-0024) that came with the Management Card to the serial port on the computer and to the serial port on the UPS or chassis.
   
   **Note:** If the computer uses smart-signaling PowerChute plus, a smart-signaling cable (APC part number 940-0024 or 940-1524) is already installed. For simple-signaling, temporarily replace the cable.
4. Run a terminal program, such as HyperTerminal.
5. Configure the serial port for 2400 bps, 8 data bits, no parity, 1 stop bit, and no flow control, then save the changes.
6. Press ENTER to display the User Name prompt (you may need to press ENTER two or three times).
7. Press the reset button on the Management Card.
8. Press ENTER to redisplay the User Name prompt.
9. Use apc for both the User Name and Password to log in.
   
   **Note:** If you take longer than 30 seconds to log in, you will need to repeat steps 6 through 8.
10. Select System from the Control Console menu.
11. Select User Manager from the System menu.
12. Select Administrator from the User Manager menu and follow the on-screen instructions to change the User Name and Password settings to the new values.
13. Press CTRL-C to exit to the Control Console menu.
14. Log out to save the changes.
15. If necessary, reconnect the simple-signaling PowerChute plus cable replaced in step 3.
Control Console

Main Screen

The following is an example of the screen that appears when you log into the Control Console.

```
American Power Conversion Network Management Card AOS v1.0.0.u
(c) Copyright 2001 All Rights Reserved Smart-UPS & Matrix-UPS APP v1.0.0.r

Name     : Writer1        Date    : 07/22/2001
Contact  : JKing          Time     : 06:44:47
Location : User Ed Department User : Administrator
Up Time  : 1 Day 22 Hours 52 Minutes Stat : P+ N+ A+

Environment : Thresholds OK, Contact Alarms OK
Smart-UPS 450 named User Ed : On Line

--- Control Console ---

1- Device Manager
2- Network
3- System
4- Logout

<ESC>- Main Menu, <ENTER>- Refresh, <CTRL>- Event Log
```

Status and identification information

The following information is provided at the top of the main screen:

- Two fields identify the APC operating system (AOS) and application (APP) firmware versions. The application firmware uses a name that identifies the type of UPS that the Management Card connects to the network. In the example above, the Management Card uses the application firmware for a UPS in the Smart-UPS/Matrix-UPS family, in this case, a Smart-UPS 450.

```
Network Management Card AOS v1.0.0.u
Smart UPS & Matrix UPS APP v1.0.0.r
```

- Three fields identify the system **Name**, **Contact**, and **Location** values.

```
Name     : Writer1
Contact  : JKing
Location : User Ed Department
```

**Note:** For information about how to set the **Name**, **Contact**, and **Location** values, see **System Menu on page 22**.

- An **Up Time** field reports how long the Management Card has been running since it was last turned on or reset.

```
Up Time  : 1 Day 22 Hours 52 Minutes
```

Continued on next page
Control Console

Main Screen continued

Status and identification information, continued

- Two fields identify when you logged in, by Date and Time.
  Date: 07/22/2001
  Time: 06:44:47
  **Note:** For information about how to change the Date and Time values, see System Menu on page 22.

- A User field identifies whether you logged in as an Administrator or Device Manager.
  User: Administrator

- A Stat field reports the Management Card status.
  Stat: P+ N+ A+

  Where,
  - P+ indicates that the APC operating system (AOS) is Ok
  - N+ indicates that the network is Ok
  - A+ indicates that the application is Ok
  - A- indicates that the application has a bad checksum
  - A? indicates that the application is initializing
  - A! indicates that the application is not compatible with the AOS

  **Note:** If you can access the Control Console, the AOS and network will report that the status is OK (P+ and N+).

- An Environment field reports the status of the Environmental Monitor, when this device is used.
  Environment: Thresholds Ok, Contact Alarms Ok

  **Note:** For more information about the Environmental Monitor status, see Environment Menu on page 43.

- A UPS model and name field reports the status of the UPS.
  Smart-UPS 1400 RM named User Ed: On Line

  **Note:** For more information about the UPS status, see UPS Status on page 27.
Control Console

Control Console Menus

Overview
The Control Console provides a set of menus that you can use to manage the Management Card, its UPS, and an Environmental Monitor.

Main menu
The main Control Console menu has options that provide access to the Control Console’s management features:

1- Device Manager
2- Network
3- System
4- Logout

Note: When you log in as Device Manager, you can only access the Device Manager menus.

Menu structure
The menus in the Control Console list options by number and name. To use an option, type the option’s number and press ENTER, then follow any on-screen instructions.

Some options access a new menu; other options allow you to change a setting. Menus that allow you to change a setting have an Accept Changes option which you must use before you exit a menu to save the changes you made.

While in a menu, you can also do the following:

• Type ? and press ENTER, to access brief menu option descriptions (if the menu has help available).
• Press ENTER, to refresh the menu.
• Press ESC, to go back to the menu from which you accessed the current menu.
• Press CTRL-C, to return to the main (Control Console) menu.
• Press CTRL-D, to toggle between the UPS and Environmental Monitor menus.
• Press CTRL-L, to access the event log.

Note: For information about the event log, see Events Menu on page 44.

Continued on next page
## Control Console

### Control Console Menus

#### Device Manager option
This option accesses the Device Manager menu. This menu’s options allow you to select the device that you want to manage:

1- Environment
2- Smart-UPS 700

**Note:** The Environment option is only present when an Environmental Monitor is present.

For information about the menus used to manage a UPS and Environmental Monitor, see [Device Manager Menus on page 26](#).

#### Network option
To do any of the following tasks, see [Network Menu on page 18](#):

- Configure the Management Card's TCP/IP settings.
- Use the Ping utility.
- Define settings that affect FTP, Telnet, the Web Interface, SNMP, and Email.

#### System option
To do any of the following tasks, see [System Menu on page 22](#):

- Control Administrator and Device Manager access.
- Define the system Name, Contact, and Location values.
- Set the Date and Time used by the Management Card.
- Use file transfer protocols.
- Reboot the Management Card.
- Reset the Control Console settings to default settings.
- Access system information about the Management Card.
Web Interface

Introduction

Overview

Unless the Web Interface is disabled, you can use a supported Web browser to manage a UPS, an Environmental Monitor, and the Management Card.

Web menu options

Two Web menu options affect access to the Web Interface.

- **Access**: Enables or disables the Web Interface.
- **Port**: Defines the Web-server port (80, by default) used for the Web Interface.

For more information about the Access and Port options, see FTP Server, Telnet and Web on page 20.

Supported Web browsers

You can use Microsoft® Internet Explorer (IE) 5.0 (and higher) or Netscape® 4.0.8 (and higher) browsers to access the Management Card through its Web Interface.

Some Web Interface features require that you enable the following for your Web browser:

- JavaScript
- Java
- Cookies

In addition, the Management Card cannot work with a proxy server. Therefore, before you can use a Web browser to access its Web Interface, you must do one of the following:

- Configure the Web browser to disable the use of a proxy server for the Management Card.
- Configure the proxy server to not proxy the specific IP address of the Management Card.
Web Interface

How to Log In

Overview

You can use a Management Card’s DNS name or System IP address for the URL address of the Web Interface. Use your case-sensitive User Name and Password settings to log in (by default, apc and apc, for an Administrator, or device and apc, for a Device Manager).

For information about the Web page that appears when you log into the Web Interface, see Status Summary Page on page 14.

URL address formats

Type the Management Card’s DNS name or IP address in the Web browser’s URL address field and press ENTER. Except as noted below, http:// is automatically added by the browser.

Note: If you get a “You are not authorized to view this page” error (Internet Explorer only), someone is logged into the Web Interface or Control Console. If a “No Response” (Netscape) or “This page cannot be displayed” (Internet Explorer) error occurs, Web access may be disabled, or the Management Card may use a non-default Web-server port, and you did not include the correct port number in the address. For more information, see FTP Server, Telnet and Web on page 20.

• For a DNS name of Web1, the entry would look like this:
  http://Web1

• For a System IP address of 159.215.12.114, when the Management Card uses the default port (80) at the Web server, the entry would look like this:
  http://159.215.12.114

• For a System IP address of 159.215.12.114, when the Management Card uses a non-default port (5000, in this example) at the Web server, the entry would look like this:
  http://159.215.12.114:5000

Note: For Internet Explorer, you must type in http:// as part of the address when any port other than 80 is used or you will get a “This page cannot be displayed” error. For more information, see FTP Server, Telnet and Web on page 20.
Web Interface

Status Summary Page

Example Web page

A menu frame (see Menu Frame on page 15) and “Summary” page appear when you log into the Web Interface.

Status and identification information

The “Summary” page reports the status of the UPS and the Environmental Monitor, when one is present. A Management Card Status section reports the following:

- The Name, Contact and Location information for the Network Management Card
- The log in Date and Time
- Type of User (Administrator or Device Manager)
- How long (Up Time) the Network Management Card has been continuously running since it was turned on or reset
- The Status of the Network Management Card

Note: If the Status field reports anything other than Ok, contact APC as described in APC Global Support on page 61.

For information about how to set the Name, Contact, and Location values, or to modify the Date and Time settings, see System Menu on page 22; for information about UPS status, see UPS Status on page 27; for information about the Environmental Monitor status, see Environment Menu on page 43.
Web Interface

Menu Frame

Overview

When you log into the Web Interface as an Administrator, the navigation bar (left frame) includes the following elements:

- The Management Card’s IP address
- A **UPS** menu which uses the UPS model for its name (Smart-UPS 450, in the example on page 14)
- An **Environment** menu (if an Environmental Monitor is used with the UPS).
- An **Events** menu
- A **Data** menu
- A **Network** menu
- A **System** menu

**Note:** When you log in as a Device Manager, the **Network** and **System** menus do not appear in the menu frame.

- A **Logout** option
- A **Help** menu
- A **Links** menu

UPS and Environment menus

For information about how to use the UPS and Environment menus to manage a UPS or an Environmental Monitor, see [Device Manager Menus on page 26](#).

Events menu

To do the following, see the **Events Menu chapter on page 44**:

- Access the event log.
- Configure the actions to be taken based on an event’s severity level.
- Configure SNMP Trap Receiver settings for sending event-based traps.
- Define who will receive Email notifications of events.

Data menu

To do the following, see the **Data Menu chapter on page 54**:

- Access the data log.
- Define the log interval (how often data will be sampled and recorded) for the data log.

*Continued on next page*
Web Interface

Menu Frame continued

Network menu
To do the following, see the Network Menu chapter on page 18:

• Configure new TCP/IP settings for the Management Card.
• Identify the Domain Name Service (DNS) Server and test the network connection to that server.
• Define settings that affect FTP, Telnet, the Web Interface, SNMP, and Email.

Note: For information about how the Network menu’s Telnet/ Web option can affect access to the Web Interface, see Web menu options on page 12.

System menu
To do the following, see the System Menu chapter on page 22:

• Control Administrator and Device Manager access.
• Define the system Name, Contact, and Location values.
• Set the Date and Time used by the Management Card.
• Use file transfer protocols.
• Reboot the Management Card
• Reset the Control Console settings to default settings.

Help menu
When you click Help, the Contents for the online help is automatically displayed to provide for easy navigation to a specific online help topic. However, from any of the Web Interface pages, you can use the question marks (?) that appears in the top right corner to link to the section of the online help that covers that page’s content.

The Help menu also has an About System option you use to view information about the Management Card’s Model Number, Serial Number, Hardware Revision, Manufacture Date, MAC Address, Application Module and APC OS (AOS) Module, including the date and time these modules were loaded.

Note: In the Control Console, the About System option, which is a System menu option, identifies the Flash Type used.

Continued on next page
Web Interface

Menu Frame continued

Links menu

Provides three user-definable URL link options. By default, these links access the following APC web pages:

- **APC’s Web Site** accesses the APC home page.
- **Testdrive Demo** accesses the APC Web-driven Products Demonstration Page, a page which allows customers to try-out APC web-enabled products.
- **Remote Monitoring** accesses the APC Remote Monitoring Service Page where you can find more information about pay-for-monitoring services available from APC.

**Note:** For more information about the APC Remote Monitoring Service available, use the **Remote Monitoring** link.

You can use the following procedure to redefine these links so that they point to other UPS devices, or to the MasterSwitch devices and servers that are being powered by the UPS.

- Click on **Links** in the **System** menu.
- Define the any new names for the **User Links**.
- Define the any new URL addresses that you want the **User Links** to access.
- Click **Apply**.

**Note:** This “Links” page also has an **Access Link** option that you can use to modify the URL address used by the APC logo, if desired.
Network Menu

Menu Options

Overview

The **Network** menu provides access to the options you use to configure the Management Card’s network settings.

**Note:** Only an Administrator has access to the **Network** menu.

TCP/IP

This option allows you to enable or disable BOOTP, and when BOOTP is disabled, define the three TCP/IP settings that the Management Card needs to operate on the network.

- The Management Card’s System IP address
- The subnet mask value
- The IP address of the Default Gateway

**Note:** For information about the watchdog role the Default Gateway plays, see *The role of the Default Gateway in resetting the network timer on page 5*; for information about how to configure the initial TCP/IP settings when you install the Management Card, see the *Network Management Card Installation and Quick Start Manual*, provided in printed form and on the APC Network Management Card utility CD (.doc\insguide.pdf).

When **BOOTP** is enabled (by default), you can only affect the **BOOTP** setting: A BOOTP server will provide the Management Card with its TCP/IP settings whenever the Management Card is turned on, reset, or rebooted.

**Note:** For information about how to use BOOTP, see the *Network Management Card Addendum* provided on the APC Network Management Card utility CD (.doc\adendum.pdf).

DNS

Use this option (which is combined with the **Email** option in the Web Interface) to define the IP addresses of the primary and secondary Domain Name Servers (DNS) used by the Management Card’s **Email** feature.

**Note:** For information about how to use the Email feature, see *Email Feature on page 50*; for more information about the role of the DNS servers, see *DNS servers on page 50*.

*Continued on next page*
Network Menu

Menu Options continued

Send DNS Query

This option is only available through the TCP & DNS option in the Web Interface. It allows you to have the Management Card send a DNS query that tests the setup of your DNS servers.

You use the following settings to define the parameters for the test DNS request.

- Use the **Query Type** setting to select the method to use for the DNS query:
  - The URL name of the server (**Name**).
  - The IP address of the server (**IP**).
  - The Mail Exchange used by the server (**MX**).
- Use the **Query Question** text field to identify the value to be used for the selected **Query Type**:
  - For **Name**, identify the URL.
  - For **IP**, identify the IP address.
  - For **MX**, identify the Mail Exchange address.
- Use the **DNS Server to Query** to select whether you want to query the **Primary DNS Server** or **Secondary DNS Server**.

**Note:** The **Last Query Response** field reports the result of the last query that was performed: **Passed**, **Failed**, or **Not Responding**.

Ping utility

This option is only available in the Control Console. It allows you to use Ping, a network utility, to test the Management Card’s network connection by seeing if a defined IP address responds to the Ping utility.

By default, the Default Gateway IP address (see TCP/IP above) is used. However, you can use the IP address of any device known to be running on the network.

Continued on next page
Network Menu

Menu Options continued

FTP Server, Telnet and Web

Each of these options has a setting which enables (by default) or disables Access, and a Port setting that identifies the TCP/IP port used for communications with the Management Card. The default Port settings are 21 (FTP), 23 (Telnet), and 80 (Web Interface).

You can change a Port setting to any port number between 5000 and 65535 to enhance the protection provided by User Name and Password settings. When you do, you must use a colon (:) to add the Port number to the IP or URL address used for access. The selected port number must be unique. The following examples show what the FTP, Telnet, and Web Interface commands could look like when the Port numbers for all three interfaces have been changed from their default settings at a Management Card with a System IP address of 159.215.12.114:

ftp 159.215.12.114:5000
telnet 159.215.12.114:59401

Note: For information about how to use FTP to download configuration files, see the Network Management Card Addendum on the APC Network Management Card utility CD (./doc/addendum.pdf); for information about how to use FTP to access a text-version of the Management Card’s event or data log, see How to use FTP to retrieve log files on page 46.

Continued on next page
Network Menu

Menu Options continued

SNMP

An Access option (the Settings option in the Control Console) enables (by default) or disables SNMP. When SNMP is enabled, the Access Control settings allow you to control how each of the four available SNMP channels is used.

Note: For information about how to define the up to four NMSs which will serve as trap receivers, see Trap Receivers on page 49; for more information about how to use SNMP to manage a UPS or an Environmental Monitor, see the PowerNet® SNMP Management Information Base (MIB) Reference Guide on the APC Network Management Card utility CD (.doc\mibguide.pdf).

<table>
<thead>
<tr>
<th>Setting</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Name</td>
<td>This setting defines the password (maximum of 15 characters) which an NMS that is defined by the NMS IP setting below uses to access the channel.</td>
</tr>
<tr>
<td>NMS IP</td>
<td>Limits access to the NMS or NMSs specified by the format used for the IP address.</td>
</tr>
<tr>
<td>Write</td>
<td>The NMS can use GETs at any time, and can use SETs when no one is logged into either the Control Console or Web Interface.</td>
</tr>
<tr>
<td>Write+</td>
<td>The NMS can use GETs and SETs at any time, even when someone is logged into the Control Console or Web Interface.</td>
</tr>
<tr>
<td>Disabled</td>
<td>The NMS cannot use GETs or SETs.</td>
</tr>
</tbody>
</table>

Email

You use this option to define two SMTP settings (SMTP Server and From Address) used by the Management Card’s Email feature.

For more information about these settings, see SMTP settings on page 50; for more information about Email as it relates to the Management Card, see Email Feature on page 50.
Network Management Card

System Menu

Introduction

Overview

The System menu provides access to the options that you use to do the following tasks:

- Configure system identification, date and time settings, and Administrator and Device Manager access.
- Synchronize the Management Card’s real-time clock with an Network Time Protocol (NTP) server.
- Download configuration files.
- Reset or reboot the Management Card.
- Define the URL links available in the Web Interface
- Access hardware and firmware information about the Management Card.
- Set the units (Fahrenheit or Celsius) used for temperature displays.

Note: Only an Administrator has access to the System menu.

Menu options

Two differences exist in the System menu as it appears in the Control Console and the Web Interface:

- The About System option in the Control Console’s System menu is located in the Help menu in the Web Interface. For information about this option, see Help menu on page 16.
- The Web Interface has a Links option you can use to configure its URL links.

For information about the settings available for the System menu options, see the following descriptions:

- User Manager on page 23
- Identification on page 23
- Date & Time on page 24
- Tools on page 25
- Preferences on page 25
- Links on page 25
System Menu

Option Settings

User Manager

Use this option to define the access values shared by the Control Console and the Web Interface.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Logout</td>
<td>Defines how much inactivity can occur, measured in minutes (3, by default), before a user is automatically logged out.</td>
</tr>
<tr>
<td>Authentication (Control Console only)</td>
<td>Only one setting, Basic, is available. The Basic setting causes the Web Interface to use standard HTTP 1.1 login (base64-encoded passwords).</td>
</tr>
</tbody>
</table>

Administrator and Device Manager User

<table>
<thead>
<tr>
<th>Setting</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Name</td>
<td>Defines the case-sensitive name (maximum of 10 characters) used to log in at the Control Console or Web Interface (apc, by default, for Administrator, and device, by default, for Device Manager User).</td>
</tr>
<tr>
<td>Password</td>
<td>Defines the case-sensitive password (maximum of 10 characters) used to log in at the Control Console or Web Interface (apc is the default for both Password settings).</td>
</tr>
<tr>
<td>Authentication Phrase</td>
<td>Not used at this time.</td>
</tr>
</tbody>
</table>

Identification

Use this option to define the System Name, Location, and Contact values used by the Management Card’s SNMP agent. The option’s settings provide the values used for the MIB-II sysName, sysContact, and sysLocation Object Identifications (OIDs).

Note: For more information about the MIB-II OIDs, see the PowerNet® SNMP Management Information Base (MIB) Reference Guide provided on the APC Network Management Card utility CD (./doc/mibguide.pdf).

Continued on next page
System Menu

Option Settings continued

Date & Time

Use this option to set the time and date used by the Management Card. The option displays the current settings, and allows you to change those settings manually, or through a Network Time Protocol (NTP) Server.

**Manual.** Use this option (Set Manually in the Web Interface) to set the Date and Time settings for the Management Card.

**Note:** An Apply Local Computer Time to Network Management Card option, which is available in the Web Interface only, sets these values to match the date and time settings of the computer you are using to access the Web Interface.

**Network Time Protocol (NTP).** Use this option (Synchronize with Network Time Protocol (NTP) Server in the Web Interface) to have an NTP Server automatically update the Date and Time settings for the Management Card.

**Note:** The Control Console has a NTP Client option that enables or disables (the default) the NTP Server updates, while in the Web Interface, selecting the Set Manually option disables the updates.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary NTP Server</td>
<td>Identifies the IP address of the primary NTP server.</td>
</tr>
<tr>
<td>Secondary NTP Server</td>
<td>Identifies the IP address of the secondary NTP server, when a secondary server is available.</td>
</tr>
<tr>
<td>GMT Offset (Time Zone)</td>
<td>Defines the offset to be used from Greenwich Mean Time (GMT) based on the Management Card’s time zone.</td>
</tr>
<tr>
<td>Update Interval</td>
<td>Defines how often, in weeks, the Management Card will access the NTP Server for an update (1 week minimum, 52 weeks maximum).</td>
</tr>
</tbody>
</table>

*Continued on next page*
System Menu

Option Settings continued

Tools

Use this option to reboot the Management Card or to reset some or all of its configuration settings to their original, default values.

<table>
<thead>
<tr>
<th>Action</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reboot Card</td>
<td>Restarts the Management Card.</td>
</tr>
<tr>
<td>Reset Card to Defaults</td>
<td>Resets all configuration settings.</td>
</tr>
<tr>
<td>Note: This resets the TCP/IP settings and enables BOOTP. The Management Card will not be able to operate on the network until its TCP/IP settings are redefined.</td>
<td></td>
</tr>
<tr>
<td>Reset Card to Defaults</td>
<td>Resets all configuration settings except the TCP/IP and BOOTP settings.</td>
</tr>
<tr>
<td>Except TCP/IP</td>
<td></td>
</tr>
<tr>
<td>XMODEM (Control Console only)</td>
<td>Allows you to download firmware using a terminal-emulation program when you use a local connection to the Control Console only. For more information about how you connect to the Control Console locally, see Local (Serial) access on page 6.</td>
</tr>
</tbody>
</table>

Preferences

Use this option, which is available in the Web Interface only, to define whether temperature values are displayed as Fahrenheit or Celsius in the Web Interface and the Control Console.

Links

Use this Web Interface-only option to modify the User Links that appear in the menu frame’s Links menu, or the Access Links setting that defines the URL addresses used by the APC logo.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Links</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Defines the link names that appear in the Links menu (by default, Test Drive Demo, Remote Monitoring, and APC Web Site).</td>
</tr>
<tr>
<td>URL</td>
<td>Defines the URL addresses used by the links. By default, the following URL addresses are used: <a href="http://testdrive.apc.com">http://testdrive.apc.com</a> (Test Drive Demo) <a href="http://rms.apc.com">http://rms.apc.com</a> (Remote Monitoring) <a href="http://www.apc.com">http://www.apc.com</a> (APC Web Site) Note: For information about these pages see Links menu on page 17.</td>
</tr>
<tr>
<td>Access Links</td>
<td></td>
</tr>
<tr>
<td>APC Home Page</td>
<td>Defines the URL address used by the APC logo at the top of all Web Interface pages (by default, <a href="http://www.apc.com">http://www.apc.com</a>).</td>
</tr>
</tbody>
</table>
Device Manager Menus

Introduction

Overview

Two Device Manager menus can appear.

- A UPS menu, which uses the UPS model for its name, provides the options that you use to manage the UPS. For more information about this menu, see UPS menu options below.
- An Environment menu, which appears only present when an Environmental Monitor is present, provides options that you use to manage the Environmental Monitor. For more information about this menu, see Environment Menu on page 43.

UPS menu options

The UPS menu options, and the information provided by those options, vary by UPS model. In addition, there are differences between the UPS menu in the Control Console and the UPS menu in the Web Interface. One major difference is the UPS menu in the Web Interface includes a PowerChute® option, which allows you to use APC’s PowerChute network shutdown utility.

For information about the PowerChute® option, which is only available in the Web Interface, see PowerChute® (UPS PowerChute network shutdown) on page 39. For information about the UPS menu options available in both the Control Console and the Web Interface, see the following:

- UPS Status on page 27
- UPS Diagnostics on page 31
- UPS Control on page 33
- UPS Configuration on page 34
- Module Status (Symmetra or Symmetra 3 Phase UPS) on page 38
- Scheduling (UPS Shutdown) on page 41

Note: A Silicon DP300E series UPS has no Diagnostics or Scheduling options. In addition, although the Control option appears in the UPS menu, that option is disabled (Control Console) or has no actions available (Web Interface).
Device Manager Menus

UPS Status

Overview

The Status options provide access to the information described in the following sections:

- Detailed UPS Status on this page
- Utility Voltage Status on page 28
- Output Power Status on page 29
- Fault Tolerance (Symmetra or Symmetra 3 Phase UPS) on page 30
- Battery on page 30

Note: No description is provided for the self-explanatory About UPS status fields.

For a Silcon DP300E series UPS, the “Status of UPS” page in the Web Interface includes the View the refreshing status page hyperlink described in Configure the Multiple/Parallel UPS IP Address and Monitor Name (Silcon DP300E series UPS only) on page 37.

Detailed UPS Status

The Web Interface reports UPS status information on the “Status for UPS” page that is accessed by the Status option in the UPS menu:

- The UPS Status fields includes information about the following:
  - The current status of the UPS.
  
  Note: The current UPS status also appears on the “Summary”, “Control”, and “Diagnostics” pages.
  
  - The reason for the last transfer to battery power at the UPS.
  - The internal temperature of the UPS.
  - The runtime that is currently available to the UPS.

- The values described in Utility Voltage Status on page 28, Output Power Status on page 29, and Battery on page 30.

- The Fault tolerance parameters described in Fault Tolerance (Symmetra or Symmetra 3 Phase UPS) on page 30.

The Control Console, which reports some UPS status information above the UPS menu, has a Detailed Status (Smart-UPS or Matrix-UPS) or Detailed UPS Information (Symmetra, Symmetra 3 Phase, or Silcon DP300E series UPS) option you use to access all UPS status information. In addition, for all Symmetra UPS models, a Faults & Alarms option in the Control Console’s UPS menu accesses descriptions of any faults or alarms reported as part of the UPS status.

Note: A Silcon DP300E series UPS can report a non-specific fault for about 50 different conditions. Access the UPS Keyboard for details when a non-specific fault is reported.

For information about how to access a list of the UPS events that can be reported as part of the UPS status, see “Event List” page on page 53.
Device Manager Menus

UPS Status continued

The following table uses footnotes to indicate which utility-voltage fields are shared by which UPS models (if no footnote is used, all UPS models report that value).

**Note:** A 3-phase UPS (Silicon 3 Phase or Silicon DP300E series UPS) identifies the values for all three phases.

<table>
<thead>
<tr>
<th>Status Field</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bypass Input Voltage</strong>¹</td>
<td>Identifies the AC voltage (VAC) used when the UPS is in bypass mode.</td>
</tr>
<tr>
<td><strong>Input Current</strong>¹</td>
<td>Identifies how much current is being supplied by the input voltage.</td>
</tr>
<tr>
<td><strong>Input Frequency</strong>²</td>
<td>Identifies the input voltage’s frequency, in Hertz (Hz). Note: In the Control Console for Smart-UPS or Matrix-UPS, the Operating Frequency field reports the frequency value shared by the input and output voltages.</td>
</tr>
<tr>
<td><strong>Input Voltage</strong></td>
<td>Identifies the AC voltage (VAC) being input to the UPS.</td>
</tr>
<tr>
<td><strong>Minimum Line Voltage</strong></td>
<td>Identifies the lowest AC voltage input to the UPS during the previous minute of operation.</td>
</tr>
<tr>
<td><strong>Maximum Line Voltage</strong></td>
<td>Identifies the highest AC voltage input to the UPS during the previous minute of operation.</td>
</tr>
</tbody>
</table>

¹ Symmetra 3 Phase and Silicon DP300E series UPS models
² Smart-UPS, Matrix-UPS, or Symmetra UPS models

Continued on next page
The following table uses footnotes to indicate which output-power fields are shared by which UPS models (only the status field, Output Voltage, is shared by all UPS models).

**Note:** A 3-phase UPS (Silicon 3 Phase or Silicon DP300E series UPS) identifies the values for all three phases.

<table>
<thead>
<tr>
<th>Status Field</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load Current&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Identifies the current, in Amps, supplied by the output voltage.</td>
</tr>
<tr>
<td>Load Power&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Identifies the UPS load as a percentage of available Watts.</td>
</tr>
<tr>
<td>Output Current&lt;sup&gt;3&lt;/sup&gt;</td>
<td>Identifies the current, in Amps, supplied by the output voltage.</td>
</tr>
<tr>
<td>Output Frequency&lt;sup&gt;4&lt;/sup&gt;</td>
<td>Identifies the frequency, in Hz, used by the output voltage. <strong>Note:</strong> In the Control Console for Smart-UPS or Matrix-UPS, the <strong>Operating Frequency</strong> field reports the frequency value shared by the input and output voltages.</td>
</tr>
<tr>
<td>Output kVA&lt;sup&gt;5&lt;/sup&gt; or Output Power&lt;sup&gt;6&lt;/sup&gt;</td>
<td>Identifies the load placed on each phase by the attached equipment, in total kVA.</td>
</tr>
<tr>
<td>Output Power Percentage&lt;sup&gt;6&lt;/sup&gt;</td>
<td>Identifies the load placed on each phase by the attached equipment, expressed as a percentage of the available kVA.</td>
</tr>
<tr>
<td>Output VA at n+0&lt;sup&gt;7&lt;/sup&gt;</td>
<td>Identifies the load placed on each phase by the attached equipment, expressed as a percentage of the VA available with no redundancy.</td>
</tr>
<tr>
<td>Output VA at n+1&lt;sup&gt;7&lt;/sup&gt;</td>
<td>Identifies the load placed on each phase by the attached equipment, expressed as a percentage of the VA available with the identified redundancy.</td>
</tr>
<tr>
<td>Output Voltage</td>
<td>Identifies the AC voltage the UPS is providing to its load.</td>
</tr>
<tr>
<td>Output Watts at n+0&lt;sup&gt;7&lt;/sup&gt;</td>
<td>Identifies the load placed on each phase by the attached equipment, expressed as a percentage of the Watts available with no redundancy.</td>
</tr>
<tr>
<td>Output Watts at n+1&lt;sup&gt;7&lt;/sup&gt;</td>
<td>Identifies the load placed on each phase by the attached equipment, expressed as a percentage of the Watts available with the identified redundancy.</td>
</tr>
<tr>
<td>Peak Output Current&lt;sup&gt;8&lt;/sup&gt;</td>
<td>Identifies the highest current, in Amps, output by each phase.</td>
</tr>
</tbody>
</table>

<sup>1</sup> Matrix-UPS  
<sup>2</sup> Smart-UPS or Matrix-UPS  
<sup>3</sup> Symmetra, Symmetra 3 Phase, or Silicon DP300E series UPS  
<sup>4</sup> Smart-UPS, Matrix-UPS, or Symmetra UPS  
<sup>5</sup> Symmetra 3 Phase UPS  
<sup>6</sup> Silicon DP300E series UPS  
<sup>7</sup> Symmetra or Symmetra 3 Phase UPS  
<sup>8</sup> Symmetra 3 Phase or Silicon DP300E series UPS

Continued on next page
Device Manager Menus

UPS Status continued

Fault Tolerance (Symmetra or Symmetra 3 Phase UPS)

Two fault-tolerance fields are available for Symmetra and Symmetra 3 Phase UPS models.

**Note:** In the Control Console, you use the Detailed UPS Information option to access the fault tolerance status.

<table>
<thead>
<tr>
<th>Status Field</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present KVA Capacity</td>
<td>Identifies the maximum load that the Symmetra can support.</td>
</tr>
<tr>
<td>Redundancy</td>
<td>Identifies the number of power modules which can fail or be removed without causing the Symmetra to switch to bypass.</td>
</tr>
</tbody>
</table>

Battery

The following table uses footnotes to indicate which output-power fields are shared by which UPS models (only the status field, Runtime Remaining, is shared by all UPS models).

<table>
<thead>
<tr>
<th>Status Field</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery Capacity&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Identifies how much of the UPS battery capacity is available to support the attached equipment.</td>
</tr>
<tr>
<td>Battery Current&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Identifies the current which is being output from the battery.</td>
</tr>
<tr>
<td>Battery Voltage&lt;sup&gt;3&lt;/sup&gt;, Actual Battery Voltage&lt;sup&gt;6&lt;/sup&gt;, or Actual Battery Bus Voltage&lt;sup&gt;4&lt;/sup&gt;</td>
<td>Identifies the available DC power.</td>
</tr>
<tr>
<td>Calibration Date&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Identifies when the last runtime calibration was performed.</td>
</tr>
<tr>
<td>Calibration Result&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Identifies the result of the last runtime calibration.</td>
</tr>
<tr>
<td>Nominal Battery Voltage&lt;sup&gt;5&lt;/sup&gt;</td>
<td>Identifies the basic voltage range that the battery needs to supply when the UPS uses its battery for output power. <strong>Note:</strong> This field only appears in the Web Interface.</td>
</tr>
<tr>
<td>Number of Bad Batteries&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Identifies how many of the UPS batteries need replacing.</td>
</tr>
<tr>
<td>Number of Batteries&lt;sup&gt;3&lt;/sup&gt; or Number of External Batteries&lt;sup&gt;6&lt;/sup&gt;</td>
<td>Identifies how many batteries the UPS has.</td>
</tr>
<tr>
<td>Runtime Remaining</td>
<td>Identifies how long the UPS can use battery power to support its attached equipment.</td>
</tr>
<tr>
<td>Self-Test Result&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Identifies the result of the last self-test.</td>
</tr>
<tr>
<td>Self-Test Date&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Identifies when the last self-test was performed.</td>
</tr>
</tbody>
</table>

<sup>1</sup> Smart-UPS, Matrix-UPS, Symmetra, or Symmetra 3 Phase UPS
<sup>2</sup> Symmetra 3 Phase or Silicon DP300E series UPS
<sup>3</sup> Smart-UPS or Matrix-UPS
<sup>4</sup> Symmetra 3 Phase UPS
<sup>5</sup> Symmetra, Symmetra 3 Phase, or Silicon DP300E series UPS
<sup>6</sup> Symmetra or Symmetra 3 Phase UPS
Device Manager Menus

UPS Diagnostics

Overview

There are two types of diagnostics options you can use with all UPS models except a Silcon DP300E series UPS, which has no diagnostic options:

- Options which cause a specified test to occur immediately.
- A scheduling option which controls when a UPS self-test occurs.

Diagnostics

In the Web Interface, you use this UPS menu option when you want to perform diagnostic tests, or view status information that is based on the results of the last self-test or runtime calibration.

**Note:** In the Control Console, the diagnostics options are listed in the Control menu.

**Smart-UPS, Matrix-UPS, or Symmetra UPS.** You can use diagnostics options to perform the following tests.

**Note:** In the Web Interface, the “Diagnostics” page reports the results of the last self-test and last runtime calibration; In the Control Console, you can use a Detailed Status (all Smart-UPS or Matrix-UPS models) or Detailed UPS Information (Symmetra or Silcon DP300E series UPS models) option to access these results.

<table>
<thead>
<tr>
<th>Test</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Test</td>
<td>Causes the UPS to perform a self-test.</td>
</tr>
<tr>
<td>Simulate Power Failure</td>
<td>Causes the UPS to test its ability to go on battery.</td>
</tr>
<tr>
<td>Start/Stop Runtime Calibration</td>
<td>Initiates (or cancels) a runtime calibration, a process which determines how much runtime the UPS has available when its battery is at 100% capacity. <strong>Note:</strong> Only perform a runtime calibration when the battery is at 100% capacity.</td>
</tr>
<tr>
<td>Test UPS Alarm (Smart-UPS or Matrix-UPS)</td>
<td>Causes a Matrix-UPS to generate an alarm tone, and a Smart-UPS to generate an alarm tone and flash its front panel lights.</td>
</tr>
</tbody>
</table>

*Continued on next page*
Device Manager Menus

UPS Diagnostics continued

Diagnostics, continued

Symmetra 3 Phase UPS. The “Diagnostics” page in the Web Interface provides buttons you use to perform self-tests (Tests...) or runtime calibrations (Calibrate...).

Note: In the Web Interface, the “Diagnostics” page reports the results of the last self-test and last runtime calibration, as well as Intelligence Modules, Power Modules, Batteries, and Communication Bus & Subsystems status; in the Control Console, you can use the Detailed UPS Information option to access this status information.

Scheduled UPS self-tests

A scheduling option allows you to control when a UPS self-test occurs. The available selections are Never, UPS Startup, Every 7 Days, or Every 14 Days.

In the Web Interface, this option is located on the same page as the diagnostic test options. In the Control Console, the location of this option depends on the type of UPS:

- Symmetra and Symmetra 3 Phase UPS models have a Scheduled Tests option in the UPS menu.
- Smart-UPS or Matrix-UPS models have a Self-Test Schedule option which is accessed as follows:
  a. Select Configuration from the UPS menu.
  b. Select General from the Configuration menu.
Device Manager Menus

UPS Control

Overview

The table below describes the Control menu options you can use with all UPS models except a Silicon DP300E series UPS. When you select an option, a description of what will occur, and when, is provided as part of a confirmation process. You can then choose to initiate the selected action, or cancel it, based on that description.

**Note:** For descriptions of the Self-Test, Simulate Power Failure, Start/Stop Runtime Calibration, and Test UPS Alarm options, which are Control menu options in the Control Console, see Diagnostics on page 31.

<table>
<thead>
<tr>
<th>Action</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn UPS On (Control Console only)</td>
<td>Turns on power at the UPS when a software command was used to turn off output power. If the on/off switch at the UPS was used to turn off power, that switch must be used to turn on power.</td>
</tr>
<tr>
<td>Turn UPS Off¹</td>
<td>Turns off power after the Shutdown Delay until you turn on power again.</td>
</tr>
<tr>
<td>Turn UPS Off Gracefully (Control Console)²</td>
<td>Turns off power after two delays: A delay (Maximum Shutdown Time plus two minutes) that allows time for PowerChute to safely shut down its server, and the Shutdown Delay.</td>
</tr>
</tbody>
</table>
| Reboot UPS¹ | Reboots the attached equipment by doing the following:  
• Turns off power at the UPS after the Shutdown Delay.
• Turns on power at the UPS after the Return Delay. |
| Reboot UPS Gracefully (Control Console)² | Reboots the attached equipment by doing the following:  
• Turns off power after two delays: A delay (Maximum Shutdown Time plus two minutes) that allows time for PowerChute to safely shut down its server, and the Shutdown Delay.  
• Turns on power after the Return Delay. |
| Put UPS To Sleep¹ | Puts the UPS into its sleep mode (turns off power for a defined period of time), as follows:  
• Turns off power after the Shutdown Delay.  
• Turns on power after two delays: Sleep Time and Return Delay. |
| Put UPS To Sleep Gracefully (Control Console)² | Puts the UPS into its sleep mode (turns off power for a defined period of time), as follows:  
• Turns off power after two delays: A delay (Maximum Shutdown Time plus two minutes) that allows time for PowerChute to safely shut down its server, and the Shutdown Delay.  
• Turns on power after two delays: Sleep Time and Return Delay. |
| Put UPS In/Take UPS Off Bypass | Controls the use of the bypass, an operational mode that allows maintenance to be performed at a Matrix-UPS or Symmetra UPS without turning off power at that UPS. |

¹ The Web Interface has a Signal servers option. When Yes is selected for that option, initiating an action is equivalent to selecting the Control Console’s Turn UPS Off Gracefully, Reboot UPS Gracefully, or Put UPS To Sleep Gracefully options.
Device Manager Menus

UPS Configuration

Overview

The UPS menu’s Configuration option provides access to the configurable parameters described in the following sections:

- Utility Line Settings on this page
- Alarm Thresholds (Symmetra or Symmetra 3 Phase UPS) on page 35
- Shutdown Parameters on page 36
- General Settings on page 37
- Reset UPS Defaults on page 37
- Configure the Multiple/Parallel UPS IP Address and Monitor Name (Silcon DP300E series UPS only) on page 37

Utility Line Settings

This Configuration menu option is available to all UPS models except a Silcon DP300E series UPS. The available settings differ based on the UPS model.

**Smart-UPS or Matrix-UPS.** Not all Utility Line settings are available for all Smart-UPS and Matrix-UPS models, and each setting’s selections can differ from UPS-to-UPS.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Voltage</td>
<td>Defines the nominal AC voltage level for the UPS output.</td>
</tr>
<tr>
<td>High Transfer Voltage</td>
<td>Defines the upper limit of acceptable input voltage. When the input reaches this value, the UPS will go on battery (Matrix-UPS) or start using its AVR Boost feature (Smart-UPS).</td>
</tr>
<tr>
<td>Low Transfer Voltage</td>
<td>Defines the lower limit of acceptable input voltage. When the input reaches this value, the Smart-UPS will start using its AVR Trim feature, or go on battery, if it does not have this feature. <strong>Note:</strong> This setting appears in the Control Console’s Line Transfer menu for Matrix-UPS, but the value cannot be changed.</td>
</tr>
<tr>
<td>Vout Reporting</td>
<td>Defines how Matrix-UPS scales its output voltage readings.</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>Defines how sensitive the UPS will be to distortions in the input voltage. <strong>Note:</strong> Matrix-UPS uses an Automatic setting.</td>
</tr>
</tbody>
</table>

*Continued on next page*
Device Manager Menus

UPS Configuration continued

Utility Line Settings, continued

Symmetra or Symmetra 3 Phase UPS. The following table describes the Utility Line settings for a Symmetra. A Symmetra 3 Phase uses the Output Frequency Range and If UPS fails settings only.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Voltage</td>
<td>Defines the nominal AC voltage level for the UPS output.</td>
</tr>
<tr>
<td>Vout Reporting</td>
<td>Defines how the UPS scales its output voltage readings.</td>
</tr>
<tr>
<td>Output Frequency Range</td>
<td>Defines the nominal value for the frequency used by the output voltage.</td>
</tr>
<tr>
<td>If UPS fails, and frequency or voltage is out of range</td>
<td>Defines how the UPS will respond if the stated condition occurs.</td>
</tr>
</tbody>
</table>

Alarm Thresholds (Symmetra or Symmetra 3 Phase UPS)

The following table describes the Alarm Thresholds settings for the Symmetra or Symmetra 3 Phase UPS.

<table>
<thead>
<tr>
<th>Threshold</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm if Redundancy Under</td>
<td>Defines the minimum redundancy level that can be present without causing an alarm.</td>
</tr>
<tr>
<td>Alarm if Load Over</td>
<td>Defines the maximum load that the attached equipment can place on the UPS without causing an alarm.</td>
</tr>
<tr>
<td>Alarm If Runtime Under</td>
<td>Defines the minimum runtime that can be available without causing an alarm.</td>
</tr>
</tbody>
</table>

Continued on next page
Device Manager Menus

UPS Configuration continued

<table>
<thead>
<tr>
<th>Setting</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Return Battery Capacity</strong></td>
<td>Defines the minimum battery capacity that must be present before the UPS turns on after a shutdown that was caused by a power failure.</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>The UPS must also wait until the time defined by the Return Delay setting expires before it can turn on.</td>
</tr>
<tr>
<td><strong>Low-Battery Duration</strong></td>
<td>Defines how the UPS can continue to run on battery once a low-battery condition occurs.</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>This setting also defines how much time PowerChute has to safely shut down its server in response to the Turn UPS Off Gracefully, Reboot Gracefully, and Put UPS To Sleep Gracefully Control menu options.</td>
</tr>
<tr>
<td><strong>Maximum Shutdown Time (Web Interface only)</strong></td>
<td>Reports the maximum time that the UPS will wait before it shuts down in response to graceful turn-off command, as defined by the Maximum Shutdown Time setting for the PowerChute® option.</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>For information about how the Maximum Shutdown Time is determined, see Maximum-Shutdown-Time negotiation on page 40.</td>
</tr>
<tr>
<td><strong>Shutdown Delay</strong></td>
<td>Defines how long the UPS will wait before it shuts down in response to a turn-off command.</td>
</tr>
<tr>
<td><strong>Return Delay</strong></td>
<td>Defines how long a UPS must wait before it turns on after a shutdown that was caused by a power failure.</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>The UPS must also have the capacity specified by the Return Battery Capacity setting before it can turn on.</td>
</tr>
<tr>
<td><strong>Sleep Time</strong></td>
<td>Defines how long the UPS will sleep (stay turned off) when you use either one of the Control menu’s sleep options (Put UPS To Sleep or Put UPS To Sleep Gracefully).</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>This setting also appears in the “Control” page.</td>
</tr>
</tbody>
</table>

Continued on next page
Device Manager Menus

UPS Configuration continued

Four General Settings are available for Smart-UPS. The first two settings (UPS Name and Last Battery Replacement) are available for all other UPS models.

Note: In the Control Console, you use the Battery option in the Configuration menu to access the Last Battery Replacement and External Batteries settings.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPS Name</td>
<td>Defines the name used by the UPS.</td>
</tr>
<tr>
<td>Last Battery Replacement</td>
<td>Defines the date when the UPS battery was last replaced.</td>
</tr>
<tr>
<td></td>
<td>Note: Use an mm/dd/yy format.</td>
</tr>
<tr>
<td>Audible Alarm</td>
<td>Defines when the Smart-UPS will generate an alarm in response to going on battery.</td>
</tr>
<tr>
<td>External Batteries</td>
<td>Defines how many external battery packs are connected to Smart-UPS XL.</td>
</tr>
<tr>
<td></td>
<td>Note: Smart-UPS XL models cannot automatically sense and report the number of connected battery packs.</td>
</tr>
</tbody>
</table>

This option allows you to reset the UPS to use the default EEPROM values.

This option is only available in the Web Interface. It allows you to identify up to nine different Silicon DP300E series UPS models which you can then access through the View the refreshing status page hyperlink that appears in the “Status for UPS” page.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Address</td>
<td>Identifies the Silicon DP300E series UPS to be monitored by the IP address of its Network Management Card.</td>
</tr>
<tr>
<td>Monitor Name</td>
<td>Identifies the name of the Silicon DP300E series UPS to be monitored.</td>
</tr>
</tbody>
</table>
Device Manager Menus

Module Status (Symmetra or Symmetra 3 Phase UPS)

Menu options

Symmetra UPS models have a Module Status option in the Web Interface that provides access to status information about the modules used at that UPS; Symmetra and Symmetra 3 Phase UPS models have a Module Diagnostics & Information option in the Control Console’s UPS menu that provides access to module status, as well as to Raw Status Data fields that provide diagnostics information about those modules.

Note: The Raw Status Data information provided in the Control Console is used by APC engineers and technical support to troubleshoot hardware problems.

Module status

With the exception of the fields which report the operational status for a module, the information reported for the following modules is self-explanatory.

• The Intelligence Module
• The Redundant Intelligence Module
• The Power Modules
• The Battery in the Main Frame
• Any External Battery Frame
• Communication Bus (Symmetra 3 Phase UPS only)

For information about how to access a list of the UPS events, including the module-related, Symmetra status events, see “Event List” page on page 53.
Device Manager Menus

PowerChute® (UPS PowerChute network shutdown)

Overview

The UPS menu in the Web Interface has a PowerChute® option that allows you to use the APC PowerChute network shutdown utility to shut down up to 50 servers on your network that are using any client-version of PowerChute network shutdown.

Note: For more information about PowerChute network shutdown, see the PowerChute® network shutdown Installation Guide (Install.htm) and the PowerChute® network shutdown Release Notes (Relnotes.htm), copies of which are provided in the .pcns directory on the APC Network Management Card utility CD. Also, see the three flow diagrams provided on the CD's .trouble directory: PCNS Shutdown Behavior.pdf, PCNS Low-Battery Shutdown Behavior.pdf, and PCNS Maximum Shutdown Time Negotiation.pdf.

Parameters

The following table describes the PowerChute network shutdown parameters.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Definition</th>
</tr>
</thead>
</table>
| **Maximum Shutdown Time**     | Defines the maximum time that the UPS at a PowerChute network shutdown client will wait before it shuts down in response to a graceful turn-off command.  
                              | **Note:** For information about this shutdown delay is determined, see Maximum-Shutdown-Time negotiation on page 40. |
| **Shutdown Behavior**         | Defines how the UPS will be turned off after the PowerChute network shutdown clients finish shutting down their computer systems. |
| **Add Client IP**             | Allow you to add up to 50 PowerChute network shutdown clients to the list of Configured Client IP Addresses.  
                              | **Note:** A PowerChute network shutdown client is normally automatically added to the list when that client is installed on your network. |
| **Configured Client IP Addresses** | Allows you to view the list of PowerChute network shutdown clients, and, when appropriate, remove PowerChute network shutdown clients from the list.  
                              | **Note:** A PowerChute network shutdown client is normally automatically removed from the list when that client is uninstalled. |

Continued on next page
Device Manager Menus

PowerChute® (UPS PowerChute network shutdown) continued

Maximum Shutdown-Time negotiation

The Maximum Shutdown Time setting provides the delay needed to make sure that a server will have enough time to shut down safely when a graceful shutdown is initiated by the Management Card or by PowerChute network shutdown client at the server.

Note: For information about the Turn UPS Off Gracefully, Reboot UPS Gracefully, and Put UPS To Sleep Gracefully options that use this delay, see UPS Control on page 33.

The time reported by the Maximum Shutdown Time setting represents the maximum delay needed by at least one of the servers listed in the Configured Client IP Addresses list. This time is determined by a negotiation process that is initiated when any of the following occurs:

- The Management Card turns on (a System: Coldstart event).
- The Management Card is reset (a System: Warmstart event).
- You select Force negotiation from the Maximum Shutdown Time setting’s drop-down menu, and click Apply.

During the negotiation process, which can take up to 10 minutes to perform, each of the servers listed in the Configured Client IP Addresses list is contacted to determine the shutdown delay needed by each server. At the end of this process, the delay time defined by the Maximum Shutdown Time setting will be changed, if necessary, to reflect the highest delay time reported by the servers. For example, if 3 minutes was the Maximum Shutdown Time setting determined during the last negotiation process, and a new server has been added to the Configured Client IP Addresses list that requires a 4-minute shutdown delay, 4 minutes will be the Maximum Shutdown Time setting at the end of the new negotiation process. Conversely, if none of the servers need more than a 2-minute delay, 2 minutes will be the Maximum Shutdown Time setting.

Note: To view a flowchart presentation of the negotiation process, see the PCNS Maximum Shutdown Time Negotiation.pdf file provided in the .\trouble\ directory on the APC Network Management Card utility CD. The .\trouble\ directory also has two other flowchart presentations that relate to PowerChute network shutdown: PCNS Shutdown Behavior.pdf and PCNS Low-Battery Shutdown Behavior.pdf.
Device Manager Menus

Scheduling (UPS Shutdown)

Overview

The following graphic provides examples of **Daily**, **Weekly**, and **One-Time** shutdowns that were scheduled using this Web Interface-only option.

For more information about how to use this option, see the following sections on this page:

- How to Schedule a Shutdown
- How to Edit, Disable, or Delete a Shutdown

How to Schedule a Shutdown

The fields used to schedule a shutdown are essentially the same whether you click the **Daily**, **Weekly**, or **One-Time** option.

1. Use **Name of Scheduled Shutdown** to identify a name for the shutdown. In the example in **Overview** above, **Nightly** is the name of the **Daily** shutdown.
2. Use **Shutdown** to identify when the shutdown will begin.
3. Use **Turn back on** to define whether the UPS will turn on at a specific day and time, **Never** (the UPS will be turned on manually), or **Immediately** (the UPS will turn on after a six-minute delay).
4. Select whether PowerChute servers will be warned before the shutdown begins.
5. Click **Apply**.

Continued on next page
Device Manager Menus

Scheduling (UPS Shutdown) continued

How to Edit, Disable, or Delete a Shutdown

When you click a listed shutdown, a “Daily Shutdown Detail” page appears. You use this page to do the following:

- View a summary of the shutdown, including information about the values for settings that can affect how the UPS shuts down and turns on again:
  - For information about Maximum Shutdown Time, a PowerChute® option setting, see the table in Maximum Shutdown-Time negotiation on page 40.
  - For information about Shutdown Delay and Return Delay, see the table in Shutdown Parameters on page 36.
- Change any shutdown parameter.
- Use Status of Scheduled Shutdown to Enable, Disable, or Delete the shutdown.
Device Manager Menus

Environment Menu

Overview

The **Status** option (Web Interface) and the **Threshold and Contact Details** option (Control Console) provide access to the status information about the probes and contacts. The **Status** option in the Web Interface also accesses the firmware information for the Environmental Monitor. In the Control Console, the firmware information is accessed through the **About Environmental Monitor** option.

The **Configuration** option in the Web Interface provides access to all of the configuration settings for the probes and contacts. In the Control Console, individual options (**Trap Thresholds Probe 1**, **Trap Thresholds Probe 2**, and **Contact Settings**) are used.

Probe status

These fields report on the status for each probe.

**Note:** For information about the threshold values cited in the table, see **Probe settings** below.

<table>
<thead>
<tr>
<th>Status Field</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Identifies the ambient temperature sensed by the probe.</td>
</tr>
<tr>
<td><strong>High</strong> or <strong>Low</strong> Temperature</td>
<td>Identifies whether or not the current ambient temperature violates the probe’s temperature threshold settings: <em>Yes</em>, <em>No</em>, or <em>Disabled</em>.</td>
</tr>
<tr>
<td>Humidity</td>
<td>Identifies whether the relative humidity sensed by the probe.</td>
</tr>
<tr>
<td><strong>High</strong> or <strong>Low</strong> Humidity</td>
<td>Identifies whether or not the current relative humidity violates the probe’s humidity threshold settings: <em>Yes</em>, <em>No</em>, or <em>Disabled</em>.</td>
</tr>
</tbody>
</table>

Contact status

Reports the name of each contact alarm, and whether or not the contact's alarm condition exists: *Yes*, *No*, or *Disabled*. For information about the contact alarm settings, see **Contact settings** below.

Probe settings

You use the **Setting** fields to define the temperature or humidity values you want to use for the thresholds, and the **Trap** fields to **Enable** or **Disable** each threshold.

Contact settings

You use the **Name** fields to define the name you want to use for the contact alarms, and the **Trap** fields to **Enable** or **Disable** each alarm.
Events Menu

Introduction

Overview

The Events menu provides access to the options that you use to do the following tasks:

- Access the event log.
- Define the actions to be taken when an event occurs, based on the severity level of that event.
  - Event logging
  - SNMP trap notification
  - Email notification

  **Note:** You can only use the Web Interface to define which events will use which actions, as described in **Event Log on page 45** and **How to Configure Individual Events on page 53**.

- Define up to four SNMP trap receivers, by NMS-specific IP address, for event notifications by SNMP traps.
- Define up to four recipients for event notifications by Email.

Menu options

In the Web Interface, all of the events options are accessed through the Events menu. In the Control Console, you access the available events-related options, as follows:

- You use the Email option in the Network menu to define the SMTP server and Email recipients.
- You use the SNMP option in the Network menu to define the SNMP trap receivers.
- You use CTRL-L to access the event log from any menu.

For information about the settings available for the Events menu options, and for a more detailed description of the Email feature, see the following descriptions:

- **Event Log on page 45**
- **Event Actions (Web Interface only) on page 47**
- **Event Recipients on page 49**
- **Email Feature on page 50**
- **How to Configure Individual Events on page 53**
Events Menu

Event Log

Overview

The Management Card supports an event logging capability for all UPS application firmware modules. This allows you to record and view UPS, Environmental Monitor, and Management Card events.

You can use any of the following to view the event log:

- Web Interface
- Control Console
- FTP

Logged events

By default, any event which causes an SNMP trap will be logged, except for SNMP authentication failures. Additionally, the Management Card will log its abnormal internal system events. However, you can use the Actions option in the Web Interface’s Events menu to disable the logging of events based on their assigned severity level, as described in Event Actions (Web Interface only) on page 47.

Note: Some system (Management Card) events do not have a severity level. Even if you disable the event log for all severity levels, these no-severity events will still be logged.

For information about how to access a list of the UPS, Environmental Monitor, and Management Card events, see “Event List” page on page 53.

Note: The event log will log a graceful shutdown of the UPS, even when that shutdown was not initiated by the Management Card: a graceful shutdown from Serial Port 1 typically indicates that PowerChute or PowerNet Manager performed the shutdown; a graceful shutdown from Serial Port 0 typically indicates that a management peripheral, such as PowerView or the Out-of-Band Management Card, initiated the shutdown.

Web Interface

The Log option in the Events menu accesses the event log. This log displays all of the events that have been recorded since the log was last deleted, in chronological order, with the most recent event displayed first. A Delete Log button allows you to clear all events from the log.

Control Console

You can access the Management Card’s Control Console from a local computer (direct serial-cable connection) or over the network (using Telnet). Once you log into the Control Console, press CTRL-L to display up to 300 events from the event log, with the most recent events displayed first. You use the SPACE BAR, as many times as necessary, to view the recorded events. While viewing the log, you can type d and press ENTER to clear all events from the log.

Continued on next page
Events Menu

Event Log continued

How to use FTP to retrieve log files

You can use FTP to retrieve a tab-delineated event log (event.txt) or data log (data.txt) file that you can import into a spreadsheet application.

- The file reports all of the events (event.txt) or data (data.txt) that has been recorded since the log was last deleted.
- The file includes information that does not show up in the event log or data log displays.
  - The version of the file format (first field).
  - The Date and Time the file was retrieved.
  - The Name, Contact, Location, and IP address of the Management Card.
  - The event.txt file includes the unique Event Code for each recorded event.

Note: The Management Card uses a 4-digit year for log entries. A spreadsheet may display these dates as 2-digit years. This can be fixed by selecting a different date format in the spreadsheet.

To use FTP to retrieve the event.txt or data.txt file, do the following:

1. At a command prompt, type ftp and the Management Card’s IP address, and press ENTER. If the Port setting for FTP Server in the Network menu has changed from its default value (21), you must use the non-default value in the FTP command. For some FTP clients, you would use a colon to add the port number to the end of the IP address. For Windows FTP clients, you would use the following command (including spaces):
   
   ftp>open ip_address port_number

   Note: For information about using non-default port values to enhance security, see Port assignments on page 55.

2. Use the case-sensitive User Name and Password settings for either an Administrator (apc is the default for both) or a Device Manager User (device is the default for the User Name, and apc is the default for the Password) to log in.

3. Use the get command to transmit the text-version of the event or data log to your local drive.
   
   ftp>get event.txt or ftp>get data.txt

4. You can use the delete command to clear the contents of the event or data log. You will not be asked to confirm the deletion. If you clear the data log, a Deleted Log event will be recorded in the event log; if you clear the event log, a new event.txt file will be created to record the Deleted Log event.
   
   ftp>del event.txt or ftp>del data.txt
   
   250 Requested file action okay, completed.

5. Type quit at the ftp> prompt to exit from FTP.

Network Management Card User’s Guide 46
Events Menu

Event Actions (Web Interface only)

Overview

The **Actions** option is available only in the Web Interface’s **Events** menu. This option allows you to do the following:

- You can select which actions will occur for events that have a specified severity level:
  - **Event Log** selects which severity levels will cause an event to be recorded in the event log. For more information about this action, see [Event Log action on page 48](#).
  - **SNMP Traps** selects which severity levels will cause SNMP traps to be generated. For more information about this action, see [SNMP Traps action on page 48](#).
  - **Email** selects which severity levels will cause Email notifications to be sent. For more information about this action, see [Email action on page 48](#).
- You can click **Details** to do access a complete list of the Management Card (System events), UPS, and Environmental Monitor (Environment events) that can occur, and then edit the actions that will occur for an individual event, as described in [How to Configure Individual Events on page 53](#).

Severity levels

With the exception of some Management Card (System) events that do not have a severity level assigned, events are assigned a default severity level based on the seriousness of the event.

- Informational: Indicates an event that requires no action, such as a notification of a return from an abnormal condition.
- Warning: Indicates an event that may need to be addressed should the condition continue, but which does not require immediate attention.
- Severe: Indicates an event that requires immediate attention. Unless resolved, UPS and Management Card severe events can cause incorrect operation of the UPS or its supported equipment, or can result in the loss of UPS protection during a power failure. Environmental Monitor severe events warn of abnormal environmental conditions or possible security violations.

*Continued on next page*
Events Menu

Event Actions (Web Interface only) continued

**Event Log action**
You can disable the recording of events in the event log. By default, all events are recorded, even events that have no severity level assigned.

*Note:* Even if you disable the Event Log action for all severity levels, system (Management Card) events which have no severity level assigned will still be logged.

For more information about this log, see **Event Log on page 45**.

**SNMP Traps action**
By default, the SNMP Traps action is enabled for all informational, warning, and severe events. However, before you can use SNMP traps for event notifications, you must identify each NMS (up to four), by its specific IP address, that you want to send those traps to.

For information about how to define the trap receivers, see **Event Recipients on page 49**.

**Email action**
By default, the Email action is enabled for all events that have a severity level assigned. However, before you can use Email for event notifications, you must define the Email recipients.

For information about how to define the Email recipients, see **Email Feature on page 50**.
Events Menu

Event Recipients

Overview

The Web Interface and Control Console both have options that allow you to define the trap receivers and up to four Email addresses to be used when an event occurs that has the SNMP traps or Email enabled, as described in Event Actions (Web Interface only) on page 47.

Trap Receivers

The Trap Receiver settings allow you to define which of up to four specific NMSs will be sent traps.

Note: In the Control Console, these settings are accessed through the SNMP option in the Network menu.

<table>
<thead>
<tr>
<th>Item</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Name</td>
<td>This setting defines the password (maximum of 15 characters) used when traps are sent to the NMS identified by the Receiver NMS IP setting.</td>
</tr>
<tr>
<td>Receiver NMS IP</td>
<td>Identifies the NMS that will be sent traps by its IP address. If this setting is 0.0.0.0 (the default value), traps will not be sent to any NMS.</td>
</tr>
<tr>
<td>Trap Generation</td>
<td>Enables (by default) or disables the sending of any traps to the NMS identified the Receiver NMS IP setting.</td>
</tr>
<tr>
<td>Authentication Traps</td>
<td>Enables or Disables the sending of authentication traps to the NMS identified the Receiver NMS IP setting.</td>
</tr>
</tbody>
</table>

Email options

See Email Feature on the next page.
Events Menu

Email Feature

Overview

You can use the Simple Mail Transfer Protocol (SMTP) to send Email to up to four recipients when an event occurs.

To use the Email feature, you must define the following settings:

- The IP addresses of the primary and secondary Domain Name Service (DNS) servers, as described in DNS servers on this page.
- The DNS name of the SMTP Server and the From Address settings for SMTP, as described in SMTP settings on this page.
- The Email addresses for up to a maximum of four recipients, as described in Email Recipients on page 51.

Note: You can use the To Address setting of the Email Recipients option to send Email to a text-based pager.

DNS servers

The Management Card cannot send any Email messages unless at least the IP address of the primary DNS server is defined. The Email (Web Interface) or DNS (Control Console) option in the Network menu accesses the setting that you use to identify the primary and secondary Domain Name Service (DNS) servers by their IP addresses.

The Management Card will only wait a maximum of 15 seconds for a response from both the primary and secondary DNS servers. If the Management Card does not get a response within that time, Email cannot be sent. Therefore, use DNS servers that are on the same segment as the Management Card, or on a nearby segment (but not across a WAN).

Once you define the IP addresses of the DNS servers, verify that DNS is working correctly by entering the DNS name of a computer on your network to see if you can look up the IP address for that DNS name.

SMTP settings

The Email option in the Network menu accesses the following settings:

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMTP Server</td>
<td>Defines the SMTP server by its DNS name.</td>
</tr>
<tr>
<td>Note:</td>
<td>This definition is only required when the Use SMTP Server option (see Email Recipients on page 51) is set to Local SMTP Server.</td>
</tr>
<tr>
<td>From Address</td>
<td>Defines the contents of the From field in the Email messages sent by the Management Card.</td>
</tr>
<tr>
<td>Note:</td>
<td>The SMTP server's configuration may require that you use a valid user account on the server for this setting. See the server's documentation for more information.</td>
</tr>
</tbody>
</table>

Continued on next page
Events Menu

Email Feature continued

Email Recipients

The **Recipients** option in the Web Interface’s **Events** menu, or the **Email** option in the Control Console’s **Network** Menu, accesses the settings you use to identify each of up to four Email recipients.

**Note:** The Web Interface has an **Email Test** option, which is located directly below the **Email Recipients** settings, you can use to send an Email test message to any defined (and enable) Email recipient.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>To Address</strong></td>
<td>Defines the user and domain names of the recipient. To use Email for paging, use the Email address for that recipient’s pager gateway account (for example, <a href="mailto:myacct100@skytel.com">myacct100@skytel.com</a>). The pager gateway will generate the page. <strong>Note:</strong> Email can only send text messages. Therefore, the recipient’s pager must be able to use text-based messaging.</td>
</tr>
<tr>
<td><strong>Use SMTP Server</strong></td>
<td>Selects whether Email will be routed through the Management Card’s SMTP server (<strong>Local SMTP Server</strong> option) or sent directly to the recipient’s SMTP server (<strong>Recipient’s SMTP Server</strong> option). When the recipient uses the same SMTP server as the Management Card, this setting has no affect. <strong>Note:</strong> The recommended selection is the <strong>Local SMTP Server</strong> option. For information about why this is recommended, and for issues to keep in mind when selecting the <strong>Use SMTP Server</strong> setting, see <strong>Optimal Email Configuration Issues</strong> on page 52.</td>
</tr>
<tr>
<td><strong>Generation</strong></td>
<td>Enables (by default) or disables the sending of Email to the defined recipient.</td>
</tr>
</tbody>
</table>
| **Format**     | Selects format used for Email messages:  
  - **Short:** The message identifies only the event that occurred. For example:  
    UPS: Communications Established  
  - **Long:** The message includes information about the Management Card and UPS, and event. The following is an example of what the Long format could look like for the UPS: Communications Established event:  
    Name : Writer1  
    Location : JKing  
    Contact : User Ed Department  
    http://xxx.xxx.xxx.xxx  
    Serial # : Wa12  
    UPS Ser #: XS9849007541  
    Date: 08/12/2001  
    Time: 16:09:48  
    Code: 0x0002  
    Severe - UPS: Communications Established |

Continued on next page
Email Recipients, continued

Optimal Email Configuration Issues. It is recommended that you select the Local SMTP Server option for the Use SMTP Server setting for the following reasons:

- The Management Card will attempt to make a connection with the selected server for up to 60 seconds. If the SMTP server does not respond within that 60 seconds, the Email will not be sent. Therefore, there is a higher probability that the Management Card will be able to connect to a local SMTP server than one across the Internet. This is especially true when the remote SMTP server is handling large amounts of traffic, like AOL or MSN.

  **Note:** The Management Card has limited resources to queue and transmit Email. Therefore, the Management Card has relatively low time-out values, particularly when compared to a workstation or server which has hundreds of times more processing bandwidth and storage.

- The local SMTP server will queue the Email and attempt to send it several times to the remote SMTP server. When you select the Recipient’s SNMP Server option, the Management Card will only try to send the Email once.

When you select the Local SNMP Server option, as recommended, you will need to enable forwarding at that server so that the server can route Email to external SMTP servers. Typically, SMTP servers are not configured to forward Email in order to prevent someone from using the server to send SPAM.

Consult with your SMTP-server administrator before changing the configuration of your SMTP server to allow forwarding. Besides direct forwarding, you can set up a special Email account for the Management Card. This account would then forward the Email to an external Email account.
Events Menu

How to Configure Individual Events

“Event List” page

The Actions option in the Events menu opens the “Event Actions Configuration” page. You use the Details button in this page to accesses a complete list of the Management Card (System events), UPS, and Environmental Monitor (Environment events) that can be reported by your Management Card.

Each event is identified by its unique code, its description, and its assigned severity level, as shown in the following examples.

Note: For information about severity levels and how they define the actions associated with events, see Event Actions (Web Interface only) on page 47.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Severity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0008</td>
<td>System: Password changed.</td>
<td>Informational</td>
</tr>
<tr>
<td>0x0109</td>
<td>UPS: Switched to battery backup power.</td>
<td>Warning</td>
</tr>
<tr>
<td>0x030F</td>
<td>Environment: High humidity threshold violation on probe 1.</td>
<td>Severe</td>
</tr>
</tbody>
</table>

“Detailed Event Action Configuration” page

The event codes provide a link to a page that allows you to do the following:

- Change the selected event’s severity level.
- Enable or disable whether the event uses the event log, SNMP traps, or Email notifications.
- Enable or disable whether the event uses the APC Remote Monitoring Service, if you have signed up for this service.

Note: Change this setting only when a manual reconfiguration is needed. For more information about the APC Remote Monitoring Service available, use the Remote Monitoring link in the Menu frame to access the “APC Remote Monitoring Service” page at the APC Web site.
Network Management Card User’s Guide

Data Menu

Menu Options

Log option

Use this option to access a log that stores information about the UPS, the power input to that UPS, and when an Environmental Monitor is used at the UPS, information about the ambient temperature and relative humidity measured by that monitor’s probes.

The information in the data log is sampled and stored based on the log interval defined by the Data menu’s Configuration option. Each entry is listed by the date and time the data was recorded, and provides the data in a column format.

The data recorded depends on the UPS model. For example, a 3-phase Symmetra records the bypass voltage for each phase under columns labeled \textbf{Vbp1} to \textbf{Vbp3}; a Smart-UPS 700 does not have multiple phases, nor does it use bypass voltages.

For descriptions of the recorded data that is specific to your UPS, see the online help in your Network Management Card’s Web Interface.

For information about how you can retrieve the data log as a text file, see \textbf{How to use FTP to retrieve log files on page 46}.

Configuration option

Use this option to access the “Data Log Configuration” page. This page reports how much data can be stored in the data log based on the Log Interval setting which defines how often data will be sampled and recorded in the data log. If you change the Log Interval, the report updates to reflect the effect of the new setting.

The minimum interval is 60 seconds; the maximum interval is 65,535 seconds.
Security

Introduction

Overview

The Management Card provides several different security options, depending on the access interface used. Each of these individual elements is described below, and a summary table is given for each interface. In general, the security aspects of the Management Card should provide a reasonable level of access and authentication control. As a network device that passes information across the network, though, it is subject to the same exposure as other devices on the network. Protecting intranet networks that are connected to external networks (the Internet) with devices such as firewalls, is also an extremely important element in security.

Port assignments

It is possible to define the TCP ports that the Telnet, FTP and Web servers utilize. These are initially set at the standard “well known port” for the particular protocol. To enable users to hide the interfaces, one can use arbitrary ports from 5000-65535. Once an interface uses a non-standard port, it is required to specify the port when using a client interface, such as a Web browser. Hiding the servers provides a level of security in obscurity. In a sense, the non-standard ports are extra passwords. For examples of what the commands would look like when the default port numbers are changed, see FTP Server, Telnet and Web on page 20.

Continued on next page
All user names, passwords, and SNMP community names are transferred over the network as plain-text. This means that someone capable of monitoring the network traffic can determine the user names and passwords required to access the Management Card. Any similar device with Telnet server, Web server, or SNMPv1 agent will have the same constraints due to the limitations in the protocols themselves.

Each of the interfaces and access methods is described in the following table.

<table>
<thead>
<tr>
<th>Interface</th>
<th>Security Access</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Console (Serial access)</td>
<td>• User name and password</td>
<td>Always enabled.</td>
</tr>
<tr>
<td>Control Console (Telnet access)</td>
<td>• User name and password • Selectable server port • Server Enable/Disable</td>
<td>The user name and password are transmitted in plain text.</td>
</tr>
<tr>
<td>SNMP</td>
<td>• Community Name • NMS IP filters • SNMP Enable/Disable • Four access communities with read/write/disable</td>
<td>The NMS IP filters allow access from designated IP addresses. • 159.215.12.1 allows only the NMS with that IP address to have access. • 159.215.12.255 allows access for any NMS on the 159.215.12 segment. • 159.215.255.255 allows access for any NMS on the 159.215 segment. • 159.255.255.255 allows access for any NMS on the 159 segment. • 0.0.0.0 or 255.255.255.255 allows access for any NMS.</td>
</tr>
<tr>
<td>FTP Server</td>
<td>• User name and password • Selectable server port • Server Enable/Disable</td>
<td>Allows access to an Administrator only.</td>
</tr>
<tr>
<td>Web Interface</td>
<td>• User name and password • Selectable server port • Server Enable/Disable</td>
<td>In basic HTTP authentication mode, the user name and password are transmitted as base-64 encoded (no encryption) text.</td>
</tr>
</tbody>
</table>
Troubleshooting

Management Card

Management Card-access problems

The following table describes problems that are related to network or other access to the Management Card. If you are experiencing a problem that is not described in this table, or in the table in SNMP issues on page 58, review the troubleshooting flowcharts on the APC Network Management Card utility CD (.\trouble). If you still cannot resolve the problem, see If Problems Persist on page 60.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
</table>
| Unable to ping the Management Card                    | Is the Management Card's Status LED green, indicating it is up and running its SNMP agent on the network? If yes, try to ping another node on the same network segment as the Management Card. If that fails, it is not a Management Card problem. If the Status LED is not green, or if the ping test succeeds, perform the following checks:  
  • Verify that the Management Card is properly seated in the UPS or expansion chassis.  
  • Verify all network connections.  
  • Verify IP addresses of the Management Card and the NMS, and make sure both are on the same network or subnetwork.  
  • Verify the default gateway (or router) IP address if the NMS is on a different physical network (or subnetwork) from the Management Card.  
  • Verify the number of subnet bits for the Management Card’s subnet mask. |
| PowerChute plus reports a constantly or frequently reports “Unable to Communicate with UPS” | See How to Correct Communication Lost Problems on page 59.               |
| The terminal program reports that it cannot allocate the comm port when you try to configure the Management Card | You must shut down PowerChute plus before you can use a terminal to configure the Management Card. |
| Cannot access the Web Interface                       | • Verify that HTTP access is enabled.  
  • Verify that you can ping the adapter.  
  • Verify that you are using either Internet Explorer 4.0 or Netscape 4.0. |
## SNMP issues

The following table describes known SNMP problems.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unable to perform a GET</td>
<td>• Verify the read (GET) community name.</td>
</tr>
<tr>
<td></td>
<td>• Use the Control Console or Web Interface to ensure that the NMS has access. See <strong>SNMP on page 21</strong>.</td>
</tr>
<tr>
<td>Unable to perform a SET</td>
<td>• Verify the read/write (SET) community name.</td>
</tr>
<tr>
<td></td>
<td>• Use the Control Console or Web Interface to ensure that the NMS has write (SET) access. See <strong>SNMP on page 21</strong>.</td>
</tr>
<tr>
<td>Unable to receive traps at the NMS</td>
<td>Query the <strong>mconfigTrapReceiverTable</strong> PowerNet MIB OID to see if the NMS IP address is listed correctly, and the community name defined for the NMS matches the community name in the table. If not, use SETs to the <strong>mconfigTrapReceiverTable</strong> OIDs, or use the Control Console or Web Interface to correct the trap receiver definition problem. See <strong>SNMP on page 21</strong>.</td>
</tr>
<tr>
<td>Traps received at an NMS are not identified</td>
<td>See your NMS documentation to verify that the traps are properly integrated in the alarm/trap database.</td>
</tr>
</tbody>
</table>
Troubleshooting

How to Correct Communication Lost Problems

Overview

PowerChute plus may constantly or frequently report an Unable to Communicate with UPS condition when PowerChute plus and the Management Card have been installed together on a UPS.

Constant Unable to Communicate Problem

1. Ensure that the cable between the computer and the UPS (or the expansion chassis) is securely connected at both ends.

2. Ensure that the UPS (or the expansion chassis) serial port is connected to the same computer port used to connect the computer to the UPS when PowerChute plus was installed.

3. If Step 1 or Step 2 did not find the problem, reset the Management Card.

4. If the problem persists, disconnect (or remove) the Management Card and restart PowerChute plus. If the problem persists, go to Step 5, and if the problem clears, go to Step 6.

5. If the problem persisted, see your PowerChute plus documentation to remove and then reinstall PowerChute plus. If the problem continues, see APC Global Support on page 61 for information about how to contact APC for technical support.

6. If problem cleared, reinstall the Management Card. If the problem returns, see APC Global Support on page 61 for information about how to contact APC for technical support.

Intermittent Unable to Communicate Problem

1. To eliminate an interrupt request (IRQ) conflict, the most likely cause of the problem, disconnect (or remove) the Management Card from the UPS and restart PowerChute plus. If the problem persists, go to Step 2, and if the problem clears, go to Step 3.

2. If the problem persisted, see your PowerChute plus documentation to remove, and then reinstall, PowerChute plus. If the problem continues, see APC Global Support on page 61 for information about how to contact APC for technical support.

3. If the problem cleared, stop PowerChute plus.

4. Use an ASCII text editor to edit the [ups] section of the PowerChute plus initialization file (pwrchute.ini or powerchute.ini, depending on the PowerChute plus operating system):
   - Add a TimeoutFactor=40 parameter to the file.
   - Change the UpsPollInterval value to =6 (default value is 4).

5. Reconnect (or reinstall) the Management Card and restart PowerChute plus. If the problem continues, see APC Global Support on page 61 for information about how to contact APC for technical support.
Troubleshooting
If Problems Persist

If you could not resolve the problem using the information in the previous tables, or by using the troubleshooting flowcharts on the APC Network Management Card utility CD (.\trouble), do the following:

1. Note the serial number and date of purchase of the Management Card before you use the information in APC Global Support on page 61 to contact APC.

2. Be prepared to provide a description of the problem. A technician will help solve the problem, if possible, or will give you a Return Material Authorization (RMA) number.

3. If the Management Card is under warranty, repairs or replacement is free of charge. If the warranty has expired, there will be a charge for repair or replacement.

4. Pack the Management Card carefully to avoid damage in transit. Damage sustained in transit is not covered under the warranty. Enclose a letter in the package with your name, address, RMA number, a copy of the sales receipt, daytime phone number, and check (if applicable).

5. Mark the RMA number clearly on the outside of the shipping carton. The factory will not accept any materials without this marking.

6. Return the Management Card by insured, prepaid carrier to the address provided by the Customer Support technician.
Customer support for this or any other APC product is available at no charge in any of the following ways:

- Visit the APC Web site to find answers to frequently asked questions (FAQs), to access documents in the APC Knowledge Base, and to submit customer support requests.
  - APC Home page (www.apc.com)
    Connect to localized APC Web sites for specific countries, each of which provides customer support information.
  - APC Global Support page (www.apc.com/support/)
    Global support with FAQs, knowledge base, and e-support.
- Contact an APC Customer Support center by telephone or e-mail.
  - Regional centers:

<table>
<thead>
<tr>
<th>APC Headquarters (U.S. and Canada)</th>
<th>(1) (800) 800-4272 (toll free)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latin America</td>
<td>(1) (401) 789-5735 (United States)</td>
</tr>
<tr>
<td>Europe, Middle East, Africa</td>
<td>(353) (91) 702020 (Ireland)</td>
</tr>
<tr>
<td>Japan</td>
<td>(03) 5434-2021 Guidance 3</td>
</tr>
</tbody>
</table>

- Worldwide Contact page (www.apc.com/support/contact)
  For information about how to contact local, country-specific centers.
- Contact the APC representative or other distributor from whom you purchased your APC product for information on how to obtain local customer support.
Warranty Information

Limited warranty

American Power Conversion (APC) warrants the Network Management Card to be free from defects in materials and workmanship for a period of two years from the date of purchase. Its obligation under this warranty is limited to repairing or replacing, at its own sole option, any such defective products. This warranty does not apply to equipment which has been damaged by accident, negligence, or misapplication or has been altered or modified in any way. This warranty applies only to the original purchaser.

Obtaining service

To obtain service under warranty you must obtain a returned material authorization (RMA) number from APC or a designated APC service center. Products must be returned to APC or an APC service center with transportation charges prepaid and must be accompanied by a brief description of the problem encountered and proof of date and place of purchase. For further information on obtaining service, see If Problems Persist on page 60.

Warranty limitations

Except as provided herein, American Power Conversion makes no warranties, express or implied, including warranties of merchantability and fitness for a particular purpose. Some jurisdictions do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

Except as provided above, in no event will APC be liable for direct, indirect, special, incidental, or consequential damages arising out of the use of this product, even if advised of the possibility of such damage.

Specifically, APC is not liable for any costs, such as lost profits or revenue, loss of equipment, loss of use of equipment, loss of software, loss of data, costs of substitutes, claims by third parties, or otherwise. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.
Product Information

Life-Support Policy

**General policy**
As a general policy, American Power Conversion (APC) does not recommend the use of any of its products in life-support applications where failure or malfunction of the APC product can be reasonably expected to cause failure of the life-support device or to significantly affect its safety or effectiveness. APC does not recommend the use of any of its products in direct patient care. APC will not knowingly sell its products for use in such applications unless it receives in writing assurances satisfactory to APC that (a) the risks of injury or damage have been minimized, (b) the customer assumes all such risks, and (c) the liability of American Power Conversion is adequately protected under the circumstances.

**Examples of life-support devices**
The term *life-support device* includes but is not limited to neonatal oxygen analyzers, nerve stimulators (whether used for anesthesia, pain relief, or other purposes), autotransfusion devices, blood pumps, defibrillators, arrhythmia detectors and alarms, pacemakers, hemodialysis systems, peritoneal dialysis systems, neonatal ventilator incubators, ventilators (for adults or infants), anesthesia ventilators, infusion pumps, and any other devices designated as “critical” by the U.S. FDA.

Hospital-grade wiring devices and leakage current protection may be ordered as options on many APC UPS systems. APC does not claim that units with this modifications are certified or listed as hospital-grade by APC or any other organization. Therefore these units do not meet the requirements for use in direct patient care.
Product Information

Specifications

**Electrical**
The following table identifies the electrical specifications.

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptable input voltage:</td>
<td>19-30 VDC</td>
</tr>
<tr>
<td>Maximum total current draw:</td>
<td>110 mA</td>
</tr>
</tbody>
</table>

**Physical**
The following table identifies the physical specifications.

<table>
<thead>
<tr>
<th>Physical</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Size (H x W x D)</td>
<td>1.46 x 4.75 x 4.3 in</td>
</tr>
<tr>
<td></td>
<td>(3.7 x 12.1 x 10.9 cm)</td>
</tr>
<tr>
<td>Weight</td>
<td>.25 lb (.11 kg)</td>
</tr>
<tr>
<td>Shipping weight:</td>
<td>.8 lb (.36 kg)</td>
</tr>
</tbody>
</table>

**Environmental**
The following table identifies the environmental specifications.

<table>
<thead>
<tr>
<th>Environmental</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevation (above MSL):</td>
<td>0 to 10,000 ft (0 to 3,000 m)</td>
</tr>
<tr>
<td>Operating</td>
<td>0 to 50,000 ft (0 to 15,000 m)</td>
</tr>
<tr>
<td>Storage</td>
<td></td>
</tr>
<tr>
<td>Temperature: Operating</td>
<td>32° to 122° F (0° to 50° C)</td>
</tr>
<tr>
<td>Storage</td>
<td>5° to 158° F (-15° to 70° C)</td>
</tr>
<tr>
<td>Operating and storage humidity:</td>
<td>0 to 95%, non-condensing</td>
</tr>
</tbody>
</table>

**Approvals**
The following table identifies the approvals.

<table>
<thead>
<tr>
<th>Approvals</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>National and International:</td>
<td>FCC, Part 15, Class A</td>
</tr>
<tr>
<td></td>
<td>EN 55022 (CISPR 22), Class A</td>
</tr>
<tr>
<td></td>
<td>VCCI Class 1</td>
</tr>
<tr>
<td></td>
<td>EN 55024 (CISPR 24)</td>
</tr>
<tr>
<td></td>
<td>CE</td>
</tr>
<tr>
<td></td>
<td>C-Tick</td>
</tr>
<tr>
<td></td>
<td>BSMI</td>
</tr>
</tbody>
</table>
Index

A

About
  Environmental Monitor, 43
  System, 16, 22

Access
  Enable/Disable for FTP, Telnet, and Web Interface, 20
  for Administrator account, 3
  for Device Manager account, 3
  limiting NMS SNMP access by IP address, 21
  Network menu option, 21
  priority, 3
  security options for each interface, 56
  troubleshooting, 57
  Type (SNMP), 21

Access Control
  Access Type (SNMP), 21
  Community Name (SNMP), 21
  NMS IP (SNMP), 21

Actions, 47

Actual Battery
  Bus Voltage, 30
  Voltage, 30

Add Client IP, 39

Alarm
  if Load Over, 35
  if Redundancy Under, 35
  if Runtime Under, 35

Alarm Thresholds
  Alarm if Load Over, 35
  Alarm if Redundancy Under, 35
  Alarm if Runtime Under, 35

APC OS, 16

Apply Local Computer Time, 24

Approvals, 64

Audible Alarm, 37

Authentication
  Phrase, 23
  SNMP Traps, 49
  User Manager setting in the Control Console, 23

Auto Logout, 23

Battery
  Capacity, 30
  Current, 30
  Voltage, 30

Battery status
  Actual Battery Bus Voltage, 30
  Actual Battery Voltage, 30
  Battery Capacity, 30
  Battery Current, 30
  Battery Voltage, 30
  Calibration Date, 30
  Calibration Result, 30
  Nominal Battery Voltage, 30
  Number of Batteries, 30
  Number of External Batteries, 30
  Runtime Remaining, 30
  Self-Test Date, 30
  Self-Test Result, 30

BOOTP
  as source of TCP/IP settings, 18
  restoring default setting (enabled), 25
  Status LED indicating BOOTP requests in progress, 4

Browsers, supported, 8

Bypass Input Voltage, 28

C

Calibration
  Date, 30
  Result, 30

Community Name, 49
  as password of SNMP channel, 21
  verifying correctness, 58

Configuration menu
  Battery, 36
  General Settings, 37
  option in UPS menu, 34

Configured Client IP Addresses, 39

Configuring email, 52
  proxy server not to proxy the Management Card, 12
  TCP/IP, 1

Contact
  identification, 23
  settings, 43

Control Console
  Device Manager menu, 11
  logging on, 6
  main screen, 8
  navigating menus, 10
  refreshing menus, 10
  security access, 56

Control menu
  Put UPS In Bypass, 33
  Put UPS To Sleep, 33
  Put UPS To Sleep Gracefully, 33
  Reboot UPS, 33
  Reboot UPS Gracefully, 33
  Self-Test (Control Console), 31
  Simulate Power Failure (Control Console), 31
  Start/Stop Runtime Calibration (Control Console), 31
  Take UPS Off Bypass, 33
  Test UPS Alarm (Control Console), 31
  Turn UPS Off, 33
  Turn UPS Off Gracefully, 33
  Turn UPS On, 33

D

Data log
  Configuration, 54
  Data menu option, 54
  Log Interval, 54
  using FTP to retrieve, 46

Data.txt file, importing into spreadsheet, 46

Date & Time settings, 24
  Apply Local Computer Time, 24
  GMT Offset (Time Zone), 24
  Manual, 24
  Network Time Protocol (NTP), 24
  Primary NTP Server, 24
  Secondary NTP Server, 24
  Set Manually, 24
  Synchronize with NTP Server, 24
  Update Interval, 24

Default settings, restoring, 25

Detailed
  Status, 27
  UPS Information, 27

Device Manager menu, 26
  Control Console, 11
  Utility Voltage Status, 28

Devices that support the Management Card, 1
Index

Diagnostics menu
- Self-Test, 31
- Simulate Power Failure, 31
- Start/Stop Runtime
  - Calibration, 31
- Test UPS Alarm, 31

Disabling
- BOOTP, 18
  - email to a recipient, 51
  - event logging, 48
  - sending any traps to an NMS, 49
  - sending authentication traps to an NMS, 49
- SNMP access by an NMS, 21
  - use of a proxy server, 12

DNS, 18
- defining DNS address, 18
- servers, 50
- Domain Name Server (DNS), 18

Email
- configuring, 50, 52
  - enabled by default for severe events, 48
  - enabling and disabling, 51
- Events menu option, 48, 51
  - message format (long or short), 51
  - reason to use local DNS server, 50
  - setting up an account for the Management Card, 52
  - using for paging, 51

Email Recipients, 51
- Format, 51
- Generation, 51
- Local SMTP Server, 51
- To Address, 51
- Use SMTP Server, 51

Enabling
- BOOTP, 18
  - email forwarding to external SMTP servers, 52
  - email to a recipient, 51
  - sending any traps to an NMS, 49
  - sending authentication traps to an NMS, 49

Environment menu
- About Environmental Monitor, 43
  - Status, 43
- Threshold and Contact Details, 43

Environmental Monitor
- Contact
  - Environmental Monitor settings, 43
- Contact Status, 43
- High or Low Humidity Violation, 43
- High or Low Temperature Violation, 43
- Humidity, 43
- Probe settings, 43
- Status on Control Console main screen, 9
- Temperature, 43

Error messages, 13

Event log, 48
- accessing, 10
- deleting by typing d in Control Console, 45
- disabling, 48
- using Ctrl-L to display the log in Control Console, 45
- using FTP delete command, 46
- using FTP to retrieve, 46

event.txt file
- contents, 46
- importing into spreadsheet, 46

Events menu
- Actions, 47
- Email (Web Interface), 48
- Email Recipients (Web Interface), 51
- Event log, 48
- Log
  - Event, 45
- SNMP traps, 48

External Batteries, 37

Fault Tolerance
- Present KVA Capacity, 30
- Redundancy, 30

Faults & Alarms, 27

Faults, non-specific on Silicon DP300E, 27

Firmware
- displaying information for an Environmental Monitor, 43
- versions displayed on main screen, 8

From Address, 50

Front panel features
- 10/100Base-T Port, 4
- Link-RX/TX LED, 4
- Reset button, 4
- Status LEDs, 4

FTP, 20
- Server security access, 56
  - using to retrieve text version of event or data log, 46

G

General Settings, 37
- Audible Alarm, 37
- External Batteries, 37
- Last Battery Replacement, 37
- UPS Name, 37

Generation, 51

GET commands, troubleshooting, 58

GMT Offset (Time Zone), 24

H

Help
- About System option (Web Interface), 16, 22
  - on Control Console, 10
  - on Web Interface, 16

High or Low Humidity Violation, 43
- Temperature Violation, 43

High Transfer Voltage, 34

Humidity, relative, 43

Hyperlinks, defining, 25

I

Identification, 23
  - displaying on main screen, 8
- MIB-II variables, 23

If UPS fails, 35

Initial setup, 1

Input
- Current, 28
- Frequency, 28
- Voltage, 28

Internet Explorer support, 8

IP addresses
  - for Configure Multiple/Parallel UPS IP Address, 37
  - for default gateway, 1
  - for PowerChute network shutdown clients, 39
  - of DNS server for email, 50
  - of the Management Card, 1
  - of trap receivers, 49
  - to limit access to specified NMSs, 21
Network Management Card User’s Guide

Index

L
Last Battery Replacement, 37
LEDs
  Link-RX/TX, 4
  Status, 4
Liability limitations, 62
Life-support policy, 63
Links
  redefining APC logo’s URL, 25
  redirecting user-definable links, 17, 25
Load
  Current, 29
  Power, 29
Local SMTP Server, 51
Location, 23
Log option
  Data, 54
  Events, 45
Logging on
  Control Console, 6
  error messages for Web Interface, 13
  Web Interface, 13
Login date and time
  Control Console, 9
  Web Interface, 14
Low Transfer Voltage, 34
Low-Battery Duration, 36

M
Main screen
  displaying identification, 8
  Environmental Monitor status, 9
  firmware values displayed, 8
  login date and time, 9
  status, 9
  Up Time, 8
  User access identification, 9
Management Card
  port assignment, 55
  security, 55
  troubleshooting communication problems, 59
Manual option, 24
Maximum Line Voltage, 28
Maximum Shutdown Time
  PowerChute network shutdown, 39–40
  Shutdown Parameters, 36
Maximum-Shutdown-Time negotiation, 40
Menus
  Configuration, 34, 36
  Control Console, 10
  Data, 15, 54
  Device Manager, 26
  Environment, 15, 43
  Events, 15, 44
  Help, 16
  Links, 25
  Network, 16, 18
  System, 16, 22
  UPS, 15, 26, 34
MIB-II Identification variables, 23
Minimum Line Voltage, 28
Module
  Diagnostics & Information, 38
  Status, 38
  Monitor Name, 37
N
Name of Scheduled Shutdown, 41
Netscape support, 8
Network Management Card, See Management Card
Network management features, 2
Network menu
  Access, 21
  DNS, 18, 50
  Email (Control Console), 51
  FTP Server, 20
  Settings, 21
  TCP/IP, 18
  TCP/IP & DNS, 50
  Telnet, 20
  Web, 20
Network Time Protocol (NTP), 24
NMS
  IP (SNMP), 21
  receiving unidentified trap, troubleshooting, 58
Nominal Battery Voltage, 30
NTP, 24
Number of
  Bad Batteries, 30
  External Batteries, 30
Operating Frequency field
  (Control Console), 28–29
OS, APC, 16
Output
  Current, 29
  Frequency, 29
  Frequency Range, 35
  kVA, 29
  Power, 29
  Power Percentage, 29
  VA at n+0, 29
  VA at n+1, 29
  Voltage, 29, 34–35
  Watts at n+0, 29
  Watts at n+1, 29
Output Power Status
  Load Current, 29
  Load Power, 29
  Output Current, 29
  Output Frequency, 29
  Output kVA, 29
  Output Power, 29
  Output Power Percentage, 29
  Output VA at n+0, 29
  Output VA at n+1, 29
  Output Voltage, 29
  Output Watts, 29
  Output Watts at n+0, 29
  Output Watts at n+1, 29
  Peak Output Current, 29
  UPS menu option, 29
Paging by using Email, 51
Passwords
  default for Administrator account, 3, 13
  default for Device Manager account, 3, 13
  for NMS that is a trap receiver, 49
  recovering from lost password, 7
  User Manager access, 23
  using non-standards ports as extra passwords, 55
Peak Output Current, 29
Physical specifications, 64
Ping utility
  for troubleshooting Management Card access, 57
  for troubleshooting Management Cards network connection, 19
## Index

<table>
<thead>
<tr>
<th>Page</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>55</td>
<td>Ports assigning, changing port settings</td>
</tr>
<tr>
<td>20</td>
<td>defaults for FTP, Telnet, and Web Interface</td>
</tr>
<tr>
<td>4</td>
<td>port for Ethernet connection</td>
</tr>
<tr>
<td>39</td>
<td>PowerChute network shutdown Add Client IP</td>
</tr>
<tr>
<td>39</td>
<td>Configured Client IP Addresses</td>
</tr>
<tr>
<td>40</td>
<td>Maximum Shutdown Time</td>
</tr>
<tr>
<td>39</td>
<td>Shutdown Behavior</td>
</tr>
<tr>
<td>59</td>
<td>PowerChute plus restarting to resolve communication problem</td>
</tr>
<tr>
<td>57</td>
<td>shutting down before configuring Management Card</td>
</tr>
<tr>
<td>39</td>
<td>PowerChute® option, UPS menu</td>
</tr>
<tr>
<td>30</td>
<td>Present KVA Capacity</td>
</tr>
<tr>
<td>24</td>
<td>Primary NTP Server</td>
</tr>
<tr>
<td>43</td>
<td>Probe settings</td>
</tr>
<tr>
<td>62</td>
<td>Product description, information</td>
</tr>
<tr>
<td>12</td>
<td>Proxy servers configuring not to proxy the Management Card, disabling use of</td>
</tr>
<tr>
<td>33</td>
<td>Put UPS In Bypass</td>
</tr>
<tr>
<td>33</td>
<td>To Sleep</td>
</tr>
<tr>
<td>33</td>
<td>To Sleep Gracefully</td>
</tr>
<tr>
<td>21</td>
<td>Read access by an NMS</td>
</tr>
<tr>
<td>25</td>
<td>Reboot Card preventing automated reboot for inactivity, restoring network communication</td>
</tr>
<tr>
<td>33</td>
<td>UPS</td>
</tr>
<tr>
<td>33</td>
<td>UPS Gracefully</td>
</tr>
<tr>
<td>49</td>
<td>Receiver NMS IP</td>
</tr>
<tr>
<td>51</td>
<td>Recipient’s SMTP Server</td>
</tr>
<tr>
<td>30</td>
<td>Redundancy</td>
</tr>
<tr>
<td>60</td>
<td>Repairs</td>
</tr>
<tr>
<td>25</td>
<td>Reset Card to Defaults, to Defaults Except TCP/IP</td>
</tr>
<tr>
<td>36</td>
<td>Return Battery Capacity, Delay</td>
</tr>
<tr>
<td>62</td>
<td>Returned material authorization</td>
</tr>
<tr>
<td>62</td>
<td>Returning APC products</td>
</tr>
<tr>
<td>30</td>
<td>Runtime Remaining</td>
</tr>
<tr>
<td>32</td>
<td>Scheduling UPS self-tests</td>
</tr>
<tr>
<td>41</td>
<td>UPS shutdowns</td>
</tr>
<tr>
<td>24</td>
<td>Secondary NTP Server</td>
</tr>
<tr>
<td>56</td>
<td>Security options for each interface, using non-standards ports as extra passwords</td>
</tr>
<tr>
<td>31</td>
<td>Self-Test Date, Diagnostics menu option, Result</td>
</tr>
<tr>
<td>19</td>
<td>Send DNS Query for testing the network connection to the DNS server</td>
</tr>
<tr>
<td>34</td>
<td>Sensitivity</td>
</tr>
<tr>
<td>62</td>
<td>Service, obtaining</td>
</tr>
<tr>
<td>58</td>
<td>SET commands, Troubleshooting</td>
</tr>
<tr>
<td>24</td>
<td>Set Manually</td>
</tr>
<tr>
<td>21</td>
<td>Settings option, Network menu, Setup initial</td>
</tr>
<tr>
<td>40</td>
<td>Severity levels (of Events) Informational, None, Severe, Warning</td>
</tr>
<tr>
<td>39</td>
<td>Shutdown Behavior</td>
</tr>
<tr>
<td>36</td>
<td>Shutdown Delay, Sleep Time</td>
</tr>
<tr>
<td>36</td>
<td>Shutdown Parameters Low-Battery Duration, Maximum Shutdown Time, Return Battery Capacity, Return Delay, Shutdown Delay</td>
</tr>
<tr>
<td>42</td>
<td>how to edit, disable, or delete, how to schedule</td>
</tr>
<tr>
<td>33</td>
<td>Signal servers</td>
</tr>
<tr>
<td>27</td>
<td>Silicon DP300E, interpreting non-specific faults</td>
</tr>
<tr>
<td>31</td>
<td>Simulate Power Failure</td>
</tr>
<tr>
<td>36</td>
<td>Sleep Time</td>
</tr>
<tr>
<td>50</td>
<td>SMTP From Address, Server, SMTP Server</td>
</tr>
<tr>
<td>56</td>
<td>SNMP Access Type, Authentication Traps, Community Name, Disabled access, enabling and disabling, NMS IP, security access for SNMP interface, SNMP traps option, troubleshooting problems, Write access, Write+ access</td>
</tr>
<tr>
<td>64</td>
<td>Specifications electrical, physical</td>
</tr>
<tr>
<td>31</td>
<td>Start/Stop Runtime Calibration</td>
</tr>
<tr>
<td>43</td>
<td>Status Environment menu, in detail, in Web Interface, LED invalid network settings, no power, on Control Console main screen, summary, UPS menu option</td>
</tr>
<tr>
<td>16</td>
<td>Subnet mask, defining</td>
</tr>
<tr>
<td>8</td>
<td>Supported browsers</td>
</tr>
<tr>
<td>24</td>
<td>Synchronize with NTP Server</td>
</tr>
<tr>
<td>16</td>
<td>System Coldstart event, information, obtaining, Name, Warmstart event</td>
</tr>
<tr>
<td>22</td>
<td>System menu About System option (Control Console), Date &amp; Time, Identification, Tools, User Manager</td>
</tr>
</tbody>
</table>

Network Management Card User’s Guide 68
Index

T
Take UPS off Bypass, 33
TCP/IP, 18
defining settings for the Management Card, 18
required settings, 1
restoring default settings, 25
setting port assignments for extra security, 55
Technical Support
contact information, 61
information required for troubleshooting, 60
Telnet, 20
Temperature, ambient, 43
Test UPS Alarm, 31
Threshold and Contact Details, 43
Time Zone, 24
To Address, 51
Tools menu, 25
Reboot Card, 25
Reset Card to Defaults, 25
Reset Card to Defaults Except TCP/IP, 25
XMODEM, 25
Trap Generation, 49
Trap Receivers
Authentication Traps, 49
Community Name, 49
Receiver NMS IP, 49
Trap Generation, 49
Traps
troubleshooting inability to receive traps, 58
troubleshooting unidentified traps, 58
Troubleshooting
by pinging a network node, 57
communication port allocation, 57
email configuration, 50
failure to send email, 52
GET and SET performance, 58
inability to access Web Interface, 57
inability to perform GETs, 58
inability to perform SETs, 58
inability to receive traps, 58
information Technical Support will need, 60
proxy server Technical Support will need, 12
SNMP problems, 58
Traps, not identified, 58
Unable to Communicate with UPS, 59
using flowcharts on the utility CD-ROM, 57
verification checklist, 57
Turn UPS
Off, 33
Off Gracefully, 33
On, 33
U
unidentified traps, troubleshooting, 58
Up Time
Control Console main screen, 8
Web Interface, 14
Update Interval, 24
UPS Keyboard, for information on non-specific faults, 27
UPS menu, 26
Configuration, 34
Detailed Status, 27
Detailed UPS Information, 27
Faults & Alarms, 27
Module Diagnostics & Information, 38
Module Status, 38
Output Power Status, 29
PowerChute®, 39
Scheduled Tests, 32
Self-Test Schedule (under Configuration/General), 32
Status, 27
UPS Name, 37
URL address formats, 13
Use SMTP Server, 51
User access identification, Control Console interface, 9
User Manager, 23
Authentication, 23
Authentication Phrase, 23
Auto Logout, 23
Password, 23
User Name, 23
User Name
default for Administrator account, 3, 13
default for Device Manager account, 3, 13
recovering from lost User Name, 7
User Manager access, 23
Utility Line Settings
High Transfer Voltage, 34
If UPS fails, 35
Low Transfer Voltage, 34
Output Frequency, 35
Output Voltage, 34–35
Sensitivity, 34
Vout Reporting, 34–35
Utility Voltage Status, 28
Bypass Input Voltage, 28
Input Current, 28
Input Frequency, 28
Input Voltage, 28
Maximum Line Voltage, 28
Minimum Line Voltage, 28
V
View the refreshing status page hyperlink, 27, 37
Vout Reporting, 34–35
W
Warranty information, 62
Watchdog features, 5
Web Interface, 12
Enable/Disable, 12
Help menu, 16
logging on, 13
logon error messages, 13
Modifying the Port setting, 20
Port, 12
security access, 56
Status, 14
status summary page, 14
troubleshooting access problems, 57
Up Time, 14
URL address formats, 13
Web option, Network menu, 20
Write access by an NMS, 21
Write+ access by an NMS, 21
X
XMODEM, 25