

## PSSNMPv4 Network card User manual



DESIGNED BY AUSTRALIANS FOR AUSTRALIAN CONDITIONS



POWER PROTECTION SOLUTIONS

[www.powershield.com.au](http://www.powershield.com.au)

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# 1. Overview

## 1.1 Introduction

This PSSNMPv4 SNMP web pro card enables real-time monitoring and managing of multiple UPSs in networked environments (LAN and Internet).

The PSSNMPv4 Web Pro card prevents potential data loss from power outages by safely shutting down specific or multiple systems and stores UPS tasking schedules, and all UPS warnings and fault event records. The card can safely shutdown Operating Systems with Shutdown Wizard installed, or SSH Client supported Operating Systems without Shutdown Wizard.

SNMP MultiView software facilitates the simultaneous monitoring and remote access of all UPS devices with the PSSNMPv4 SNMP web pro card. For detailed operations, please check the SNMP MultiView user manual.

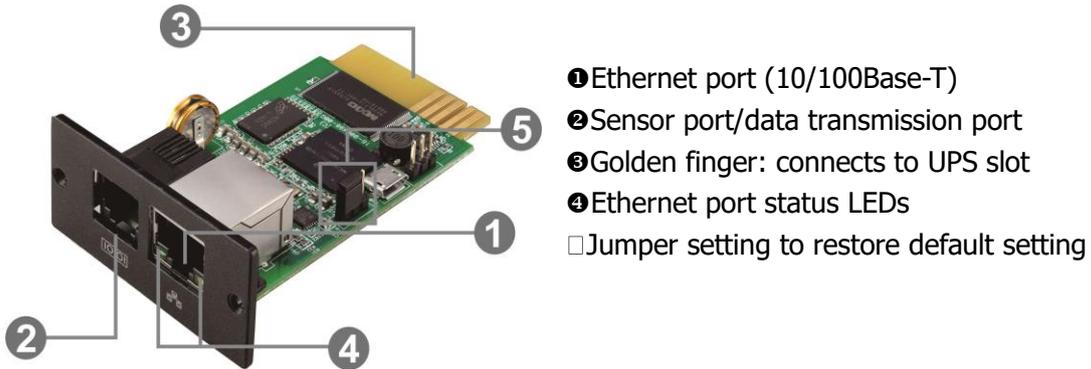
The PSSNMPv4 Management Information Base (MIB) file is freely available for third party, SCADA, software monitoring systems.

The card can also record ambient temperature and humidity by connecting via its sensor port to an optional Environmental Monitoring Device (EMD).

## 1.2 Features

- Open monitoring via Web Browser.
- PSSNMPv4 MIB file freely available from the PowerShield web site to monitor UPS status for third party SCADA monitoring software.
- Automatically detects and exchange 10M/100M Fast Ethernet.
- Supports wake-on-LAN function.
- Supported protocols: TCP/IP, UDP, SNMP V1/V2C/V3, SMTP, SNTP, HTTP, HTTPS, SSL, SSH, IPV4/IPV6, DHCP, AES-128 CBC data encryption.
- Operating Systems are shut down by PSSNMPv4 with Shutdown Wizard, or by PSSNMPv4 alone in SSH Client supported Operating Systems.
- 128MB flash memory with 32MB data and 32MB event logs. More than 200,000 threads each, including UPS warnings, faults and EMD warnings, operation data logs from web users or SNMP MultiView users. All data stored safely without loss even when power failure occurs.
- Supports daily reports for event log and data log.
- Scheduled UPS on/off and battery test.
- Supports EMD monitoring and sending emails or SMS.
- Equipped with real-time clock to record log with time and date and will continue running up to 7 days without power connected.

### 1.3 OverView



PSSNMPv4 card Ethernet port status LEDs:

100M LED (Green)	On	Port is operating at 100Mbit/s
	Off	Current web bandwidth is 10Mbit/s
Link status LED (Yellow)	Flash	Link Active
	Off	Card is not connected to the network

The SNMP card is supplied with server assigned DHCP address settings. The user can choose to apply a static IP address or server assigned IP address using a Web browser via the web server interface of the SNMP card or, as an alternative, using the SNMP Web Manager software.

**Note:** As a final option, users can reset/restore the IP settings and Password.

**To reset and restore the default static IP address and Password:**

Please use the following Table for the Jumper Pins to activate the default settings.

Pin assignment for Jumper:

Pin #	Status	Description
Pin 1 & Pin 2	Closed	Normal operation
Pin 2 & Pin 3	Closed	After re-connecting utility, the IP address of SNMP web card and password will restore to default setting. Default static IP address: (192.168.102.230) Default password: 12345678

**NOTE: The reset & restore process should only be used as a rollback and recovery option to reset the card to the factory default settings.**

After the Password and IP setting have been reset/restored to default, be sure to change the jumper setting back to connect Pin 1 and Pin 2 for normal operation.

## 1.4 Installation and Connection

### **Installation**

Follow the procedure below to install and connect the PSSNMPv4 card:

**Step 1:** Remove the cover of the intelligent slot on the back panel of the UPS and retain the screws

**Step 2:** Slide the card into the open slot and secure with the screws from step 1. (see chart 1-1)

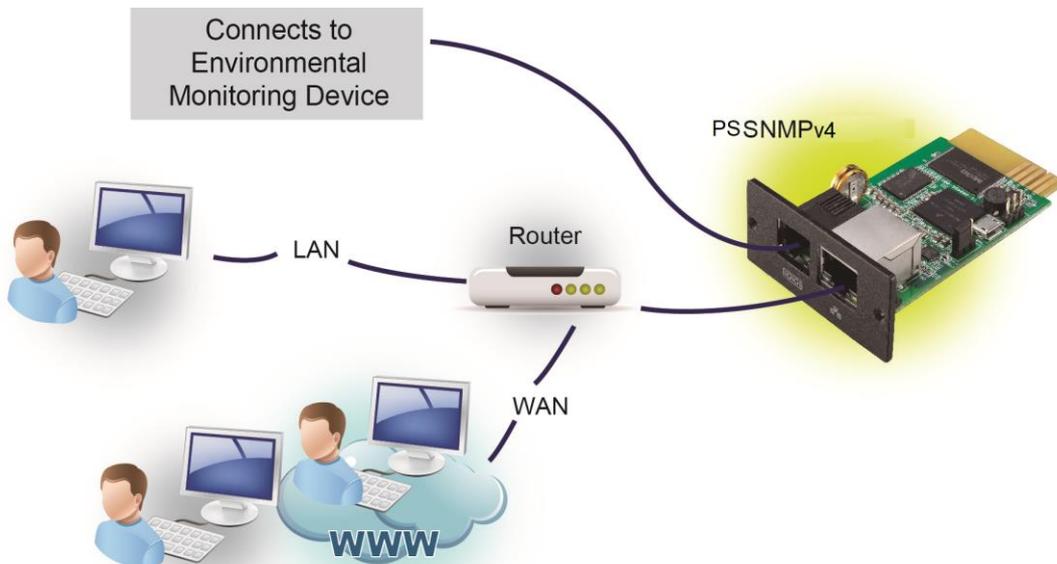


**Chart 1-1**

Refer to chart 1-2 for connecting the PSSNMPv4 SNMP web pro card.

**Step 3:** Connect the Ethernet cable to the Ethernet port (RJ-45) on the SNMP card.

**Step 4:** Sensor Port. Connect a second cable to the sensor port on the SNMP card and the other end to the optional environmental monitoring device (EMD).



**Chart 1-2**

## 1.5 Configuration

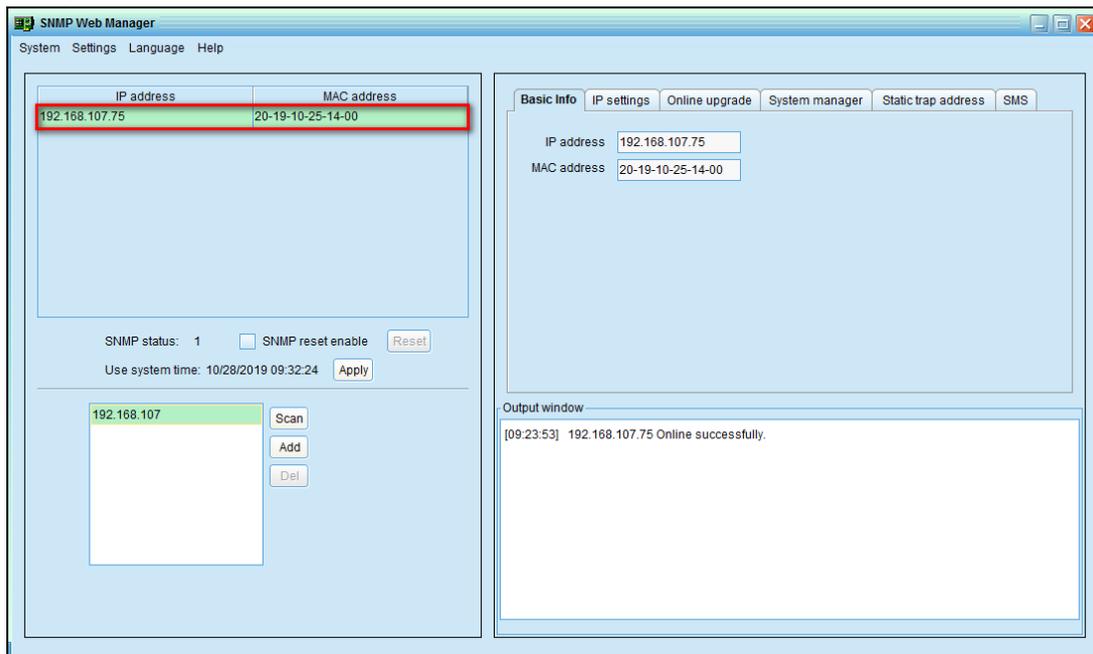
- a) Please download and install SNMP web manager from [www.powershield.com.au/download-2/](http://www.powershield.com.au/download-2/)
- b) The Installer will leave a shortcut icon on your desktop. Double click on the icon



**Chart 1-4**

- c) Press Scan IP address to search all SNMP devices in the LAN. If DHCP service is not available, the SNMP web manager defaults to static IP address 192.168.102.230, default subnet mask 255.255.255.0, and default gateway 192.168.102.254. Users can modify the IP address or apply DHCP mode using a web browser through the web server of the SNMP card or, alternatively, using SNMP Web Manager. See SNMP Web Manager User Manual, 4.3 Settings IP.

d)



**Chart 1-5**

- e) Users can modify the IP settings, online upgrade, password management, and static trap address setting in SNMP Web Manager interface. It is necessary to enter the password for any modifications. The default password is 12345678.

Please consult the SNMP Web Manager User Manual for more detailed configuration settings.

## 1.6 Monitoring

Available options for monitoring the PSSNMPv4 card:

- a) **Browser:** Double click the selected device from the device list (refer to Chart 1-5) to open web page as shown in Chart 1-6 a.  
Or simply enter https address (http://192.168.107.75) in a web browser to access the web server directly. Refer to Chart 1-6 b.

The screenshot shows the SNMP Web Pro 1.1 web interface. The browser address bar displays 'http://192.168.107.75/'. The interface includes a navigation menu on the left and a main content area with several data tables.

UPS information		
UPS mode:	Line Mode	UPS temp.: 28.7 °C
Auto reboot:	enabled	Converter mode: disabled
ECO Mode:	disabled	Bypass when UPS is off: disabled
Bypass not allowed:	disabled	Fault type:
UPS warning:		

Input information	
Input voltage:	221.7 V
Input frequency:	50.0 Hz

Output information	
Output voltage:	229.6 V
Output frequency:	50.0 Hz
Output current:	0.0 A
Load level:	0 %

Battery information	
Battery voltage:	39.5 V
Remaining backup time:	374 Min
Battery capacity:	100 %

EMD information	
EMD temp.:	--- °C
Humidity:	--- %
Alarm1:	-
Alarm2:	-

Chart 1-6 a

This screenshot is identical to Chart 1-6 a, but the browser address bar 'http://192.168.107.75/' is highlighted with a red rectangle to illustrate the direct access method.

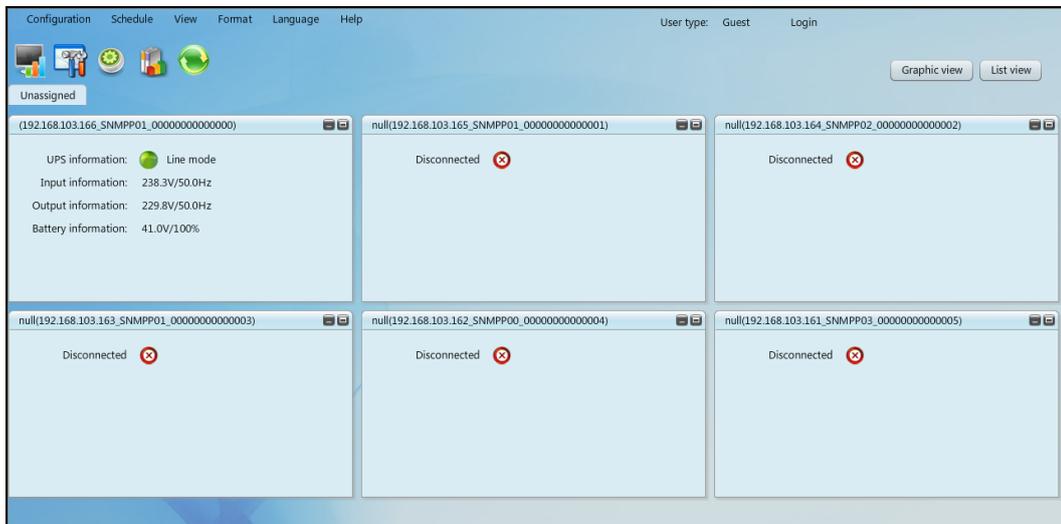
Chart 1-6 b

## Monitoring

To monitor multiple PSSNMPv4 cards simultaneously using SNMP Multiview

- b) **Installed SNMP MultiView** software to monitor multiple SNMP web pro cards. Refer to Chart 1-7.

Please check SNMP MultiView User Manual for detailed monitoring.



**Chart 1-7**

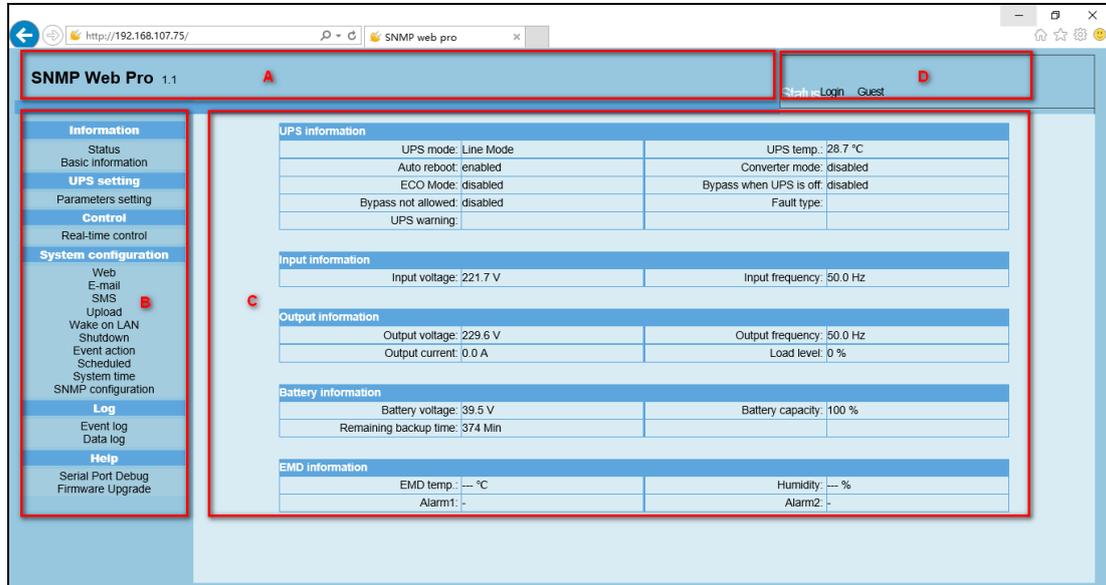
- c) **Management Information Base (MIB)** file

The PSSNMPv4 MIB file is freely available and downloadable from the PowerShield web site. The PSSNMPv4 Management Information Base (MIB) file facilitates real time monitoring of the UPS status for third party monitoring software Supervisory Control and Data Acquisition (SCADA) systems.

**SCADA** systems are used to monitor and control a plant or equipment in industries such as telecommunications, water and waste control, energy, oil and gas refining and transportation.

## 2. SNMP web pro GUI

The SNMP web pro Graphic User Interface (GUI) includes a function menu, login section and main screen. Refer to Chart 2-1:



**Chart 2-1**

A .SNMP web pro GUI version

B .Function Menu

The Function menu facilitates navigation and Menu settings.

C .Main Screen

The Main Screen will display information and or control alternatives according to the function menu selected.

D. Login section

The Login section shows the user type for the current login user. The default password for administrator is "12345678".

# 3. Function Menu

## 3.1 Information

### 3.1.1. Status

Select Information >> Status. Refer to Chart 3-1. The Status menu displays real-time monitored UPS data including input, output, UPS, battery information and environmental information in table format.

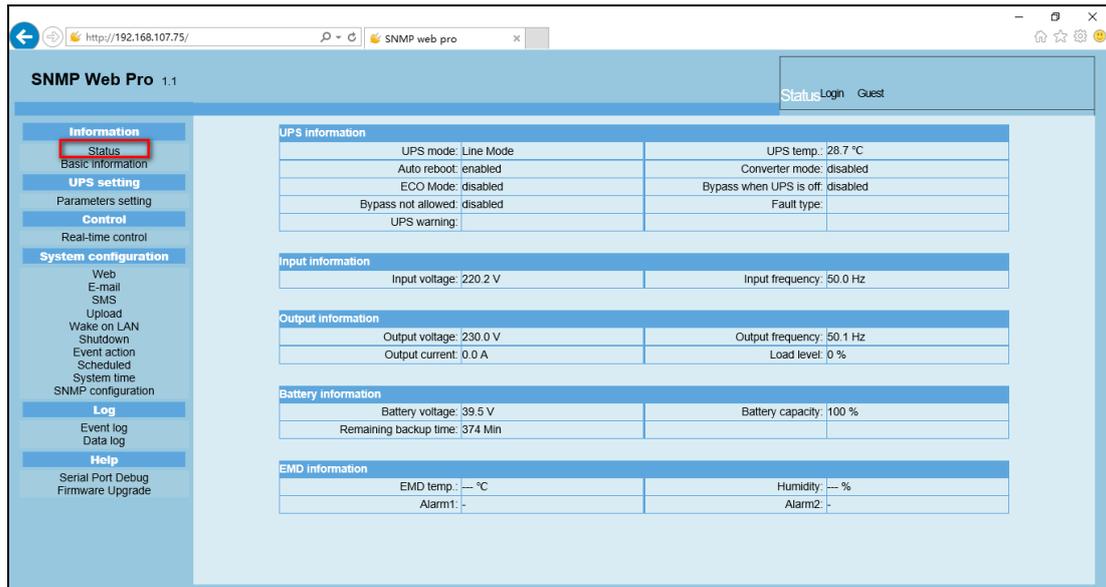


Chart 3-1

### 3.1.2. Basic information

Select Information>>Basic information. It includes UPS basic information, battery information and UPS rated information. Refer to Chart 3-2.

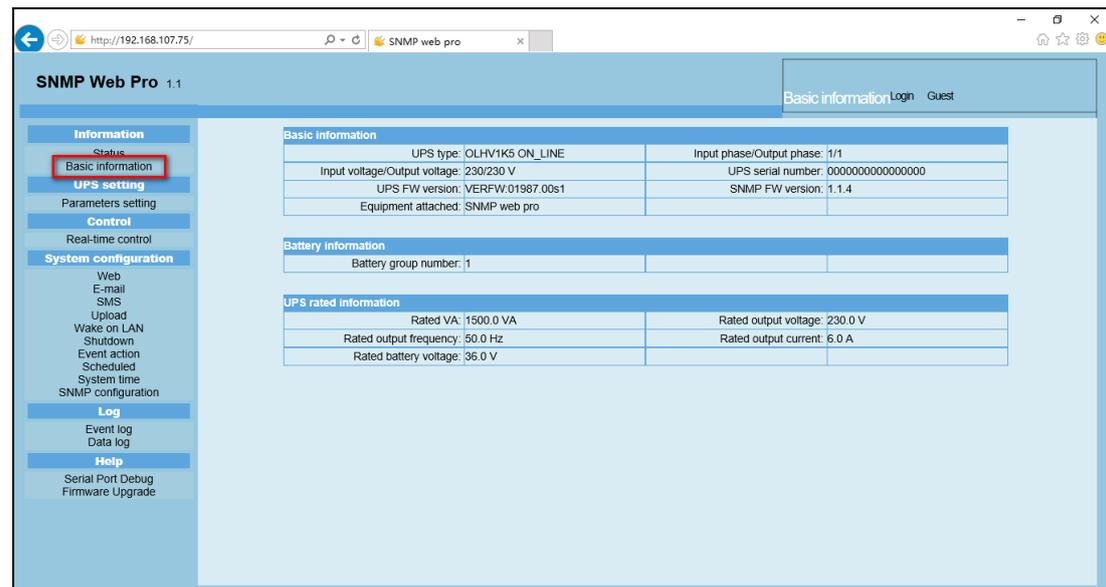


Chart 3-2

## 3.2 UPS setting

### 3.2.1 Parameters setting

Depending on the UPS model, some UPS functions can be set and changed via software. Parameter setting includes backup time setting for programmable outlet (P1), battery number setting, voltage and frequency range setting for bypass mode and voltage range setting for ECO mode. Select UPS setting >> Parameters setting. Refer to Chart 3-4.

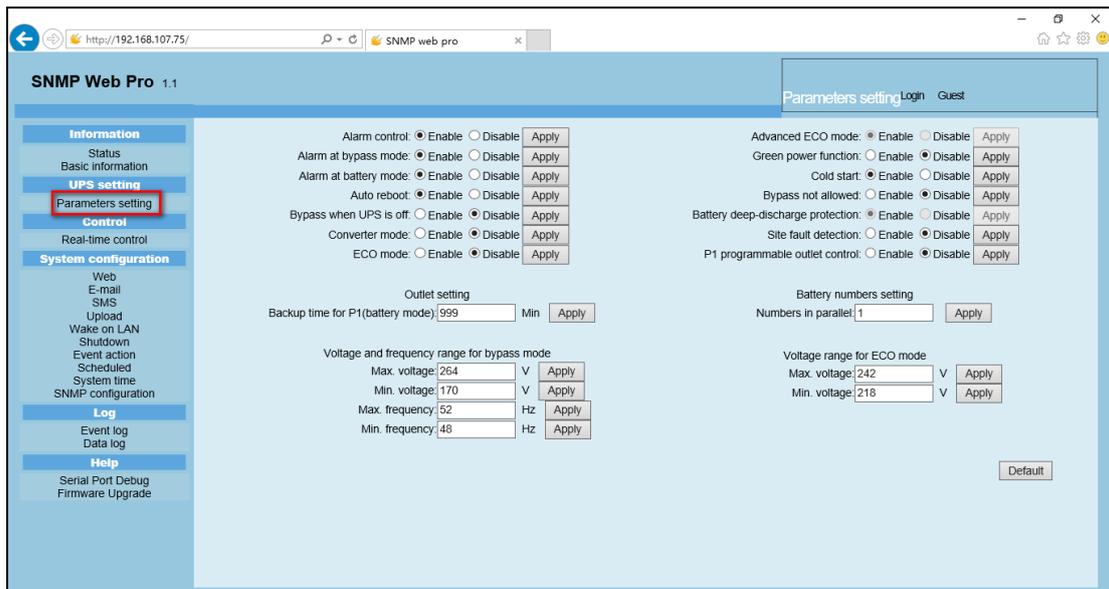


Chart 3-4

**Note:** Different UPSs may access different parameter setting.

1. Select the functions by clicking "Enable" or "Disable" button. Change the numbers by clicking up-down arrows or modify the numbers directly in the number column.
2. Click "Apply" button to save the settings. Each function setting is saved by clicking "Apply" button in each section.
3. Click "Default" button to recover the default setting.

**Note:** Any functions which are not supported by a UPS will not be accessible.

**External Battery banks** can be accommodated using the Battery Numbers Setting parameter, Numbers in Parallel. Each battery bank has 2 battery strings in parallel. Simply increase the default Number in Parallel from "1" to twice the number of Battery Banks plus "1".

Example1: 1 battery bank + UPS internal batteries

$$\text{Numbers in Parallel} = 2 \times 1 + 1 = 3$$

Example2: 2 battery banks + UPS internal batteries

$$\text{Numbers in Parallel} = 2 \times 2 + 1 = 5$$

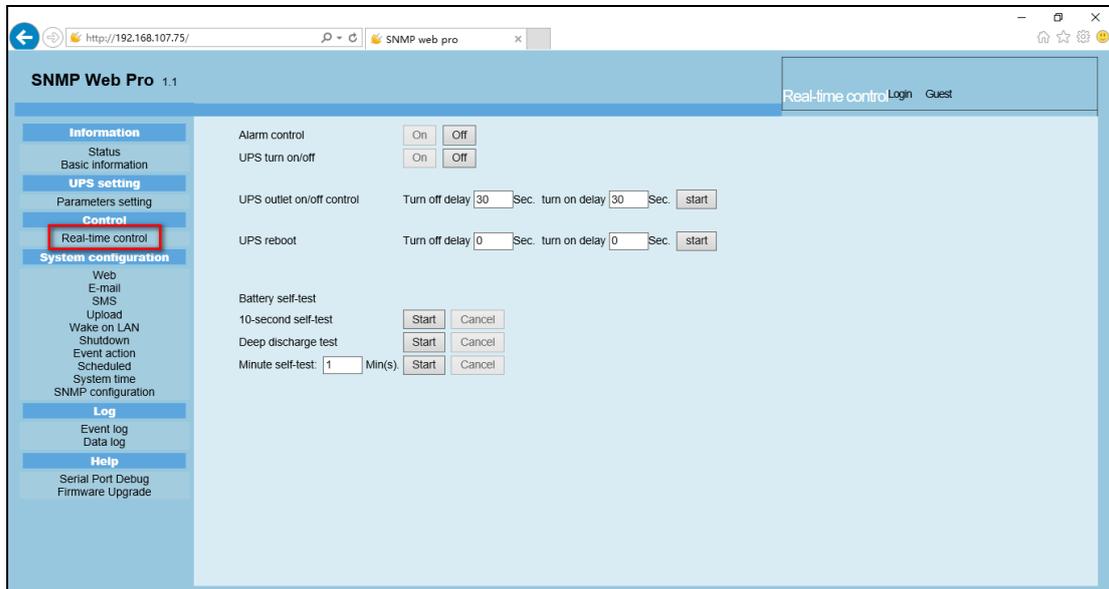
## UPS Parameter Settings

- Alarm Control: If enabled, UPS alarm will be activated. Vice versa.
- Alarm at bypass mode: If enabled, UPS alarms when operating in bypass mode. Vice versa.
- Alarm at battery mode: If disabled, UPS will not alarm when operating in battery mode. Vice versa.
- Auto reboot: If enabled, UPS will auto recover when AC is recovering. Vice versa.
- Bypass when UPS is off: If enabled, AC will directly provide power to connected devices when UPS is off. Vice versa.
- Converter mode: If enabled, the UPS will operate in converter mode. Vice versa.
- ECO mode: If enabled, the UPS will operate in ECO mode when input voltage is within acceptable range. Vice versa.
- Battery open status check: If enabled, the monitored UPS will check if the battery connection is ok or not when UPS is turned on.
- Cold start: If disabled, the UPS can be turned on only when AC is normally connected to UPS. Vice versa.
- Bypass not allowed: If enabled, the UPS will not transfer to bypass mode under any conditions. If disabled, the UPS will be allowed to transfer to bypass mode according to UPS internal setting.
- Battery deep-discharge protection: If enabled, the monitored UPS shuts down in accordance with the condition of battery and load on battery mode to protect battery. Vice versa.
- Site fault detection: If enabled, the monitored UPS will beep when the input neutral and hot wires are reversed. Vice versa.
- P1 Programmable outlet control (battery mode): If enabled, when UPS is running in battery mode, P1 outlets will cut off after backup setting time expires. If disabled, UPS will provide continuous power to P1 outlets until the battery is completely discharged.
- Outlet setting: Users can set limited backup time for P1 outlets when UPS is in battery mode.
- Battery numbers setting: Set battery numbers in parallel.
- Voltage and frequency range for bypass mode: Set acceptable voltage and frequency range in bypass mode
  - ✧ Maximum and minimum voltage: When UPS is on bypass mode and input voltage is out of setting range, UPS will enter battery mode.
  - ✧ Maximum and minimum frequency: When UPS is on bypass mode and input frequency is out of setting range, UPS will enter battery mode.
- Voltage range for ECO mode: Set acceptable voltage range for ECO mode.

## 3.3 Control

### 3.3.1. Real-time control

Select Control >> Real-time control. Refer to Chart 3-5.



**Chart 3-5**

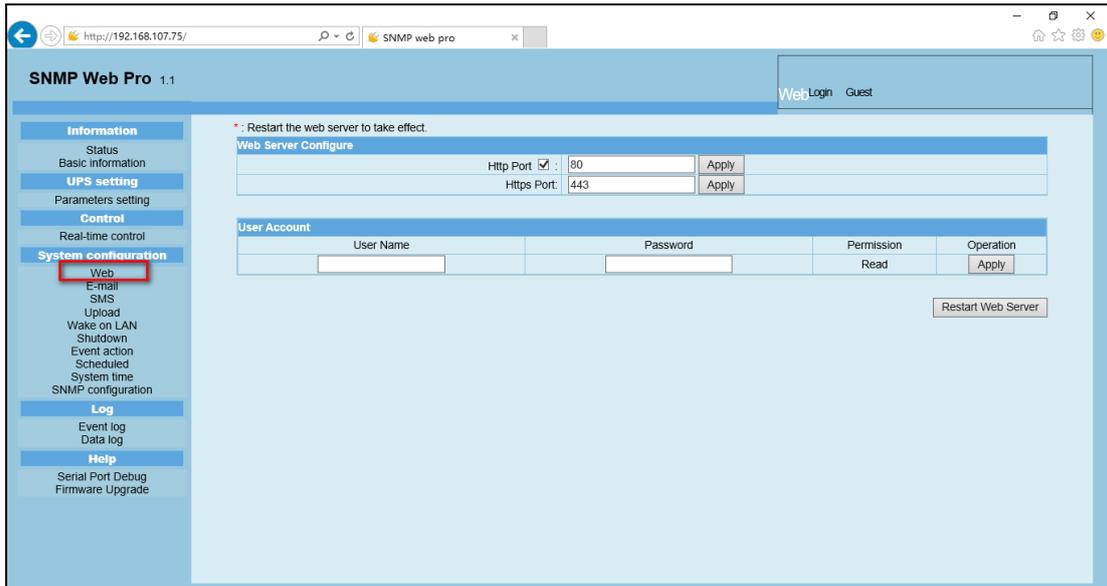
This menu facilitates real-time user control of the UPS by executing the following operations:

- UPS turn On/Off: Click "On" to turn on the UPS and "Off" to turn off the UPS immediately.
- Battery Self-Test: Offers three types of battery self-test: 10-second self-test, deep discharge test, and user-defined self-test. Simply click the "Start" button for each type to execute the desired self-test immediately.

## 3.4. System configuration

### 3.4.1. Web user

The System configuration Menu configures the user authority to access the PSSNMPv4 SNMP web pro card. Please enter access ID and password in each column. There is no limitation to access control in the default setting. Options are available for http and https port modification. The default port setting is 80 for http and 443 for https. If any changes are desired for adding web users, deleting web users or port re-configuration, it is necessary to click "Restart Web Server" button to restart web server to activate all modifications. Refer to Chart 3-6.

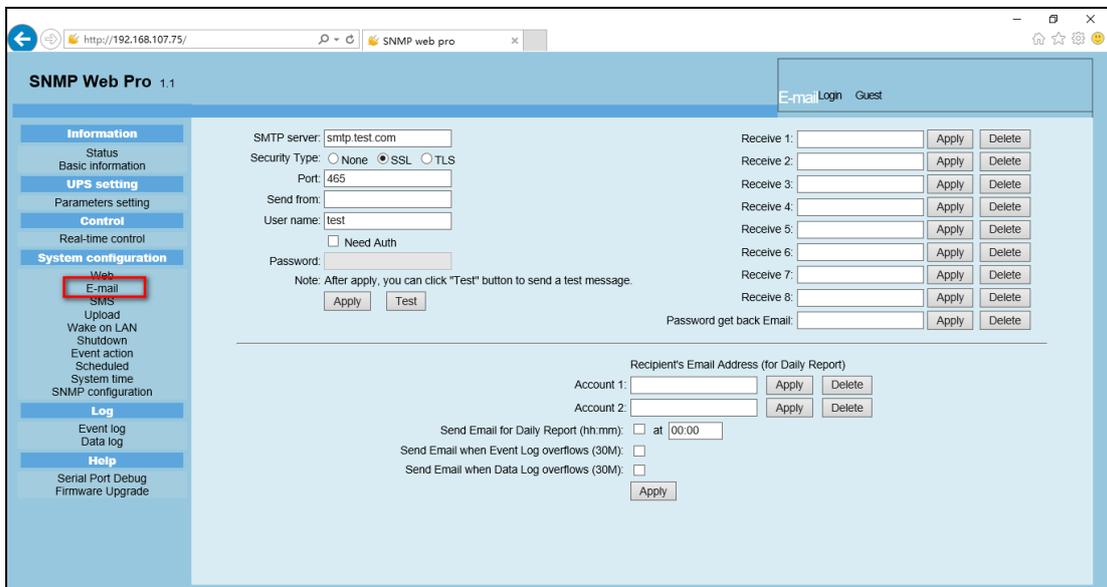


**Chart 3-6**

### 3.4.2. E-mail

Email event alarms can be sent by SMTP server protocol. To use this function, the e-mail service must be correctly configured. All values in this function page are by default empty. This action cannot be executed without the SMTP information, e-mail account and password. Note: the sender account should be configured for SMTP/POP3 forwarding.

Select System Configuration >> E-mail. Refer to Chart 3-7



**Chart 3-7**

## E-mail Settings

1. Enter the SMTP server, security type (supported encryption from SMTP server), SMTP port, sender's E-mail address, username and password. Click checkbox of "Need Auth" for password verify.
2. Enter the correct e-mail accounts in Receive list. Then, click "Apply" to add into receivers list. Click "Delete" button to delete e-mail account.
3. Click "Apply" to save the changes. The "Test" button can be used to send a test e-mail to all receivers to confirm correct operation. When the test e-mails are successfully sent to specific recipients, a pop-up window will display a successful message on the operated PC. Otherwise, the pop-up window will display a failure dialog to indicate there is an error for the email parameter setting.
4. User option exists to include who will receive daily report e-mails at specific durations. Please enter recipient's Email Address and timer into columns, and then click "Apply" button to save this action. A further option exists to configure who will receive alarm e-mails when the event log exceeds 100 or data log exceeds 50 records. Please click checkbox of selections.

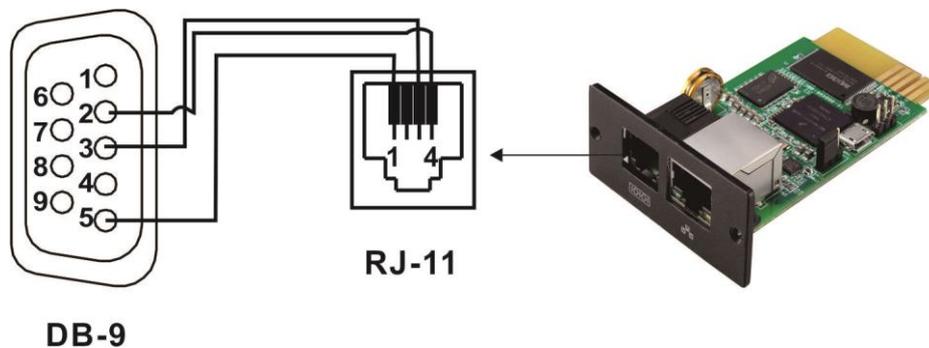
### 3.4.3. SMS

- Sending SMS By Server

It is necessary to have service software available such as SNMP Web Manager. In the event of an alarm condition occurring, a message about UPS status will be sent to the specified users via mobile phone. Please refer to Chart 3-8 b. The SNMP card will send the message to the PC that has SNMP web manager installed. That PC then sends the SMS.

- Sending SMS By Serial Port

The EMD port can be used for data transmission to send an SMS without any service software. Please configure Baud rate of GSM Modem at 9600 and then connect data transmission port (□) of PSSNMPv4 SNMP web port card to GSM Modem with a RJ11 to DB9 cable. Please refer to Chart 3-8 a for detailed wiring.



**Chart 3-8 a**

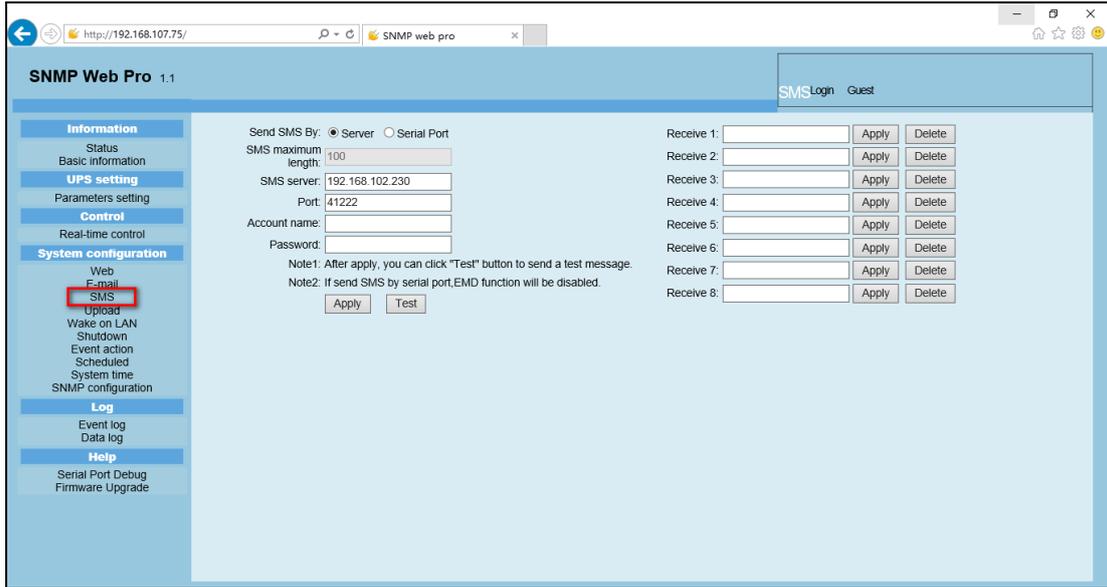


Chart 3-8 b

### 3.4.4. Wake on LAN

This function is to remotely wake on specific PCs in LAN when these PCs are supported to Wake-on-LAN (WOL) via a magic packet.

Select System Configuration >> Wake on LAN. Refer to Chart 3-9 a and Chart 3-9 b.

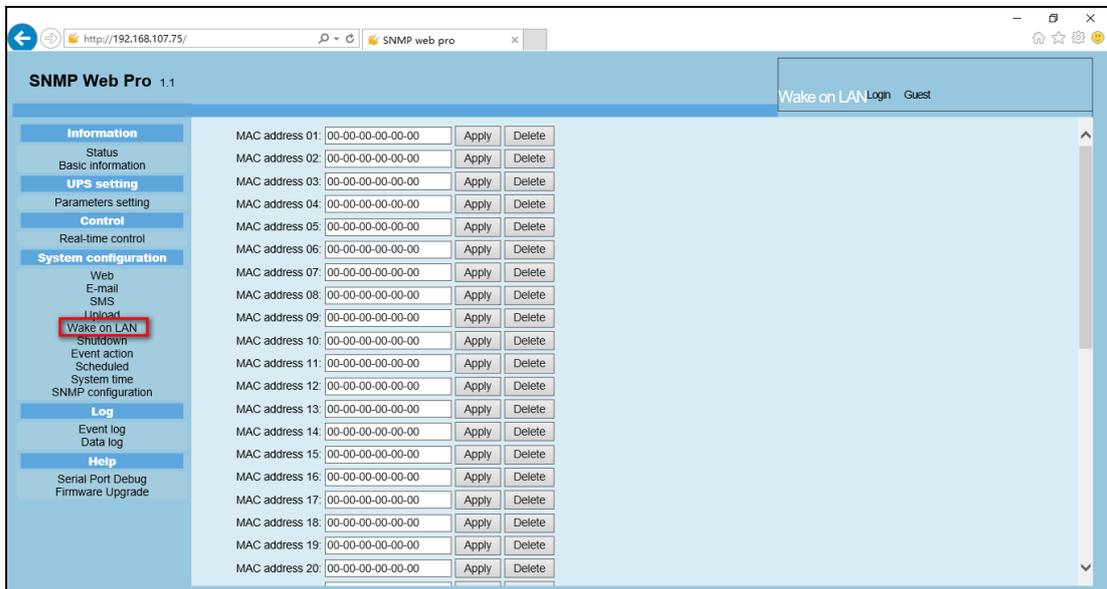
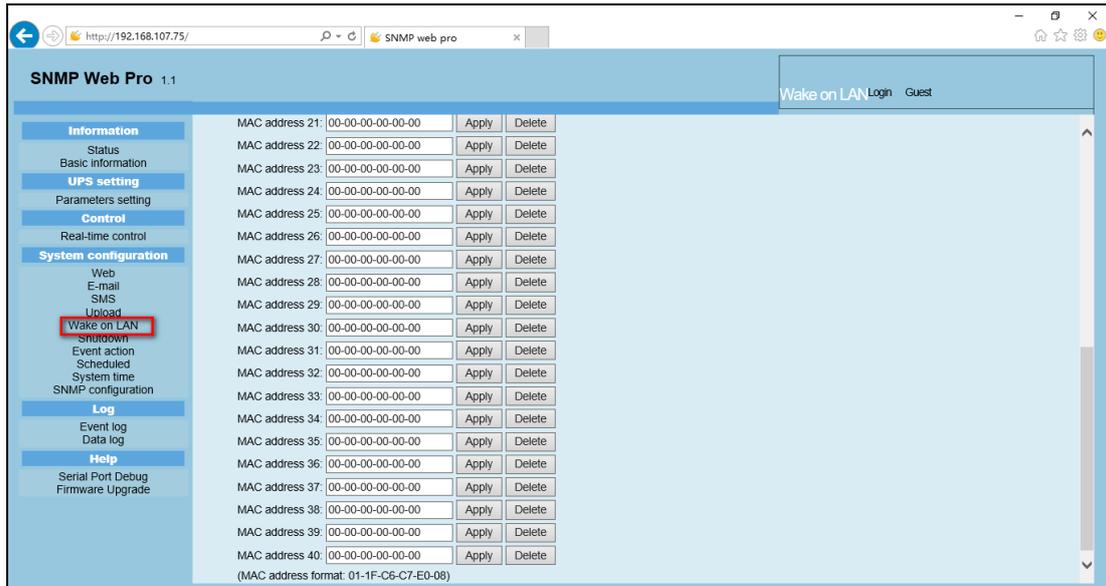


Chart 3-9 a



**Chart 3-9 b**

After the MAC addresses of the remote PCs are entered in the address column, it will allow for the remote control of the selected PCs. However, it is also required to have hardware support for those remote PCs selected to implement this function.

3.4.5. Shutdown in conjunction with the use of Shutdown Wizard.  
 This mode is used to remotely shut down specific IPs of remote operating systems with Shutdown Wizard installed (Windows, Mac). Please tick AES encryption corresponding to those IPs and untick SSH shutdown and ignore the remaining fields of Username, Password and Command (as they are not used in this mode). Please also check the user manual of Shutdown Wizard for details.

Direct SSH Shutdown without the use of Shutdown Wizard.

If you wish to use SSH shutdown commands for specific IPs of remote operating systems (Linux, VMware) that support SSH shutdown, please untick AES encryption and tick SSH shutdown and enter the desired Username, Password and Command corresponding to those IPs. Alternatively, you can select a script file to be uploaded to the PSSNMPv4, SNMP Web Pro, if you want to execute it by SSH.

Select System Configuration >> Shutdown. Refer to Chart 3-10.

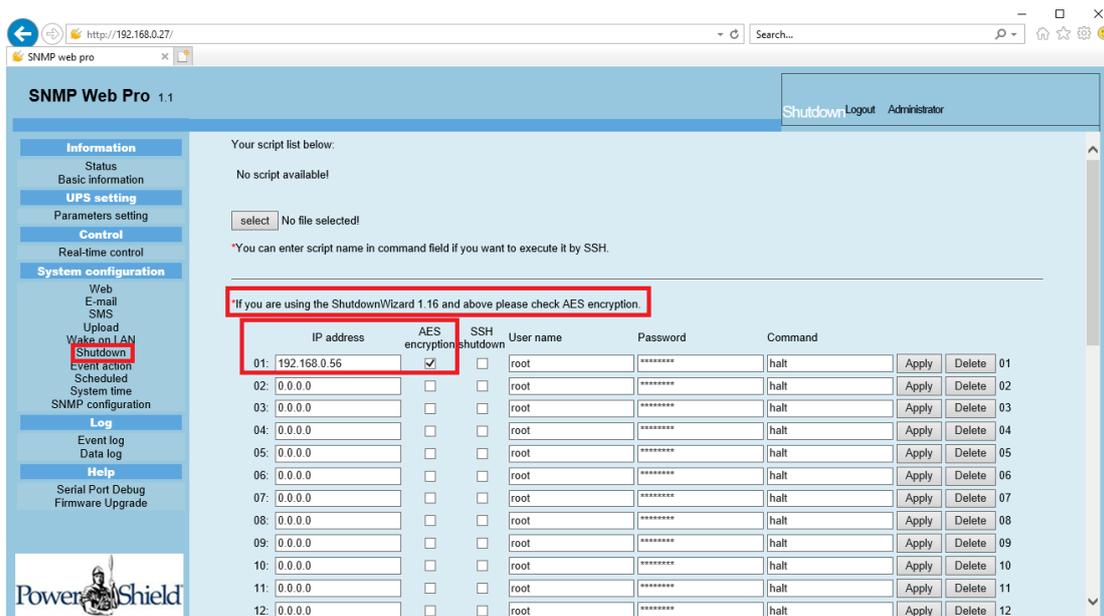


Chart 3-10

### 3.4.6. Event action

This function is only available when integrated with Shutdown Wizard. Please also check user manual of Shutdown Wizard for the details.

Select System Configuration >> Event action. Refer to Chart 3-11.

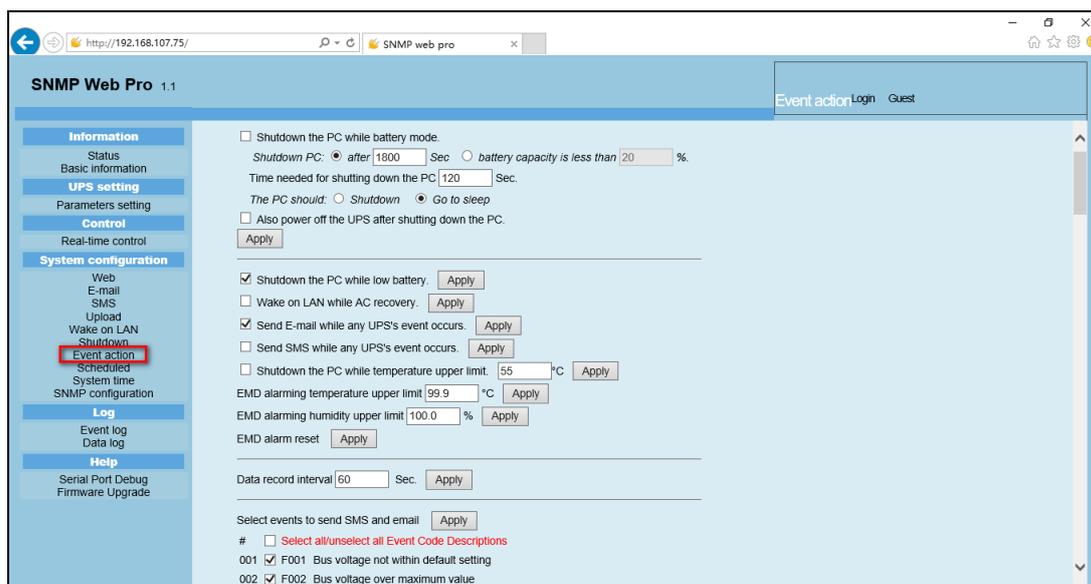
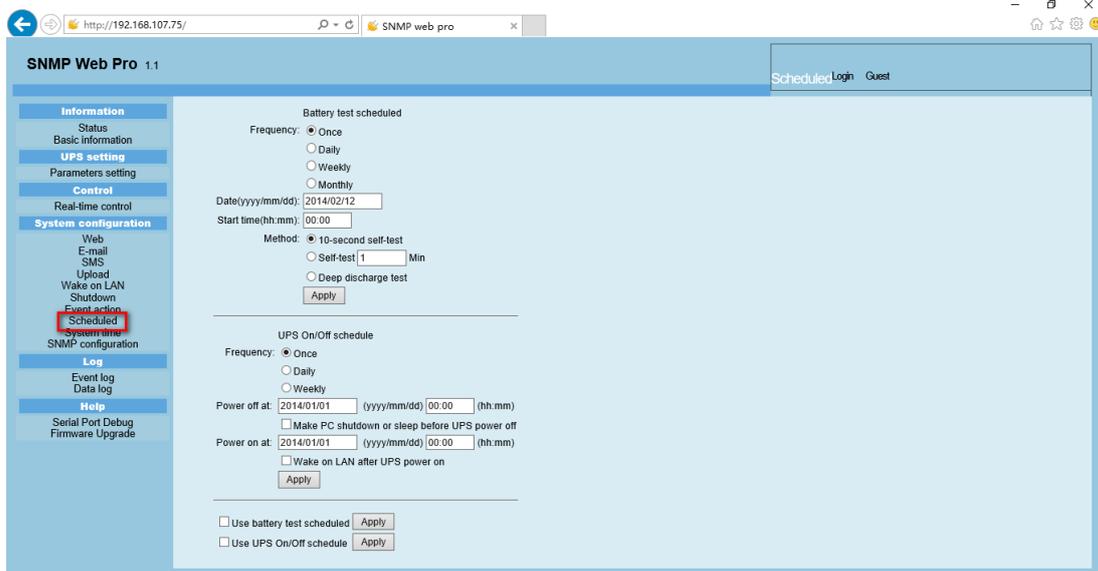


Chart 3-11

- Shutdown the PC while battery mode: When selected, and integrated with Shutdown Wizard, local PC will shut down while UPS works on battery mode.
- Time needed for shutting down the PC: Enter the delay time to shut down the operating system.
- The PC should:
  1. Shutdown: When clicking the checkbox, the selected system will shut down. The default setting is clicked.
  2. Sleep mode: When clicking the checkbox, selected system will suspend the system instead of a normal shutdown. Please note this function is only supported by Windows 2000 or higher on supported hardware.
- Also power off the UPS after shutting down the PC: When the checkbox is clicked, the monitored UPS will turn off after local system shuts down. The UPS shutdown time will be later than system complete shutdown time. Users can choose to shut down the system without shutting down the UPS.
- Shutdown UPS output after xx sec: It will cut off UPS output after monitored UPS works on battery mode for xx sec.
- Shutdown the PC while low battery: When clicking this checkbox, local PC will shut down when monitored UPS battery is running low.
- Wake on LAN while AC recovery: When clicking this checkbox, the local PC will be wake on LAN while AC recovery.
- Send E-mail while any UPS event occurs: When clicking this checkbox, it will send alarm E-mail when any event occurs on the local UPS.
- Send SMS while any UPS event occurs: When clicking this checkbox, in the event of an alarm condition occurring, a message about UPS status will be sent to the specified users via mobile phone.
- EMD alarming temperature upper limit: Set up alarm for high temperature point. If detected temperature is beyond setting value, it will send alarm message.
- EMD alarming humidity upper limit: Set up alarm for high humidity point. If detected humidity is beyond setting value, it will send alarm message.
- Data record interval xx sec: Data log records the data per xx sec.

### 3.4.7. Scheduled

Select System Configuration >> Scheduled. Refer to Chart 3-12.

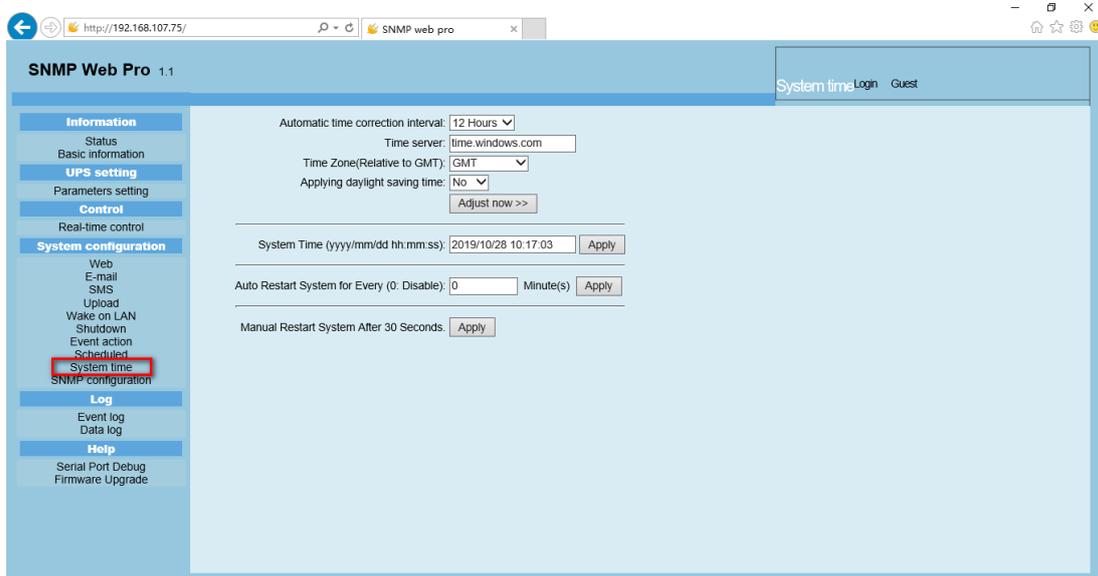


**Chart 3-12**

- **Scheduled battery self-test:** Scheduled battery self-test can be executed once, daily, weekly, or monthly. Users can select UPS and time parameters. It is recommended to set only one action in the same time. If multiple actions have been applied at the same time, some of these actions may be ignored. Any action will be ignored when the action is not supported by the UPS.
- **Scheduled UPS on/off:** Scheduled UPS on/off can be executed once, daily, weekly. Users can select UPS and time parameters. It is recommended to set only one action in the same time. If multiple actions have been applied at the same time, some of these actions may be ignored. Any action will be ignored when the action is not supported by the UPS.

### 3.4.8. System time

Select System Configuration >> System time. Refer to Chart 3-13.



**Chart 3-13**

- Automatic time correction interval
- Time server: The SNTP server IP address or domain name.
- Time Zone (Relative to GMT): Time difference relative to GMT.
- System Time (mm/dd/yyyy hh:mm:ss): Used to set up SNMP web local host time
- Auto Restart System for Every (0: Disable): XX Minute(s)
- Manual Restart system after 30 Seconds: When click "Apply" button, SNMP will restart after 30 seconds.

### 3.4.9. SNMP configuration

PSSNMPv4 configuration setting for SNMP web pro basic information such as IP address, password, trap IP address, SNMP UDP port, add/delete snmpv3 user account and restore to the factory settings.

**Note:** Some modifications require a restart of the snmp server to become effective.

Select System Configuration >> SNMP configuration. Refer to Chart 3-14 a and 3-14 b.

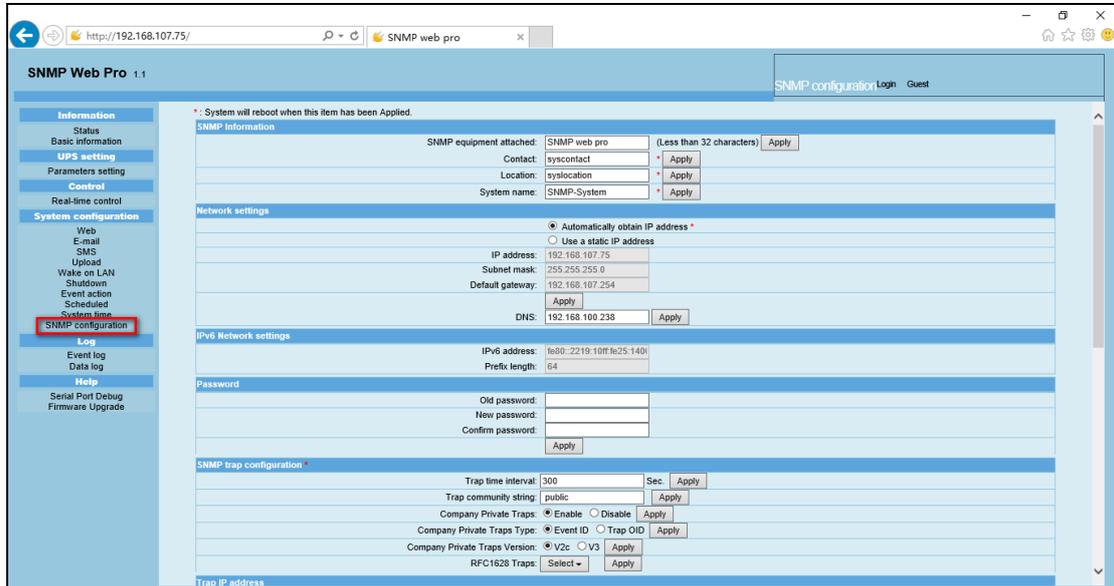


Chart 3-14 a

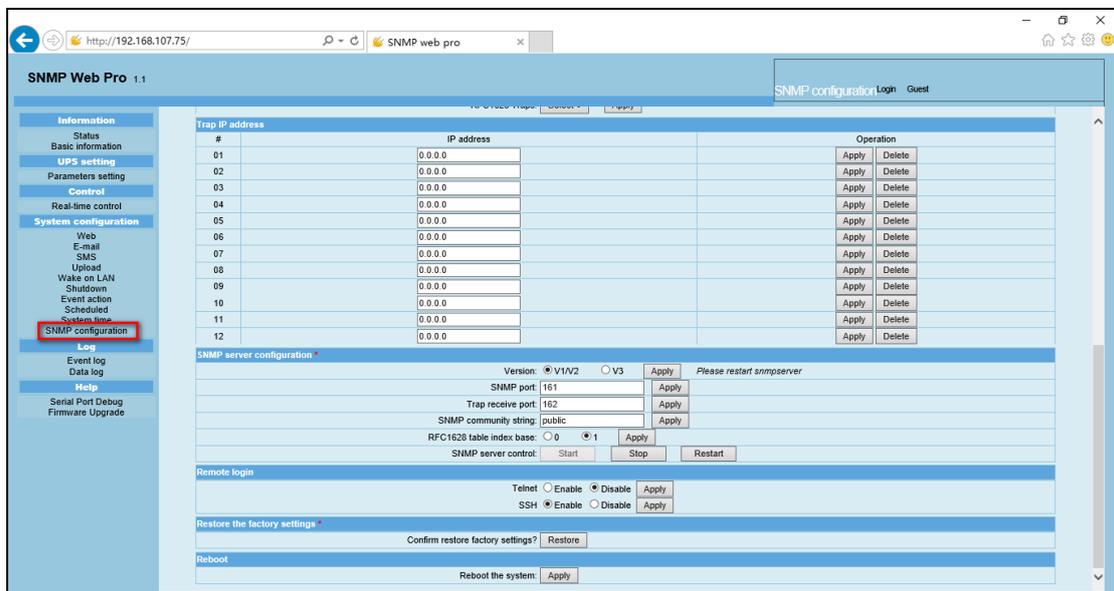
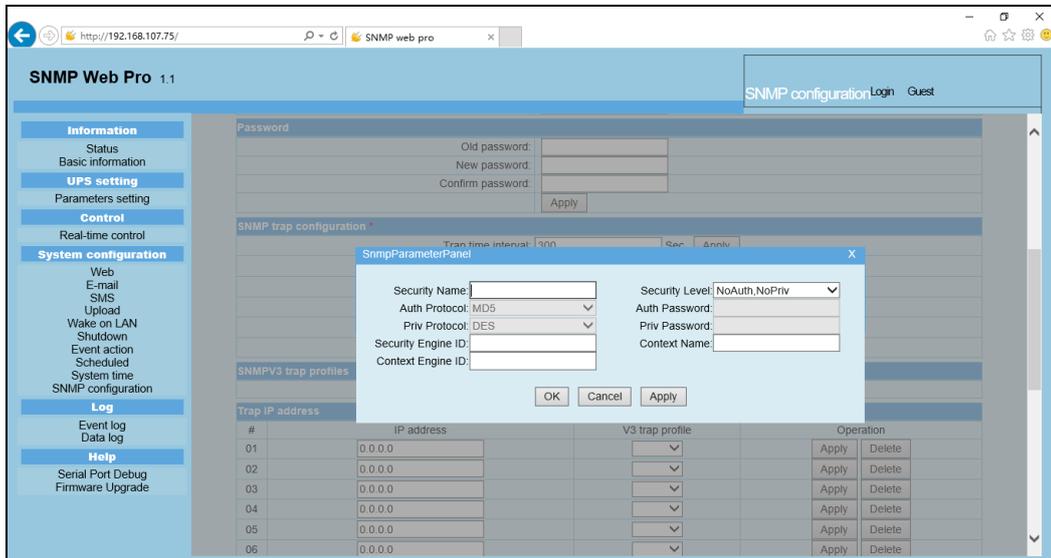


Chart 3-14 b

## SNMP configuration

- IP address: There are two methods to obtain IP address
  1. Automatically obtain IP address (DHCP, default)
  2. Manually configure IP addressThe system will by default automatically obtain IP addresses. If there is no DHCP service provided in the LAN, the default IP will display as "192.168.102.230", Net mask as "255.255.255.0" and default gateway as "0.0.0.0".
- Password: Modify the password. The length of password is 8~15 digits.
- Trap IP address: The SNMP device can provide 12 static trap addresses.
- SNMP server configuration: Option exists to change SNMP port and trap port. A further option exists to add SNMPV3 users by clicking "Add" button. A pop-up screen will appear to set up user settings such as security level and permission level. Refer to the chart below.



- Restore to the factory settings  
Note: The system will default automatically to obtain IP addresses and the default Password is 12345678.

## 3.5. Log

### 3.5.1. Event log

The Event Log page lists all history events and can be saved as .csv file format. The event log includes UPS warnings, fault information, EMD warnings, UPS operation logs from web users or SNMP MultiView users. All logs are recorded in the PSSNMPv4 card non-volatile flash memory by month. It is safely recorded without loss even after power failure. The PSSNMPv4 can save up to over 200,000 threads. Refer to Chart 3-15.

Select Log >> Event log.

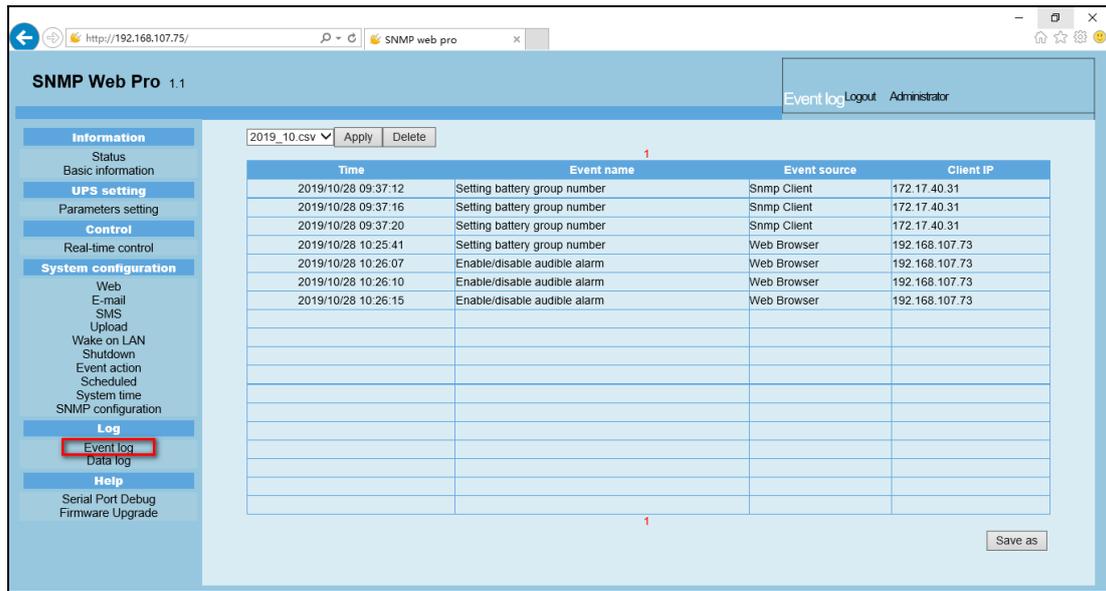


Chart 3-15

### 3.5.2. Data Log

The Data Log page displays all history logs and can be saved as .csv file format. All logs are recorded in the PSSNMPv4 card non-volatile flash memory. It is safely recorded without loss even after power failure. It can save up to over 200,000 threads. Refer to Chart 3-16.

Select Log >> Data log.

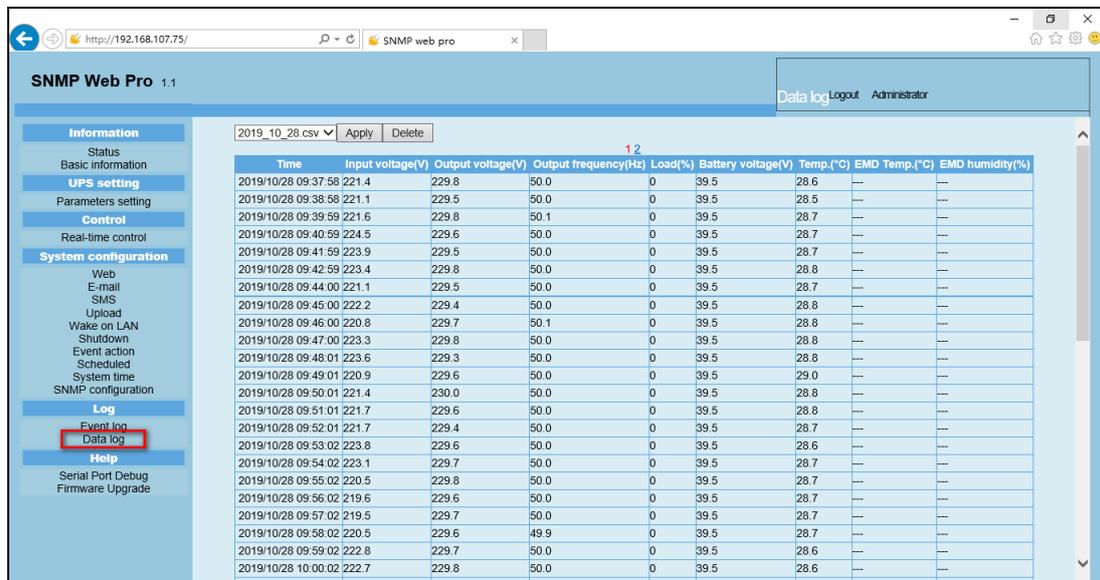


Chart 3-16

## 3.6. Help

### 3.6.1. Serial Port Debug

The Help page is used to test communication condition between the SNMP card and device.

Select Help >> Serial Port Debug. Refer to Chart 3-17.

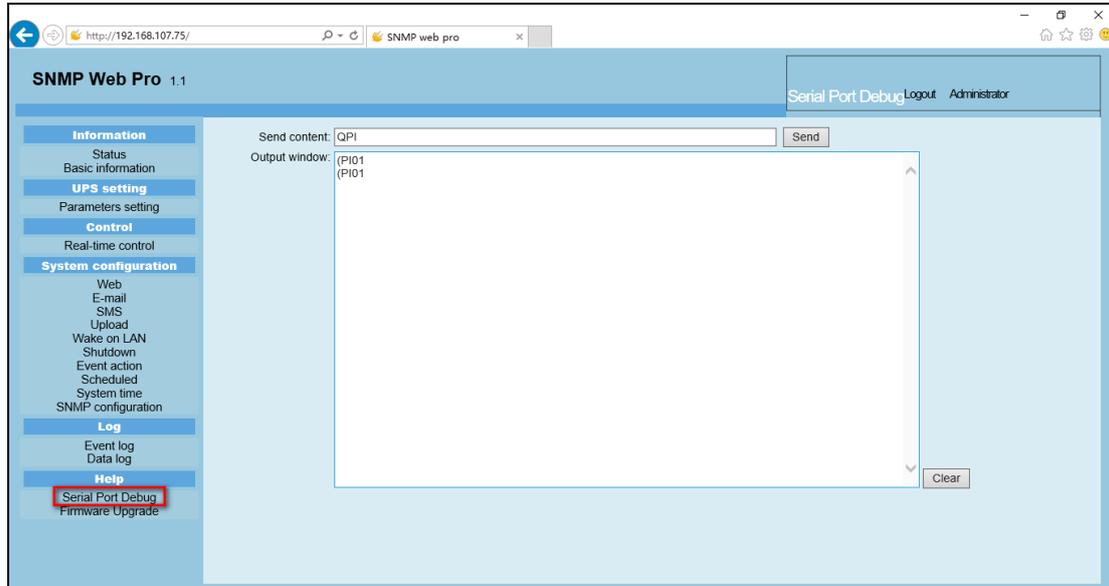


Chart 3-17

### 3.6.2. Firmware Upgrade

The Firmware upgrade page is used to update firmware.

Select Help >> Firmware Upgrade. Refer to Chart 3-18.

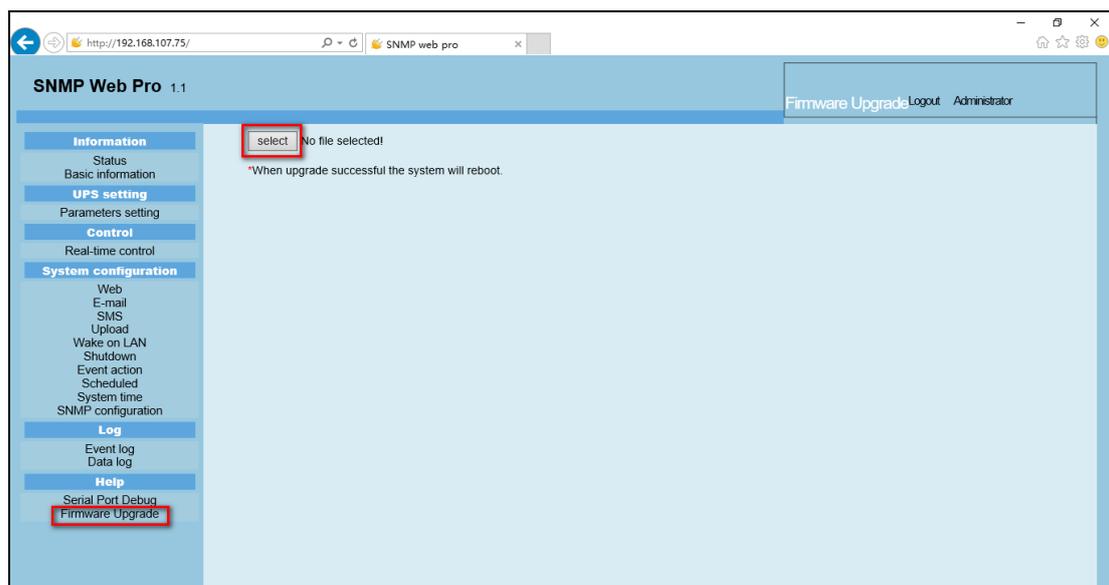


Chart 3-18

