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# ***PowerMon<sup>®</sup> II***

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## **User Manual**

for the:

## **Microsoft<sup>®</sup> Windows<sup>®</sup> 95** **Operating System**

by:



**MT-SE-39/01**

11-Apr-97

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# Conventions Used In This Guide

This guide uses these type style conventions:

*Italic print*, as shown in this example, indicates chapter or section names in this guide, window or dialog box names, or is used for emphasis.

***Bold italic print***, as shown in this example, indicates field names or menu items in the software, or is used for emphasis. Words separated by a / vertical bar indicate a series of menu items that must be selected. For example: ***File|Exit***

**Bold print**, as shown in this example, indicates filenames, directories, or items to be typed exactly as they appear.

*Italic print words or letters in braces { }* indicate values that must be supplied by the user. For example: *{drive}:\setup*

*Italic print words or letters in brackets < >* indicate keys to press. If two keys are separated by a + plus symbol, then the first key should be pressed and held down while pressing the second key. For example: *<alt+enter>*

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**Note:**      **Notes contain important information set off from the text.**

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**Warning:** **Warning messages alert you to a specific procedure or practice which, if not followed correctly, could cause serious personal injury or loss of data.**

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# Introduction

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PowerMon II is a power monitoring software package that allows UPS monitoring for the Windows 95 operating system. The software monitors the UPS through a cable attached to a serial port on the computer, and the communication interface on the UPS. This cable enables the software to check the status of the UPS (such as battery warning, power fail, power restored, and low battery) and to perform a graceful shutdown if required.

Through PowerMon II's pull-down menus and dialog boxes, you can configure the user interface and shutdown timers, view and print event logs, view power history and analysis charts, and get help on-line.

If PowerMon II detects a utility power failure, it activates a user-specified timer to automatically shut down your system. PowerMon II also displays a warning message so you can recognize the possibility of a system shutdown and save your work.

If power is restored during a utility power failure, PowerMon II will reset the shutdown timer and notify you that utility power has been restored.

If the UPS battery power runs low, PowerMon II activates a user-specified low battery shutdown timer to override the power failure shutdown timer.

If the user-specified shutdown or low battery timer expires and power is still not restored, you are notified of the shutdown, then shutdown of the system begins. You can perform actions by placing commands in a `shutdown.bat` file, which is executed at shutdown time.

PowerMon II will also track battery warnings, when the UPS reports low battery and utility power is present. This feature allows you to identify a potential problem with the UPS batteries. All power events are recorded in an event log file.

If you would like to dial the telephone number for a pager when power fails, you can configure PowerMonII to dial the number and leave a warning code.

If you have any questions and or recommendations regarding this installation guide, please bring them to the attention of our Technical Support Department.



## **REMEMBER**



Don't forget to mail your PowerMonII registration card, it is your proof-of-purchase.



## **NOTE**



If you have any questions about PowerMonII or other products from Systems Enhancement Corporation, please contact us at:

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For Technical Support, see the section titled, **Placing a Technical Support Call**

# Installation & Configuration

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## System Requirements

1. To use PowerMonII, you must be running the Microsoft Windows 95 operating system. If you are using an earlier version of Microsoft Windows, contact your reseller for that version of PowerMon II.
2. PowerMon II requires one dedicated RS-232 serial port on your computer, for communications with a UPS.

Installation and configuration consists of the following:

- Installing the UPS interface cable
- Installing the PowerMon II application
- Configuring PowerMon II

## Installing the UPS Interface Cable

Before you attach the cable to the UPS or computer, please perform the following steps:

1. Shutdown and turn off your computer.
2. Locate the UPS interface cable that was provided in the PowerMon II kit.

PowerMon II kits may include a *Plug and Play* compatible cable. The *Plug and Play* cable provides PowerMonII with important configuration information that would have to otherwise be entered manually. Before you continue, you must determine if the cable supplied in your PowerMonII kit is *Plug and Play* compatible. Each cable is labeled with a part number on at least one end of the cable. If the part number on either end contains **PNP**, then the cable is *Plug and Play* compatible.

Install the UPS interface cable by performing the following steps:

1. Identify the computer end of the cable. The computer end of a *Plug and Play* cable will have a label with a PNP part number. Non *Plug and Play* cables will have a label on the computer end.
2. Plug the connector at the computer end of the cable into any dedicated serial communications port on your computer. If this end of the cable does not match your serial port connector, use an RS-232 adapter.
3. Plug the connector at the other end of the cable into the interface port on the UPS. (Refer to your UPS user's manual for help in locating the interface port.) If this end of the cable does not match the connector on your UPS, contact your reseller or Systems Enhancement Corporation. Do **not** use an adapter.
4. Restart your UPS and computer.

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**WARNING: If you don't have the UPS interface cable connected to the computer and the UPS, your system could shutdown immediately when the software starts.**

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## ***Plug and Play UPS Interface Cables***

If you didn't shut down your system before you installed the *Plug and Play* cable, you must perform one of the following steps for Windows 95 to recognize the cable:

- Restart your computer.
- Run the *System* application from the *Control Panel* folder. Choose the ***Device Manager*** tabbed card. Push the ***Refresh*** command button on the ***Device Manager*** tabbed card.

If Windows 95 detects the *Plug and Play* cable, it displays the following *New Hardware Found* dialog box:



Select the ***Driver from disk provided by hardware manufacturer*** option and click the **OK** button. An *Install From Disk* dialog box is displayed.

Insert the PowerMon II diskette in the appropriate diskette drive on your system. Set the drive in the ***Copy manufacturer's files from*** text box and click the **OK** button.

To verify that the cable is installed and configured, you can run the *System* application from the *Control Panel* folder. Choose the ***Device Manager*** tabbed card. You should see an entry for the UPS cable under ***Other devices***

## Installing PowerMonII

Insert the PowerMon II diskette in the appropriate diskette drive on your system. You can install the program by using one of the following methods:

- Run **setup.exe** from the diskette.
- Run the *Add/Remove Programs* application from the *Control Panel* folder.

The *Setup Wizard* will guide you through the installation.

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**NOTE:** If you press **Cancel** during PowerMon II installation, you stop the installation program.

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Select the install destination drive and directory and type of install. There are three types of installs:

**Typical** - Install all files from the diskette.

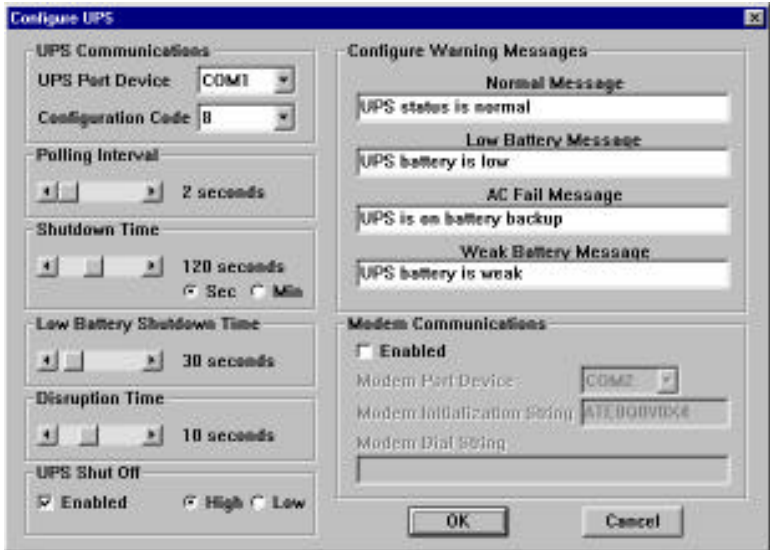
**Compact**- Install only the files required for operation.

**Custom** - You choose what files are installed.

During the installation process, an icon is placed in the **Programs** folder on the **Start** menu. When installation is complete, remove your PowerMonII diskette and store it in a safe place.

## Configuring PowerMonII

To start PowerMonII, click on the PowerMonII icon in the **Programs** folder on the **Start** menu. The *Configure UPS* window displays. Use this window to setup the software for UPS monitoring.



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**Note:** For On-line help, go to **Help** on the main menu bar or use the <F1> key for context specific help.

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If a *Plug and Play* cable is detected, **UPS Communications** fields will automatically be configured from the cable.



The fields will not be available for you to configure.

## ***UPS Communications***

The ***UPS Communications*** group allows you to identify the serial port and UPS type.

### **UPS Port Device**

Select the COM port to which the UPS interface cable is attached.

### **Configuration Code**

Select the ***Configuration Code***. Your ***Configuration Code*** is located on the inside front cover of this manual.

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**Warning:** If you don't have the UPS interface cable connected to the computer and UPS, your system could immediately shutdown when the software starts monitoring.

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## ***Polling Interval***

The ***Polling Interval*** allows you to set the amount of time between UPS status checks. The ***UPS Status*** graph also uses this time interval to set the interval length. Default setting: 2 seconds.

## ***Shutdown Time***

The ***Shutdown Time*** allows you to set the amount of time to allow the computer to run before PowerMonII performs an automatic Windows 95 shutdown. Default setting: 120 seconds.

## Low Battery Shutdown Time

The **Low Battery Shutdown Time** allows you to set the amount of time to allow the computer to run before PowerMonII performs an automatic Windows 95 shutdown. This value overrides the **Shutdown Time**. Default setting: 30 seconds.

## Disruption Time

The **Disruption Time** allows you to set the amount of time between when a utility power failure occurs and when you are notified of the failure. This feature allows you to avoid nuisance power disruption notices and delays paging. Default setting: 10 seconds.

## UPS Shut off

The **UPS Shut off** group allows you to turn off UPS output power after Windows 95 is shutdown. If you are using a *Plug and Play* cable, the **High** and **Low** option buttons will not be displayed.

### Enabled

Check this check box to enable the UPS shut off signal. Default setting: Disabled.

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**Note:** If you are using a *Plug and Play* cable, the shut off signal will be sent to the UPS approximately 50 seconds after shutdown begins. If your system takes more than 50 seconds to shutdown, disable **UPS Shut off**.

If you are **not** using a *Plug and Play* cable, the shut off signal will be sent immediately. If your UPS does not have a built-in shut off delay, then disable **UPS Shut off**, or your UPS will shut off immediately.

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### High

Choose this option button to send a high shut off signal to the UPS. Default setting: Enabled.

### Low

Choose this option button to send a low shut off signal to the UPS. Default setting: Disabled.

## **Configure Warning Messages**

The **Configure Warning Messages** group allows you to edit the text of warning messages. The following messages display in the *UPS Status* window for the corresponding conditions. If you want to change any message, you can highlight or delete the current text and type the new text.

### **Normal Message**

This message displays when no alarm conditions exist.

### **Low Battery Message**

This message displays when a low UPS battery condition exists.

### **AC Fail Message**

This message displays when a utility power failure condition exists.

### **Weak Battery Message**

This message displays when a weak battery condition exists. If utility power fails when a weak battery condition exists, a low battery will occur.

## **Modem Communications**

The **Modem Communications** group allows you to configure paging for PowerMonII power events. If **Enabled** is not checked, the remainder of the options in this section will not be available. The examples use the Hayes® standard AT modem command set.

### **Enabled**

Check this check box to enable paging when a utility power failure, low battery, or utility power restored event occurs. The page will be performed after the **Disruption Time** expires. Default setting: Disabled.

## Modem Port Device

Select the COM port to which the modem is attached.

## Modem Initialization String

Enter the initialization string that will be sent to the modem before a page is attempted. The default string is `ISATE0QOV0X4`.

The meanings of the codes follow:

- AT** Attention code
- EO** Turns echo off so commands are not echoed back to the computer
- Q0** Enables result code return to the computer
- V0** Enables numeric result codes which allows PowerMonII to determine the page status
- X4** Enables all of the numeric result codes which allows PowerMon II to determine dial tone, busy signal, and answer status

See your modem users manual for more explanation of commands.

## Modem Dial String

Enter the dial string that will be sent to the modem to page. Begin the string with AT, and include any Hayes commands required to dial the telephone number of the paging service, wait for the paging service to answer, and send a warning code or phone number.

## Common Modem Commands

For more information, see your modem user manual.

<b>Command</b>	<b>Description</b>
<b>DT</b>	Dial the following number using Tone dialing.
<b>DP</b>	Dial the following number using Pulse dialing.
<b>W</b>	Wait for Dial tone. It is most often used to wait for the dial tone of an outside telephone line before processing the rest of the dial string. The amount of time to wait is set in the S-Registers of the modem. (S7)
<b>,</b>	A comma, placed anywhere in the dial string, tells the modem to pause before processing the rest of the string. The amount of time to pause is set in the S-Registers of the modem. (S8)

**Example:**

XYZ company has 20 systems running PowerMonII in one building. You are configuring PowerMonII for one of five systems located in one room of the building. The telephone number for the paging service is **1 800 555 1212**. To acquire an outside line from your building, you must dial **9** and wait for the dial tone.

Identify the location of the computer system. For example, your system is located in room number **122**, and it is the **third** of five systems located in that room. Identify your system as **122-3**.

Using the previously supplied information, try to set up a dial string that will work with your paging service. For example:

**ATDT 9 W 18005551212,,,,,122 3**

**9W** causes the modem to dial 9 and wait for the dial tone of an outside line. **18005551212** is the phone number of the pager. **","",""** waits for approx. 10 seconds to allow the pager service to answer the phone and get ready to receive the number. **1223** (122-room, 3-computer) will be displayed on the pager to identify the computer system that is currently reporting utility power problems.

Dial your pager service to determine what you will need to include in your **Modem Dial String**. Your paging service may vary from the example.

## **OK**

Choose this command button to save the configuration and begin monitoring.

## **Cancel**

Choose this command button to discard changes. Choosing this command button during installation will also exit the software.

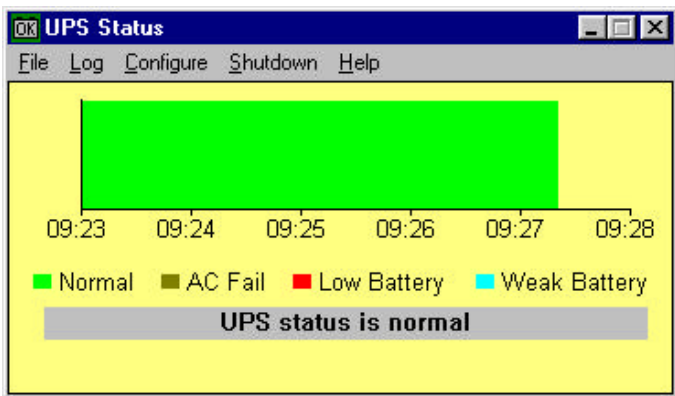


# Using PowerMon II

To start PowerMon II, click on the PowerMon II icon in the **Programs** folder on the **Start** menu.

## UPS Status

The *UPS Status* window displays a graph and message to reflect the current status of the UPS. The following window illustration shows a normal UPS Status window.



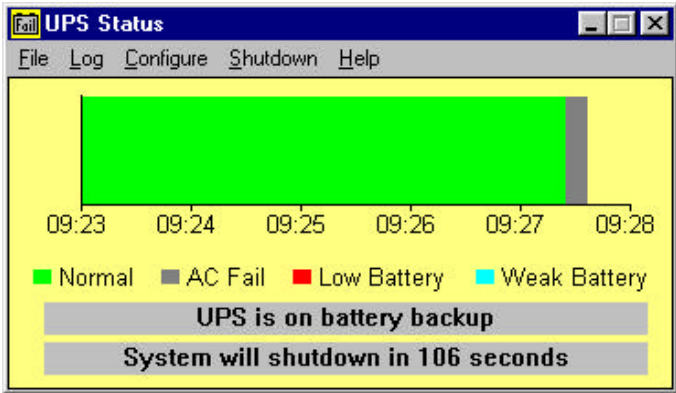
**Note:** Your message may be different if you changed the default message in the configuration screen.

The real-time graph displays a color coded bar that indicates the UPS state:

<b>Green</b>	Utility Power Normal, UPS Battery Normal
<b>Light Blue</b>	Utility Power Normal, UPS Battery Weak
<b>Yellow</b>	Utility Power Failure, UPS Battery Normal
<b>Red</b>	Utility Power Failure, UPS Battery Low

When the status of the power changes, the color and displayed message change to reflect the new conditions. The event log also records any change in the UPS state.

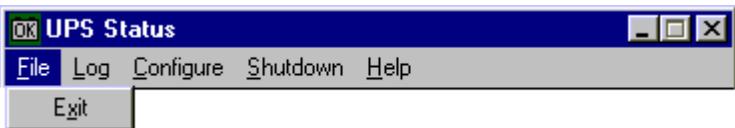
If either a utility power failure or a UPS low battery condition occurs, a timer indicates the amount of time until system shutdown begins. The following window illustration shows a utility power failure (AC Fail).



## Menu Bar Options

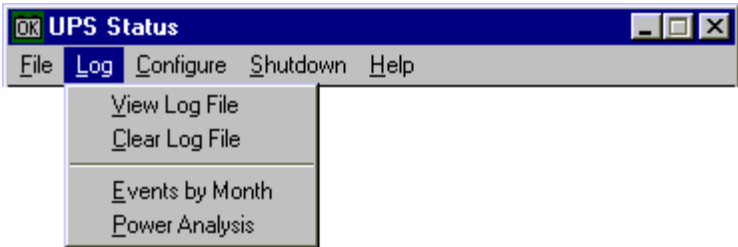
When you select any menu bar option, a drop down list displays additional options from which you can choose. To select an option, place the pointer on it and click the mouse button. The options on the *UPS Status* screen are:

### **File**



The **File** menu contains the **Exit** option. The **Exit** option closes the PowerMon II application and terminates UPS monitoring.

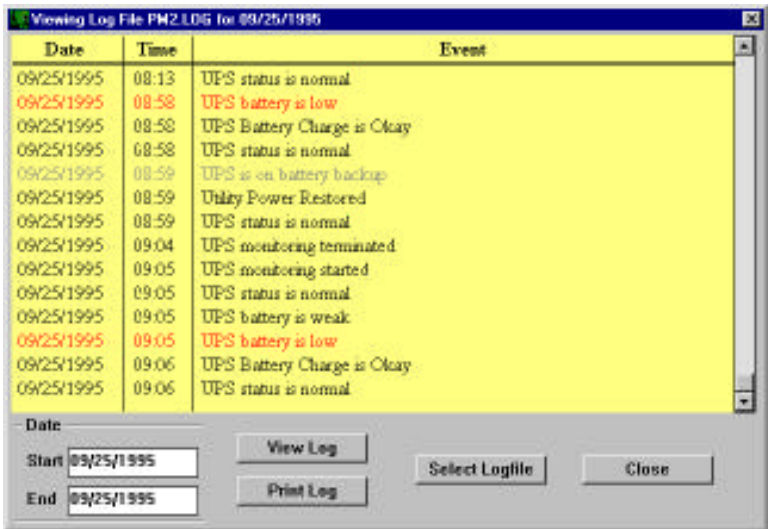
# Log



The **Log** menu allows you to view, print, and analyze the event log file.

## View Log File

Choose the **View Log File** option to view and/or print a log file. The current day's events are automatically displayed.



The window displays the *Date*, *Time*, and a description of the *Event*. The following controls appear at the bottom of the window:

### **Date**

The Date group allows you to set the date range for the events.

#### **Start**

Enter the starting date for events in the *mm/dd/yyyy* format.

#### **End**

Enter the ending date for events in the *mm/dd/yyyy* format.

### **View Log**

Press this command button after you change the **Date** range or **Select Logfile**

### **Print Log**

Press this command button to print the log file. A print setup window allows you to configure printing.

### **Select Logfile**

Press this command button to select an archived log file for viewing.

### **Close**

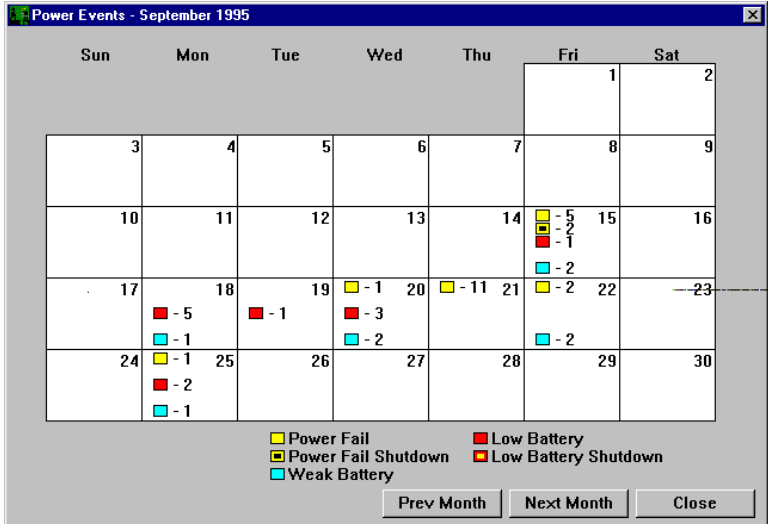
Press this command button to close the log file viewer.

## **Clear Log File**

Choose the **Clear Log File** option to archive the current event log file. PowerMon II generates a unique filename derived from the date. For example, **Pm951350.log** the **951350** translates—year is 95 (current year), Julian date is 135 (the 135th day of the year), and the file number is 0 (no other log files exist for this date).

## Events by Month

Choose the **Events by Month** option to display a calendar that shows the type and number of power events for each day of the month. The current month displays by default.



Each day may have symbols, which indicate the type of event, and numbers which indicate the number of event occurrences. Below the calendar, a legend describes the event types.

### **Prev Month**

Press this command button to display the events for the previous month. The month and year currently in view will be displayed in the window title bar.

### **Next Month**

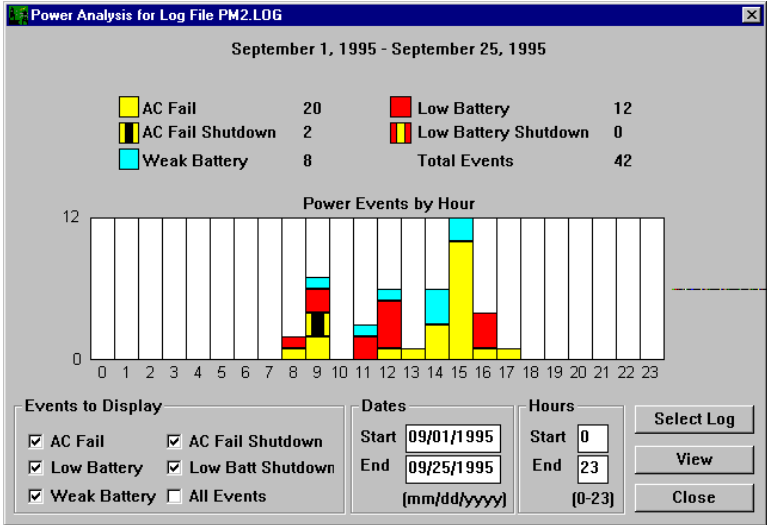
Press this command button to display the events for the next month. The month and year currently in view will be displayed in the window title bar.

### **Close**

Press this command button to close the calendar window.

## Power Analysis

Choose the **Power Analysis** option to display a power analysis of the event log file.



The screen displays a graph that shows the distribution and type of power events for a given time period. The legend above the graph identifies each type of power event. The legend also displays the total number of occurrences of each type of event for the given time period.

### Events to Display

Select the types of events that should be included in the power analysis graph.

### Dates

The Date group allows you to set the date range for the events.

#### Start

Enter the starting date for events in the *mm/dd/yyyy* format.

#### End

Enter the ending date for events in the *mm/dd/yyyy* format.

## Hours

Enter the hours to graph for events. Enter the hours in 24 hour format.

## Select Log

Press this command button to select an archived log file.

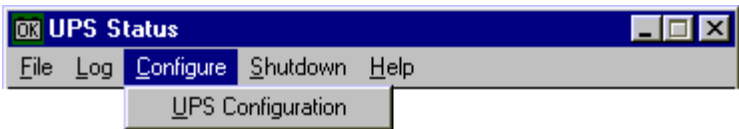
## View

Press this command button after you change the **Date** range or **Select Logfile**

## Close

Press this command button to close the log file viewer.

# Configure



The **UPS Configuration** option allows you to reconfigure all software parameters. Use this option to revisit the configuration screen described in the *Installation & Configuration* section.

# Shutdown



The **Shutdown** option allows you to control system shutdown.

## Suspend Shutdown

The **Suspend Shutdown** option pauses the shutdown timer if it is currently running. At any other time, it is not available.

## Resume Shutdown

The **Resume Shutdown** option restarts the shutdown timer if it is currently suspended. At any other time, it is not available.

## Manual Shutdown

The **Manual Shutdown** option initiates shutdown of the Windows 95 operating system. The program displays a confirmation box before performing the shutdown.

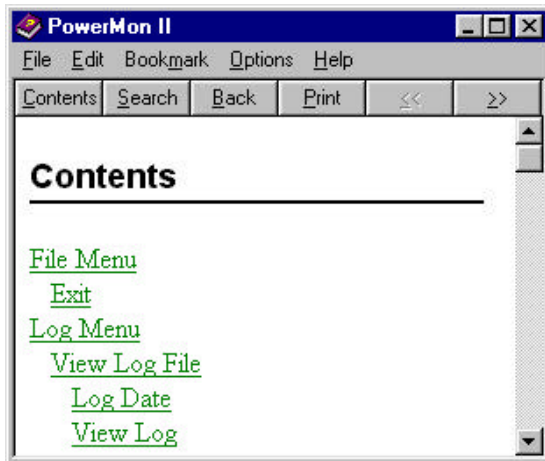
## Help



The **Help** option allows you to view help for every topic, and view product version information. At any time, you may access context sensitive help by pressing <F1>.

## Contents

This menu lists all topics. You can scroll through the topics.



## About

This window displays product and version information.

# PowerMon II Files

## Program Files

The following files are the core of the PowerMonII application. Unless you changed the default directory during the setup program, these files reside in the **C:\Program Files\PowerMon II** directory.

<b>FILE NAME</b>	<b>FILE DESCRIPTION</b>
<i>Pm2.exe</i>	PowerMonII program.
<i>Pm2.cfg</i>	PowerMonII configuration file.
<i>Pm2.hlp</i>	PowerMonII help file.
<i>Pm2.log</i>	Event log file.
<i>Pmyydd# .log</i>	Archived (cleared) log files. Use this format: <b>yy</b> = current year (95,96) <b>ddd</b> = Julian date (001-365); <b>#</b> = a unique file number (0-9).
<i>Xnmba*.dll</i> <i>Xnmhn*.dll</i> <i>Xnmte*.dll</i>	These files are system DLLs (libraries).

Some other files from the install process may exist in the PowerMon II directory.

## Uninstalling PowerMonII

Run the *Add/Remove Programs* application from the *Control Panel* folder. Select PowerMonII from the list of software that can be automatically removed. Press the **Add/Remove** command button.

A bar graph will show the removal progress. Some files will remain after automatic removal is complete. To remove the leftover files, change to the PowerMonII subdirectory and delete the remaining files. You can also remove the PowerMonII subdirectory.

## Using SHUTDOWN.BAT

PowerMon II will run `shutdown.bat` when the **Shutdown Time** or **Low Battery Shutdown Time** expires. You can use this file to execute any commands before your system is shut down.

In order for `shutdown.bat` to work properly, use the following guidelines.

- Create `shutdown.bat` in the PowerMon II install directory.
- Do not include any commands that require keyboard input. If a command requires keyboard input, then PowerMon II cannot perform an automatic unattended graceful shutdown.
- Set the *Properties* for `shutdown.bat` so the window will close on exit. To do this, use *My Computer* to display the PowerMon II install directory. Click on `shutdown.bat`, then choose **File|Properties** from the directory window. Select the **Program** tabbed card. Check the **Close on exit** checkbox.

Test your `shutdown.bat` file to be sure it executes without user input, and the window closes after it is finished.

# Troubleshooting

We have made every effort to ensure an easy and straight forward PowerMonII installation. If you should experience problems or unexpected results during the installation or execution, please verify your system setup and configuration using the following checklist:

- Positively identify the serial port to which the UPS interface cable is connected. (Consult computer and/or operating system documentation if necessary.)
- Verify that no other hardware or software is using/accessing this serial port, including your mouse. PowerMonII requires a serial port dedicated to monitoring the UPS.
- Verify that you are using the UPS interface cable supplied with the PowerMonII software and that it is securely connected to the serial port.
- Verify that the other end of the supplied cable is securely attached to the UPS interface port. This end should not require any adapters.

## Common Problems and Solutions

<b>Problems</b>	<b>Solutions</b>
When you start PowerMon II, a message displays immediately to inform you that a power failure or low battery is occurring.	<p>Make sure the cable is plugged into the UPS and the computer.</p> <p>Make sure you have correctly identified the serial ports. You may have connected the cable to the wrong port. Ports may be mislabeled.</p> <p>If you are using a <i>Plug and Play</i> cable, check to see that Windows 95 recognizes it. To verify that the cable is installed and configured, you can run the <i>System</i> application from the <i>Control Panel</i> folder. Choose the <b>Device Manager</b> tabbed card. You should see an entry for the UPS cable under <b>Other devices</b></p>

<b>Problems</b>	<b>Solutions</b>
When you test PowerMon II, the program does not display any power failure or power restored messages.	A conflict may occur with hardware devices or other software. Make sure the serial port is enabled. Make sure the port is operational. Perform another test on it, such as attaching a modem and attempting to dial out.

## Serial Port Testing

Use the following procedure to test if PowerMonII can communicate properly through the specified serial port on your computer. This procedure tests the serial port independently from the supplied PowerMonII cable and the UPS. Follow the steps below:

- Disconnect the supplied UPS interface cable from your computer's serial port. You may leave the other end connected to your UPS. If your system reports that it is on battery backup, you can stop system shutdown by choosing **Suspend Shutdown**, under **Shutdown**, in the menu bar.
- If you are using a *Plug and Play* cable, restart your system with the cable disconnected.
- Choose **Configure** from the PowerMonII menu bar. Choose **UPS Configuration**. Change the **Configuration Code** to **7** and click **OK**.
- Turn your computer so you can work on the serial port and still see the screen. Make sure the *UPS Status* window is on the screen.
- Use a "jumper wire" or a paper clip to touch pins together at the same time.

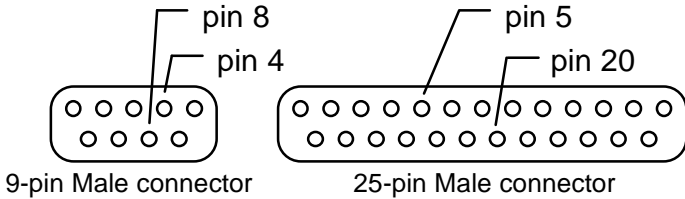
For a **25-pin serial port** jumper pins numbered **20** and **5**.

For a **9-pin serial port** jumper pins numbered **4** and **8**.

Continue to hold the two pins jumpered together. (See the following diagrams for pin numbering.)

## Serial Port Connectors

As depicted, you are looking straight into the connector. For standard serial ports, you should see **pins** and not holes.



- After holding the pins jumpered together, the *UPS Status* window displays “UPS is on battery backup.”
- Remove the jumper from the pins. Another message displays, “UPS status is normal.”

## Serial Port Test Results

If you receive the messages “UPS is on battery backup” and “UPS status is normal,” then your system passes the test. If you did not receive the messages, then your system fails the test.

### ***If your system passes this test, follow these steps:***

- Connect the UPS interface cable to your serial port. If your system reports that it is on battery backup, you can stop system shutdown by choosing **Suspend Shutdown**, under **Shutdown**, in the menu bar.
- Choose **Configure** from the PowerMon II menu bar. Choose **UPS Configuration**. Change the **Configuration Code** to your code. If you are using a *Plug and Play* cable, just restart your system with the cable connected.

If you continue to have problems, place a technical support call.

***If your system fails the serial port test, review these suggestions:***

- Ensure that your serial port is properly installed and configured to your system.
- Ensure that you are testing the correct port. Ports may be mislabeled.
- Check that no other adapter setups conflict with the port.
- Check that no other applications are accessing the port.
- Perform another test on the serial port using another method such as connecting to an external modem.

PowerMon II will not function properly until the serial port passes the test described above.

# Placing a Technical Support Call

In order to diagnose the problem you are having, our technicians will need the following information from you:

**Installation Site:**

Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_ ZIP code: \_\_\_\_\_

**Installation Site Contact:**

Full Name: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

**If you are a consultant,**

Consultant Name: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

**Computer System:**

Operating System type and version: \_\_\_\_\_

System Manufacturer: \_\_\_\_\_

System Model Number: \_\_\_\_\_

Type of Serial Port Connector (How many pins, male or female, etc.): \_\_\_\_\_

Address of the Port: \_\_\_\_\_

**UPS:**

Manufacturer: \_\_\_\_\_

Model Name/Number: \_\_\_\_\_

Type of Port Connector (How many pins, male or female, etc.): \_\_\_\_\_

**PowerMonII Configuration:**

Configuration Code: \_\_\_\_\_

UPS Interface Cable's Part Number (Identification label located at end of cable): \_\_\_\_\_

Are any adapters connected to the cable? \_\_\_\_\_

If yes, what type? \_\_\_\_\_

**What are the symptoms?**



**Technical Support**



Have the information listed above ready. You can reach us by calling:

**US & World** (314) 532-2855

by fax at (314) 532-2037

or by E-mail at: support@sechq.com

**Europe** +44 1600 716400

or by fax at +44 1600 772026

# **Systems Enhancement Products**

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## **SensiMon™**

SensiMon is the power monitoring and shutdown package designed to work with any Uninterruptible Power Supply (UPS) with or without a serial interface. SensiMon incorporates all the monitoring capabilities of PowerMon II by using a custom SensiCable. The SensiCable plugs into the same electrical outlet as the UPS and provides a graceful system shutdown when unfavorable power events occur. SensiMon works with all PowerMon II supported operating systems.

## **Multi-Interface Units (MIU)**

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Multi-Interface Units (MIU) are designed to allow more than one computer to monitor a single UPS for a utility power failure or a low battery condition. Multi-Interface Units are necessary since a typical UPS has only one communication interface, making it impossible for multiple computers to simultaneously monitor a single UPS.

One cable is provided to attach the MIU to the UPS interface. A cable is provided for each computer system to attach to the MIU. Each computer will individually monitor the status of the UPS, and all power events that occur, by using PowerMonII, SmartMon (for MIUs that support serial UPSs), or built-in UPS monitoring software. When the MIU detects a change in UPS status, it passes the same status signals to all the attached servers, informing them of the power event.

The following provides more information on Systems Enhancement's family of Multi-Interface Units:

### **MultiMon™**

- Provides 8 ports for basic monitoring and system shutdown.
- Expandable for UPS systems that support more than 8 computer systems.
- Allows each computer system to monitor for utility power failure and UPS low battery.\*
- Provides support for UPS inverter shut off.\*\*

### **MultiMon/400™**

- Provides 4 ports for basic monitoring and system shutdown.
- Expandable for UPS systems that support more than 4 computer systems.
- Allows each computer system to monitor for utility power failure, UPS low battery, general alarm, and on bypass mode. IBM AS/400 servers use the monitoring capabilities provided by the operating system. Other operating systems require PowerMonII or other UPS (contact closure) monitoring software. PowerMonII does not monitor general alarm or on bypass mode.
- Provides support for UPS inverter shut off.\*\*

### **MultiMon Plus™**

- Provides 9 ports—8 basic and 1 smart/serial port, for power management and system shutdown.
- Expandable for UPS systems that support more than 9 computer systems.
- Allows each computer system connected to the basic monitoring ports to monitor for utility power failure and UPS low battery. Allows one computer system connected to the smart monitoring port to monitor smart UPS data, including frequency, load, and temperature.
- Provides support for UPS inverter shut off.\*\*

### **MicroMon™**

- Provides 3 ports—2 basic and 1 smart/serial port, for power management and system shutdown. Designed to work with smaller UPS systems.
- Allows two computer systems connected to the basic monitoring ports to monitor for utility power failure and UPS low battery. Allows one computer system connected to the smart monitoring port to monitor smart UPS data.
- Provides support for UPS inverter shut off.\*\*
- Cost-effective solution that is less than half the price of other MIUs.

\* Basic monitoring requires PowerMonII or other UPS (contact closure) monitoring software. Smart/serial monitoring requires SmartMon or other smart/serial UPS monitoring software.

\*\* UPS inverter shut off is currently supported for basic monitoring in PowerMon II systems only. UPS inverter shut off for smart/serial monitoring is normally handled through serial communications.

## ***NetMon SNMP Adapters***

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Systems Enhancement's NetMon products give you a cost-effective solution for monitoring your uninterruptible power supplies using Simple Network Management Protocol (SNMP). The NetMon adapters receive status data from the UPS, translate this information into SNMP-compliant messages, and send these messages to the Network Management Station (NMS). The NetMon family is compatible with a variety of NMSs—Novell, HP OpenView, SunNet Manager, and IBM NetView.

The following NetMon features provide your solution for UPS monitoring.

### ***NetMon—SP™ (Single Port)***

- Allows network administrators to manage a single UPS using SNMP.
- Works with contact closure and serial data UPSs.
- Designed for Ethernet networks.
- Small, compact design.

### ***NetMon—MP™ (Multi Port)***

- Allows your network administrators to manage up to four UPSs simultaneously using SNMP.
- Works with contact closure and serial data UPSs.
- Provides additional monitoring with up to four input relays for devices such as smoke detectors and security alarms.
- Provides control with two output relay contacts for devices such as air conditioners or cooling fans.
- Measures temperature and humidity with built-in environmental sensors.
- Designed for Ethernet or Token-Ring networks.

# SmartMon™

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SmartMon is UPS power management and shutdown software that works with smart/serial data to provide critical information about power conditions and the status of the UPS. SmartMon is designed to monitor a smart UPS for events such as power failure and low battery conditions and provide a graceful system shutdown.

Key features of SmartMon include:

- Multiple brand UPS support
- Configurable user interface—display UPS values, such as:
  - Input Voltage
  - Output Voltage
  - Output Frequency
  - Percent Load
  - Battery Charge
  - Battery Temperature
  - more...
- Configurable real-time graphing
- User-defined events based on UPS value thresholds
- User-configurable actions based on UPS events and data, including:
  - Shutdown the Operating System
  - Shutdown the UPS
  - Log the event
  - Broadcast a warning
  - Page the Administrator
- Scheduled system shutdown
- Scheduled UPS self-test

Contact Systems Enhancement Corporation for more information.