

# **PSNA Web/SNMP Agent Network Card**

## **User Manual**

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# Statement

## Purpose

This book is for Agent Network Card (hereinafter referred to as "PSNA Card") V2.00. It will guide you through the installation, configuration, and operation of the Card.

The Card operation involves PS power supply system, Web browser (above IE 5.0 version), network management station (NMS). The book only describes the straight correlative operations of PSNA Card. As for the usage of other operation systems, please refer to relevant manuals.

## Reading Guide

The book introduces the PSNA Card functions and features first, then describes its usage according to the sequence of installation, function, and operation. configuration and including its installation, configuration, operation, as well as possible problems you may encounter during the usage. The appendix is in the end of the book.

There are six chapters and two appendixes in this book. Since the first chapter is very important to you, we recommend you must read it carefully. The other chapters are arranged independently, you may choose to read it based on your needs. However, if it is the first time you use the PSNA Card, we suggest you to read through the book before you embark to use it.

- Chapter 1 is a brief introduction of the PSNA Card. It introduces the function and system performance of the PSNA Card. Understanding this chapter will help you to understand the following chapters.
- Chapter 2 is the PSNA Card installation. It introduces the installation, system environment and detailed installation process. If you need to install PSNA Card in the power supply, please read this chapter and Chapter 3 carefully. If you just want to know how to monitor power supply through Web browser or NMS by PSNA Card, you may skip this chapter and chapter 3.
- Chapter 3 will teach you how to configure the PSNA Card through Hyper Terminal/Telnet. It introduces to configure the basic running parameters of PSNA Card (e.g., IP address) through TTY or Telnet. You must configure the parameters of PSNA Card after the installation, then you can monitor the power supply through PSNA Card.
- Chapter 4 is the first method to monitor the power supply: use Web browser. It introduces how to use Web browser (above IE 5.0) to monitor power supply system through PSNA Card. If you want to monitor the power supply system through Web browser, please read this chapter carefully.
- Chapter 5 is the second method to monitor the power supply: use NMS. In this chapter, MIB installation and its content will be described. If you want to monitor the power supply system through MIB, please read this chapter carefully.
- Chapter 6 is the third method to monitor the power supply: use power monitor software PowerStar (Ver6.52 Network Version). It introduces how to use PowerStar to monitor power supply system through network by PSNA Card.
- Appendix 1: PSM-A/A9/A10/A11 Alarm Event List. It applies to the power supply system use PSM-A/A9/A10/A11 monitoring module. We suggest you to read it before monitoring power supply, for it will acquaint you the meanings of power signals and events during the monitoring process.

- Appendix 2: PSM-A/A9/A10/A11 Signals (IE Mode). It applies to the power supply system use PSM-A/A9/A10/A11 monitoring module.
- Appendix 3: M500F Alarm Event List. It applies to the power supply system use M500F monitoring module. We suggest you to read it before monitoring power supply, for it will acquaint you the meanings of power signals and events during the monitoring process.
- Appendix 4: M500F Signals (IE Mode). It applies to the power supply system use M500F monitoring module.
- Appendix 5: Serial Port Positions. It will acquaint you the serial port positions in different power supply systems.
- Appendix 6: Fast Q&A. It lists the problems and solutions during the usage of PSNA Card. If you meet with problem during operation, you can quickly look through it to find solutions before asking for technical support.

## Reader Group

This book is for: Users, technical support engineers, and service technicians.

## Conventions

### Symbol

□ Notice: Further descriptions or cautions during the operations.

### Format

The content in "< >" is input from terminals, and the content in "[ ]" can be a man-machine interface, menu name, tables or field name. The slash "/" is used to describe multilevel menu. e.g. [PSNA configuration], represent sub menu of PSNA Card parameters configuration webpage.

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# Chapter 1 PSNA Card Introduction

This chapter will briefly introduce the features and technical specifications of PSNA Card and special terms used in this book.

## 1.1 PSNA Card Introduction

Thanks for selecting Emerson's power supply network card (PSNA Web/SNMP Agent).

PSNA Web/SNMP Agent Network Card (PSNA Card) V2.00 allows you to monitor power supply through network by the following three means:

1. Network management station (NMS), and make use of the SNMP agent function (compatible with SNMPv1 protocol) provided by the PSNA Card to monitor power supply.
2. Web browser, make use of Web server function of the PSNA card.
3. PowerStar (Ver6.52) software, through the network interface provided by the PSNA Card.

The PSNA card can make your power supply a real network power supply. As far as the network is connected, you can control over it through any computer installed with NMS or Web browser at any time via the PSNA Card.

## 1.2 Main Technical Indexes

- Applied to the power supply type: the power supply used PSM-A/A9/A10/A11 and M500F monitoring module.
- Applied network: 10/100MB Ethernet, adapt automatically.
- Support Web browser number visiting at the same time: eight users maximum can access it simultaneously, and supporting Chinese and English to browse at one time.
- Support NMS number visiting at the same time: eight maximum (four querying operations, eight receiving TRAPs), supporting SNMPv1 version.
- Support PowerStar number visiting at the same time: eight
- Log capacity of PSNA Card: ninety records.

## 1.3 Terms

PS: Communication power supply system. It refers to PS series Communication power supply system made by Emerson Network Power Co., Ltd.

PSNA: Power System Network Adapter;

NMS: Network Management Station, such as HP OpenView, IBM NetView or Novell ManageWise, etc;

SNMP: Simple Network Management Protocol

MIB: Management Information Base

HTTP: HyperText Transfer Protocol

Web Browser: That is web page browser such as Internet Explorer etc.

PowerStar: PS series power network monitoring software developed by Emerson Network Power Co., Ltd. PowerStar obtain the real time data and alarm of the power through TCP/IP protocol from PSNA Card, and PowerStar can manage multi-power supplies at one time.

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## Chapter 2 PSNA Card Installation

This chapter will describe system requirement for installing the PSNA Card, the card physical structure, as well as the installation procedures.

### 2.1 System Requirements

So long as the communication power supply has PS-A/A9/A10/A11 or M500F monitoring module, you can install PSNA Card. But if you want to use PSNA Card to monitor the power supply, the following conditions must be satisfied.

1. Have 10 or 100M Ethernet, support TCP/IP protocol.
2. Computer with one of the software installed:
  - Web browser: Internet Explorer 5.0 or above
  - NMS compatible with SNMPv1 protocol: HP OpenView, IBM NetView, Novell ManageWise, SunNet Manager, etc.
  - Power supply network monitoring software: PowerStar (Ver 6.52)

### 2.2 Packing List

The PSNA Card package contains (The detailed contents refer to the <consignment list> in the PSNA Card package):

1. PSNA Card: 1
2. Standard RS232 cable (DB9 interface): 1; power supply cable or power transfer cable: 1.
3. PSNA card installation disk, which contains:
  - 1) PSM-A/A9/A10/A11 and M500F monitoring module MIB file
  - 2) This book

If any of the above is missed, contact your supplier immediately.

#### 1. Note

The power supply cable and power transfer cable are optional accessories. If the monitoring module model of your power supply system is PSM A/A9/A10/A11, you should choose the power supply cable (the input end of the cable connected to 12Vdc output of the power supply system). If the monitoring module model of your power supply system is M500F, you should choose the power transfer cable (the input end of the cable connected to J22 socket of the monitoring module backboard). Otherwise, the PSNA card may be damaged.

### 2.3 PSNA Card Components

#### 2. Warning

Some electronic components on the PSNA card are sensitive to static electricity. Do not touch the circuit or components with hands or through electrified articles, otherwise the card might be damaged. Non-designated person must not open the PSNA Card case.

PSNA Card is build-external module construction. See Figure2-1.



Figure 2-1 PSNA card

See detailed descriptions of Figure 2-1 in Table 2-1.

Table 2-1 PSNA hardware function descriptions

No.	Name	Function
1	RJ45 Interface	Connect to the network. Note: for 100M Ethernet, please use category 5 twisted pair cable, otherwise the cable length will be less than 100m, besides, electromagnetic interference to the outside will be slightly increased.
2	Card State Indicator Light ( Green )	OFF: no power supply.
		ON (blink every 5 seconds): communication with power failed.
		BLINK: (blink every 1 second): normal
3	Network State Indicator Light ( Yellow )	OFF: network connection failure
		ON: network blocked or no data transmitted.
		BLINK: communicating
4	Setting RS232 Interface	Connect with computer serial port
5	Power Supply Interface	Plug in the power supply and connect with it
6	RS232 Interface	Connect with RS232 serial port of monitoring module

## 2.4 Installation Preparation

Before installation:

1. Check whether the monitoring module of the power supply is PSM-A/A9/A10/A11 or not.
2. Prepare a computer that has an idle serial port, connect one serial port of the computer to the setting serial port of mounting PSNA Card using a RS232 cable. Please note down the serial port No. of the computer. Connect the computer to Ethernet.
3. Start Hyper Terminal. Refer to Section 3.1.1 for the configuration.

Attention: the serial port for Hyper Terminal must be the one connected to the PSNA Card.

4. Connect PSNA Card to the Ethernet LAN using a twisted pair cable of category 5, and connect one end of the cable to the network.

After all the above is ready, we can start the PSNA Card installation.

## 2.5 PSNA Card Installation

1. Insert the network cable into the RJ45 port of PSNA Card.
2. Connect the serial port of the power supply system with COM1 port of PSNA card with a RS232 communication cable. Please refer to Appendix 5 for the serial port positions.
3. Connect the PC with COM2 port of PSNA card with a RS232 communication cable.
4. Connect MODEM 12V power supply on monitor module (or transfer board of power system) to power port of the PSNA Card using power supply cable. If the model of the monitoring module is M500F, you must use the power transfer cable as the power cable of the PSNA card. Please refer to the power supply manual for the position connected with the power cable of the PSNA card.

Now, you will see the green light of the PSNA Card blinks. If the PSNA Card has connected to the network, the yellow light will be ON or blink, which indicates that the PSNA Card is operating. Observe the hyper terminal of the PC, you will see the startup course as shown below:

```

PSNA Web/SNMP Agent Adapter (V2.10)

Copyright (c) 2002-2006, EMERSON Network Power Co., Ltd.

Network Interface Information:
IP: 10.63.0.91, Subnet Mask: 255.255.254.0, Gateway: 10.63.0.1
MAC address: 00.e0.fc.02.dc.d5, Ethernet link speed: 10M.

PSNA Web/SNMP Agent adapter is starting.....

Loading config parameters...
EEPROM used: 16020[0x3e94] bytes. Success.
Starting time synchronizing task...Success.
Starting power data sampler...Success.

```



```
Initializing firmware updating environment...Success.  
Initializing TTY/Telnet services...Success.  
Initializing auto-search-notification task...Success.  
Initializing SNMP agent...Success.  
Initializing web server...Success.  
Initializing PowerStar server...Success.
```

```
PSNA Web/SNMP Agent adapter starting is done!
```

```
PSNA Web/SNMP Agent Adapter(V2.10)
```

```
Copyright (c) 2002-2006, EMERSON Network Power Co., Ltd.
```

```
> User name(1-10 chars):
```

Congratulations! You've finished the physical installation of PSNA Card successfully.

But, if you find the phenomenon:

- Green light off: Please check whether the power supply of PSNA Card is normal or not, and the connection of power supply is normal or not.
- Green light blinks every five seconds: it indicates that the PSNA Card cannot detect the power supply system and cannot communicate with monitoring module. PSNA Card can identify PSM - A/ A9/ A10/ A11 and M500F monitoring module automatically.
- Yellow light OFF: Please check the network cable and whether the PSNA is connected to the network. The yellow light is ON only when the network connection is normal.

---

### 3. Note

1. If the PSNA Card is installed for the first time, you must configure the PSNA Card IP address, baud rate, system time via Hyper Terminal before using Web browser, PowerStar or NMS visit PSNA Card. See 3.3.2 *Parameter Configurations*.
  2. If the PSNA Card cannot communicate with the power supply monitor module after configuring correct baud rate, check the correctness of hardware connections. Next check if the serial- port baud rate of the PSNA card is the same with that of the monitoring module. Check if the version of the PSNA network card match the power supply system.
-

## Chapter 3 PSNA Card Configuration Via Hyper Terminal/ Telnet

The basic configurations of PSNA Card can be done through Hyper Terminal (TTY) or Telnet. The basic configurations involve the IP address of PSNA Card, baud rate of PSNA Card to monitoring module. This chapter describes how to configure basic configurations of PSNA Card through TTY and Telnet.

The parameters can be configured through two ways:

1. TTY (Hyper Terminal);
2. Telnet.

For the PSNA Card, the interfaces and functions of the two modes are the same. The differences lie in the software and process when connect with PSNA Card.

### 3.1 Creating Hyper Terminal

If it is the first time you install the PSNA or you don't know its IP address, you must use TTY to configure PSNA Card parameters.

The Hyper Terminal is a tool of Windows, the detailed setting up and starting can refer to the computer operation manual. When creating Hyper Terminal, serial port number uses that of connecting computer to the power supply. The Hyper Terminal serial port is configured as follows:

Parameter	Value
Baud rate	38400bps
Data bit	8
Parity checkout	none
Stop bit	1
Flow control	none

#### 4. Note

If the PSNA has been started, press "ENTER" key, you will see login interface.

### 3.2 Login And Logout

#### 3.2.1 Login The PSNA Card

If you have already know the PSNA IP address, you may modify or configure the parameters through Telnet.

The command is "Telnet" in operation system. Input "telnet PSNA Card IP Address" directly in the command, such as "telnet 10.63.0.91", you will login the PSNA Card and will be prompted login information.

The detailed information of using TTY to login the PSNA Card can refer to the computer operation manual.

After login PSNA Card through either TTY or Telnet, you will see the login information below:

PSNA Web/SNMP Agent Adapter (V2.10)

Copyright (c) 2002-2006, EMERSON  
Network Power Co., Ltd.

> User name (1-10 chars):

Enter your User name and Password (The password will not be displayed). If you login successfully, you will see the command prompt: COMMAND:>

If the user name or password is wrong, you cannot login the PSNA Card, and the system will prompt username and password again.

### 5. Important

1. Only administrator with user name “admin” is allowed to login the PSNA through TTY/telnet.
2. The default password for “admin” is “123”.
3. Pay attention to the small letter and capital letter of the password, which are seen as different code. Keep an eye on the Caps Lock light on your keypad.
4. For telnet mode, only one user can be logged on at a time. If other users want to log in at the same time, the system will refuse them.

## 3.2.2 Logout

### Manually logout

After the configuration, you may type “Logout” to exit the system.

### Auto logout

If you do not operate the system for 5min, to ensure system security, you will be logged out the PSNA automatically.

### Relogin after logout

If you are using TTY, you may just re-enter your user name and password, and then you can login the PSNA again. But, for Telnet, you have to rebuild the Telnet connection.

## 3.3 PSNA Card Parameter Configurations Via Hyper Terminal/Telnet

### 3.3.1 Basic Command Descriptions

Command	Explanation	Description
SetIp	Set IP address	Set the PSNA Card IP address, subnet mask and gateway address
SetBaud	Set baud rate of serial port	Set the baud rate for communicating between the PSNA Card and the power supply monitor
Password	Modify password	Modify admin's password
SuperNMS	Setup super NMS	Setup NMS parameters with administrator purview
PowerStar	Setup supervision center	Setup supervision center parameters of PowerStar
User	Setup users information	Adding PSNA Card user, the maximum is 8.
Time	Set time	Set the current time of PSNA Card
Timeserver	Set time server	Set the IP address of time server that can correct the PSNA time automatically.
Ping	Check the network status	Check whether the IP address is reachable
Download	To upgrade the firmware of the PSNA	To upgrade the firmware of the PSNA using TFTP server

After login PSNA Card via TTY or Telnet, type “?” after “COMMAND:>”, the system will prompt all the commands and the meanings.

> User name(1-10 chars): admin	
> Password(1- 20 chars):	
COMMAND:>?	
Download	Download file and refresh the flash
Help	Display this brief help message about all
commands	
History	Display contents in command history
Logout	Logout from the current console
Password	Change administrator's password
Ping	Send echo messages to test networks
reachable	
PowerStar	Set PowerStar Center information
SetBaud	Set sampler port baud rate
SetIp	Set PSNA card IP Address
SuperNMS	Set super NMS information

Time	Set system time
Timeserver	Set time server
User	Set user information
COMMAND:>	

### 3.3.2 Parameter Configurations

Type the command name behind “COMMAND:>”, and begin to set corresponding parameters. The value inside the [ ] is current value of the parameter. If you enter nothing and press ENTER key, then the setting remains. If you want to modify it, input the desired value at the end of the command and press ENTER key.

#### 6. Hint

When typing command, the PSNA can identify it by given the initial several letters, so you need not type the full words, e.g. SetI stands for SetIp, P for Password, L for Logout.

#### Set IP: set the IP address and subnet mask of the PSNA Card.

#### 7. Note

If it is the first time you install the PSNA or transfer it to another network, you must configure the parameter e.g. IP address using TTY. You may also reconfigure the IP address of the PSNA after login through the old IP address in telnet mode.

Setting method: COMMAND:>SetIp

Setting process:

Config the board's IP address, subnet mask and default gateway.

```
This board's LAN IP address?[100.100.100.100] 10.63.0.91
Subnet mask for LAN (0 for none)?[255.255.255.0] 255.255.254.0
Should there be a default gateway for packet routing?[Y]
What is its IP address?[0.0.0.0]10.63.0.1
```

Interface explanation:

```
IP address of PSNA Card?[100.100.100.100]10.63.0.91
Subnet mask (0 for none)?[255.255.255.0]255.255.254.0
Should there be a default gateway for packet routing ?[Y]
What is its IP address? [0.0.0.0]10.63.0.1
```

The default IP address of PSNA Card is 100.100.100.100, subnet mask: 255.255.255.0, default gateway: 0.0.0.0.

If you change any of the above parameters, the PSNA Card will restart after 5s.

After the PSNA Card is started successfully, please use “Ping” command to check whether the PSNA Card is accessible. If the reply is timeout mistake, check the correctness of network configurations and cable connection.

#### SetBaud: set Baud rate

Setting method: COMMAND:>SetBaud

Setting process:

```
COMMAND:>setbaud
Baud rate for sampler serial channels[9600]9600
Set baud success.
```

Interface explanation:

```
Baud rate for sampler serial channels[9600]9600
Set baud success.
```

If current power supply communication is normal, the baud rate can not be modified. Display:

Current baud rate for sampler serial port is 9600 bps

The communication state with Power System is OK, nothing need be modified.

#### 8. Note

For PSM-A/A9/A10/A11 and M500F monitoring module, the default baud rate for data sampler serial port is set at 9600bps.

**Password: change admin's password.****9. Suggestion**

Because the admin has the highest authority, to ensure system safety, you are recommended to change the password immediately after the installation or firmware upgrade of PSNA Card.

**10. Warning**

Do learn by heart the admin's password. If you forget it, you cannot configure PSNA Card via TTP/Telnet or even visit the PSNA.

In case you forget the password, please contact your local supplier.

Setting method: COMMAND:>Password

Setting process: (The password is displayed as "\*" input by keyboard)

```
COMMAND:>Password
> Old password: ****
> New password(1-20 chars): *****
> Confirm new password: *****
Password modified successfully.
```

```
Interface explanation:
Old password: **** — password is invisible
New password: *****
Confirm new password: *****
Password modified successfully.
```

**SuperNMS: set super network management station (NMS)**

A super NMS is the NMS that has system administrator authority and can modify NMS table using the SNMP agent function of the PSNA Card.

Setting method: COMMAND:>SuperNMS

Setting process:

```
COMMAND:>SuperNMS
Super NMS IP address[0.0.0.0] 10.63.0.160
Public community[public] public
Private community[private] private
Set Super NMS success.
```

```
Interface explanation:
Super NMS IP address [0.0.0.0] 10.63.0.160
Public community [public] public
Private community [private] private
Set Super NMS success.
```

**11. Note**

Pay attention to the capital/small letter of the community string.

**PowerStar: set PowerStar center station**

PowerStar Center Station is PowerStar power monitoring software with network version installation or the computer with control or browser authority. PowerStar Center can realize power supply network monitoring through PSNA Card.

Setting method: COMMAND:>PowerStar

Setting process:

```
COMMAND:>PowerStar
PowerStar Center IP address[0.0.0.0] 10.63.0.160

Set PowerStar Center success.
```

```
Interface explanation:
PowerStar Center IP address [0.0.0.0] 10.63.0.160
```

```
PowerStar Set PowerStar Center success.
```

## 12. Note

The PowerStar Center setup through TTY/Telnet possesses control authority and can fulfill all the functions needed by PowerStar.

If PowerStar just has browser function and can not setup and control power supply, then change the accessing authority of the PowerStar Center to “querying authority” on webpage.

### User: setup user information

An administrator “admin” is added automatically after the first start of PSNA Card, and its user name and authority cannot be modified. The other users can be added after login by admin.

Setting method: COMMAND:>User

Setting process:

```
COMMAND:>User
User name[user] user1
Password[123] 12345
Access authority(0:No access,1:Query,2:Control,3:administrator)[1]1
Set user success.
Interface explanation:
User name [user] user1
Password [123] 12345
Access authority(0:No access,1:Query,2:Control,3:administrator)[1]1
Set user success
```

## 13. Note

The user with arbitrary authority can be setup through TTY/Telnet, user name is 1-10 characters, password is 1-20 characters, and capital and small letters of password are different.

### Time: set the PSNA card time

Setting method: COMMAND:>Time

Setting process:

```
COMMAND:>Time
Local time zone: GMT+08:00
Current time : 06/11/2001 16:11:56

Enter new time zone(GMT+/-hh:mm) [GMT+08:00]:GMT+08:00

> Enter new date (mm/dd/yyyy): 11/28/2000

> Enter new time (hh:mm:ss): 18:15:27

Interface explanation:
Local time zone: GMT+08:00
Current time : 11/28/2000 18:13:26
Enter new time zone (GMT+/-hh:mm) [GMT+08:00]:GMT+08:00
> Enter new date (mm/dd/yyyy): 11/28/2000

> Enter new time (hh:mm:ss): 18:15:27
```

## 14. Important

Except Chinese area, the local time zone of PSNA Card must be setup before its formal application. For example the time zone of China is setup as “GMT+08:00”.

If the time zone is not setup properly, when the adjusting time function of Timeserver is used, the time of PSNA Card shows wrong.

If the time zone of PSNA Card is changed halfway, then the recorded time on the log of PSNA Card also changes.

**15. Note**

The date and time of PSNA Card need not to be setup commonly. After starting, PSNA Card can get proper time from Timeserver when using Timeserver to adjust time. If Timeserver is not used or not running on network, when PSNA Card communicates with monitoring module, it will get time from monitoring module and setup time. So if there is neither using Timeserver nor communicating with monitoring module, the time in the log of PSNA Card is the default time (2002/05/01) and is not the actual time.

**Timeserver: set Timeserver**

Setting method: COMMAND:>Timeserver

Setting process:

```
COMMAND:>TimeServer
The primary time server IP address[0.0.0.0] 10.76.12.75
The secondary time server IP address[0.0.0.0] 10.76.12.56
Interval to synchronize time in minutes(>9) [720]60
COMMAND:>
```

Interface explanation:

```
The primary time server IP address [0.0.0.0] : 10.76.12.75
The secondary time server IP address [0.0.0.0] : 10.76.12.56
Interval to synchronize time in minutes (>9 minutes) [720] 60:
```

**16. Note**

If the Timeserver is not running in the network, the Timeserver of PSNA Card (IP address is 0.0.0.0) does not need to be setup. PSNA Card will get time from monitoring module and setup it when PSNA Card communicates with monitoring module. If Timeserver has been setup and in proper running, PSNA Card will adjust time according to the setting.

**Download: upgrade the PSNA card firmware**

After new version of the PSNA Card Firmware released, you may download it from Emerson Network Power Co., Ltd. website and upgrade the PSNA Card online.

**17. Warning**

1. After firmware upgrade, all parameters of PSNA Card might be lost. You need reconfigure them.
2. It must make sure that the power supply of PSNA Card is proper in the process of upgrade. Otherwise the Card will be damaged if power off during the process.
3. The erasing times of the PSNA FLASH memory is limited. Do not write into the same firmware file frequently using the upgrade function, otherwise, the FLASH memory might be damaged and the PSNA Card will thus be unavailable. But normal upgrade operation will not result in such problem.
4. If there is any problem, please contact your local supplier.

Download the newest firmware and start TFTP Server, copy the firmware file to the home directory of the TFTP server, and then upgrade the old firmware using "Download" command. The TFTP Server can be downloaded from Ethernet for free or offered by the supplier.

Upgrade method: COMMAND:>Download

Upgrade process:

```
COMMAND:>download
The host IP address[100.100.100.200] 10.63.0.224
The file name[uwsa.bin] uwsa-00-00-20.bin
```

```
Download starting...
TFTP download start.
Downloading, please wait...
The card will auto reset after download ok.
```

```
Pass check , Please wait for refresh FLASH.
```

```
Start to erase chip!
```

```
ERASE Success..!
```

```
Warning !!!
```

```
Start updata FLASH .....
```

```
.....
```

```
Program refresh OK...
```

```
Please wait for the PSNA resetting .
```

```
Interface explanation:
```

```
Running the host IP address of TFTP server [10.76.12.56]: 10.63.0.224
```

```
The name of file used for firmware upgrade [uwsa.bin] uwsa-00-00-20.bin
```

```
Starting upgrade, please wait..
```

```
After upgrade finished, PSNA Card will restart automatically.
```

## 18. Note

Trivial File Transfer Protocol (TFTP) is used to load software for embedded systems. It is one of the TCP/ IP protocols and for to transfer trivial files between clients and servers. It supplies little-cost service for trivial file transfer.

### PING: check network connection

PING command is to test whether the data from the PSNA Card can be sent to certain computer on the network.

```
COMMAND:>ping ?
Send echo messages to test networks reachable.
Usage: ping host [-c count] [-s packetsize] [-t timeout]

options:
-c count           Number of echo requests to send.From 1 to 2147483647
-t timeout         Timeout in milliseconds to wait for each reply.
                  From 1ms to 300000ms.
-s packetsize     Specifies the number of data bytes to be sent.
                  From 20 to 8100.The default is 56.
e.g. : ping 10.100.1.2 -c 100
```

```
Interface explanation:
```

```
PING usage:       PING host [-c count] [-s packetsize] [-t timeout]
```

```
host:            IP address of the tested host
```

```
-c count:        testing count
```

```
-t timeout:      Timeout in milliseconds to wait for each reply. If the reply form
                  he host is not received in a certain time, then the host is
                  considered as not reachable.
```

```
-s packetsize Specifies the number of data bytes to be sent.
```

```
e.g.:           ping 10.100.1.2 -c 100
```



## Chapter 4 Power Monitoring Method One: Through Web Browser

Through Web browser and the PSNA Card build-in Web server, you can real time monitor power state and input/output signals, send power command, configure power running parameters, view power current /history alarms and user control records, view PSNA Card log, set the PSNA Card parameters (IP address, user and NMS parameters, etc.), upgrade PSNA Card software.

### 4.1 Web Browser Configuration

Before using Web browser to monitor power, please verify the type of the current browser and that its configuration can meet the requirement as follows:

#### 1. Browser type and version

When used web server of PSNA Card, please use the following browser:

- Internet Explorer 5.0 (IE 5.0) or above

For the other lower version of web browsers such as IE or Netscape Navigator, if it can support HTTP1.1, HTML 4.0, and JavaScript1.0. PSNA Card can provide complete support but not ensure.

Chinese/English support: PSNA Card can support Chinese/English Web browser.

#### 2. Enable cookie support

The PSNA Card need Cookies to save data temporarily, please allow your browser to accept Cookies that is to enable Cookie support. If you disable Cookie out of security concern, you cannot use some automatic functions, but it doesn't prevent you from using the basic function of the PSNA Card.

The method for commonly starting Web browser:

Internet Explorer 5.0 (IE 5.0) Chinese version to start Cookie:

Menu [Tool/Internet Options/Security/Custom Level/Cookies/Allow per-session cookies/ Enable];

#### 3. Start graphic and animation display

Your browser must be able to display graphic and animation.

#### 4. Webpage cache setting

Browsers use Cache (so called "temporary file" in IE) to increase webpage display speed. When you visit webpages in the Cache, the browser will check whether there is any new version of them in Web server according to the configuration below:

- Check every time visiting webpages;
- Check every time starting the browser;
- No check.

On visiting the PSNA Card, the configuration must be " Check every time visiting the webpages"; otherwise, the page cannot be displayed normally. The common usage for webbrowser is as following:

The method of changing Cache options for IE4.0/5.0 is as follows:

Menu [Check / Internet Options / General/Internet Temporary files / Settings / Check for newer version of stored pages /  Check every time visiting webpages];

#### 5. Monitor definition and browser font setting

We recommend you to set the monitor definition at 800×600 or above; otherwise, the page (power state and input/output signal page) might not be displayed fully.

If your monitor definition has already been 800×600, but you still cannot view full page, decrease the browser font (refer to browser font setting) and close less useful tool bars to enlarge display area.

### 4.2 Login PSNA Card Through Web Browser

#### 1. Login

Start Web browser, type the PSNA IP address, then you will see the login interface (see Figure 4-1). The domain name is "Welcome to PSNA Web/SNMP Agent. Please use IE5.0 or higher." You are required to enter user name and password.

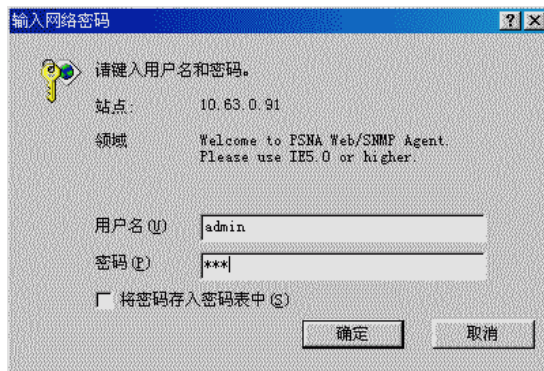


Figure 4-1 PSNA Login interface

Enter your user name and password, and then click [OK]. If your entry is accepted, you will enter the main interface of PSNA Card (see Figure 4-2), then you can operate power monitoring.

## 19. Hint

If the Card is new or just upgraded, and you do not reset new user through TTY/Telnet, then you must login with user name "admin" and its password. If you have not changed the password through Hyper Terminal/Telnet, the default is "123".

The default homepage of PSNA Card is in English. If Windows operation system is Chinese, then it will change to Chinese homepage automatically when the English homepage is opened for the first time.

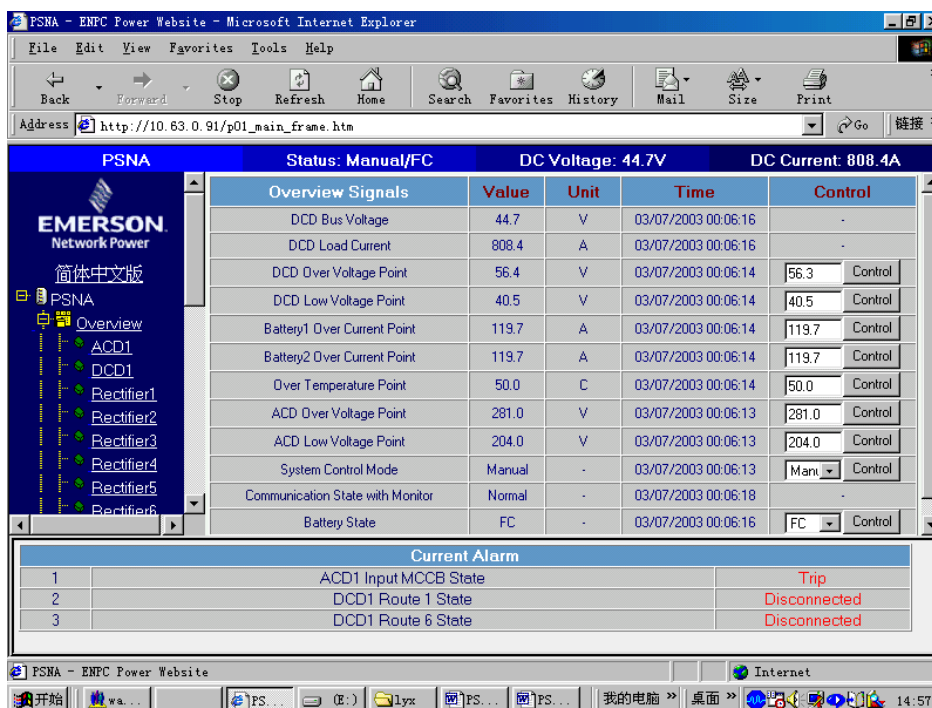


Figure 4-2 Power monitoring homepage

## 2. Logout

Close IE browser to exit the PSNA homage.

## 20. Warning

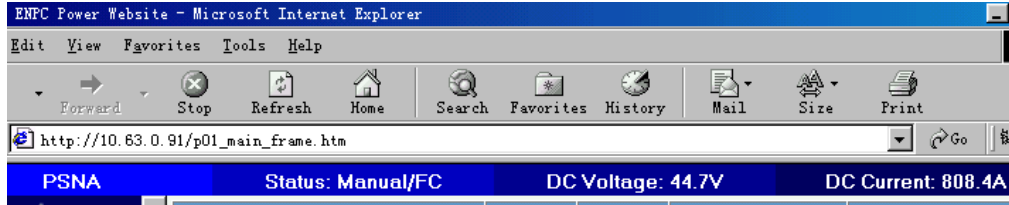
If you are administrator or have power supply control authority, do remember to close the browser when you finish visiting PSNA Card. Otherwise, if other person uses send control command through your browser, the consequence might be serious.

### 4.3 Power Monitoring Homepage Introduction

Power monitoring homepage (Figure 4-2) is divided into 4 parts. The top is power supply main menu area. In the middle area, the left is sub-menu area, the right is webpage display main area. In the bottom area displays the current alarm messages of power supply.

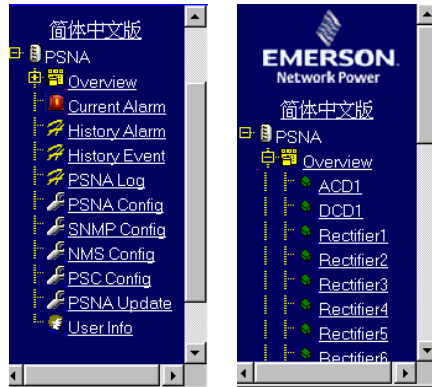
1. Main menu area

The main menu displays the name and main status of the power: system control and battery charging state (Auto/Manual, FC (floating charge)/ EC (equalized charge) / Test), DC voltage and DC current.



2. Sub-menu area

The sub-menu can be divided into three parts: overview signals (main signals and states of system), module signals (AC distribution, DC distribution, signals and states for rectifier module), common signals (current alarm, history alarm, PSNA Card log, PSNA Card configuration, NMS configuration, PowerStar Center configuration, PSNA Card upgrade, user information). There is Chinese/English switch linking on the top of the manual.



21. Hint

The PSNA Card can show corresponding sub-manual according to the authority of login user automatically. Only the person who has administrator authority can view all of the sub-menus.

3. Webpage display main area

The contents of webpage display main area shows corresponding signals and states according to clicking different menu.

4. Current alarming display area

Current alarming display area shows current alarming of power and updating automatically.

Current Alarm		
1	ACD1 Input MCCB State	Trip
2	DCD1 Route 1 State	Disconnected
3	DCD1 Route 6 State	Disconnected

22. Hint

PSNA Card can detect monitoring model automatically. Since different monitoring model has different monitoring parameters, your interface actual viewing may not be exactly the same with the diagram in this book.

## 4.4 Checking Operation States And Current Alarm Of Power Supply

The main state area Current always shows operating states of Power, and current alarm area always shows current alarming contents. Main states and current alarming are updating automatically. No matter what you view the other signals or conduct operating or setup system parameters, you can view the power states at any moment.

## 4.5 Checking Power Supply Signals And States

Except overview signals on the homepage, each part signals and states of the power supply can be viewed.

Overview Signals	Value	Unit	Time	Control
DCD Bus Voltage	45.1	V	03/07/2003 00:32:07	-
DCD Load Current	808.5	A	03/07/2003 00:32:07	-
DCD Over Voltage Point	56.4	V	03/07/2003 00:32:05	56.4 Control
DCD Low Voltage Point	40.5	V	03/07/2003 00:32:05	40.5 Control
Battery1 Over Current Point	119.7	A	03/07/2003 00:32:05	119.7 Control
Battery2 Over Current Point	119.7	A	03/07/2003 00:32:05	119.7 Control
Over Temperature Point	50.0	C	03/07/2003 00:32:05	50.0 Control
ACD Over Voltage Point	281.0	V	03/07/2003 00:32:04	281.0 Control
ACD Low Voltage Point	204.0	V	03/07/2003 00:32:04	204.0 Control
System Control Mode	Manual	-	03/07/2003 00:32:04	Man Control
Communication State with Monitor	Normal	-	03/07/2003 00:32:10	-
Battery State	FC	-	03/07/2003 00:32:07	FC Control

### 4.5.1 Checking AC Distribution Signals And States

Click on the manual [ACDn], the signals and state webpage of corresponding AC distribution are shown. See Figure 4-3.

ACD1	Value	Unit	Time	Control
ACD1 Mains I Uab/Ua	210.0	V	03/07/2003 00:34:24	-
ACD1 Mains II Uab/Ua	213.9	V	03/07/2003 00:34:24	-
ACD1 Emergency Lighting State	Off	-	03/07/2003 00:34:24	-
ACD1 Input Running Number	No. 1	-	03/07/2003 00:34:24	-
ACD1 Main I Uab/Ua State	Normal	-	03/07/2003 00:34:24	-
ACD1 Input MCCB State	Trip	-	03/07/2003 00:34:24	-
ACD1 SPD State	Normal	-	03/07/2003 00:34:24	-
ACD1 Main I Power State	Normal	-	03/07/2003 00:34:24	-
ACD1 Main II Power State	Normal	-	03/07/2003 00:34:24	-
ACD1 Main II Uab/Ua State	Normal	-	03/07/2003 00:34:24	-

Figure 4-3 AC distribution signals and states

### 23. Color Denotation

Blue: normal;

Red: alarm. Please check the corresponding power state signal and take action.

### 4.5.2 Checking DC Distribution Signals And States

Click on the manual [DCDn], the signals and state webpage of corresponding DC distribution are shown. See Figure 4-4.

DCD1	Value	Unit	Time	Control
DCD1 Bus Voltage	44.5	V	03/07/2003 00:36:16	-
DCD1 Load Current	808.7	A	03/07/2003 00:36:16	-
DCD1 Battery1 Current	30.2	A	03/07/2003 00:36:16	-
DCD1 Battery1 Voltage	44.5	V	03/07/2003 00:36:16	-
DCD1 Ambient Temperature	27.6	C	03/07/2003 00:36:16	-
DCD1 Battery2 Current	30.2	A	03/07/2003 00:36:16	-
DCD1 Battery2 Voltage	44.5	V	03/07/2003 00:36:16	-
DCD1 Voltage Signal State	Normal	-	03/07/2003 00:36:16	-
DCD1 Route 1 State	Disconnected	-	03/07/2003 00:36:16	-
DCD1 Route 2 State	Connected	-	03/07/2003 00:36:16	-
DCD1 Route 3 State	Connected	-	03/07/2003 00:36:16	-
DCD1 Route 4 State	Connected	-	03/07/2003 00:36:16	-
DCD1 Route 5 State	Connected	-	03/07/2003 00:36:16	-

Figure 4-4 DC distribution signals and states

**24. Color Denotation**

Blue: normal;

Red: alarm. Please check the corresponding power state signal and take action.

**4.5.3 Checking Rectifier Module Signals And States**

Click on the manual [DCDn], the signals and state webpage of corresponding DC distribution are shown. See Figure 4-5.

Rectifier1	Value	Unit	Time	Control
Rectifier1 Current	50.0	A	03/07/2003 00:38:09	-
Rectifier1 Temperature	60.0	C	03/07/2003 00:38:09	-
Rectifier1 Current Limit	110.0	%	03/07/2003 00:38:09	110.0 Control
Rectifier1 Voltage	53.5	V	03/07/2003 00:38:09	53.5 Control
Rectifier1 ON/OFF State	ON	-	03/07/2003 00:38:09	ON Control
Rectifier1 Current Limiting State	Limited	-	03/07/2003 00:38:09	-
Rectifier1 EC/FC/Test State	FC	-	03/07/2003 00:38:09	-
Rectifier1 Control State	Automatic	-	03/07/2003 00:38:09	-
Rectifier1 Fault Signal State	Normal	-	03/07/2003 00:38:09	-
Rectifier1 Protection State	Normal	-	03/07/2003 00:38:09	-
Rectifier1 Fan State	Normal	-	03/07/2003 00:38:09	-
Rectifier1 Over Temperature State	Normal	-	03/07/2003 00:38:09	-
Rectifier1 Communication State	Normal	-	03/07/2003 00:38:09	-

Figure 4-5 Rectifier module signals and states

**4.6 Power Supply Parameters Configuration And Control**

**25. Hint**

1. Only users with “system administrator” or with “control” authority can configure parameters or control power operation, other users can only view current configurations.
2. The PSNA Card will record all the operations done to the power supply.

**4.6.1 Power Supply Parameters Configuration**

There are power supply parameters in common use can be setup in overview signals. They are: DCD Over Voltage Point, DC Under Voltage Point, Battery Over Current Point, Over Temperature Point, ACD Over Voltage Point, ACD Under Voltage Point, and System Control Mode.

**26. Hint**

1. Before setup power supply parameters, the meaning of corresponding parameters and power must understand clearly, otherwise it may result in serious consequence.
2. The configuration for any parameters must be satisfied to the requirements of power supply. If parameter setup is failed, please look over related power supply manual.
3. The PSNA Card will record all the parameters setup done to the power.

## 4.6.2 Power Supply Control

There is battery-charging mode (FC, EC or TEST can be controlled) in overview signals, and there is Rectifier Module ON/OFF (power on, power off can be controlled), Rectifier Module Current Limiting Point, and Rectifier Module Voltage in rectifier module signals. All of above are the signals and states that can be controlled.

### 27. Hint

1. Before control power supply, the meaning of corresponding parameters and power supply must understand clear, otherwise it may result in serious consequence.
2. The control for any parameters must be satisfied to the requirements of power supply. If control is failed, please look over related power supply manual.
3. Before control power supply, "System Control Mode" in overview signals must be set as "Manual".
4. Current-limiting point and voltage control on any one of the rectifier module will control on all of the rectifier modules of the power system at the same time.
5. The PSNA Card will record all the parameters setup done to the power.

## 4.7 Checking History Alarm, Event And PSNA Log

### 4.7.1 Power Supply History Alarm

Select [History Alarm], you will see power supply history alarm messages (Figure 4-6). You can view the latest 100 records in this webpage.

History Alarm			
No.	Alarm	Start	End
90	6# rectifier communication interrupt	02/28/2003 23:35:41	02/28/2003 23:36:37
91	7# rectifier communication interrupt	02/28/2003 23:35:44	02/28/2003 23:36:37
92	8# rectifier communication interrupt	02/28/2003 23:35:44	02/28/2003 23:36:37
93	9# rectifier communication interrupt	02/28/2003 23:35:44	02/28/2003 23:36:37
94	10# rectifier communication interrupt	02/28/2003 23:35:44	02/28/2003 23:36:37
95	11# rectifier communication interrupt	02/28/2003 23:35:44	02/28/2003 23:36:37
96	12# rectifier communication interrupt	02/28/2003 23:35:44	02/28/2003 23:36:37
97	13# rectifier communication interrupt	02/28/2003 23:35:44	02/28/2003 23:36:37
98	14# rectifier communication interrupt	02/28/2003 23:35:44	02/28/2003 23:36:37
99	15# rectifier communication interrupt	02/28/2003 23:35:47	02/28/2003 23:36:37
100	AC fail	02/28/2003 23:36:37	02/28/2003 23:40:25
1	0# rectifier fault	01/29/2003 03:00:48	01/29/2003 03:03:29
2	1# rectifier protection	01/29/2003 03:00:56	01/29/2003 03:03:29
3	1# rectifier fault	01/29/2003 03:00:48	01/29/2003 03:03:29

Figure4-6 Power supply history alarm

### 28. Hint

Just PSM-A9/A10/A11 and M500F monitoring module has history alarm messages and PSM-A monitoring module does not have history alarm messages temporarily.

### 4.7.2 Power Supply History Event

Select [History Event], you will see power supply history event messages (Figure 4-7). You can view the latest 512 records (maximum) in this webpage.

History Event			
427	Power on	02/21/2003 17:40:39	0.000
428	DC route 7 disconnection	02/21/2003 17:40:43	Alarm data: 0.000
429	AC circuit breaker trip	02/21/2003 17:40:43	Alarm data: 0.000
430	Manual	02/21/2003 17:40:43	Alarm data: 0.000
431	DC current unbalance	02/21/2003 17:43:58	Alarm data: 0.000
432	Power on	02/24/2003 17:40:30	0.000
433	DC route 7 disconnection	02/24/2003 17:40:35	Alarm data: 0.000
434	AC circuit breaker trip	02/24/2003 17:40:35	Alarm data: 0.000
435	Manual	02/24/2003 17:40:35	Alarm data: 0.000
436	DC current unbalance	02/24/2003 17:43:46	Alarm data: 0.000
437	Set(byte) battery number: Success!	02/24/2003 19:46:36	Set value: 255
438	Set(float) battery 1 rated capacity: Success!	02/24/2003 20:10:33	Set value: 399.000Ah
439	Power on	02/25/2003 17:40:35	0.000
440	DC route 7 disconnection	02/25/2003 17:40:39	Alarm data: 0.000
441	AC circuit breaker trip	02/25/2003 17:40:39	Alarm data: 0.000
442	Manual	02/25/2003 17:40:39	Alarm data: 0.000

Figure 4-7 Power supply history event

**29. Hint**

Just PSM - A9/A10/A11 and M500F monitoring module has history event message and PSM-A monitoring module does not have history event message temporarily.

## 4.7.3 PSNA Log

Select [PSNA Log], you will see PSNA Card log messages (Figure 4-8). PSNA Card log records some important states change, configurations and control information of all users. You can view the maximum 90 log records.

PSNA Log	When	By
Add [10.63.1.3] to PowerStar Center list	03/07/2003 00:24:28	admin[10.63.1.3]
The signal [Rectifier1 ON/OFF State] is set to [OFF]	03/07/2003 00:16:33	admin[10.63.1.3]
The signal [DCD Over Voltage Point] is set to [56.4 V]	03/06/2003 23:48:47	admin[10.63.1.3]
PSNA SNMP Agent start up	03/06/2003 17:48:54	PSNA
PSNA web server start up	03/06/2003 17:48:54	PSNA
PSNA PowerStar server start up	03/06/2003 17:48:48	PSNA
PSNA TTY/Telnet services start up	03/06/2003 17:48:48	PSNA
PSNA sync time with the monitor	03/06/2003 17:48:46	PSNA
PSNA SNMP Agent start up	03/04/2003 17:42:25	PSNA
PSNA web server start up	03/04/2003 17:42:25	PSNA
PSNA PowerStar server start up	03/04/2003 17:42:18	PSNA
PSNA TTY/Telnet services start up	03/04/2003 17:42:18	PSNA
PSNA sync time with the monitor	03/04/2003 17:42:16	PSNA

Figure 4-8 PSNA Log Information

## 4.8 PSNA Card System Configuration

**30. Hint**

Only users who have “system administrator” authority can configure the PSNA Card

## 4.8.1 Network Parameter Setup

Select sub-manual [PSNA Config], you will see Network Parameter Setup screen. In the PSNA Card parameters configuration webpage(See Figure 4-9), you can change the PSNA Card IP address, subnet mask and default gateway address here.

Network Parameter Setup	
PSNA IP	<input type="text" value="10.63.0.91"/>
Gateway IP	<input type="text" value="10.63.0.1"/>
Subnet Mask	<input type="text" value="255.255.254.0"/>
<input type="button" value="Set Network Parameter"/>	

Figure4-9 PSNA card network parameter setup

Enter the new parameters and press [Set Network Parameter] to save them. If you have done any modification, the PSNA Card will be restarted 5 seconds later automatically; if you have changed the IP address, you should use the new address to visit the PSNA Card.



**31. Warning**

1. Do not set the network parameters randomly. If the Card IP address conflicts with that of other equipment (like PC), the PSNA Card or other equipment will be not accessed. So you'd better consult the network administrator in your company for your network parameters.
2. If network parameters such as IP address of PSNA Card are modified, the connection between the PSNA Card and PowerStar, IE and NMS will be interrupted when the PSNA Card is restarted due to network parameter modification. Please reconfigure relevant PowerStar and NMS after IP address modification.

**4.8.2 System Time Configuration**

Select [PSNA Config], you will see the PSNA Card Data & Time configuration screen.

You can set current time and time server IP address for the PSNA Card in the PSNA Card Data & Time configuration webpage (See Figure 4-10).

During the PSNA Card system time setting, you may choose

- Adjust time automatically by Timeserver
- Adjust time by the specify time

If you choose time server, please enter primary and secondary time server IP address. When setting "0.0.0.0", it represent none. Timeserver refers to the time server that running with PSNA Card on the same network and support RFC 868 Time Adjust Protocol.

If you choose "Specify time", you can input time by yourself or click [Get Local Time] to obtain the time by the computer that is visiting the Card as the current time.

Date & Time	
<input checked="" type="radio"/> Check time with time server	<input type="radio"/> Check time with real time
Primary Server: <input type="text" value="10.63.0.224"/>	Date: <input type="text" value="03/07/2003"/>
Secondary Server: <input type="text" value="10.63.0.160"/>	Time: <input type="text" value="00:43:33"/>
<input type="button" value="Get Local Time"/>	<input type="button" value="Set PSNA Time"/>

Figure 4-10 PSNA card date & time setting

After the time setting, click [Set PSNA Time] to save.

**32. Note**

1. The local time zone of PSNA Card must be setup through TTY/Telnet before its formal application, otherwise the adjusting time from Timeserver will be wrong.
2. It must make sure that the Timeserver of the network is in proper operation when setting Timeserver. If Timeserver is not used or not setup parameters, when PSNA Card communicates with monitoring module, it will get time from monitoring module and setup time.
3. If the Timeserver is setup and available, no matter whether the PSNA Card time is set, it will be adjusted by the Timeserver automatically.

**4.8.3 Power Name Setting**

Select [PSNA Configuration], you will see the PSNA Card relating setting screen.

You can set PSNA Card power name in the PSNA Card power name setting webpage (See Figure 4-11). The name is that shown in the main state of the IE browser to distinguish different PSNA Card.

The Power Name	
Power Name	<input type="text" value="PSNA"/>
<input type="button" value="Set Power Name"/>	

Figure 4-11 Power name setting webpage

**4.8.4 User Information Setting**

Select sub-menu [User Info], you will see user information setting screen. You may setup relative information parameters in the webpage (See Figure 4-12).



The user parameters are to specify user accessibility to the PSNA Card, to avoid illegal access and control over PSNA Card.

Figure 4-12 User information setting

### 1. Adding new users

For newly installed PSNA card, the default user is only system administrator that is "admin". To enable other relevant persons to visit and control power supply through Web browser, you should login the PSNA Card as the "admin", add their information and grant them corresponding authority.

### 33. Note

The system administrator "admin" is a special user with highest authority. You cannot delete it or change the name or its authorities. But you can change its password.

Input the following messages in the Figure 4-12:

- User name

The user name can be made up of any character (including Chinese character), except "<", ">", "&", " and quotation marks("). Ten characters at the most.

- Password and password identification

The password can be made up of any character (including Chinese character), 20 characters at most. It is requisite. Your entry will be displayed as "\*\*\*\*". You will be asked to confirm the password by entering it again. The two entries must be the same.

- Authority

Set user authority to access the PSNA Card or power supply. Refer to Table 4-1.

Table 4-1 User authority table

Name	Authority		
administrator	<input checked="" type="checkbox"/> System Configuration	<input checked="" type="checkbox"/> Control Power	<input checked="" type="checkbox"/> View Power State
Control	<input type="checkbox"/> System Configuration	<input checked="" type="checkbox"/> Control Power	<input checked="" type="checkbox"/> View Power State
Query	<input type="checkbox"/> System Configuration	<input type="checkbox"/> Control Power	<input checked="" type="checkbox"/> View Power State
No Access	<input type="checkbox"/> System Configuration	<input type="checkbox"/> Control Power	<input type="checkbox"/> View Power State

### 34. Suggestion

To enhance the security of power supply and communication equipment, you'd better grant "Query" authority to most users, "Control" authority to power supply equipment manager and "Administrator" to the users who operate PSNA Card or setup parameters.

After confirming the correctness of the above information, click [Add New User], then the user will be added to the user table and is able to visit the PSNA Card through Web browser.

### 2. Modify user information

Administrator can modify all users' password and authority through user property modification. Other users can only change their own password but not their authority.

In Figure 4-12, select the user you want to modify in user table or directly input the user name, enter new password and authority, click [Modify User Inform] to submit the modification. You need relogin after password changed.

### 35. About admin Password

In Hyper Terminal/Telnet mode, if you want to modify basic parameters, you must login as admin. In case that the admin password is lost, you will be unable to configure parameters. As a backup, when you first login the PSNA Card via Web browser,

besides changing admin password, add another user as system administrator, like "Adm". When you cannot login in as admin, you can also use Adm account, and then change the admin password.

### 3. Deleting Selected User

You can also delete users that no longer need visit the PSNA Card. Select the user you want to delete in the list of Figure 4-12 and click [Delete Selected User] to delete one or multi-user.

### 36. Hint

There are two methods to forbid a user from visiting the PSNA Card:

- 1) Delete User: block the user away from the PSNA Card forever;
- 2) Modify Authority: change user authority to "No Access", temporarily disable user's access to the PSNA Card until you regrant him/her the right.

## 4.8.5 SNMP Agent Information Configuration

Select [SNMP Config], you will see the parameter configuration screen (see Figure 4-13).

Figure 4-13 SNMP agent information configuration webpage

The SNMP agent parameters are kept in RFC1213/system, refer to Table 4-2.

Table 4-2 RFC1213 system parameters

Name	Value	Remark
System Description (sysDescr)	PSNA Web/SNMP Agent, EMERSON Network Power Co., Ltd.	Read only
Agent Revision (agentRevision)	Current Agent Version is 2.10	Read only
System OID(sysObjectID)	1.3.6.1.4.1.13400.2.8	Read only
System Operating Time (sysUpTime)	0:19:13 (change at any time)	Read only
System Service (sysServices)	79	Read only
System Name (sysName)	PSNA Web/SNMP Agent	User configurable
System Contactor (sysContact)	administrator	User configurable
System Location (sysLocation)	Agent Location	User configurable

In this screen, you can specify agent name, MIB contact person, and SNMP Agent location. Click [Submit] to save the configuration.

## 4.8.6 NMS Configuration

Select sub-menu [NMS Config], you will see NMS configuration screen (Figure 4-14). System administrator can add/delete NMS and modify NMS property.

NMS can be HP OpenView, IBM NetView, etc.

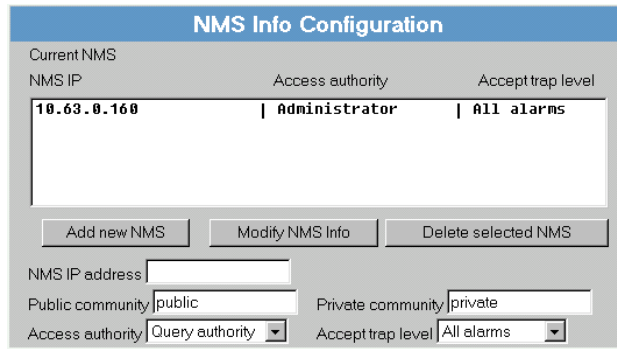


Figure 4-14 NMS information configuration webpage

1. Add new NMS

If a NMS want to visit SNMP agent, it must exist in NMS table.

NMS properties include: IP address, community string for visiting SNMP agent and TRAP level for receiving SUMP agent.

- NMS IP address
- NMS IP address means the NMS computer address allowed visiting SNMP agent, such as: 10.63.0.160 °
- Public community string
- Community string for getting SNMP agent variables, the default is "public"
- Private community string
- Community string for getting and setting SNMP agent variables, the default is "private."

37. Note

Community String is a code for NMS to visit SNMP agent. Pay attention to the capital/small letters.

- NMS authority for power visiting
- Refer to Table 4-3 for the various authority levels for NMS to visit power SNMP Agent.

Table 4-3 NMS authority table

Name	Authority
administrator	<input checked="" type="checkbox"/> Configure NMS table <input checked="" type="checkbox"/> Control Power <input checked="" type="checkbox"/> View Power State
Control	<input type="checkbox"/> Configure NMS table <input checked="" type="checkbox"/> Control Power <input checked="" type="checkbox"/> View Power State
Query	<input type="checkbox"/> Configure NMS table <input type="checkbox"/> Control Power <input checked="" type="checkbox"/> View Power State
No Access	<input type="checkbox"/> Configure NMS table <input type="checkbox"/> Control Power <input type="checkbox"/> View Power State

38. Suggestion

Generally, we grant configuration authority to power-control NMS, query authority to other NMS.

- TRAP level for receiving SNMP agent (alarm level)

When power alarm occurs, SNMP agent will send TRAP to NMS. You may set TRAP level to filter these alarms. Only the alarm whose level is equal to or greater than the trap level will be sent to NMS. The TRAP levels are:

1. Information: receive all power alarms including inform messages.
2. Warning: receive important and serious alarm.
3. Severe: receive urgent alarm only.
4. No Trap: no alarm will be sent to NMS.

39. Suggestion

1. Generally, the alarm level for receiving NMS Agent (TRAP) can be set as "Information" that is to receive all alarm messages.
2. At present, all alarm levels are set to "Severe" in MIB for the communication equipment of Emerson Network Power Co., Ltd. Users can reset the actual alarm level according to the requirement in NMS software.
3. 8 NMS can be set at the most.

After the configurations, click [Add New NMS] and add it to the NMS table.

#### 5. Modifying NMS property

Select a NMS in the NMS table or input the IP address, modify its property and then click [Modify NMS Info] to save.

#### 6. Deleting selected NMS

Select one or more NMS in the NMS table, click [Delete Selected NMS]. When a NMS is deleted, it will not be allowed to visit SNMP agent any more.

### 4.8.7 PowerStar Center Configuration

Select [PSC Config], you will see PowerStar Center configuration webpage (Figure 4-15). The power supply can be visited via PSNA Card after the PowerStar Center configuration.

System administrator can add, delete and modify PowerStar Center property.

PSC IP	Access authority	Alarm trap level
10.63.0.218	Control authority	All alarms
10.63.4.172	Administrator	All alarms
10.63.0.160	Control authority	All alarms
10.63.1.3	Control authority	All alarms

Figure 4-15 PowerStar center information configuration webpage

#### 1. Adding new PSC

Enter the IP address of the computer that runs PowerStar software in "PSC IP" column. Select the corresponding type in "Access Authority" column. Click [Add New PSC] to add the new PowerStar Center to the visiting table. The table below is the authority for PowerStar Center.

Table 4-4 PowerStar center authority table

Name	Authority		
No Access	<input type="checkbox"/> Control power	<input type="checkbox"/> View power state	<input type="checkbox"/> Receive power alarm
Query	<input type="checkbox"/> Control power	<input checked="" type="checkbox"/> View power state	<input type="checkbox"/> Receive power alarm
Control	<input checked="" type="checkbox"/> Control power	<input checked="" type="checkbox"/> View power state	<input type="checkbox"/> Receive power alarm
administrator	<input checked="" type="checkbox"/> Control power	<input checked="" type="checkbox"/> View power state	<input type="checkbox"/> Receive power alarm

At present, alarm report level has not been used yet.

#### 40. Note

1. For general PowerStar Centers, their visiting authorities are all Control authority.
2. If some PowerStar Center is not allowed to visit, its right can be set as "No Access" or delete its configuration.
3. If some PowerStar Center is not allowed to control power, its right can be set as "Query".
4. Generally it is not need to set as administrator.
5. 8 PowerStar Centers can be set at the most.

#### 2. Modifying PowerStar center information

Select a PowerStar Center in the table, modify its type and then click [Modify PSC Info]. Generally the visiting authority of PowerStar Center is to be modified.

#### 3. Deleting selected PowerStar center

Select one or more PowerStar Centers in the table; click [Delete Selected PSC]. Once a center is deleted, the PowerStar monitoring software in these computers will be disconnected from the PSNA Card and cannot visit it any more.

### 4.8.8 PSNA Card Firmware Upgrade

You may download the latest version of the PSNA Card firmware to upgrade it online. Select [PSNA Upgrade], you will see PSNA Card Firmware Upgrade webpage (Figure 4-16).

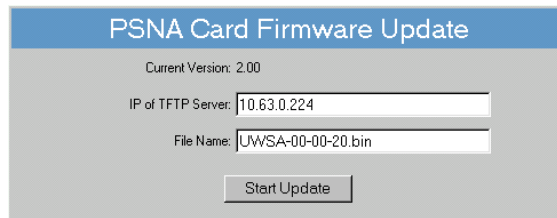


Figure 4-16 PSNA card firmware upgrade webpage

On this screen, you will see current version of the firmware.

Now, you can upgrade firmware following the steps below.

---

#### 41. Warning

1. After firmware upgrade, all parameters of the PSNA Card may be cleared. You need reconfigure them.
2. When upgrade the firmware, it must guarantee the proper operation of the power supply. If power fails during the process, the PSNA Card will be damaged.
3. The erasing ability of the Card FLASH memory is limited. Do not write into the same firmware file frequently using the upgrade function, otherwise, the FLASH memory might be damaged and the PSNA Card will thus be unavailable. But normal upgrade operation will not result in such problem.
4. If there is any problem please contact with the local supplier.

- 
1. Download from our website or ask your supplier for the latest version of firmware;
  2. Start TFTP server, copy the firmware file to its main directory. The TFTP server can be downloaded from the Internet for free or you may contact the suppliers for it;
  3. Enter the computer IP address that runs TFTP Server in the software upgrade webpage;
  4. Enter the updating file name in the software upgrade webpage;
  5. Click [Start Upgrade] to begin upgrading, after the upgrade, the PSNA Card will be restarted.

If you have problem during the upgrade, contact your supplier.

## Chapter 5 Power Monitoring Method Two: Through NMS

Using the SNMP agent function of the PSNA Card, NMS can inquire power state and input/output signals, and view power alarm. In case of alarm, the PSNA agent will notify the preset NMS by TRAP.

### 5.1 SNMP Agent Supported NMS And Protocol

The SNMP agent provided by PSNA Card now supports SNMP protocol SNMPv1.

NMS that supports SNMPv1 protocol is allowed to access the SNMP agent of PSNA Card, like HP OpenView, IBM NetView, Novell ManageWise, SunNet Manager, etc.

### 5.2 Power MIB Installation

#### 1. MIB installation

Network administrator can view information stored in MIB. The information is the administrated resources in the network administration.

MIB files of PSM - A/A9/A10/A11 and M500F monitoring module are on the installation disk (delivered with the PSNA Card):

PSNA\_PS\_PSM\_MIB.mib.

NMS gets the important information of the power supply system from MIB documents.

Please install MIB using NMS MIB import function. See detailed information in your NMS manual.

#### 2. Contents of power MIB

PSNA\_PS\_PSM\_MIB.mib applies to PSM - A/A9/A10/A11 series and M500F monitoring module.

It will change with the firmware version. Refer to the website of Emerson Network Power Co., Ltd. or local supplier to get the latest version of MIB. MIB supported by power SNMP and object identifier can refer to Table 5-1 and Table 5-2. Please refer to PSNA\_PS\_PSM\_MIB.mib for detailed information.

Table 5-1 Power MIB (PSM-A/A9/A10/A11 Series Monitoring Module)

psAgent Group	SNMP Agent System Variable	R/W
agentRevision	Agent Software Version	R
agentManagersNum	NMS number in the NMS table	R
agentManagersTable	NMS Table	R/W
managerIndex	NMS Table Index	R
managerAddr	NMS IP IP Address	R/W
publicCommunityString	Public Community String	R/W
privateCommunityString	Private Community String	R/W
managerPrivilege	NMS Access Authority	R/W
acceptTrapLevel	Accept TRAP Level	R/W
managerAccept	Add/Modify/Delete a NMS mark GET reply :view(0) Add: new(1) Modify: modify(2) Delete: delete(3)	R/W
psIdent Group	Power Supply ID Group	
psIdentControllerModel	Monitoring Module Model such as: PSM-A9	R
psIdentFirmwareRevision	Monitoring ModuleFirmwareRevision	R
psIdentFactory	Power manufacturer name	R
psBattery Group	Power Supply Battery Information Group	
psBatteryVoltage	Battery Voltage (unit:1/10 Vdc)	R
psBatteryCurrent	Total Battery Current(Unit:1/10 A)	R
psBatteryTemperature	Battery Room Temperature(Unit:1/10°C)	R
psInput group	Power Supply Input Information Group	
psInputLineAVoltage	AC Input Phase A Line Voltage (unit:1/10Vac)	R
PsInputLineBVoltage	AC Input Phase B Line Voltage (unit:1/10Vac)	R
psInputLineCVoltage	AC Input Phase C Line Voltage (unit:1/10Vac)	R
psOutput group	Power Supply Output Information	
psOutputVoltage	DC Output Voltage (unit:1/10Vdc)	R

psOutputCurrent	Total Load Current (unit:1/10A)	R
psStatus Group	Power Supply State Group	
psStatusAlarm	PSNA Card Alarm State(Monitoring module alarm state) Normal: normal(2); Alarm:alarm(3)	R
psStatusCommunication	PSNA Card and communication state with monitoring module Normal: normal(2); Interrupt:interrupt(3)	R
psStatusControlMode	Monitoring Module Control Mode Auto: auto(2); Manual: manual(3)	R
psStatusChargingMode	Battery Charging State Floating Charge:floatCharging(2) Equalized Charge:equalizeCharging(3) Testing:testing(4)	R
psAlarm Group	Power Supply Alarm Group	
psAlarmPresentNum	Power Read alarm number	R
psAlarmPresentTable	Power Current Alarm List	R
presentAlarmIndex	Current Alarm Index	R
PresentAlarmTime	AlarmTime, format is YYYY/MM/DD/HH/MM/SS	R
PresentAlarmId	Alarm Event ID, that is the OID event valued used when sending TRAP	R
PresentAlarmName	Alarm Event Name	R
PresentAlaramLevel	Alarm Level Inform: information(1) Warning: warning(2) Severe: severe(3)	R
Traps	Power Supply Alarm Information	
See Appendix 1 PSM-A/A9/A10/A11 Alarm Event List		

Table 5-2 Power MIB (M500F Monitoring Module)

psAgent Group	SNMP Agent System Variable	R/W
agentRevision	Agent Software Version	R
agentManagersNum	NMS number in the NMS table	R
agentManagersTable	NMS Table	R/W
managerIndex	NMS Table Index	R
managerAddr	NMS IP IP Address	R/W
publicCommunityString	Public Community String	R/W
privateCommunityString	Private Community String	R/W
managerPrivilege	NMS Access Authority	R/W
acceptTrapLevel	Accept TRAP Level	R/W
managerAccept	Add/Modify/Delete a NMS mark GET reply :view(0) Add: new(1) Modify: modify(2) Delete: delete(3)	R/W
psIdent Group	Power Supply ID Group	
psIdentControllerModel	Monitoring Module Model such as: M500F	R
psIdentFirmwareRevision	Monitoring ModuleFirmwareRevision	R
psIdentFactory	Power manufacturer name	R
psBattery Group	Power Supply Battery Information Group	
psBatteryVoltage	Battery Voltage (unit:1/10 Vdc)	R
psBatteryCurrent	Total Battery Current(Unit:1/10 A)	R
psBatteryTemperature	Battery Room Temperature(Unit:1/10°C)	R
psInput group	Power Supply Input Information Group	
psInputLineAVoltage	AC Input Phase A Line Voltage (unit:1/10Vac)	R
PsInputLineBVoltage	AC Input Phase B Line Voltage (unit:1/10Vac)	R
psInputLineCVoltage	AC Input Phase C Line Voltage (unit:1/10Vac)	R
psOutput group	Power Supply Output Information	
psOutputVoltage	DC Output Voltage (unit:1/10Vdc)	R
psOutputCurrent	Total Load Current (unit:1/10A)	R
psBattery1Current	Battery1 Current	R
PsBattery2Current	Battery2 Current	R
PsBattery1Temperature	Battery1 Temperature	R
psBattery2Temperature	Battery2 Temperature	R
psAmbient1Temperature	Ambient1 Temperature	R
PsAmbient2Temperature	Ambient2 Temperature	R

psStatus Group	Power Supply State Group	
psStatusAlarm	PSNA Card Alarm State(Monitoring module alarm state) Normal: normal(2); Alarm:alarm(3)	R
psStatusCommunication	PSNA Card and communication state with monitoring module Normal: normal(2); Interrupt:interrupt(3)	R
psStatusControlMode	Monitoring Module Control Mode Auto: auto(2); Manual: manual(3)	R
psStatusChargingMode	Battery Charging State Floating Charge:floatCharging(2) Equalized Charge:equalizeCharging(3) Testing:testing(4)	R
psAlarm Group	Power Supply Alarm Group	
psAlarmPresentNum	Power Read alarm number	R
psAlarmPresentTable	Power Current Alarm List	R
presentAlarmIndex	Current Alarm Index	R
PresentAlarmTime	AlarmTime, format is YYYY/MM/DD/HH/MM/SS	R
PresentAlarmId	Alarm Event ID, that is the OID event valued used when sending TRAP	R
PresentAlarmName	Alarm Event Name	R
PresentAlarmLevel	Alarm Level Inform: information(1) Warning: warning(2) Severe: severe(3)	R
Traps	Power Supply Alarm Information	
See Appendix 3 M500F Alarm Event List		

**42. Note**

R for OLD read only (GET), R/W for OID read and write (GET/SET)

## 5.3 Monitoring Power Through NMS

### 5.3.1 Authority

To enable NMS to control power supply through the power SNMP agent provided by PSNA Card, you should apply to the PSNA Card administrator for management authority, and add NMS information to the PSNA Card NMS table.

#### 1. Add NMS through Web Browser

Refer to Section 4.8.6 "NMS Configuration".

#### 2. Add NMS through super NMS

Super NMS refers to the NMS with system administrator authority. Super NMS can modify NMS configuration table (agentManagersTable), such as add/delete/modify NMS.



**43. Hint**

When modifying NMS, you must send all of the following NMS properties to the Card in a submitting session; otherwise, you will be prompted error message.

1. IP address: managerAddr
2. Public Community String: publicCommunityString
3. Private Community String: privateCommunityString
4. Operation authority: managerPrivilege
5. TRAP level: acceptTrapLevel
6. Add/modify/delete options: managerAccept

**5.3.2 Power Supply Management**

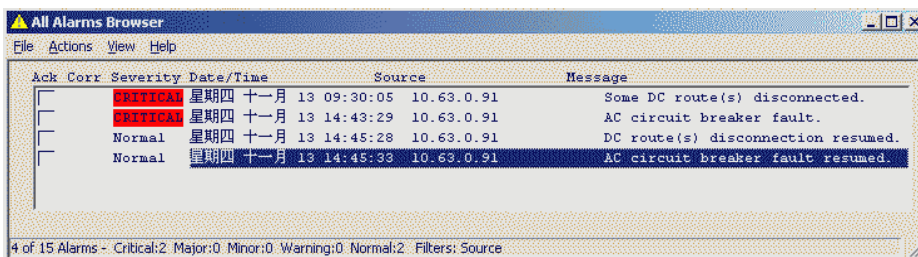
The way NMS managing power is the same with managing other equipment. Refer to your NMS manual. At present just support query and TRAP, configuration and control are not supported.

**44. Hint**

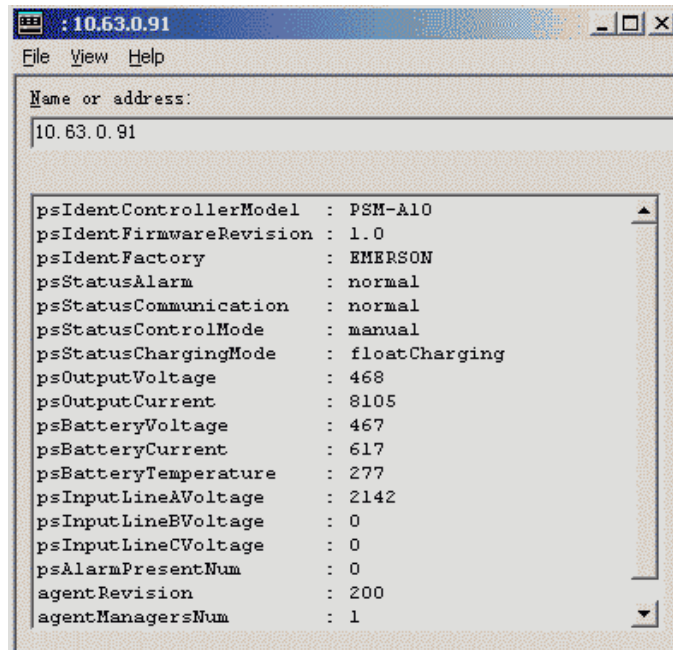
1. The community string used in getting power data must be the same with the public or private community string set in the PSNA Card.
2. The community string used in setting power data or sending power control command must be the same with the private community string set in the PSNA Card.
3. If you are granted "query" authority, you can only view power state and input/output signals, but not control power.
4. If your NMS has power control authority, the PSNA Card will record all your control actions to the power through your NMS.
5. If you want to modify a table, you must configure all the writable properties of it and submit them to the PSNA Card, only in this way, your modifications will be accepted.
6. If control failure due to lack of authority or community string error, NMS will receive an AUTH\_FAILURE TRAP.

**5.3.3 NMS Demonstration**

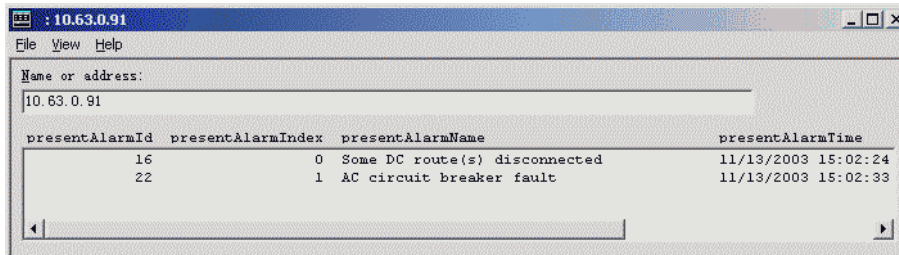
The following figure is a browser interface for TRAP event of NNM software of HP OpenView. Its detailed information is the TRAP event content reporting to NMS when PSNA Card alarms and alarm recoveries.



The following figure is the querying interface for analog value and digital value of PSNA Card in NNM software of HP OpenView, among which show the querying contents defined in the power supply MIB.



The following figure is the querying interface for current alarm list of PSNA Card in NNM software of HP OpenView.



## Chapter 6 Power Monitoring Method Three: Through PowerStar

PowerStar is centralized management software for the PSNA Card. It can manage many power supplies. PowerStar can real time inquire power state and input/output signals, set power running testing, control power running state etc. When power alarm occurs, PowerStar will notify PowerStar Center by displaying alarm contents.

PowerStar Center managing power through PSNA Card needs the following two steps:

1. Authority

Add the IP address of the computer that runs PowerStar Center to the PowerStar Center table and grant it corresponding authority. See 4.8.7 PowerStar Center Configuration.

2. Monitoring power

As to PowerStar Center monitoring power supply, refer to PowerStar software manual.

## Appendix 1 PSM-A/A9/A10/A11 Alarm Event List

Note: This Appendix is PSM-A/A9/A10/A11 monitoring module alarm event list of Emerson Network Power Co., Ltd.

ID	English	Chinese
0	unknown alarm	
1	The Power System is on normal status	
2	Communication with the Power System lost	
3	Communication with the Power System resumed	
4	AC Power failed	
5	AC power Resumed	
6	AC voltage is out of normal range	
7	AC voltage is normal	
8	DC voltage is out of normal range	
9	DC voltage is normal	
10	Load low voltage disconnected	
11	Load low voltage disconnection resumed	
12	Battery low voltage disconnected	
13	Battery low voltage disconnection resumed	
14	The temperature around battery is too high	
15	The temperature around battery is normal	
16	Some DC route(s) disconnected	
17	DC route(s) disconnection resumed	
18	The battery route(s) disconnected	
19	The battery route(s) disconnection resumed	
20	AC SPD fault	
21	AC SPD fault resumed	
22	AC circuit breaker fault	
23	AC circuit breaker fault resumed	
24	Battery current is over limit	
25	Battery current over resumed	
26	Some Rectifier(s) fault	
27	Rectifier(s) fault resumed	
28	Some Rectifier(s) protection	
29	Rectifier(s) protection resumed	
30	Some Rectifier(s) fan fault	
31	Rectifier(s) fan fault resumed	
32	Some Rectifier(s) over temperature	
33	Rectifier(s) over temperature resumed	
34	Power System communication with ACD lost	
35	Power System communication with ACD resumed	
36	Power System communication with DCD lost	
37	Power System communication with DCD resumed	
38	Power System communication with rectifier lost	
39	Power System communication with rectifier resumed	
40	DC/DC convertor fault	
41	DC/DC convertor fault resumed	

## Appendix 2 PSM-A/A9/A10/A11 Signals (IE Mode)

No.	Signal	Type	Setting range
1	Battery over voltage	R/W	20V ~ 60V
2	Battery under voltage	R/W	20V ~ 60V
3	Battery over current	R/W	0 ~ 5000A
4	Over temperature alarm point	R/W	25°C ~ 100°C
5	AC input over-voltage alarm point	R/W	50V ~ 500V
6	AC input under-voltage alarm point	R/W	50V ~ 500V
7	AC input over-current alarm point	R/W	5A ~ 2000A
8	AC input over-frequency alarm point	R/W	45Hz ~ 75Hz
9	AC input under-frequency alarm point	R/W	45Hz ~ 75Hz
10	Rectifier current- limit point	R/W	5% ~ 110%
11	Battery management mode	R/W	Manual/ Auto
12	Battery status	R/W	FC/ BC/ Test
13	Rectifier switch mode	R/W	On/ Off
14	DC busbar voltage	R	
15	DC load current	R	
16	Phase voltage of each route and each AC screen	R	
17	Phase current of each route and each AC screen	R	
18	Rectifier current	R	
19	Rectifier2 temperature	R	
20	Rectifier2 voltage	R	
21	Current of each route and each DC screen	R	
22	Temperature of each measuring point and each DC screen	R	
23	Current of each battery and each DC screen	R	
24	Voltage of each battery and each DC screen	R	
25	Temperature of each battery and each DC screen	R	

**Note:**

History events and history alarms are available in PSM-A9/A10/A11 monitoring modules.

## Appendix 3 M500F Alarm Event List

Note: This Appendix is M500F monitoring module alarm event list of Emerson Network Power Co., Ltd.

ID	English	Chinese
0	unknown alarm	
1	The Power System is on normal status	
2	Communication with the Power System lost	
3	Communication with the Power System resumed	
4	AC Power failed	
5	AC power Resumed	
6	AC voltage is out of normal range	
7	AC voltage is normal	
8	DC voltage is out of normal range	
9	DC voltage is normal	
10	Load low voltage disconnected	
11	Load low voltage disconnection resumed	
12	Battery low voltage disconnected	
13	Battery low voltage disconnection resumed	
14	The temperature around battery is too high	
15	The temperature around battery is normal	
16	Some DC route(s) disconnected	
17	DC route(s) disconnection resumed	
18	The battery route(s) disconnected	
19	The battery route(s) disconnection resumed	
20	AC SPD fault	
21	AC SPD fault resumed	
22	AC circuit breaker fault	
23	AC circuit breaker fault resumed	
24	Battery current is over limit	
25	Battery current over resumed	
26	Some Rectifier(s) fault	
27	Rectifier(s) fault resumed	
28	Some Rectifier(s) protection	
29	Rectifier(s) protection resumed	
30	Some Rectifier(s) fan fault	
31	Rectifier(s) fan fault resumed	
32	Some Rectifier(s) over temperature	
33	Rectifier(s) over temperature resumed	
34	Power System communication with ACD lost	
35	Power System communication with ACD resumed	
36	Power System communication with DCD lost	
37	Power System communication with DCD resumed	
38	Power System communication with rectifier lost	
39	Power System communication with rectifier resumed	
40	DC/DC convertor fault	
41	DC/DC convertor fault resumed	
33	Power System communication with rectifier lost	
34	Power System communication with rectifier resumed	
35	DC/DC convertor fault	
36	DC/DC convertor fault resumed	
37	Hardware Self-Check	
38	Hardware Self-Check resumed	
39	System Maintain	
40	System Maintain resumed	
41	Some Rectifier(s) Derated	
42	Some Rectifier(s) Derated resumed	
43	Some Rectifier(s) AC fault	
44	Some Rectifier(s) AC fault resumed	
45	Ambient temperature is abnormal	
46	Ambient temperature is normal	
47	Battery discharge is in progress	
48	Finished battery discharge	
49	Battery Current Imbalance	
50	Battery Current Imbalance resumed	
51	Battery Short Test Failure	
52	Battery Short Test Failure Resumed	
53	Battery Test is in progress	

ID	English	Chinese
54	Finished battery Test resumed	
55	DC Voltage Fault	
56	DC Voltage Fault resumed	
57	Customized alarm generated	
58	Customized alarm resumed	
59	Rectifier(s) Lost alarm	
60	Rectifier(s) Lost alarm resumed	

## Appendix 4 M500F Signals (IE Mode)

### 1. System screen

No.	Signal	Type	Setting range
1	DC busbar voltage	R	
2	DC load current	R	
3	DC input over-voltage alarm point	R/W	20V ~60V
4	DC input under-voltage alarm point	R/W	20V ~60V
5	Battery charging over current point	R/W	0A ~ 5000A
6	Battery over temperature	R/W	10°C ~ 100°C
7	Battery under temperature	R/W	-40°C ~ 10°C
8	Over temperature alarm point	R/W	10°C ~ 100°C
9	Under temperature alarm point	R/W	-40°C ~ 10°C
10	AC input over-voltage alarm point	R/W	50V ~ 500V
11	AC input under-voltage alarm point	R/W	50V ~ 500V
12	Battery management mode	R/W	Manual/ Auto
13	Communication mode with monitoring module	R (alarm)	
14	Battery status	R/W	FC/ BC/ Test/ Stop test
15	Monitoring hardware self-check alarm state	R (alarm)	
16	Rectifiers alarm state	R (alarm)	
17	System maintenance alarm state	R (alarm)	
18	Rectifier lost alarm state	R (alarm)	

### 2. AC screens

#### 1) Systems without AC input

No.	Signal	Type	Setting range
1	AC screen1, route1 voltage: Uab/ Ua/ Umax	R	
2	AC screen1, route1 voltage: Uab/ Ua/ Umax	R	
3	AC screen switching state	R	
4	AC screen route No.	R	
5	AC screen1, route1 voltage Uab/ Ua/ Umax state	R (alarm)	
6	AC screen1, route1 voltage Ubc/ Ub/ Umin state	R (alarm)	
7	AC screen1, route1 power failure alarm state	R (alarm)	
8	AC input over-frequency alarm point	R/W	45Hz ~ 75Hz
9	AC input under-frequency alarm point	R/W	45Hz ~ 75Hz
10	Rectifier current- limit point	R/W	5% ~ 110%
11			
12	Battery status	R/W	FC/ BC/ Test
13	Rectifier switch mode	R/W	On/ Off
14	DC busbar voltage	R	
15	DC load current	R	
16	Phase voltage of each route and each AC screen	R	
17	Phase current of each route and each AC screen	R	
18	Rectifier current	R	
19	Rectifier2 temperature	R	
20	Rectifier2 voltage	R	
21	Current of each route and each DC screen	R	
22	Temperature of each measuring point and each DC screen	R	
23	Current of each battery and each DC screen	R	
24	Voltage of each battery and each DC screen	R	
25	Temperature of each battery and each DC screen	R	

#### 2) Systems with AC input

No.	Signal	Type	Setting range
1	AC screen1, route1 voltage Uab/ Ua/ Umax	R	
2	AC screen1, route1 voltage Uab/ Ua/ Umax	R	
3	AC screen1, route1 voltage Uca/ Ua	R	
4	AC screen1, route2 voltage Uab/ Ua	R	
5	AC screen1, route2 voltage Ubc/ Ub	R	
6	AC screen1, route2 voltage Uca/ Uc	R	
7	AC screen switching state	R	



8	AC screen route No.	R	
9	AC screen route1 voltage Uab/ Ua/ Umax state	R (alarm)	
10	AC screen route1 voltage Ubc/ Ub/ Umin state	R (alarm)	
11	AC screen route1 voltage Uca/ Uc state	R (alarm)	
12	AC screen route1 voltage MCB state	R (alarm)	
13	AC screen route1 voltage SPD state	R (alarm)	
14	AC screen route1 power failure alarm state	R (alarm)	
15	AC screen route2 voltage Uab/ Ua/ Umax state	R (alarm)	
16	AC screen route2 voltage Ubc/ Ub/ Umin state	R (alarm)	
17	AC screen route1 voltage Uca/ Uc state	R (alarm)	

## 3. DC screen

No.	Signal	Type	Setting range
1	DC screen1 DC voltage	R	
2	DC screen1 load current	R	
3	DC screen1 battery1 current	R	
4	DC screen1 battery2 current	R	
5	DC screen1 battery string1 voltage	R	
6	DC screen1 battery string2 voltage	R	
7	DC screen1 battery string1 actual capacity	R	
8	DC screen1 battery string2 actual capacity	R	
9	DC screen1 battery1 temperature	R	
10	DC screen1 voltage state	R (alarm)	
11	DC screen1 route1 state	R (alarm)	
12	DC screen1 route2 state	R (alarm)	
13	DC screen1 route3 state	R (alarm)	
14	DC screen1 route4 state	R (alarm)	
15	DC screen1 route5 state	R (alarm)	
16	DC screen1 route6 state	R (alarm)	
17	DC screen1 route7 state	R (alarm)	
18	DC screen1 route8 state	R (alarm)	
19	DC screen1 route9 state	R (alarm)	
20	DC screen1 route10 (non- priority route) state	R (alarm)	
21	DC screen1 battery string1 route state	R (alarm)	
22	DC screen1 battery string 2 route state	R (alarm)	
23	DC screen1 battery string 1 over- current state	R (alarm)	
24	DC screen1 battery string 2 over- current state	R (alarm)	
25	DC screen1 battery1 protected state	R (alarm)	
26	DC screen1 LLVD state	R (alarm)	
27	DC screen1 battery 1 temperature state	R (alarm)	
28	DC screen1 ambient 1 temperature state	R (alarm)	
29	DC screen1 current- unbalanced state	R (alarm)	
30	DC screen1 battery short test (abnormal) state	R (alarm)	
31	DC screen1 battery test (abnormal) state	R (alarm)	
32	DC screen1 DC- output- voltage- abnormal alarm state	R (alarm)	
33	DC SPD alarm state	R (alarm)	
34	DC screen1 digital input2 (AC input MCB) alarm state	R (alarm)	
35	DC screen1 digital input3 alarm state	R (alarm)	
36	DC screen1 digital input4 alarm state	R (alarm)	
37	DC screen1 digital input5 alarm state	R (alarm)	
38	DC screen1 digital input6 (other device failure) alarm state	R (alarm)	
39	DC screen1 digital input7 alarm state	R (alarm)	
40	DC screen1 digital input8 alarm state	R (alarm)	

## 4. Rectifier screen

No.	Signal	Type	Setting range
1	Rectifier current	R	
2	Rectifier temperature	R	
3	Rectifier current- limit point	R/W	5% ~ 121%
4	Rectifier vltage	R/W	20V ~ 60V
5	Rectifier AC voltage	R	
6	Rectifier switch state	R/W	On/ off
7	Rectifier current- limit state	R	
8	Rectifier FC/ BC/ Test state	R	
9	Rectifier AC power- limit state	R	
10	Rectifier temperature power- limit state	R	
11	Rectifier fan- adjustment state	R	
12	Rectifier walk- in state	R	
13	Rectifier over- voltage detached state	R	
14	Rectifier failure alarm state	R (alarm)	

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15	Rectifier protected alarm state	R (alarm)	
16	Rectifier fan failure alarm state	R (alarm)	
17	Rectifier over-temperature alarm state	R (alarm)	
18	Rectifier power- limited alarm state	R (alarm)	
19	Rectifier AC power failure alarm state	R (alarm)	
20	Rectifier communication state	R (alarm)	

5. Current alarm display

6. History alarm display

7. History event display

## Appendix 5 Serial Port Positions

There is a reserved serial port for the PSNA network card in every Emerson power supply system. The serial port locates at the monitoring module or the signal transfer board (for monitoring module and signal transfer board positions, please refer to power supply system user manual). The serial port positions will be introduced in the following contents.

### 1. PSM-A monitoring module

The model of power supply system with PSM-A monitoring module is PS481000-2/100. The serial port for PSNA card locates at the back board of the PSM-A monitoring module, as shown in Figure1.

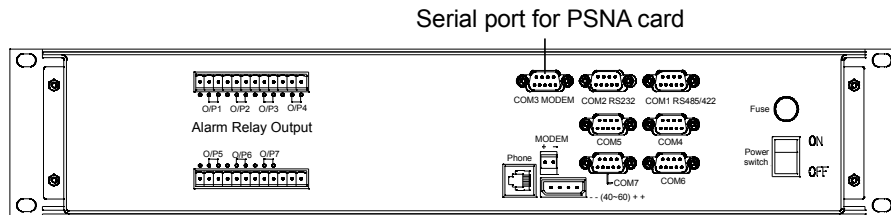


Figure 1 Serial port at PSM-A monitoring module

### 2. PSM-A10 monitoring module

The models of power supply system with PSM-A10 monitoring module are PS48600-2D/50, PS48100-2B/25, PS48300-1B/30 and so on. The serial port for PSNA card locates at the W2442X1 signal transfer board, as shown in Figure2.

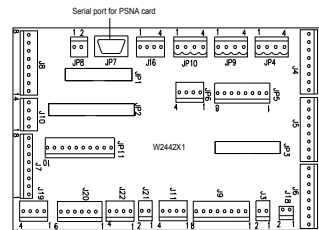


Figure 2 Serial port at W2442X1 signal transfer board

### 3. PSM-A9/A11 monitoring module

The models of power supply system with PSM- A9/A11 monitoring module are PS48600-2D/50, PS48100-2B/25, PS48300-1B/30 and so on. The serial port for PSNA card locates at the back board of the PSM- A9/A11 monitoring module, as shown in Figure3.



Figure 3 Serial port at PSM- A9/A11 monitoring module

#### 4. M500F monitoring module

The models of power supply system with M500F monitoring module are PS48600-3A/2900, PS48300-3/2900 and so on. The serial port for PSNA card locates at the W74C5X1 signal transfer board, as shown in Figure4.

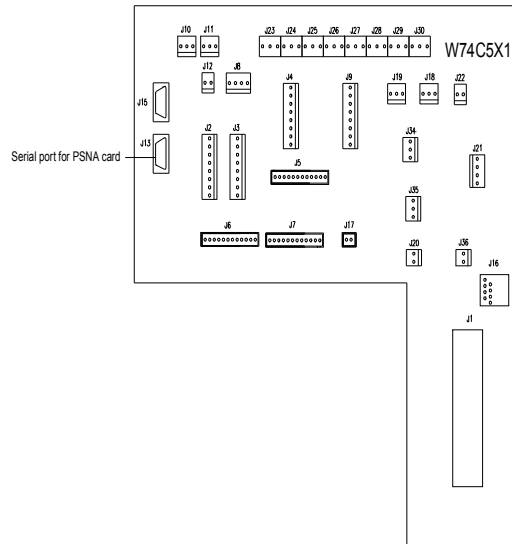


Figure 4 Serial port at W74C5X1 signal transfer board

## Appendix 6 Troubleshooting

### 6.1 Installation Q&A

1. Indicator does not light after PSNA Card installation.

Answer: The power cable is not connected correctly or the monitoring module is shutdown.

2. No PSNA Card startup information on Hyper Terminal screen during the installation.

Answer: You have to start Hyper Terminal and connect testing port of PSNA Card with RS232 cable of the computer before the start of PSNA Card, because it takes only 5 seconds to start the PSNA Card, you cannot see the start process if you start Hyper Terminal after you insert PSNA Card. If you do have start Hyper Terminal before starting the PSNA Card, but you cannot see the process, refer to question 2 in 6.2 *Running Q&A*.

3. Can I finish the PSNA Card installation without computer at hand to run Hyper Terminal?

Answer: No, if you don't know the IP address. If it is a new card (the default address is 100.100.100.100), or you know IP address of PSNA Card, you may follow the steps below to configure your card through Telnet mode.

1) Connect the PSNA Card to the computer network;

2) Modify the network parameters of a computer located in the same intranet (in the same HUB or Switch is better) with the PSNA Card, to get them in the same network section. Suppose the PSNA Card IP address is: 100.100.100.100, subnet mask: 255.255.255.0, gateway: 0.0.0.0, then the computer IP address may be: 100.100.100.101, subnet mask: 255.255.255.0, gateway: 0.0.0.0.

3) Restart the computer, visit the PSNA Card in Telnet mode, login as admin and its password (default password for the new card admin: 123).

4) After login, set the PSNA Card network parameters. The Card will be restarted automatically. You may visit the PSNA Card using new IP address later on.

5) Resume the network parameter of the computer.

### 6.2 Running Q&A

1. PSNA Card Green light blink but yellow light turns off?

Answer: The Card has not connected to the network, please connect it to the network. After building up network connection, when the Card receiving data from the network, the yellow light will blink, if no data transmitting, the yellow light will keep turning on.

2. The PSNA Card is running, but when starting Hyper Terminal to prepare setting PSNA Card parameters, no login information on the screen?

Answer: Press ENTER key, if still no login information, please verify that the Card is running (green light turning on) and check the following:

1) PSNA Card has connected to the computer using RS232 cable;

2) Whether the serial port set in Hyper Terminal is the same with the one connected to the PSNA Card;

3) Whether the serial port set in Hyper Terminal is consistent with what the specifications required.

4) Whether Hyper Terminal and serial port are in communication state.

3. What shall I do if I lose admin password?

Answer: If you have set another web user with administrator authority, you may login the PSNA Card using this account through Web browser and then change admin password. Otherwise, you have to contact your supplier.

4. Why can some computers visit the Card but some cannot, but these computers can visit each other?

Answer: Incorrect PSNA Card gateway setting. If the default gateway is 0.0.0.0, the PSNA Card can be visited only by the computers in the same network segment. Please reset the gateway according to your computer.

Even though the gateway is set correctly, if firewall is installed in your network, you will also meet with the above problem. If so, contact your network administrator.

## 6.3 Web Monitoring Q&A

1. When I enter the IP address of the computer that has connected to PSNA Card, I am prompted "cannot find server".

Answer: suppose the IP address is correct, check the following:

- 1) The Card is not started: check whether PSNA Card is shutdown or the utility fails. If so, try later.
- 2) Network disconnected: using "PING" command to check whether your computer can connect to the PSNA Card. Refer to your OS manual for PING command usage. If you cannot PING successfully, check whether the PSNA Card address is modified or wrong.

2. What if I forget my user password?

Answer: ask the PSNA Card administrator to give you a new password.

3. Why does the system prompt "connection timeout" while the browser is visiting the PSNA Card?

Answer: Too many network users (including Web users, PowerStar and NMS). The PSNA Card can respond only eight Web users and four inquiring NMS concurrently. Please close or stop some Web browser, PowerStar or NMS and try again.

4. The displayed power state in my Web browser and the PSNA Card configuration seems inconsistent with the actual conditions.

Answer: It might be caused by:

- 1) Your computer time is wrong;
- 2) The PSNA Card time is wrong;
- 3) The Cache of your Web browser is configured incorrectly;
- 4) History webpage time problem.

Solution: Set the PSNA Card time and your computer time correctly. Check your browser Cache settings; clear all history recording of WebPages on your computer.

5. Sometimes, the browser prompt webpage error and cannot continue. Sometimes it is normal.

Answer: This problem occurs when the browser is downloading the homepage when you click other link on the homepage. The download process is thus interrupted. Please wait until power status signal appears on the homepage, and then click other menu.

6. I have entered correct user name and password and there is no error message, but the monitoring webpage doesn't come next.

Answer: The homepage is programmed by JavaScript.

- 1) If you have installed some anti-virus firewall, the software cannot identify normal and webpage that contains virus, so the homepage is not displayed. Please configure or close the firewall software;
- 2) Check whether the Web browser is configured not to use JavaScript, if so, change the setting.

## 6.4 NMS Monitoring Q&A

1. Why timeout error often occurs when NMS is visiting power SNMP agent?

Answer: Three reasons are for this question.

- 1) The NMS does not exist in NMS table of the PSNA Card. Ask the PSNA Card administrator to add it;
- 2) Community string error. NMS will receive AUTH-FAILURE TRAP at this time. Attention: the community string used in sending request must be the same with that set in NMS table, namely, public community string for Get request and private community string for SET request.
- 3) Network error. Check network connection.

2. When NMS attempts to modify Power agent parameters, "genErr" replied. Why?

Answer: "genErr" occurs when:

- 1) This NMS is lack of power control authority.
- 2) Agent sending power control command failure. The agent does not send NMS request to the power successfully. Please check whether the parameters sent by the NMS are correct, and whether power communication failure alarm (TRAP) is received.
3. I just cannot add a new NMS to the NMS table by NMS.

Answer: Only system administrator can add/delete/modify NMS. Besides, you must submit all writable properties of the NMS table when you do the above operation.

## 6.5 PowerStar Monitoring Q&A

1. How can PowerStar manage power through the PSNA Card?

Answer: (1) Adding the computer IP address that runs PowerStar to the PSNA Card through "PowerStar Center configuration" screen on Web browser and set the corresponding authority;

2) Through PowerStar configuration tools, add the PSNA Card IP address to the configuration files of PowerStar software;

3) Restart PowerStar, then you can manage power through it.

2. Why PowerStar that running proper before can not monitoring the power through PSNA Card:

Answer: 1) Upgrade PowerStar to Ver 6.52(Network version) and setup port parameters correctly according to the manual (distinguishing network or series port).

2) IP address of operating computer is added into the PowerStar Center list through webpage by administrator and setup corresponding authority.

3. Why PowerStar can just query power state and can not setup and control the power through PSNA Card.

Answer: Your authority is not high enough. If you want to setup and control the power please contact the administrator.