
PowerMon[®] II

User Manual

for the:

OS/2[®]
Operating System

by:



MT-SE-23/03

13-May-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>*.

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

Warning: **This messages alerts you to a specific procedure or practice. If you do not follow it, serious consequences may result.**

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Introduction

PowerMon II is a power monitoring software package that allows UPS monitoring within the OS/2 operating system. The software monitors the UPS through a cable attached to a serial port on the computer and a contact closure interface on the UPS. This cable enables the software to check the status of the UPS (such as battery warning, power failure, 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 UPS 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 or a low battery state, it displays a shutdown warning message. User-specified timers, one for AC fail and one for low battery, let you know how much time you have to save and close your applications before shutdown of your system begins. When the timers expire, your system shuts down. During a utility power failure, PowerMonII can detect power restoration and revert back to a normal monitoring state.

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

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

Installation & Configuration

System Requirements

PowerMon II supports systems running:

- IBM OS/2 2.1+
- LAN Server 3.0 for network broadcasting

PowerMon II requires:

A dedicated RS-232 serial port on your computer.

This software may not be upward compatible. If you have any questions on the ability of the software to run on other systems, please contact Technical Support.

Installation and configuration consists of the following:

- Determining which serial port on the PC to use
- Installing the UPS interface cable
- Installing the PowerMon II software
- Configuring PowerMon II software

Installing the UPS Interface Cable

To install the UPS interface cable:

1. Locate the communications cable that was shipped with the PowerMon II software.
2. Plug the connector at the end of the cable with the identification label into any dedicated serial communications port on your computer.
3. Plug the connector at the other end of the cable into the communications port on the back of the UPS.

Refer to your UPS operator's manual for help in locating the UPS communications port.

Installing the Software

Turn on the UPS. From the *Workplace Shell*, install PowerMon II from the **Drive** {drive} object or using the OS/2 Window.

- Place the installation diskette into the floppy drive.

With Drive{drive} Object

- Double click on the **Drive** object and double click on **install.exe**

With The Command Prompts Object

- Double click on the **OS/2 Window** icon.
- When the screen displays the OS/2 Window, type {drive}:**install** at the command prompt.

Proceed for either intallation method with the following:

- The screen displays a registration message and reminders about free technical support and other SEC services.
A message box tells you to press <Esc> to quit or to press any other key to continue.
- Another screen tells you about System Enhancement's family of products. Again a message box tells you to press <Esc> to quit or to press any other key to continue.
- The installation program begins with, "Please select the drive to which you want to install the PowerMonII program." Press <enter> to accept the default **Drive C** or select another drive from the drop-down list.
- Another message prompts you to, "Please enter the subdirectory to which you want to install the PowerMonII program." The subdirectory text box directs you to, "Please Enter The Subdirectory Name.": Press <enter> to accept the default **IPM2** subdirectory or type in the name of the subdirectory you want.

A message informs you, "Installing PowerMonII - Please Wait ...". After the installation program decompresses the files and writes them to the subdirectory, it tells you, "The installation of PowerMon II has completed. Press any key to continue."

The PowerMon II installation is finished. The program creates a folder for PowerMonII on the desktop and places the program icons into that group. Remove your installation diskette and store it in a safe place.

All Time Data Protection

To ensure data and file protection from the moment you power up your system, create a shadow of the PowerMonII Service icon and drag it into the *Startup* folder.

Configuring the Software

To start PowerMonII, double click on the PowerMonII folder icon and again on the PowerMonII V3.2.2 icon. The *Configure UPS* screen will be displayed. Use this screen to setup the software for UPS monitoring.

Note: For On-line help, go to Help on the main menu bar or press F1.

In order for PowerMon II to function properly, you must fill every field on the configuration screen. The following screen and the field illustrations show the PowerMonII defaults.

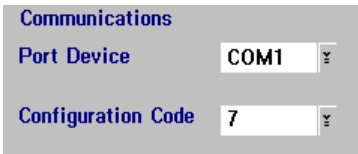
The screenshot shows the 'Configure UPS' dialog box with the following settings:

- Communications:** UPS Port Device: COM1, Configuration Code: 8
- Polling Interval:** 2 seconds
- Shutdown Time:** 120 seconds (Sec selected)
- Low Battery Shutdown Time:** 30 seconds
- Disruption Time:** 10 seconds
- Configure Warning Messages:**
 - Normal Message: UPS status is normal
 - Low Battery Message: UPS battery is low
 - AC Fail Message: UPS is on battery backup
 - Weak Battery Message: UPS battery is weak
- UPS Shut Off:** Enabled, High Signal, Low Signal

Buttons: OK, Cancel

When you save the values on this screen, the program saves them to a configuration file. PowerMonII uses these values when it starts the application.

Communications



Communications

Port Device COM1 OK

Configuration Code 7 OK

This box contains two fields: the **Port Device** and **Configuration Code**. The options display in drop-down lists.

Port Device

This field specifies the serial port to which the UPS communications cable attaches.

Configuration Code

This field specifies the configuration code. You must choose the manufacturer's configuration code. From the drop-down list, choose the number that corresponds to the code stamped on the inside front cover of this manual.

Polling Interval



Polling Interval

< [] > 2 seconds

This field specifies the amount of time that occurs between UPS status checks. To select

the polling interval, move the scroll box or click on the arrows to the desired time. The selected time displays beside the scroll bar.

Shutdown Time



Shutdown Time

< [] > 120 seconds

Sec Min

This is the amount of time before shutdown occurs after the software detects a power failure.

If you want to change the default time, click the **Sec**(onds) or **Min**(utes) button and move the scroll box to the desired time. (Or, you can click on the arrows for the desired time.) The selected time displays beside the scroll bar.

Low Battery Shutdown Time



This field specifies the amount of time from when the software detects a low battery condition until shutdown

begins. To change the low battery shutdown time, click the arrows or move the scroll box to the desired time. The selected value displays beside the scroll bar.

Disruption Time



This is the number of seconds PowerMon II waits before maximizing the **UPS Status** window while on AC

fail. The disruption timer keeps short power outages from interrupting you with warning messages. Also, the server broadcasts a network message after the **Disruption Time** expires.

To increase or decrease the number of seconds, click the arrows or move the scroll box on the horizontal scroll bar. The selected value displays beside the scroll bar.

Configure Warning Messages

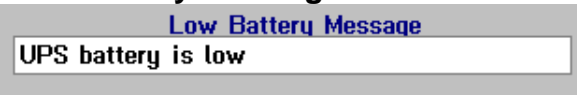
The following messages display for the corresponding conditions. If you want to change any message, you can highlight the current text and type in the new text.

Normal Message



This message displays when no alarm conditions exist.

Low Battery Message



This message displays when a low battery condition exists.

AC Fail Message



This message displays when an AC power failure condition exists.


Weak Battery Message



This message displays when a weak battery condition exists.

UPS Shut Off

This option enables UPS inverter shut off. This option determines if the software performs a UPS shutdown after the shutdown timer expires.



The **High** or **Low Signal** radio buttons determine the type of signal to send to turn off the UPS. Check your UPS documentation for the signal required.

Saving Configurations

After you complete changes to configuration parameters, click the **OK** button to save the information to a system configuration file. This action makes permanent changes to the configuration values, it reflects these changes in the running software immediately, and it begins the UPS monitoring process.

If you click the **Cancel** push button, you leave the *UPS Configurations* screen without saving any changes.

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

Using PowerMon II

To start monitoring the UPS, double-click on the PowerMonII icon. The *UPS Status* screen displays.

UPS Status Screen

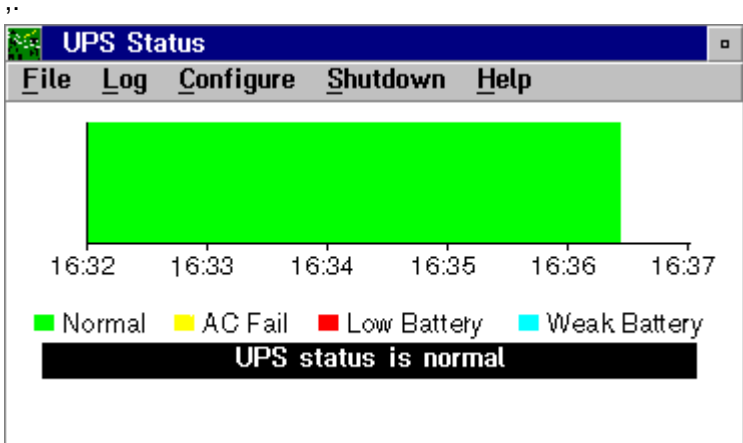
This screen displays the status of the UPS and contains the menu bar options. The screen displays a graph and message to reflect the state of the UPS. Use the menu bar to access the PowerMon II options.

UPS Status

The real-time graph displays the current state of the UPS. A color coded bar indicates the UPS state:

Green	Normal
Yellow	AC Fail
Red	Low Battery
Light Blue	Weak Battery

The following screen illustration shows a normal *UPS Status* screen. Notice the time intervals reflect the configured polling time.

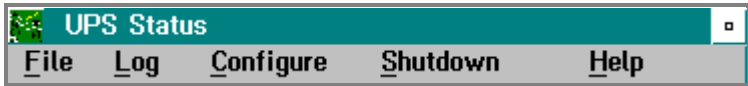


NOTE: Your message may be different if you changed the default message in the configuration screen.

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

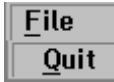
If either the AC fail or low battery conditions occur, a timer indicates how much time you have left until the shutdown begins. Use the **Configuration** options to set this time.

Menu Bar Options



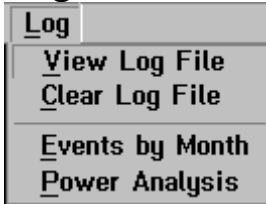
When you select any menu bar option, a drop down list displays additional options from which you can choose. To select an option, place the pointer on it and click the mouse button.

File



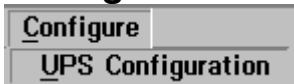
The **File** option contains the **Quit** option. To quit the program, click on the **Quit** option.

Log



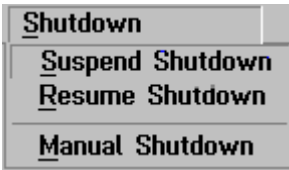
The **Log** menu contains **View Log File**, **Clear Log File**, **Events by Month**, and **Power Analysis** graph. See the *Log File Reporting* section for more information on log file options.

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



This menu allows you to perform a manual shutdown of your system, suspend a shutdown in progress, and resume a suspended shutdown.

Suspend Shutdown

This option pauses the shutdown timer if a shutdown is in progress. At any other time, it is not available.

Resume Shutdown

This option restarts the shutdown timer if you suspended a shutdown; **Resume Shutdown** is only available for a suspended shutdown.

Manual Shutdown

This option allows you to perform a shutdown of the OS/2 operating system. If you choose this option, the program displays a confirmation box to verify the shutdown.

Help

This menu contains **Help index**, **Using help**, **Keys Help**, and **Product information** options. To access **Help**, scroll through the **Help index** and select the topic for which you need help.

Log File Reporting

The Log File options provide a variety of methods to view the performance of your system. If you choose **Log** from the main menu bar, you can select from the following options: **View Log File**, **Clear Log File**, **Events by Month**, and **Power Analysis**

View Log File

Choose the *View Log File* option to print a log file or to view a log file. The most current day's events display by default on the *Viewing Log Files* screen.

Viewing Log File pm2.log for 07/21/1995		
Date	Time	Event
07/21/1995	14:11	UPS monitoring started
07/21/1995	14:11	UPS status is normal
07/21/1995	14:46	UPS monitoring started
07/21/1995	14:46	UPS is on battery backup
07/21/1995	14:47	Utility Power Restored
07/21/1995	14:47	UPS status is normal
07/21/1995	14:52	UPS is on battery backup
07/21/1995	14:53	UPS battery is low
07/21/1995	14:53	UPS Battery Charge is Okay
07/21/1995	14:53	UPS battery is weak
07/21/1995	14:53	UPS battery is low
07/21/1995	14:53	UPS Battery Charge is Okay
07/21/1995	14:53	UPS battery is weak
07/21/1995	14:54	UPS status is normal

Date

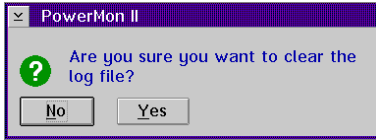
Start

End

To view another log file, click the **Select Log File** button. The screen displays the *Select Log File to View* dialog box. To change the date range on the *Viewing Log File* menu, enter the start and end dates using the *mm/dd/yyyy* format. After you select a new date range or another log file, click **View Log** to view the events. To print the log, click the **Print Log** button. A print setup window allows you to configure your printer. To close, click **Close**.

Clear Log File

This option clears the current log file to another name. Choose



the **Clear Log File** option to archive the existing log file and to create a new, empty one. The program requests a confirmation to clear the file. Select **Yes**. The program

generates a name for your archived log file. For example, `pm951350.log` the **yyddd#** format translates—year is 95 (current year), Julian date is 135 (the 135th of the year), and 0. The last number indicates the number of log files that have been saved on that day. Click **OK** to close.

Events by Month

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



The power event displays correspond to the legend near the bottom of the screen.

For example: The 21st had several power events.

Three power fails A yellow box displays with the number 3.

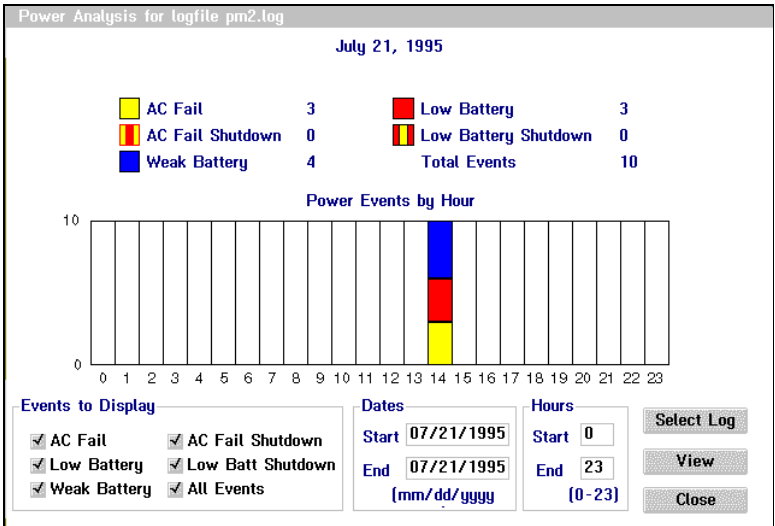
Three low battery A red box displays with the number 3

Four weak battery A light blue box displays with the number 4.

If you want to see the previous month's power events, click the **Prev Month** button. Continue to click the **Prev Month** button to see past months. Press **Next Month**, to advance the display one month at a time.

Power Analysis

The **Power Analysis** option displays the power analysis for the log file `pm2.1log`.



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

You can select the type of events to display, the starting and ending dates, and the time of day. To view an event, click in the accompanying checkbox. To select the day or days for which you want to see the cumulative power event statistics, enter the dates in the **Dates** group using the *mm/dd/yyyy* format.

NOTE: All times must be entered in 24-hour format

PowerMon II Files

This section lists the core files for PowerMonII and discusses how to disable and how to remove the PowerMonII software.

Core Files for PowerMonII

The following files are the core of the PowerMonII application. Unless you changed the default directory during the setup program, they reside in the **c:\pm2** directory.

- **pm2.exe**
This file is the primary executable program for the PowerMon II application. You can only execute this program within the OS/2 environment.
- **pm2svc.exe**
This file is a program file that is the PowerMon II service monitoring program.
- **pm2.hlp**
This is the help file for the PowerMonII application.
- **pm2.ico**
This is the PowerMonII icon file. This icon displays when you minimize the PowerMonII program and in the PowerMon II folder.
- **pm2.bmp**
This is the PowerMonII bitmap version of the icon file.

When you successfully configure and use PowerMonII, the program creates these additional files:

- **pm2.cfg**
This is the PowerMonII configuration file.
- **pm2.log**
This is the PowerMonII event log file.

Warning: Do not delete the system files.

The system files are:

xpbba*.dll**
xpbhn*.dll**
xpbte*.dll**

Disable The Software

If you want to disable the software without removing it, select the PowerMon II service from the Window List and double click on it. After the **Service** window opens, double-click on the title bar icon to close, or you can click once on the title bar icon to open the pop up menu and select close. To re-enable PowerMon II, open the service by clicking on the **Service** icon and minimize.

Remove The Software

You can delete PowerMon II in two ways—from the **Tree View** or from the **Command** prompt. Click on the PM2 folder to open. Click on the title bar icon to open the pop-up menu and select **Delete**. The **Delete Objects** box opens for confirmation. If you want to use the command prompt, select the **Command Prompts** folder and the **OS/2 Command Window**. At the [C:] prompt, type `Del PM2`. The program will then ask for confirmation.

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 checklists:

Check Before You Install PowerMonII

- Positively identify the name of the serial port to which the PowerMon II communications cable is connected. (Consult computer/operating system documentation if necessary.)
- Verify that no other hardware or software is using/accessing this serial port, including your mouse. PowerMonII **must** have a dedicated port.
- Verify that you are using the cable supplied with the PowerMon II 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 With Solutions

Problems	Solutions
When you start PowerMon II, a message displays immediately to inform you that a power failure or low battery is occurring.	Make sure the cable is plugged into the UPS and the Computer Make sure you have correctly identified the serial ports. You may have connected the cable to the wrong port. Ports may be mislabeled.

Problems	Solutions
When you test PowerMon II, the program does not display any power failure or power restored messages.	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. A conflict may occur with hardware devices or other software.

Serial Port Testing

- First, stop the PowerMon II monitoring process.
- Disconnect the supplied PowerMonII cable from your computer's serial port. You may leave the other end connected to your UPS.
- Open the OS/2 full screen. At the prompt type:

```
[c:\] cd pm2 <enter>
```

```
[c:\pm2] pm2 /SETUP.
```
- At this point the program opens the *Configuration* screen. Change the **Configuration Code** to **7**; change the Shutdown Time and Low Battery Shutdown Time to 300 seconds and then click **OK**. The program informs you, "Could not establish connection with PowerMonII service! Would you like to start the service now?" Answer **Yes** to continue with your test.
- Make sure the *UPS Status* window is on the screen.
- Turn your computer so you can work on the serial port on the back and still see the screen.
- Use a "jumper wire" or a paper clip to touch pins together (at the same time).

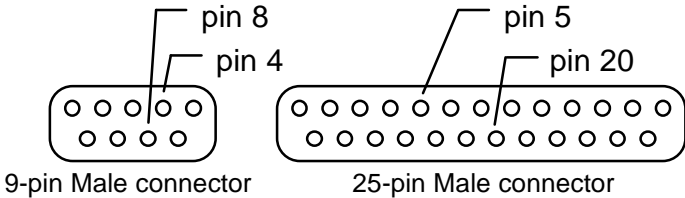
For a **25-pin serial port**, touch pins numbered **20** and **5** together.

For a **9-pin serial port**, touch pins numbered **4** and **8** together. (See the following diagrams for pin numbering.)

- Continue to hold the two pins jumpered together.

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 pins **4** and **8** or **5** and **20** together, the *UPS Status* window should display "On Battery Backup."
- Now remove the jumper from the pins. Another message should display "UPS status is normal."

Serial Port Test Results

If you receive the messages “UPS is on battery backup” and “UPS status is normal,” PowerMonII can communicate through your computer’s serial port properly.

If your system passes this test follow these steps:

- Stop the PowerMonII service.
- Reconnect the PowerMonII cable.
- Run **PM2 /SETUP**.
- Change the configuration code to your code.
- Choose **OK** to save the configuration and restart the service.

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

If you do **not** receive the messages, there is a problem with your serial port. You should:

- 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 for 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 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 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: _____

Cable's Part Number (From tag on 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

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)

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 PowerMon II, 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 shutoff.**

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 shutoff.**

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 shutoff.**

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

NetMon SNMP Adapters

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™

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.