Share-UPS™

AP9207

Thank You!

Thank you for selecting APC Share-UPS (AP9207). It has been designed for many years of reliable, maintenance-free service in combination with your American Power Conversion (APC) uninterruptible power supply (UPS). 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 computing system.

Please **read this manual!** It provides important safety, installation, and operating instructions that will help you get the most from your Share-UPS unit.

Save **this manual!** It includes instructions for obtaining warranty service.

Radio frequency interference

WARNING: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this user manual, may cause harmful interference to radio communications.

> *Shielded communications cables must be used with this*
> *unit to ensure compliance with the Class A FCC limits.*

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set forth in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limits applicables aux appareils numériques de la Class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

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Chapter 1 Preliminary Information

Introduction

Overview
Share-UPS (AP9207) is an American Power Conversion (APC) accessory that provides seven additional computer interface ports for your APC UPS. It allows the UPS to work in conjunction with your power management software to provide safe system shutdown in extended power outages for up to eight network servers or other devices. If necessary, Share-UPS can shut down the UPS when all attached devices have confirmed OS shutdown.

The first interface port makes it possible to provide advanced UPS and power management functions to all protected devices. You can provide power management with APC PowerChute© *plus* software and UPS accessories such as the APC Web/SNMP Management Card (AP9606) for network connectivity and the Call-UPS© *II* (AP9608) remote management device.

Share-UPS draws power from the Computer Interface port of the UPS or, with an optional AC power adapter (AP9505[i]) not included), from an external source. It monitors the UPS and reports power conditions (e.g., On Battery, Low Battery, On Line) to all attached devices.

**Features of
Share-UPS**

The following list shows some of the features of Share-UPS. Your Share-UPS unit…

- Can be used as a freestanding desktop unit or mounted on a wall, in an APC NetShelter enclosure, or other 19" rack.
- Works well in a heterogeneous network. Servers running different operating systems can monitor the same UPS simultaneously.
- Supports advanced or simple signaling on its Advanced port.
- Can delay shutdown of the UPS until all servers have shut down gracefully.
- Can be connected to a modem or terminal for sending and receiving status and control information between the UPS and Share-UPS. See "Using the Share-UPS Menus," on page 29.
- Allows you to restart hung servers.
- Has operating modes that cause the UPS to shut down after confirmation from all protected devices or after an interval set by the user. See "Configuring Share-UPS" on page 23.
- Does not depend on the operation of the network to protect connected devices. As a hard-wired accessory, Share-UPS reliably conveys important status messages during poor power conditions.

Introduction *continued*

Hardware and software requirements

Share-UPS requires:

- An APC UPS of one the following models:
  - Smart-UPS®, except models AP250, AP400, AP600, AP900, AP1250, AP2000, SUVS420, SUVS650, SUVS1000, SUVS1400, SU620.
  - Matrix-UPS™, except models with serial numbers less than x9412.
  - Symmetra™ *PowerArray*™.

- APC PowerChute software (simple signaling) or PowerChute *plus* (advanced or simple signaling) software. See "Simple versus smart signaling: Table 3" on page 10.

- A communications cable (for each connected device) that monitors shutdown signals. See "Choosing simple signaling cables: Table 1" on page 4.

Introduction *continued*

Choosing simple signaling cables: Table 1

This table lists the simple signaling cables for use with the systems supported by Share-UPS. When ordering a cable, provide the Part Number. See

Note: For smart signaling on the Advanced port, use the cable supplied with your APC UPS (940-0024).

IF you want to connect Share-UPS to a(n)…	THEN order…	Part Number
Windows or NetWare server	UPS LAN Manager Cable	940-0020
UNIX server	UNIX Basic Signaling Cable	AP9823
IBM AS/400	AS/400 Cable Model 9402/9404	940-0006
Macintosh Apple-Share server	PowerChute for Macintosh (software and cable)	AP9001
15-ft extension cable	UPS Interface Extension	AP9815
50-ft extension cable	Isolated Extension Cable	AP9825

Safety warning

Share-UPS is to be used only in conjunction with an APC UPS. Use only APC UPS monitoring cables. Do not connect a computer to any Share-UPS port using a "straight-through" wired extending cable. Connections using a UPS or cable made by any other manufacturer may cause damage or improper operation of the Share-UPS unit, the UPS, or the computer.

Do not operate Share-UPS where the ambient temperature or humidity is outside the limits listed in "Product specifications: Table 14" on page 59.

Product Description

Share-UPS consists of the parts shown in the figure below.

Share-UPS Unit

Management Cable

Mounting Brackets & Screws

5
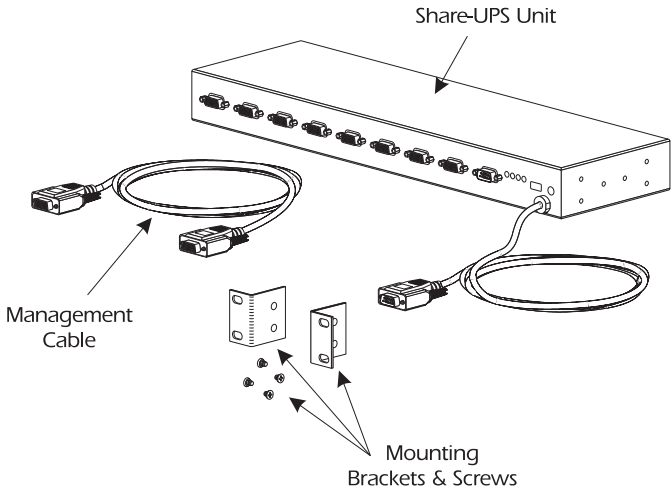
Product Description *continued*

Share-UPS rear panel:
Figure 2

The following figure shows the rear panel of Share-UPS.

Basic Ports

LEDs

ADVANCED PORT

MANAGEMENT PORT

OPTIONAL
POWER
24VDC

TO
UPS

UPS
Connection
Cable
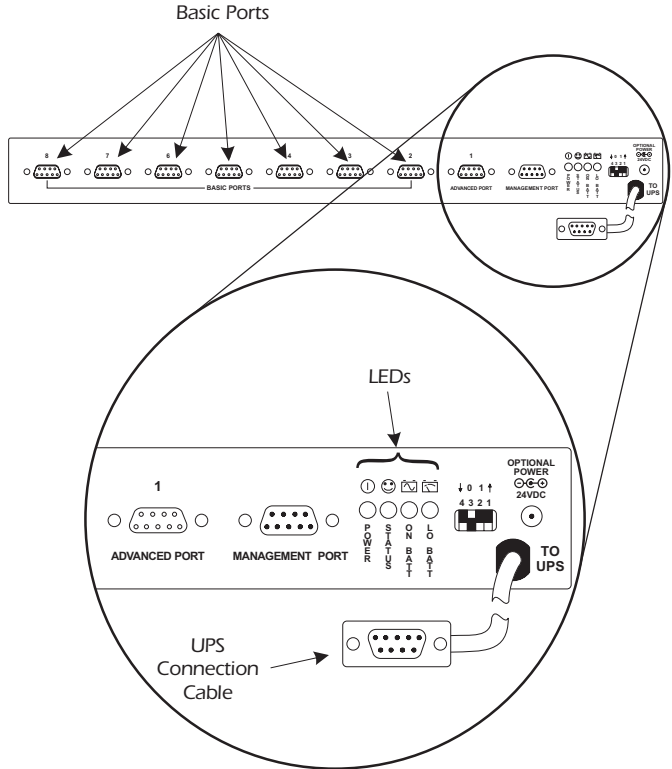
Basic monitoring ports

Ports 2–8 on the rear panel of Share-UPS are called *Basic* ports because they supply simple UPS signaling for On Battery and Low Battery conditions in the UPS. For further information see "Simple versus smart signaling: Table 3," on page 10. For Basic port specifications, see "Basic port pin assignments," on page 54.

Continued on next page

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Product Description *continued*

Advanced monitoring port

Port 1 is called the *Advanced* port because it supplies smart signaling, which provides the advanced capabilities available to a server running PowerChute *plus* software. The Advanced port provides full access to the Computer Interface port of the UPS.

The Advanced port can also function as a Basic port (see "Basic monitoring ports," on page 6).

Management port

The Management port allows you to connect a modem or terminal to configure the Share-UPS unit and the connected UPS. With a modem, you can configure Share-UPS to dial a pager for out-of-band management. (See "Using the Share-UPS Menus," on page 29.)

For direct connection to the Management port, you must use the Management cable supplied with the Share-UPS unit (APC P/N 940-0103).

Product Description *continued*

LEDs:
Table 2

The Share-UPS LEDs provide important information concerning operation of the unit. Refer to the table below for a description of the conditions indicated by the LED.

IF the LED labeled…	is…	THEN Share-UPS…
Power	on	is powered on.
	flashing	is not working properly.
Status	on	has established communication with the UPS.
	off	has lost (or has not established) communication with the UPS.
	flashing	failed the self-test.
On Batt	on	is detecting an On Battery condition in the UPS (unless the UPS is on battery during a self-test or is performing a run time calibration).
	off	is not detecting an On Battery condition in the UPS.
Lo Batt	on	is detecting a Low Battery condition in the UPS.
	off	is not detecting a Low Battery condition in the UPS.

Configuration
DIP switches

The Share-UPS Configuration DIP switches control the shutdown operation of the unit. See "Configuring Share-UPS" on page 23.

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Product Description *continued*

To UPS cable The cable labeled "To UPS" connects the Share-UPS unit to the UPS. The cable connector normally plugs into the Computer Interface port on an APC UPS.

Optional Power input Share-UPS normally receives its power from the UPS through the To UPS cable. The Optional Power input allows you to power the Share-UPS unit from an external source, using a standard 24V AC/DC power adapter (AP9505[i]), available from APC. Use the Optional Power input if you are using several UPS accessories, and the expected draw will exceed the capability of the UPS.

Share-UPS passes power from the Optional Power input to the Advanced port, allowing you to power multiple accessory devices from an external source of power.

Key Concepts

Simple versus smart signaling: Table 3

The communication between an APC UPS and a connected server can be of two types: simple signaling or smart signaling. This table provides information that distinguishes the two types.

Item	Communication Types	
	Simple Signaling	**Smart Signaling**
UPS monitoring features	–On Battery signal –Low Battery signal	–On Battery signal –Low Battery signal –Continuous advanced monitoring visible in PowerChute *plus* graphs
Software used	PowerChute (or PowerChute *plus* configured for simple signaling)	PowerChute *plus* configured for smart signaling
Port type	Basic or Advanced	Advanced
UPS models supported[†]	–Smart-UPS –Matrix-UPS –Symmetra *PowerArray*	–Smart-UPS, –Matrix-UPS, and –Symmetra *PowerArray*
Communication cables	Cables in the interface kit associated with each OS. See "Choosing simple signaling cables: Table 1" on page 4.	Cable supplied with PowerChute *plus*

† See "Hardware and software requirements," on page 3 for a listing of APC UPSs supported by Share-UPS.

Key Concepts *continued*

Master server versus other servers

A "master" server is a server or other device connected to port 1, the Advanced port of Share-UPS. This server uses PowerChute *plus*, configured for smart signaling, to monitor and control the UPS. Although the Advanced port on Share-UPS can provide simple signaling, we strongly recommend using it for smart signaling with the advanced capabilities of PowerChute *plus*.

Servers connected to the Basic ports of Share-UPS use simple signaling with PowerChute or PowerChute *plus* to provide UPS shutdown capabilities and advanced notification features. If you are running PowerChute *plus* on these servers, you must configure it for simple signaling. See "Configuring PowerChute plus for simple signaling," on page 12.

Configuring PowerChute *plus* for simple signaling

To configure PowerChute *plus* for simple signaling. Use either **one** of these procedures. Note that steps 4–8 are common to both procedures.

1 (Re)install PowerChute *plus*. When the installation program prompts for the UPS Type, select "Back-UPS" and continue with the installation, including a reboot of the system.

2 Run PowerChute *plus* and connect to the UPS.

3 Verify that the status line on the PowerChute *plus* screen shows "On Line." Proceed with step 4.

OR

1 With PowerChute *plus* running, select **Communication Parameters** from the **Configuration** menu.

2 Click **Simple Signalling**. Click **OK**.

3 Close PowerChute *plus*.

4 *If the UPS had previously been connected using smart signaling*:

   a Unplug the UPS.

   b Turn off the UPS output by pressing the Off button for at least 5 seconds.

   c Change communication cables, using the simple signaling cable from the interface kit. (See "Choosing simple signaling cables: Table 1" on page 4.)

5 Restart PowerChute *plus* and attach the server to the UPS.

6 Verify that the status of the UPS on the PowerChute *plus* screen shows "On Line."

7 Simulate a utility power failure.

8 Confirm that the On Batt LED of Share-UPS is on, indicating that Share-UPS is sending an On Battery signal to the server. See "LEDs: Table 2" on page 8.

Key Concepts *continued*

Low Battery signal	Share-UPS generates a Low Battery signal when it detects a Low Battery condition at the UPS. Share-UPS generates a Low Battery signal under certain other conditions according to the configured shutdown mode (see "Configuring Share-UPS" on page 23), when it may force a Low Battery signal and an On Battery signal, causing the servers to shut down.
	The duration of the Low Battery signal is defined in the UPS configuration. (Refer to the UPS documentation for information on setting the duration of the Low Battery signal.)

Scheduled shutdowns	When a server connected to the (Advanced) Computer Interface port on Share-UPS is running UPS-monitoring software such as PowerChute *plus*, you can execute scheduled or supervised UPS shutdowns for the servers connected to Share-UPS. Share-UPS receives the shutdown signal and sends the following messages to all attached servers or devices:

- On Battery and Low Battery signals (for the Low Battery signal duration set in the UPS)
- Shutdown commands (e.g., Sleep, Turnoff, etc., as requested by PowerChute *plus*)

The servers connected to the Basic ports shut down gracefully before they lose power when the UPS output is turned off.

Key Concepts *continued*

Setup overview
To set up Share-UPS, you will be required to perform the following procedures as applicable:

1 *If you are using Share-UPS with other APC accessories:* Determine where to install Share-UPS with respect to other accessories. See "Installing Multiple Accessories" on page 15.

2 Install Share-UPS. See "Installing Share-UPS" on page 18.

3 Connect the protected devices. See "Connecting Share-UPS" on page 21.

4 Configure Share-UPS for automatic shutdown:

a   Set the Configuration DIP switches. See "Configuring Share-UPS" on page 23.

b Access the Share-UPS menus through the Management port to complete configuration. See "Using the Share-UPS Menus" on page 29.

5 Test the operation of Share-UPS. See "Testing Share-UPS" on page 28.

Chapter 2 Setting Up Share-UPS

Installing Multiple Accessories

Introduction

If your UPS configuration uses more than one APC accessory, you must install them in the correct order for them to work together properly. Connect the Share-UPS unit to the Computer Interface port of the UPS, installing only a Measure-UPS *II* device in a SmartSlot accessory slot of the UPS. Install all accessories according to priority, referring to "Priority of APC accessories: Table 4," on page 16.

Note: SmartSlot accessories fit into APC UPSs and accessories equipped with a SmartSlot accessory slot. External accessories connect to the Computer Interface port of the UPS or to the Advanced port of other APC accessories (including Share-UPS).

Multiple Share-UPS units

If you need more than the eight ports available with Share-UPS, you can daisy-chain up to 5 Share-UPS units together, provided that the total number of accessories (including Share-UPS units and APC's PowerView™) does not exceed 10.

Note: When daisy-chaining Share-UPS units, you may need to use a power adapter (see "Optional Power input," on page 9). You may also need to lengthen the timeout delay in PowerChute plus by editing the [ups] section of **pwrchute.ini** *to include "TimeoutFactor = 100" (or greater) to keep the software from interrupting the daisy chain's communications.*

Each added Share-UPS unit provides seven more Basic ports. Only one Advanced port in the daisy chain is available for connection to the master server. For connection instructions, see step 2 of "Connection procedure" on page 21.

Continued on next page

Installing Multiple Accessories *continued*

Priority of APC accessories: Table 4

Install SmartSlot accessories as dictated by the following table. An accessory with higher priority is to be placed in the accessory slot with the higher number.

Note: Share-UPS has the same priority as the SmartSlot Interface Expander.

Accessory	P/N	Priority	Position
PowerNet SNMP Adapter or Web/SNMP Management Card	AP9605 AP9603 AP9606	Highest	Highest-numbered slot.
Call-UPS® *II*	AP9608	Second-highest	Second-highest-numbered slot (highest if no PowerNet SNMP or Web/SNMP Management Card is present.)
Relay I/O Module	AP9610	Third-highest	Any slot numbered lower than PowerNet SNMP Adapter, Web/SNMP Management Card & Call-UPS *II,* and higher than Share-UPS, Share-UPS, and Measure-UPS *II*.
Interface Expander	AP9607 AP9207	Second lowest	Slot higher than Measure-UPS *II* and lower than all others.
Measure-UPS® *II*	AP9612T AP9612TH	Lowest	In the UPS accessory slot.

Installing Multiple Accessories *continued*

Expanding SmartSlot capacity

If you need additional SmartSlot capacity between the Share-UPS unit and the master server, you can purchase an APC Expansion Chassis (AP9600) or Triple Chassis (AP9604). For installation instructions, refer to the user documentation supplied with each of these products.

Installing Share-UPS

You may install Share-UPS in any protected environment;
the location should be central to all servers powered by the
UPS.

Warning

Do not operate Share-UPS where the ambient temperature
or humidity is outside the limits listed in "Product specifica-
tions: Table 14," on page 59.

Reminder

Before you install Share-UPS, install any required power
management software (PowerChute, PowerChute *plus*, or
software required by your operating system). If you plan to
use PowerChute *plus* on servers connected to the Basic
ports of Share-UPS, see "Master server versus other serv-
ers" on page 11 and "Configuring PowerChute plus for
simple signaling" on page 12.

**Installation
options**

You can install Share-UPS in one of three ways:

- Place on a desktop.
- Mount in a NetShelter or other 19" rack. For mount-
  ing instructions, see "Mounting Share-UPS in a Net-
  Shelter: Figure 3," on page 19.
- Mount on a wall. For mounting instructions, see
  "Mounting Share-UPS on a wall: Figure 4," on page
  20.

Please recycle

The shipping materials for Share-UPS are recyclable. Please
reuse or dispose of them appropriately.

Installing Share-UPS *continued*

To mount Share-UPS in a NetShelter or other 19" rack:

1 Fasten the mounting brackets (supplied) to the
Share-UPS unit as shown, using the self-tapping
screws (supplied).

2 Attach the Share-UPS assembly to the rack, using
mounting hardware supplied with your NetShelter
enclosure or other rack.

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Installing Share-UPS *continued*

To mount Share-UPS on a wall:

1 Fasten the mounting brackets (supplied) to the
   Share-UPS unit as shown, using the self-tapping
   screws (supplied).

2 Attach the Share-UPS assembly to the wall, using
   appropriate mounting hardware (not supplied).
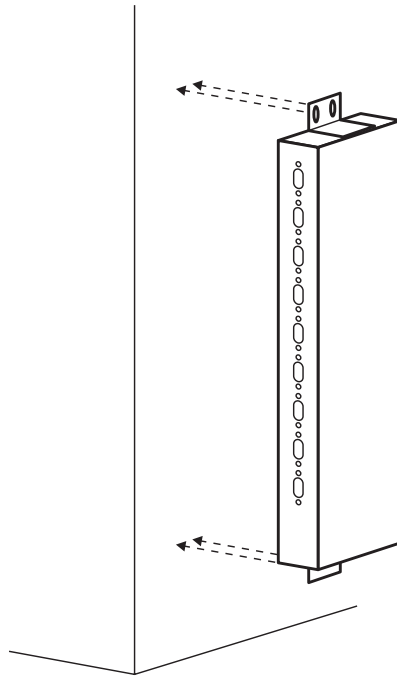
After installation After installing Share-UPS, proceed with "Connecting
Share-UPS" on page 21.

Connecting Share-UPS

Connection procedure

To connect the devices, perform the following steps in the order given.

1 Verify that all protected loads are powered by the same UPS to which the Share-UPS unit will be connected.

2 Verify that no shutdown software is running.

3 Connect the To UPS cable of the Share-UPS unit to the Computer Interface port on the back of your UPS. Fasten securely.

4 *If daisy-chaining multiple Share-UPS units*: Connect the To UPS cable of each subsequent Share-UPS unit to port 1, the Advanced port, of the previous unit.

   Note: When connecting multiple Share-UPS units, you must configure all units identically. See "Configuring Share-UPS," on page 23.

5 *If using Optional Power input (see "Optional Power input" on page 9)*: Plug the external power adapter into the UPS and into the Optional Power input on the rear panel of the Share-UPS unit (or the first unit in a daisy chain).

Connecting Share-UPS *continued*

Connection procedure, continued

6 Connect the master server to port 1, the Advanced port of Share-UPS, using the smart-signaling cable (940-0024) supplied with your UPS. (See "Master server versus other servers" on page 11.)

Note: A server not supported by PowerChute plus must use simple signaling with the appropriate cable. (See "Choosing simple signaling cables: Table 1" on page 4.)

If an accessory, such as Measure-UPS II or an Expansion Chassis, is already using the (Advanced) Computer Interface port of the UPS, connect the master server to the UPS Monitoring port on the accessory. (Accessories label this port in different ways, but the function—replicating the Computer Interface port of the UPS—is the same.)

7 Connect the other server(s) to the Basic ports on Share-UPS, using APC cables. See "Choosing simple signaling cables: Table 1" on page 4.

Note: Servers connected to the Basic ports of Share-UPS use simple signaling for monitoring the UPS. If these servers use PowerChute plus, this software must be configured for simple signaling. See "Configuring PowerChute plus for simple signaling" on page 12.

After connecting Share-UPS

After you have completed the connection procedure, continue with "Configuring Share-UPS" on page 23.

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Configuring Share-UPS

To configure Share-UPS, you must choose one of the three available modes of automatic shutdown of the UPS. Each shutdown mode is described in this section.

- Confirmed
- Until Low Battery
- Timer

DIP switches: Table 5

Select the shutdown mode by using the DIP switches as described in the following table. (An abbreviated form of this table also appears on the top panel of Share-UPS.)

Shutdown Mode		Switch Setting (↓=0, ↑ =1)			
		4	**3**	**2**	**1**
Confirmed		0	0	0	*
Until Low Battery		0	0	1	N/A
Timer	2 min.	0	1	0	N/A
	5 min.	0	1	1	N/A
	10 min.	1	0	0	N/A
	15 min.	1	0	1	N/A
	30 min.	1	1	0	N/A
	Soft Timer	1	1	1	N/A
* Server on Advanced Port	Await Confirmation	0	0	0	0
	Treat as Confirmed	0	0	0	1

Configuring Share-UPS *continued*

**Confirmed
shutdown mode**

In Confirmed mode, Share-UPS shuts down the UPS after all connected servers have signaled that they have completed shutdown of the operating system.

Note: Do not use Confirmed mode if any server connected to Share-UPS Basic ports is incapable of sending a shutdown confirmation signal. See "PowerChute plus support for Confirmed shutdown mode," on page 25.

**Behavior of
Confirmed
shutdown mode**

Unoccupied ports and ports connected to unpowered servers are considered to have confirmed shutdown.

If utility power returns before any connected server has signaled shutdown of the operating system, Share-UPS returns to On Line status.

If Share-UPS detects a Low Battery condition in the UPS before all connected servers have signaled shutdown of the operating system, it notifies the servers that the UPS battery is exhausted, shutting down the UPS after the Low Battery Signal Time has elapsed.

If utility power returns after at least one server has confirmed shutdown of the operating system, but before all servers have confirmed system shutdown, Share-UPS forces On Battery and Low Battery signals so that the remaining servers shut down as well. Share-UPS sends the forced Low Battery signal for a period of time equal to the Low Battery Signal Time and then shuts down the UPS, which cycles power to restart the servers.

If none of the Share-UPS ports are connected to a powered server, Share-UPS operates in Until Low Battery shutdown mode, as described in "Until Low Battery shutdown mode," on page 26.

Configuring Share-UPS *continued*

PowerChute *plus*
support for
Confirmed
shutdown mode

Some versions of PowerChute *plus* do not support Confirmed shutdown mode when set up for simple signaling. Other versions require some editing of the **pwrchute.ini** file in the PowerChute *plus* installation directory. To find out whether your version of PowerChute *plus* supports Confirmed shutdown mode, go to http://support.apcc.com/ and find the link to "*What Versions of* PowerChute *plus Support Confirmed Shutdown Mode?"* under **Preinstallation Information|Share-UPS|Installation Planning**.

Confirmed
shutdown mode
and the
Advanced port

If you configure Share-UPS in Confirmed shutdown mode by setting DIP switches 2, 3, and 4 in the down (0) position, you must set DIP switch #1 to determine the behavior of the server or device connected to the Advanced port.

When Share-UPS is configured for Confirmed mode, DIP switch #1 behaves as follows:

- With DIP switch #1 in the 0 (down) position, the Advanced port operates normally, awaiting shutdown confirmation in the Confirmed shutdown mode.
- With DIP switch #1 in the 1 (up) position, Share-UPS treats the Advanced port as always confirmed. Use this setting when the Advanced port will not be receiving a shutdown confirmation signal.

Note: When the shutdown mode of Share-UPS is set to Until Low Battery or Timer, the position of DIP switch #1 has no effect.

Configuring Share-UPS *continued*

Until Low Battery shutdown mode

Until Low Battery shutdown mode is similar to the standard operation of the UPS. During a utility failure, Share-UPS allows the UPS to run on battery until utility power is restored, or until the battery is exhausted. If Share-UPS detects a UPS Low Battery condition, it sends a Low Battery signal on all ports for a period of time equal to the Low Battery Signal Time and then shuts down the UPS.

If utility power returns after the Low Battery timer has begun, Share-UPS will continue the countdown and force the UPS to cycle power.

This mode is useful for applications which require maximum run time from the UPS.

Timer shutdown mode

In Timer shutdown mode, Share-UPS allows the UPS to operate on battery for a user-specified length of time before shutting down the UPS. See "DIP switches: Table 5" on page 23 for the available timer settings.

If power returns before the timer has run out, Share-UPS returns to On Line status. When the timer runs out or when Share-UPS detects a Low Battery condition in the UPS, Share-UPS sends a Low Battery signal for a period of time equal to the Low battery signal time and then shuts down the UPS.

Note: If you are using PowerChute software, set the shutdown delay for a time longer than Share-UPS timer setting. Otherwise, if the power returns after the server shuts down, the server may not restart. To set the shutdown delay, go to **Configuration**/**Event Actions** *and select UPS On Battery from the Event list and Shut Down Server in the Action box. Click* **Options** *and enter a setting for Begin Shutdown Sequence in __ Seconds. Click* **OK***.*

Configuring Share-UPS *continued*

Soft timer

The soft timer allows you to set a custom duration for the timer, from 0 to 99 minutes. One of the DIP switch settings in Timer shutdown mode enables the soft timer, whose default is 60 minutes. To change the soft timer duration, use the Share-UPS Settings menu. See "Share-UPS Settings menu: Figure 8," on page 40.

Completing the configuration

After you set the DIP switches, perform the following steps in the order given.

1 *If you want to change Share-UPS settings:* Complete the configuration of Share-UPS by accessing the Share-UPS Settings menu. For information on how to connect to the Share-UPS menu system, see "Using the Management Port" on page 29.

2 *If configuring multiple Share-UPS units*: repeat step 2 for each unit, if applicable. You must configure each Share-UPS unit identically.

3 Test the configuration. See "Testing Share-UPS," on page 28.

Configuring Share-UPS *continued*

**Testing
Share-UPS**

To test the operation of Share-UPS, perform the following steps in the order given. If Share-UPS fails this test, see "Troubleshooting: Table 12" on page 48.

1 Confirm that the UPS in on and that the battery is fully charged.

2 Verify that Share-UPS has been installed, connected, and configured.

3 Start the power management software on the servers, with power management screens visible, if applicable.

4 Confirm that the Power and Status LEDs on Share-UPS are on, indicating normal operation.

5 Simulate a utility power failure.

6 Confirm that the On Batt LED of Share-UPS is on, indicating that Share-UPS is sending an On Battery signal to the connected servers or devices. See "LEDs: Table 2" on page 8.

7 Confirm that all connected servers and devices have received the On Battery message from Share-UPS.

8 Restore utility power.

9 Confirm that all connected servers and devices have received the message that utility power has been restored.

Note: To check the shutdown mode of your configuration, keep the utility power off long enough to allow all connected servers and devices to shut down. After all connected servers and devices have shut down, restore power and verify that they all restart.

Chapter 3 Using the Share-UPS Menus

Using the Management Port

Introduction

The Management port of Share-UPS allows you to connect a modem or DTE (data terminating equipment—a dumb terminal or a computer running terminal emulation software) to the Advanced port (port 1) of Share-UPS. Upon establishing communications with Share-UPS through the Management port (see "Logging on to Share-UPS" on page 31), you will access the Share-UPS menus. The Share-UPS menus provide the following features:

- Out-of-band notification
- UPS status display
- UPS control
- Share-UPS configuration

The next paragraphs in this section describe these features.

Out-of-band notification

When you use Share-UPS with an external modem and a pager, Share-UPS can notify system administrators of problems, such as:

- UPS is operating on battery
- UPS has returned to On Line status (utility power restored)
- UPS has a low battery
- UPS has been shut down
- Battery needs replacement
- Abnormal UPS conditions or faults

Using the Management Port *continued*

UPS status display

Using a dumb terminal or a computer and terminal emulation software, you can access the UPS remotely. The password-protected menu interface allows you to view information concerning UPS manufacture, the connected load, battery conditions, and current UPS status.

UPS control

Using a dumb terminal or a computer and terminal emulation software, you can perform certain control functions of the UPS on demand:

- Self-test
- Reboot all servers
- Turn UPS on
- Turn UPS off

Share-UPS configuration

Using a dumb terminal or a computer and terminal emulation software, you can configure the Share-UPS unit. Settings include:

- Device ID string
- Password
- Soft timer
- Baud
- Dial string and trouble codes for pager notification

Connecting to the Management port (local)

To connect locally to Share-UPS, use the Management cable (940-0103) supplied with Share-UPS. Connect one end of the cable to the Management port of Share-UPS and the other end to the computer or dumb terminal.

Using the Management Port *continued*

Connecting to the Management port (via modem)

To connect a modem to Share-UPS, use a standard serial cable. Connect one end to the Management port of Share-UPS and the other end to the serial port of the modem.

When Share-UPS is powered on, it configures the connected modem by sending modem AT setup commands.

If your modem requires an external power adapter, plug it into the UPS so that it will operate during power failures.

Logging on to Share-UPS

To log on to Share-UPS, perform the following steps in the order given.

1 Set the communication parameters of the modem or DTE to 8 data bits, no parity, 1 stop bit, no flow control. When logging on for the first time, set the baud to 9600 bps, the Share-UPS default. (Share-UPS supports 1200, 2400, 9600, and 19200 baud.)

2 Press CTRL + P. Share-UPS then prompts you for the password.

3 Enter the password for Share-UPS. The default password from the factory is **APC** (upper case). The Share-UPS Main menu appears.

   Note: The password may be as many as eight characters long, and is case-sensitive. Share-UPS hangs up the modem, if connected, after three unsuccessful password entries.
   For security, change the password as soon as possible. See "Share-UPS Settings Menu," on page 40.

Main Menu

The following figure shows the Main menu.

```
---------------------- SMART-UPS 700 ----------------------

    Share-UPS by American Power Conversion Corp
    (c) Copyright 1994,97 All Rights Reserved

     Site ID: 12345678
    Location: Physical Location of This UPS

----------------------- MAIN MENU ------------------------

    s- UPS Status
    c- UPS Control
    d- Share-UPS Settings
    p- Paging Setup
    m- Measure-UPS Status
  <CR> Display Menu
 <ESC> End Session

>
```

Note: The model of the UPS connected to Share-UPS is
*   indicated in the header of some screens. Smart-UPS*
*   700 shown.*

Navigating
through the
menus

To navigate through the Share-UPS menus, note the
following:

- ">" is your prompt.
- To access a menu or status display, type the letter
  associated with the menu item. Selections are not
  case-sensitive.
- The menus display directions for navigation.
- Status displays do not leave the Main menu. At these
  displays, press ENTER to redraw the Main menu, or
  ESC to quit the session
- *If you are using a modem*: when you quit the session,
  Share-UPS hangs up, sends the modem configuration
  commands, and changes the baud setting, if it has
  been changed using the Share-UPS Settings menu.

Main Menu *continued*

**Menu
description**

All Share-UPS functions are available through the Main menu. A description of each function appears in the following sections of this manual.

Note: The Measure-UPS Status selection appears on the Main menu only if Share-UPS has detected an APC Measure-UPS environmental monitoring accessory. For a description of the Measure-UPS Status screen, refer to the user guide supplied with the Measure-UPS accessory.

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Main Menu *continued*

The following table describes the items that appear on the Main menu.

Item	Description	Behavior
SITE ID	Identifies the Share-UPS unit (for paging).	A string of up to 8 digits, changeable from the Paging Setup menu (page 42).
LOCATION	The physical location of the Share-UPS unit.	A string of up to 40 characters, settable from the Share-UPS Settings menu (page 40).
UPS STATUS	Factory information about the UPS and battery. Current status of the UPS.	Goes to the UPS Status display (page 35).
UPS CONTROL	For sending commands to the UPS.	Goes to the UPS Control menu (page 38).
SHARE-UPS SETTINGS	For setting various configuration parameters of Share-UPS.	Goes to the Share-UPS Settings menu (page 40).
PAGING SETUP	For enabling paging during certain UPS events.	Goes to the Paging Setup menu (page 42).
MEASURE-UPS STATUS	Temperature and humidity readings and alarm settings of the connected Measure-UPS accessory.	Item does not appear on the menu if Measure-UPS accessory is not present. Goes to the Measure-UPS Status display. (See the user guide for the Measure-UPS accessory.)

UPS Status Display

Menu description

The UPS Status display provides factory information on the connected UPS, output and load readings, battery information, and Measure-UPS accessory readings (if attached). To access the UPS Status display, type **s** from the Main menu.

UPS Status display: Figure 6

The following figure shows the UPS Status display.

```
----------------------- MATRIX 5000 -----------------------

    Utility Line: 213.1 VAC           Battery Info
      UPS Output: 248.7 VAC       -----------------------
        UPS Load: 013.0 %              Voltage: 55.62 VDC
        Run Time: 0113 min            Capacity: 100.0 %
      Load Power: 015.4 VA        Smart Cells: 002
    Load Current: 04.26 A           Bad Cells: 000
        UPS Temp: 024.3 C           Batt Date: 04/28/97
            Freq: 60.00 Hz          Self Test: NO

          UPS ID: UPS_IDEN         Manuf Date: 04/28/97
          UPS S/N: 80033718         F/W Rev: 5ZI
         Status: On-Line

>
```

UPS Status display definitions: Table 7

The following table describes the items that appear on the UPS Status display.

Item	Description
Utility Line	The input voltage from the utility, in volts AC.
UPS Output	The output voltage to the load from the UPS, in volts AC.
UPS Load	The connected load (in watts) as a percentage of the rated capacity of the UPS.

Continued on next page

UPS Status Display *continued*

UPS Status display definitions: Table 7, continued

Item	Description
Run Time	An estimate of the total run time currently available from the UPS, based on present load and battery, in minutes.
Load Power	The amount of power being drawn by the load, in volt-amps (if supported by the UPS).
Load Current	The amount of current being drawn by the load, in amps (if supported by the UPS).
UPS Temp	The current temperature inside the UPS, in degrees Celsius.
Freq	The output frequency setting of the UPS, in hertz.
Voltage	The total voltage for the UPS batteries, in volts DC.
Capacity	The batteries' charge as a percentage of capacity.
Smart Cells	The number of SmartCell battery packs connected to the UPS. (Not supported by all UPS models.)
Bad Cells	The number of connected SmartCell battery packs that are bad. (Not supported by all UPS models.)
Batt Date	The date of the last battery change, settable through PowerChute *plus*.
Self Test	The results of the latest UPS self-test, displayed as one of the following: **OK**–Good battery **BT**–Battery failed; insufficient capacity **NG**–Invalid test because of overload **NO**–Test results not available

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UPS Status Display *continued*

Item	Description
UPS ID	The internal identifier for the UPS, settable through PowerChute *plus*.
Manuf Date	The date the UPS was manufactured.
UPS S/N	The UPS electronic serial number, pro-grammed at the factory.
F/W Rev	The revision number of the UPS firmware.
Status	The current status of the UPS, displayed as one or more of the following. **Waiting to Power Load** **In Bypass** **On-Line** **On-Battery** **Replace Battery** **Low Battery** **Abnormal Condition (see Fault item below)**
Fault	The current abnormal conditions, when Status = Abnormal Condition. Some abnormal conditions are: **Low Batt Shutdown** **Overload** **Main Relay**–main relay failure **Batt Charger**–battery charger failure **Bypass Relay**–bypass relay failure **Internal Temp**–internal temperature too high **Elec Fan Unit**–electronics unit fan failure **Iso Unit Fan**–isolation unit fan failure **Bypass Supply**–bypass supply failure **Voltage Select**–voltage selection failure **DC Imbalance**

UPS Control Menu

Menu description

The UPS Control menu allows you to perform control functions on demand through Share-UPS. To access the UPS Status display, type **c** from the Main menu.

UPS Control menu: Figure 7

The following figure shows the UPS Control menu.

```
---------------------- CONTROL MENU ----------------------

   t- UPS Self Test
   r- Re-Boot All Servers
   n- Turn UPS ON
   f- Turn UPS OFF
 <CR> Display Menu
 <ESC> Return to Main Menu

>
```

UPS Control Menu *continued*

The following table describes the items that appear on the UPS Control menu.

Item	Description
UPS Self Test	The results of the latest UPS self-test (also shown on the UPS Status display page 36), displayed as one of the following. **OK**–Good battery **BT**–Battery failed; insufficient capacity **NG**–Invalid test because of overload **NO**–Test results not available
Re-Boot All Servers	Reboots all servers connected to the Share-UPS unit. For safety, Share-UPS prompts you to confirm this command. To confirm the reboot command, you must enter **YES** (upper case). Share-UPS then forces the On Battery and Low Battery signals for the duration of the Low Battery signal, causing the UPS to cycle power to the loads. *Note: Your modem will lose power during reboot if it is connected to the UPS.*
Turn UPS ON	Immediately turns on the UPS, providing power to any equipment connected to the UPS.
Turn UPS OFF	Turns off the UPS, dropping the connected load. For safety, Share-UPS prompts you to confirm this command. To confirm the Turn UPS OFF command, you must enter **YES** (upper case). Share-UPS then immediately turns off the UPS. *Note: Your modem will lose power if it is connected to the UPS when it is turned off.*
Toggle Bypass Mode	Switches the UPS in and out of bypass mode, if bypass capability exists in the UPS. The results of this command appear as one of the following. **BYP**–UPS has gone into bypass mode **INV**–UPS has gone into normal mode **ERR**–UPS cannot execute request

Share-UPS Settings Menu

Menu description

The Share-UPS Settings menu allows you to configure the way Share-UPS operates. To access the Share-UPS Settings menu, type **d** from the Main menu.

Share-UPS Settings menu: Figure 8

The following figure shows the Share-UPS Settings menu.

```
------------------- SHARE-UPS SETTINGS -------------------
    Model Number: AP9207              H/W Rev: C3
   Serial Number: WA9715696075        F/W Rev: L
     Manuf. Date: 4/15/97
----------------------------------------------------------
   1-    Baud Rate: 9600
   2- Set Password: ********
   3-  Answer Ring: 0
   4-     Location: Physical Location of this UPS
----------------------------------------------------------
   5-   Soft Timer: 75 min
     Shutdown Mode: Confirmed
----------------------------------------------------------
   6- Reset Share-UPS to Default Settings
 <CR> Display Menu
 <ESC> Return to Main Menu

 >
```

Share-UPS Settings menu definitions: Table 9

The following table describes the items that appear on the Share-UPS Settings menu.

Item	Description
Model Number	The model number of the Share-UPS unit.
Serial Number	The serial number of the Share-UPS unit.
Manuf Date	The date on which the Share-UPS unit was manufactured.
H/W Rev	The hardware revision number of the Share-UPS unit.
F/W Rev	The firmware revision number of the Share-UPS unit.

Continued on next page

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Share-UPS Settings Menu *continued*

**Share-UPS
Settings menu
definitions:
Table 9,
continued**

Baud rate	Transfer rate to be used for Share-UPS communications (**0** = 1200, **1** = 2400, **2** = 9600, **3** = 19200). The change takes effect when you quit the session.
Password	The password to use when logging onto the Share-UPS Main menu. The factory default is **APC** (upper case). The password may be up to eight printable characters, and is case-sensitive. Write down the password and keep it in a secure place. If you forget your password, contact APC by one of the means listed on the back cover of this manual.
Answer	The number of rings after which Share-UPS answers a call. The range is **0** (no answering) through **9**.
Location	A character string describing the physical location of the Share-UPS unit.
Soft Timer	A value from 0-99 minutes for the Soft Timer duration (see "Soft timer," on page 27).
Shutdown Mode	The current setting for the shutdown mode, based on the configuration DIP switch settings of Share-UPS.
Reset Share-UPS Default Settings	Clears any changes you have made, returning all device settings to their factory defaults. Share-UPS will prompt you to confirm this command.

Paging Setup Menu

Paging and Share-UPS

When used in conjunction with a modem connected to the Management port (see "Connecting to the Management port (via modem)," on page 31), Share-UPS can be set up to dial a pager to report UPS problem events, such as on-battery operation or problems with the UPS. To use paging, access the Paging Setup menu by typing **p** from the Main menu, and change the settings to work with your modem and pager.

Format of reported events

When paging is enabled and a UPS problem event occurs, Share-UPS reports the condition by sending a code that appears on the pager's display:

[Site ID][space][event code]

For example, a pager displaying:

```
12345678 1
```

tells you that the UPS whose Site ID you have assigned as "12345678" is reporting the event whose code you have chosen to be represented by "1."

Share-UPS modem command string: Figure 9

When a reportable event occurs, Share-UPS issues a modem command string like the one in the following figure.
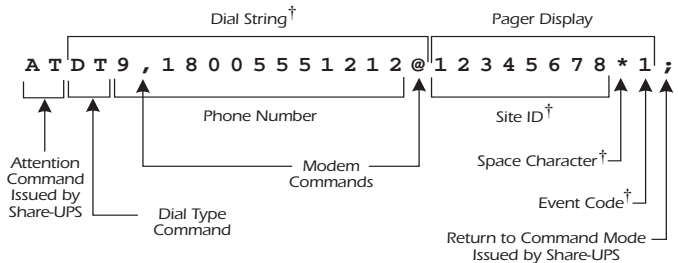
† To be set using the Paging Setup menu.

Paging Setup Menu *continued*

The following figure shows a typical sequence of events
during a utility power outage when Share-UPS is config-
ured for paging.

```
┌─────────────────────┐
│  Power failure occurs: │
│  UPS goes on battery   │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│  Share-UPS transmits   │
│  modem command string  │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│  Pager displays Site ID │
│  and Event Code for     │
│  UPS On Battery         │
└─────────────────────┘
          ┆
          ▼
┌─────────────────────┐
│  Power is restored:     │
│  UPS goes on line       │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│  Share-UPS transmits   │
│  modem command string  │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│  Pager displays Site ID │
│  and Event Code for     │
│  UPS On Line            │
└─────────────────────┘
```

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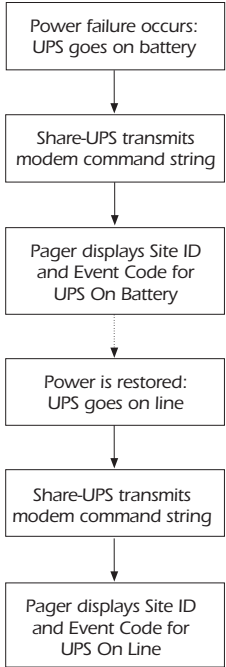
Paging Setup Menu *continued*

Paging Setup menu:
Figure 11

The following figure shows the Paging Setup menu.

```
---------------------- PAGING SETUP ----------------------
   1-      Paging: ON
   2-  Dial String: DT9,18005551212@
   3-      Site ID: 12345678
   4-   Space Char: *

------- EVENT ------------- CODE (0=Disabled) ------------
   a- UPS ON-BATTERY        1
   b- ON & LOW BATTERY      2
   c- UPS SHUT DOWN         3
   d- UPS ON-LINE           4
   e- REPLACE BATTERY       5
   f- UPS FAULT             6
   g- ENV-ALARM             7
----------------------------------------------------------
 <CR> Display Menu
 <ESC> Return to Main Menu

>
```

Common modem commands:
Table 10

The following table lists some common modem commands that you may include in your dial string (see "Share-UPS modem command string: Figure 9," on page 42). For further information, see the documentation supplied with the modem.

Command	Description
DP	Pulse dialing method.
DT	Tone dialing method.
W	Wait for second dial tone.
, (Comma)	Pause. Pause duration is typically 2 seconds.
@	Wait for quiet answer (5 seconds of silence).
|	Inserts a new line and a 3-second delay.
; (Semicolon)	Returns modem to command state after dialing. (Share-UPS inserts this command automatically.)

Paging Setup Menu *continued*

Paging Setup menu definitions: Table 11

The following table describes the items that appear on the Paging Setup menu.

Setting	Description
Paging	Turns paging on or off.
Dial String	A string of up to 40 characters (letters, numbers, or punctuation) that Share-UPS sends to the modem in order to contact your pager. The Dial String must contain the following items. • The dial type command (**DT** or **DP**) at the beginning of the string • The phone number of the pager • Any modem commands needed for timing, waiting for dial tone, outside line access, pager PIN number, etc. For an example of a dial string, see "Share-UPS modem command string: Figure 9," on page 42.
Site ID	A string of up to 8 numeric (0–9) characters that will allow you to determine which Share-UPS unit is paging you during an event.
Space Char	The character that Share-UPS uses to separate the Site ID from the Event Code. This character appears as a space on the pager. Change this setting only if your pager requires a different space character.

Paging Setup Menu *continued*

Setting	Description
Event	A one-digit code that you associate with each of the events reportable by Share-UPS. If Paging is turned on and Share-UPS detects an event, it transmits the code to the pager. An event assigned **0** does not trigger paging and is thus not reported.
	You may assign the same digit to multiple events. (For example, you could assign **3** to all battery-related events.) However, it may prevent confusion to assign a unique code to each event.
	Each event is described below.
	UPS ON BATTERY–the UPS is providing battery output due to a loss of utility power.
	ON & LOW BATTERY–the UPS is providing battery output due to a loss of utility power, and the UPS battery is nearly exhausted.
	UPS SHUT DOWN–the UPS has been shut down by command or a low-battery condition.
	UPS ON-LINE–the UPS has returned to online operation after an on-battery, low-battery, or shutdown condition.
	REPLACE BATTERY–the UPS has issued a Replace Battery alarm.
	UPS FAULT–the UPS has detected an internal fault.
	ENV-ALARM–a Measure-UPS device has issued an alarm (temperature or humidity reading outside established limits, or contact closure).

Chapter 4   Product Information

Warranty Information

Limited warranty

American Power Conversion (APC) warrants Share-UPS 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.

Warranty Information *continued*

**Except as provided herein, American Power Conversion
makes no warranties, express or implied, including war-
ranties 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 equip-
ment, 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.

Troubleshooting

The troubleshooting chart (Table 12) covers many of the
problems that might arise with Share-UPS. If you encounter
a problem with your Share-UPS unit, refer to the trouble-
shooting chart first. There may be a simple solution you are
overlooking.

Trouble-
shooting:
Table 12
The following table shows the solution to common prob-
lems with the operation of Share-UPS.

Problem	Possible Cause	Solution
Cannot log onto Share-UPS menus via the Management port.	Incompatible terminal settings.	Change settings to match the Share-UPS baud (the default is 9600), with 8 data bits, no parity, and no handshaking.
A server connected to a Basic port does not acknowledge On Battery signal.	The wrong cable is being used.	Verify that the cable is the one supplied with your interface kit. See "Choosing simple signaling cables: Table 1" on page 4.
	There is an internal problem with Share-UPS.	Disconnect Share-UPS temporarily from the UPS and reconnect. If the problem persists, see "If problems persist," on page 52.
The Power LED flashes continuously.	There is an internal problem with Share-UPS.	Disconnect Share-UPS temporarily from the UPS and reconnect. If the problem persists, see "If problems persist," on page 52.

Troubleshooting *continued*

Problem	Possible Cause	Solution
The Power LED is on but the Status LED is off.	The UPS is off.	Normal Share-UPS operation when the UPS is off.
	The UPS is not capable of smart signaling.	Verify that your UPS supports smart signaling. See "Hardware and software requirements," on page 3 and "Simple versus smart signaling: Table 3," on page 10.
	There is a problem with the UPS.	Contact APC Technical Support at one of the phone number or address on the back cover of this manual.
One or more servers shuts down when the UPS is on battery, but does not restart when power returns.	*Timer mode:* the operating system shutdown time as set in PowerChute *plus* is too short.	The power management software shutdown time must be set longer than Share-UPS Timer shutdown mode setting.
	Confirmed mode: Share-UPS did not receive shutdown confirmation from servers that shut down, and utility power was restored. The server shut down but the UPS did not shut down.	Verify that the servers can confirm shutdown. See "PowerChute *plus* support for Confirmed shutdown mode" on page 20. If not, configure Share-UPS for Timer or Until Low Battery shutdown mode.

Continued on next page

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Troubleshooting *continued*

Problem	Possible Cause	Solution
The Status LED is on but the server on the Advanced port cannot communicate with the UPS.	The communication cable is not properly fastened.	Verify cable connections.
	The wrong cable is being used.	If you are using smart signaling, verify that you are using the cable supplied with your APC UPS (940-0024). If you are using simple signaling, verify that you are using the correct simple signaling cable. (See "Choosing simple signaling cables: Table 1" on page 4.)
	The port on the master server is being used by another application.	Close the offending application.
The pager receives incomplete or incorrect codes.	The modem is dialing too quickly for the pager system.	Configure your modem for slower dialing, using modem commands. See "Common modem commands: Table 10," on page 44.

Troubleshooting *continued*

If problems persist

For problems not covered in the troubleshooting chart (see "Troubleshooting: Table 6" on page 26), or if the problem persists, follow this procedure:

1 Note the serial number and date of purchase of the Share-UPS unit. Contact Technical Support at the phone number or address on the back cover of this manual.

2 Be prepared to provide a description of the problem. A technician will help solve the problem over the phone, if possible, or will give you a return material authorization (RMA) number.

3 If the Share-UPS unit is under warranty, repairs are free of charge. If the warranty has expired, there will be a nominal charge for repair.

4 Pack the Share-UPS unit carefully in its original packaging, if possible. Do not use polystyrene beads for packing. 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 Share-UPS unit by insured, prepaid carrier to the U.S. address on the back cover of this manual.

Life-Support Policy

General policy

As a general policy, 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 affect significantly 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

Examples of devices considered to be life support devices are 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 both adults and infants, anesthesia ventilators, and infusion pumps as well as any other devices designated as "critical" by the U.S. FDA.

Hospital-grade wiring devices and leakage current 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.

Specifications

Basic port pin assignments

The following limitations and capabilities apply to the Basic ports of Share-UPS:

- Pins 3, 5, and 6 are open collector outputs which must be pulled up to a common referenced supply no greater than +40 Vdc. The transistors are capable of a maximum non-inductive load of 25 mAdc. Use only Pin 4 as the common.
- The output at Pin 2 generates a low-to-high RS-232 level when the device is signaling an On Battery condition. The pin is normally at a low RS-232 level.
- Share-UPS may be signaled to shut down the UPS by applying a high RS-232 level to Pin 1 for 4.5 seconds. Shutdown is also dependent on the UPS status and the Share-UPS shutdown mode (see "Configuring Share-UPS," on page 23).

Specifications *continued*

The following figure shows the Basic port pin assignments.
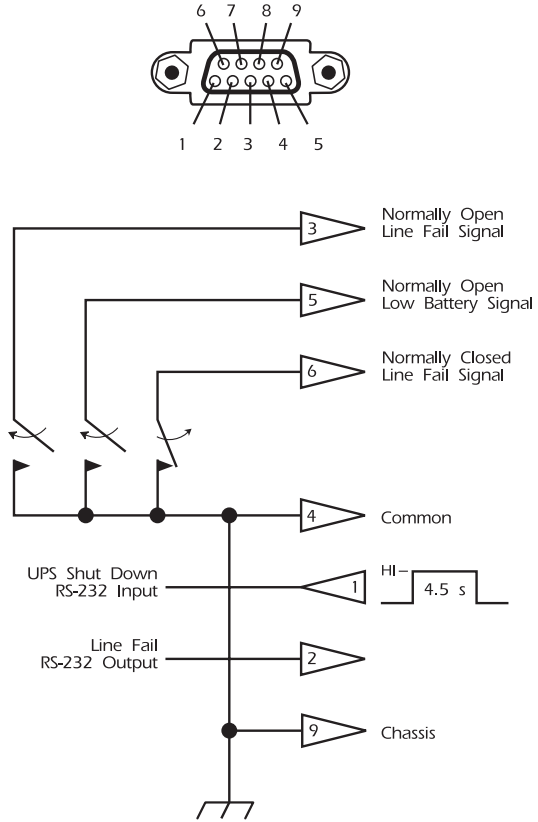
Specifications *continued*

**Advanced port
pin assignments**

The Advanced port of Share-UPS has the same limitations and capabilities as the Basic port (see "Basic port pin assignments," on page 54). The following *additional* limitations and capabilities apply to the Advanced port:

- Applying a momentary (approximately 1 second) high RS-232 level to Pin 7 turns on the UPS and its loads. A momentary low RS-232 level turns off the UPS and its loads. Pin 7 should normally be unconnected. This signal is passed through Share-UPS.
- DC operating voltage is available on Pin 8 of the Advanced port. This voltage may be the UPS battery voltage or the voltage from an external adapter, whichever is greater.

Specifications *continued*

Advanced port pin assignments: Figure 13

The following figure shows the Advanced port pin assignments.

Continued on next page

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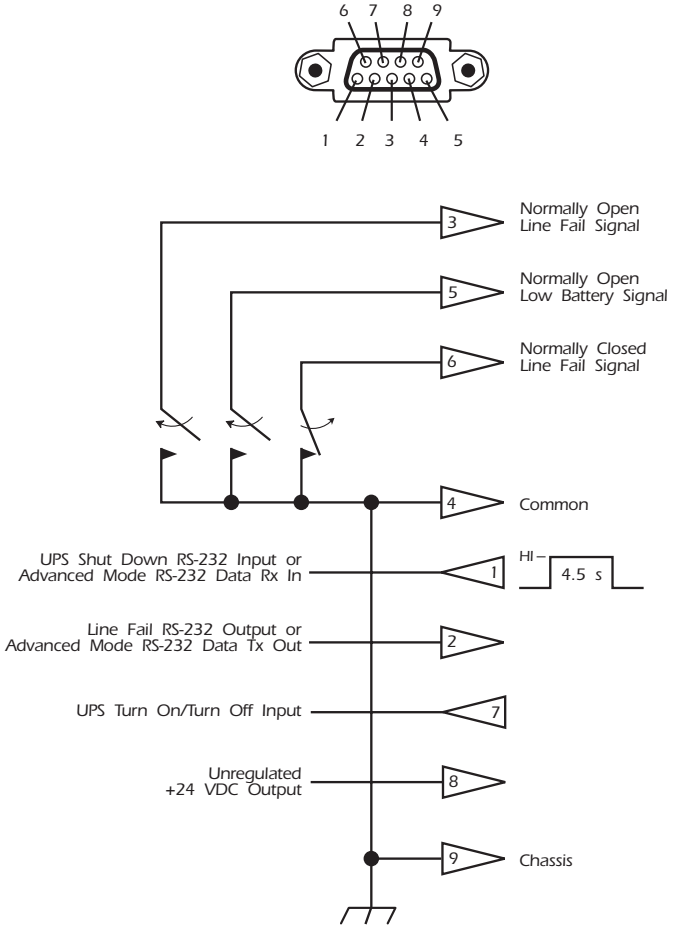
Specifications *continued*

Management port pin assignments

The Management port is a standard 9-pin RS-232 serial communications port. The port is configured as data terminating equipment (DTE) with no handshaking, and supports bauds of 1200, 2400, 9600, and 19200. The data format is 8 data bits with 1 start bit, 1 stop bit, and no parity.

Management port pin assignments: Table 13

The Management port pin assignments are listed in the following table.

Pin	Function
1	Unused
2	Receive Data input
3	Transmit Data output
4	+12 Vdc (through a 1-kΩ resistor)
5	Ground
6	Unused
7	Request To Send output
8	Clear To Send input
9	Unused

Specifications *continued*

Product specifications: Table 14

The following table shows the product specifications for Share-UPS.

Item	Specification
Power	
Turn on voltage:	> 22 Vdc
Turn off voltage:	< 16 Vdc
Current draw (normal operation):	45 mAdc
Current draw (voltage < 16 Vdc):	< 1 mAdc
Physical	
Size (H × W × D):	1.75 × 17.0 × 5.0 in (4.4 × 43.2 × 12.7 cm)
Weight:	3.5 lb (1.6 kg)
Shipping weight:	5.75 lb (2.6 kg)
Environmental	
Elevation (above MSL): Operating Storage	 0 to 10,000 ft (0 to 3000 m) 0 to 50,000 ft (0 to 15 000 m)
Temperature: Operating Storage	 32 to 149°F (0 to 65°C) -4 to 158°F (-20 to 70°C)
Relative humidity: Operating Storage	 0 to 95%, non-condensing 0 to 95%, non-condensing
Electromagnetic immunity:	EN50082-1 verified

Specifications *continued*

**Product
specifications:
Table 14,
continued**

Item	Specification
Approvals	
EMC verification:	FCC/DOC Class A, VDE/EN 50022 Class B verified
Other:	CE, C-Tick (AS/NZS 3538)

Index

APC

www.apcc.com

Toll free technical support:

U. S. & Canada	1-800-800-4272
Austria	0660 6480
Belgium	0800 15063
Czech Republic	0 800 102063
Denmark	800 18 153
Finland	9800 13 374
France	0 800 906 483
Germany	01300818907
Holland	0800 0224655
Hungary	00800 12221
Ireland	1 800 702000 x 2045
Israel	177 353 2206
Italy	1678 74731
Japan	0120-80-60-90
Luxembourg	0800 2091
Norway	800 11 632
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Portugal	050 553182
South Africa	0800 994206
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