

PDU Web Server

User's Manual

Management Software for Power Distribution Unit

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1. Overview

1.1 Introduction

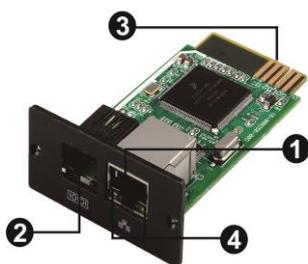
This PDU Web card can provide web server to monitor and manage multiple PDUs in a networked environment including LAN and INTERNET. It can detect temperature and humidity of the environment via connected EMD (Environmental Monitoring Device).

Integrated with PDUTracker software, it can monitor and remotely access to all distributed PDU web cards in a LAN or INTERNET. For the detailed operations, please check the user manual of PDUTracker.

1.2 Features

- Embedded web server via web browser
- Offer SNMP MIB to monitor PDU status.
- Support 10M/100M Fast Ethernet auto-detect function
- Support protocols such as TCP/IP, UDP, SNMP, SMTP, SNTP, HTTP and so on.
- Support event log record and export, including PDU warnings, faults and EMD warnings.
- Support data log record and export.
- Support daily reports for event log and data log.

1.3 Overlook



- ❶ Ethernet port (10/100Base-T)
- ❷ Sensor port
- ❸ Golden finger: connects to PDU slot
- ❹ Ethernet port status LEDs

1.4 Installation and Connection

Installation

When using SNMP card, please follow the installation steps below first:

Step 1: Remove the cover of intelligent slot on the panel of PDU and retain the screws

Step 2: Slide the card into the slot and fix it with the screws from step 1. (See Chart 1-1)



Chart 1-1

For system diagram of PDU web card, please refer to chart 1-2. Plug the Ethernet cable to the Ethernet port (RJ-45) on the SNMP card. Use another Ethernet cable to connect to the sensor port on the SNMP card and the other end to the optional environmental monitoring device.

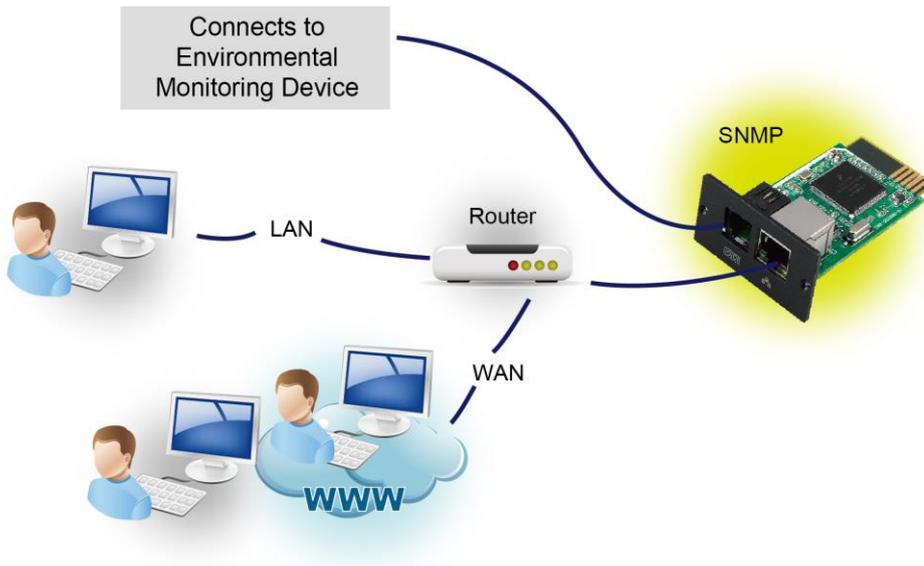


Chart 1-2

1.5 Configuration

- Please install SNMP web manager in your PC. After software is installed successfully, a shortcut icon of the Installer will appear on your desktop as shown in Chart 1.4.



Chart 1-4

- b) Enter specific IP address to search all of the SNMP devices in the LAN. The SNMP web manager will automatically collect the IP addresses from sever in default via a DHCP server. If there is no DHCP server, it will apply default IP address as 192.168.102.230, default subnet mask as 255.255.255.0 and default gateway 0.0.0.0.

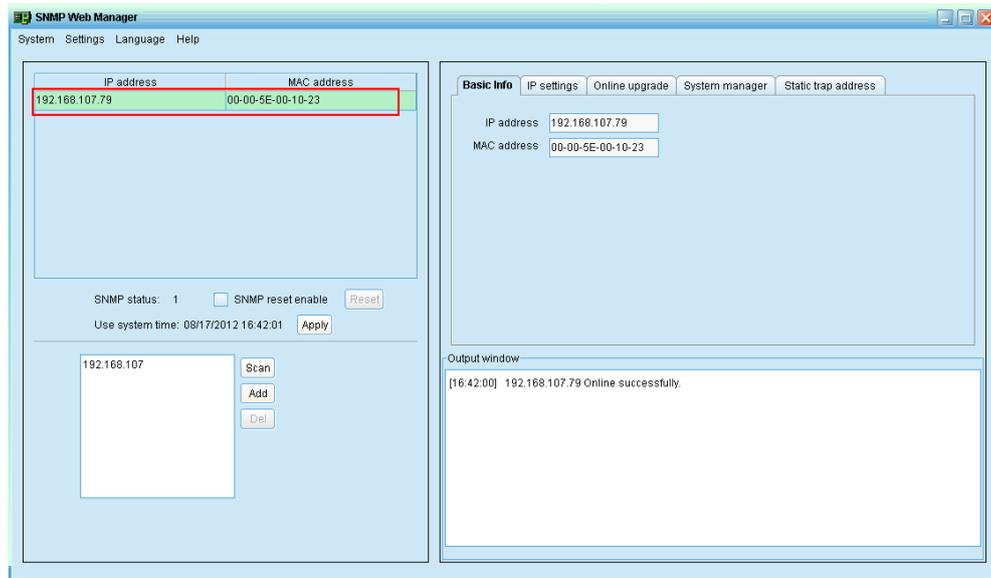


Chart 1-5

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

Please check SNMP Web Manager User Manual for detailed configuration.

1.6 Monitoring

There are two ways to monitor the device:

- a) Double click the selected device from the device list (refer to Chart 1-5) and it will pop up screen as Chart 1-6.

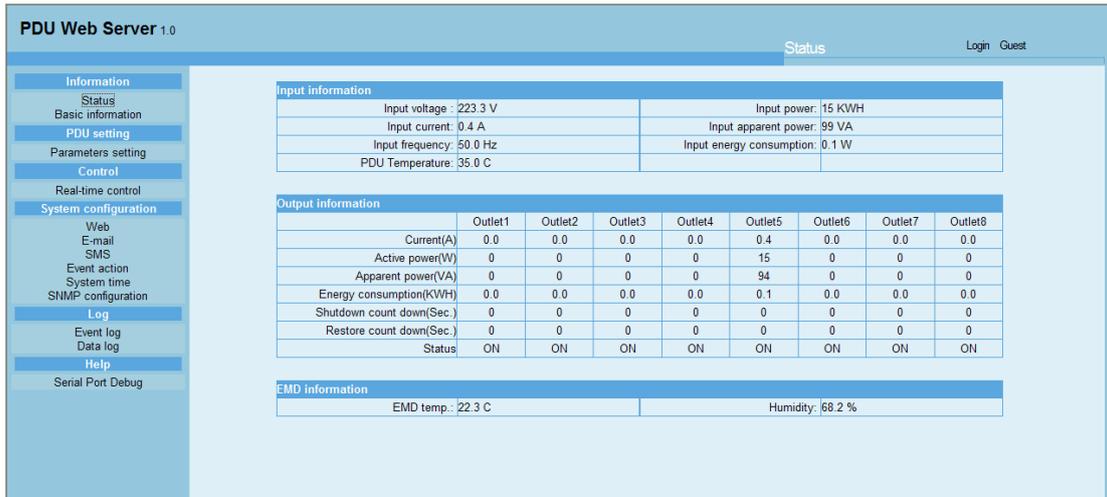


Chart 1-6

b) Install PDUTracker software to monitor SNMP web card. Refer to Chart 1-7.

Please check PDUTracker User Manual for detailed operation.

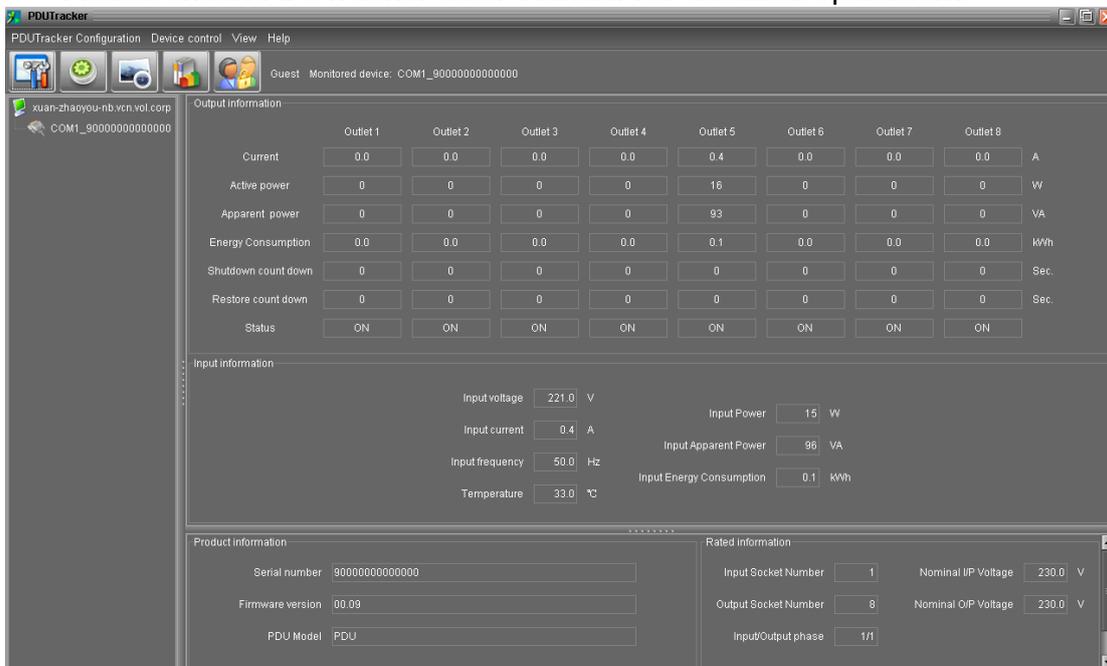


Chart 1-7

2. PDU web card GUI

PDU web card GUI includes the function menu, login section and main screen. Refer to Chart 2-1:

The screenshot shows the PDU Web Server GUI. At the top left, it says 'PDU Web Server 1.0'. At the top right, it says 'Status' and 'Login: Guest'. On the left side, there is a navigation menu with the following items: Information, Status, Basic information, PDU setting, Parameters setting, Control, Real-time control, System configuration, Web, E-mail, SMS, Event action, System time, SNMP configuration, Log, Event log, Data log, Help, and Serial Port Debug. The main display area is divided into three sections: 'Input information', 'Output information', and 'EMD information'. The 'Input information' section shows: Input voltage: 223.3 V, Input current: 0.4 A, Input frequency: 50.0 Hz, PDU Temperature: 35.0 C, Input power: 15 KWH, Input apparent power: 99 VA, and Input energy consumption: 0.1 W. The 'Output information' section is a table with 8 columns (Outlet1 to Outlet8) and 6 rows (Current(A), Active power(W), Apparent power(VA), Energy consumption(KWH), Shutdown count down(Sec.), Restore count down(Sec.)). The 'EMD information' section shows: EMD temp.: 22.3 C and Humidity: 68.2 %.

Outlet1	Outlet2	Outlet3	Outlet4	Outlet5	Outlet6	Outlet7	Outlet8
0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
0	0	0	0	15	0	0	0
0	0	0	0	94	0	0	0
0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Chart 2-1

A. PDU web card version

B. Function Menu

It offers complete tool-set for navigation and setting of the GUI.

C. Main Screen

It will display information and/or control alternatives according to the selected function menu.

D. Login section

It shows the current user type that logs in. The default passwords for administrator is "12345678".

3. Function Menu

3.1 Information

3.1.1. Status

Select Information >> Status. Please refer to Chart 3-1. It shows real-time monitored PDU data including input, output and environmental information in table format.

The screenshot shows the 'Status' page of the PDU Web Server 1.0. The left sidebar contains a navigation menu with categories: Information, Control, Real-time control, System configuration, Log, and Help. The main content area displays three tables:

Input information	
Input voltage :	223.3 V
Input current:	0.4 A
Input frequency:	50.0 Hz
PDU Temperature:	35.0 C
Input power:	15 KWH
Input apparent power:	99 VA
Input energy consumption:	0.1 W

Output information								
	Outlet1	Outlet2	Outlet3	Outlet4	Outlet5	Outlet6	Outlet7	Outlet8
Current(A)	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Active power(W)	0	0	0	0	15	0	0	0
Apparent power(VA)	0	0	0	0	94	0	0	0
Energy consumption(KWH)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Shutdown count down(Sec.)	0	0	0	0	0	0	0	0
Restore count down(Sec.)	0	0	0	0	0	0	0	0
Status	ON							

EMD information	
EMD temp.:	22.3 C
Humidity:	68.2 %

Chart 3-1

3.1.2. Basic information

Select Information>>Basic information. It includes PDU basic information and PDU rated information. Please refer to Chart 3-2.

The screenshot shows the 'Basic information' page of the PDU Web Server 1.0. The left sidebar is the same as in Chart 3-1. The main content area displays two tables:

Basic information	
PDU model:	PDU
PDU FW version:	00.09
Equipment attached:	SNMP web server
Input phase/Output phase:	1/1
PDU serial number:	90000000000000
SNMP FW version:	-00S

PDU rated information	
Nominal I/P Voltage:	230.0 V
Nominal O/P Voltage:	230.0 V
Input SocketNumber:	1
Output SocketNumber:	8

Chart 3-2

3.2 PDU setting

3.2.1 Parameters setting

Some PDU parameters can be configured with PDU Web Server. Configurable parameter setting includes outlet setting, voltage and current range setting,

shutdown imminent time and Delay between turning on outlet.

Select PDU setting >> Parameters setting. Please refer to Chart 3-4.

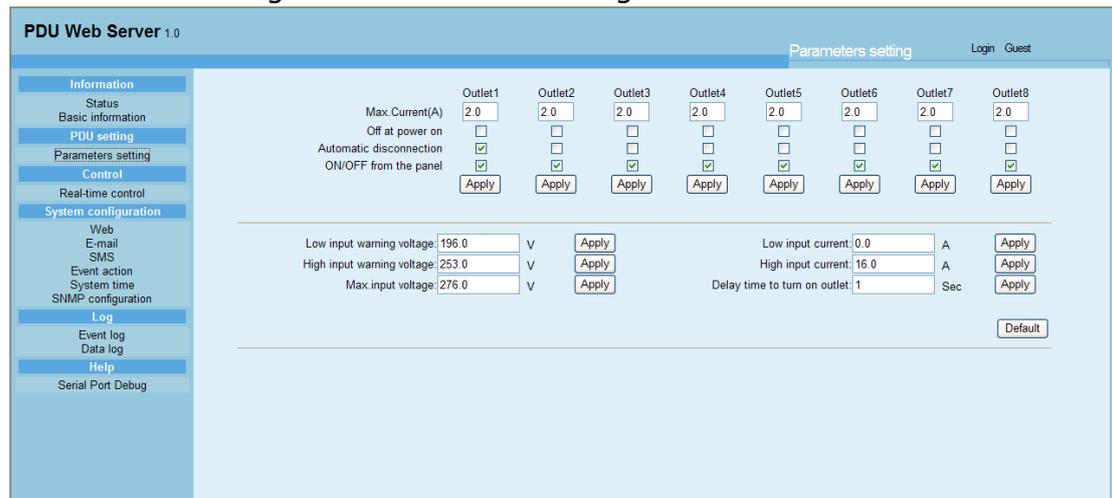


Chart 3-4

Step 1. Click "Apply" button to save the settings. Each function setting is saved by clicking "Apply" button in each section.

Step 2. Click "Default" button to recover the default setting.

Note: Any functions which are not supported by PDU will not be able to access.

- Maximum current (A):Setting maximum output current in Amp for each outlet. If output current is higher than this setting, PDU will alarm overload warning.
- OFF at power on: When selected, there is no output on this outlet after PDU is turned on. If unclicked, it will have output on this outlet after PDU is turned on.
- Automatic disconnection: When selected, if overload warning happens, it will cut off power on selected outlet in one minute.
- ON / OFF from the panel: When selected, it's allowed to manually turn on/off the selected outlet. When unclicked, it's not allowed to manually turn on/off the selected outlet.
- Low input warning voltage: Setting low input warning voltage. When input voltage is lower than this setting point, it will buzz to remind users.
- High input warning voltage: Setting high input warning voltage. When input voltage is higher than this setting point, it will buzz to remind users.
- Max. input voltage: Setting acceptable maximum input voltage point. When input voltage is higher than this setting point, it will buzz and

then shut down all outlets immediately.

- Low input current: Setting acceptable low input current point. When input current is lower than this setting point, it will buzz to remind users
- High input current: Setting acceptable high input current point. When input current is higher than this setting point, it will buzz to remind users.
- Delay time to turn on outlet: Setting delay time for activating output outlet.

3.3 Control

3.3.1. Real-time control

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

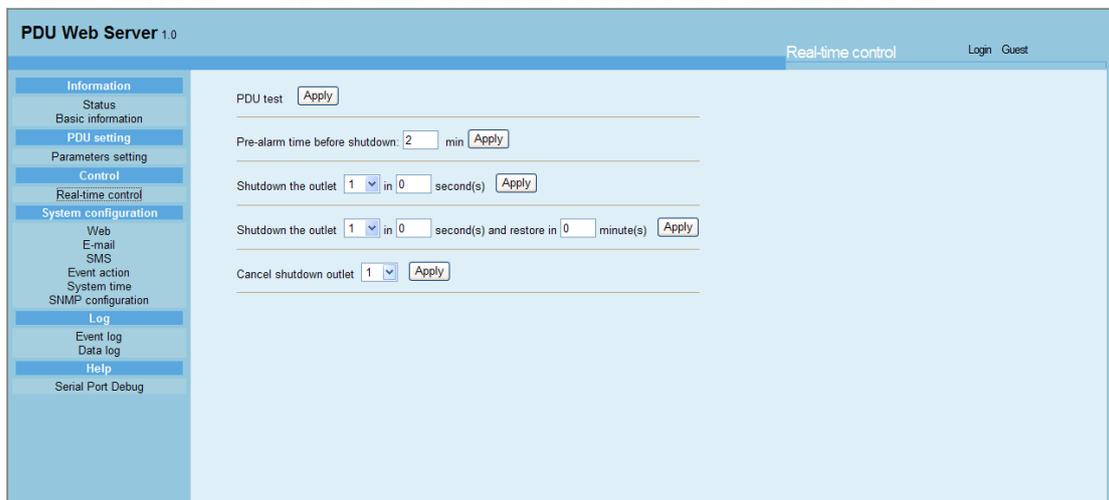


Chart 3-5

You can real-time control the PDU by executing the following operations:

- PDU test: Before operation, please apply this test to check if all the panel LEDs and the buzzer are working well.
- Pre-alarm time before shutdown: Set pre-alarm time before shutting down the selected outlet.
- Shut down # no. outlet in x minute(s): The selected outlets will be shut down in x minute(s).
- Shut down # no. outlet in x minute(s) and restore in x minute(s): the selected outlets will be shut down in x minutes and turned on in x minute(s).
- Cancel shutdown # no. outlet: If the selected outlet is counting down for shutdown, this action will cancel the shutdown immediately.

3.4. System configuration

3.4.1. Web user

It configures the authority to access to SNMP web card. Please enter access ID and password in each column. There is no any limitation to access control in default setting. Please refer to Chart 3-6.

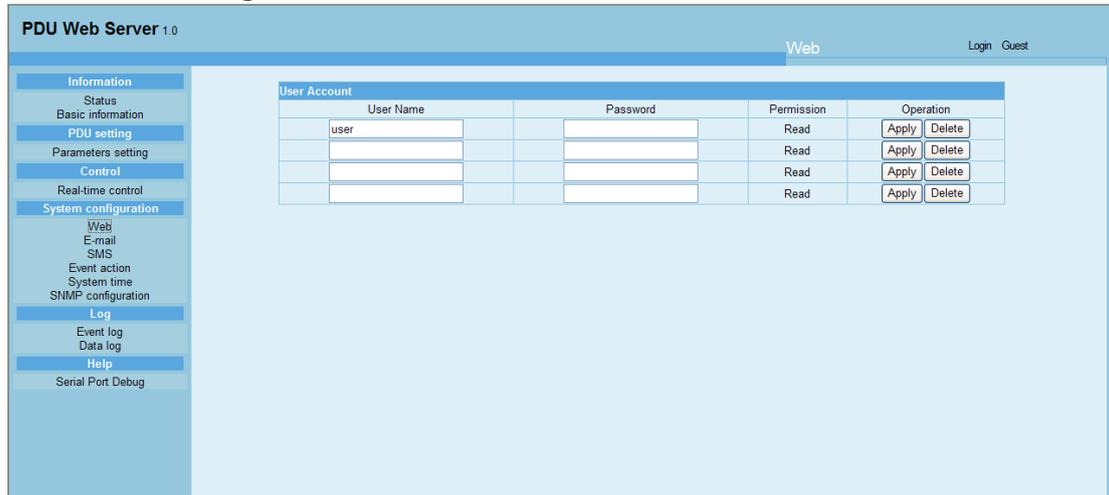


Chart 3-6

3.4.2. E-mail

It's allowed to send alarm mail from SMTP server. To use this function, the e-mail service must be correctly configured. All values in this function page are empty in default. This action can't be executed without the SMTP information, e-mail account and password. Besides, the sender account should be permitted for SMTP/POP3 forwarding.

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

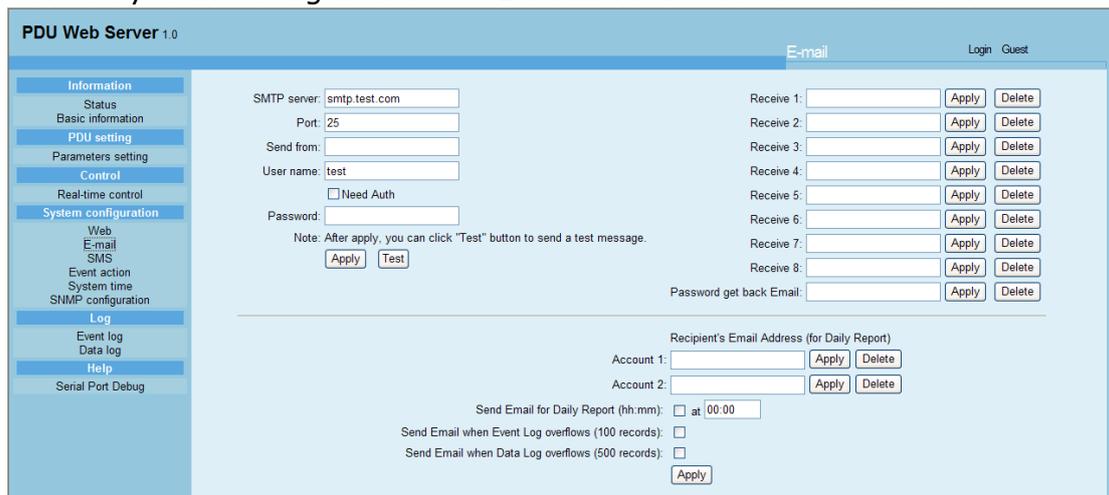


Chart 3-7

1. Enter SMTP server, SMTP port, sender's E-mail address, user name and password. Click the checkbox "Need Auth" for password verification.

2. Enter correct e-mail accounts in Receiver list. Then, click "Apply" to add them into receivers list. Click "Delete" button to delete them.
3. Click "Apply" to save the changes. The "Test" button can be used to send a test e-mail to all receivers to confirm the correct operation. When the test e-mails are successfully sent to the specific recipients, a successful dialog will pop up on the operated PC. Otherwise, a failure dialog will pop up to indicate there is an error for parameter setting.
4. You may decide who will receive daily report e-mail at designate duration. Please enter recipient's Email Address and timer into the corresponding columns. Then, click "Apply" button to set up this action. You also can configure who will receive the alarm e-mail when event log exceeds 100 or data log exceeds 50 records. Please click checkbox for selection.

3.4.3. SMS

It's required to have a service software such as ViewPower Pro to execute the function. If an alarm occurring, a message of the PDU status will be sent to the specified users via mobile phone. Please refer to Chart 3-8.

Chart 3-8

3.4.4. Event action

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

Select System Configuration >> Event action. Please refer to Chart 3-9.

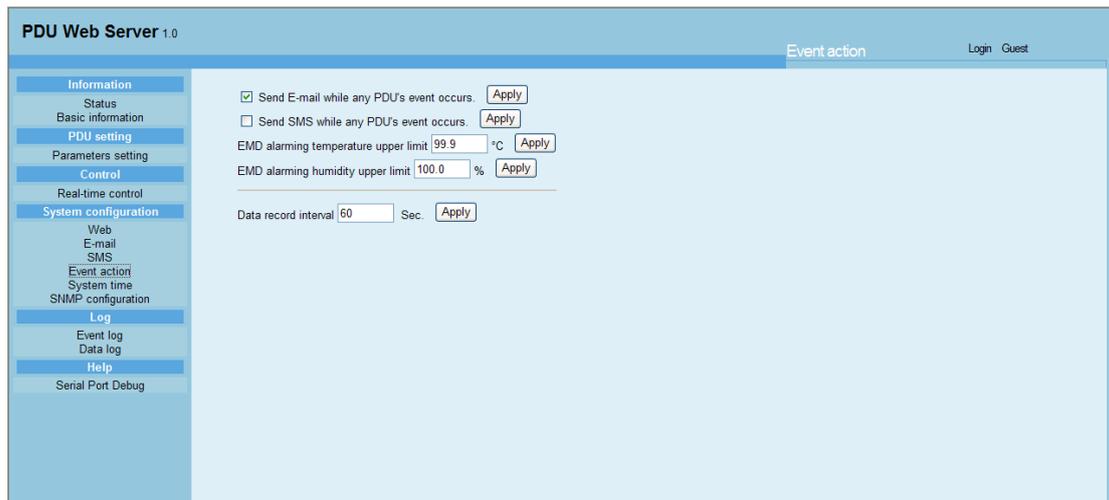


Chart 3-9

- Send an e-mail notification while any PDU event occurs: When clicking this checkbox, it will send an e-mail alarm when any event occurs on the local PDU.
- Send an SMS while any PDU event occurs: When clicking this checkbox, if an alarm occurs, a message of PDU status will be sent to the specified users via mobile phone.
- EMD alarms if temperature is over upper limit: Set up alarm for high temperature point. If detected temperature is beyond setting value, an alarm message will be sent.
- EMD alarms if humidity is over upper limit: Set up alarm for high humidity point. If detected humidity is beyond setting value, an alarm message will be sent.
- Data record interval xx sec: The data will be recorded in Data log per xx sec.

3.4.5. System time

Select System Configuration >> System time. Please refer to Chart 3-10.

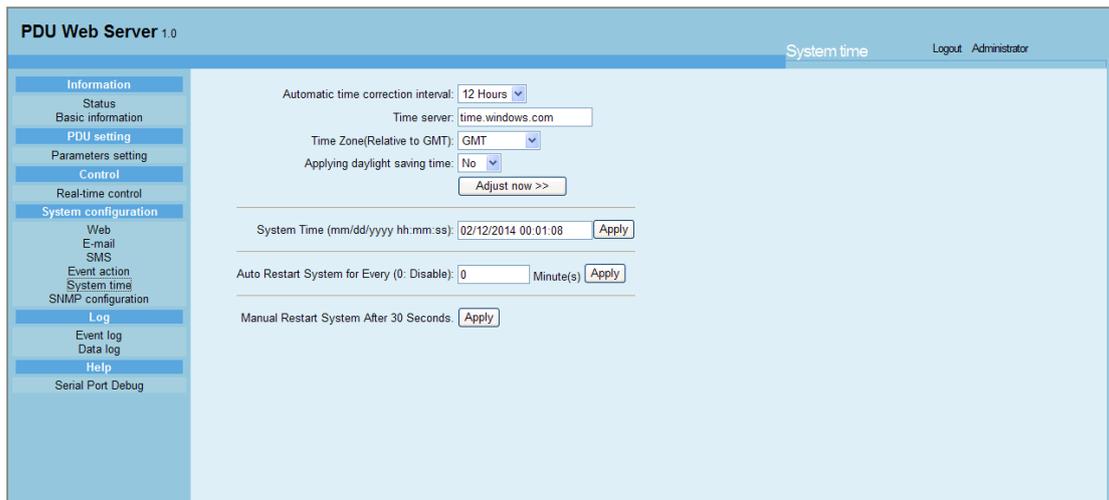


Chart 3-10

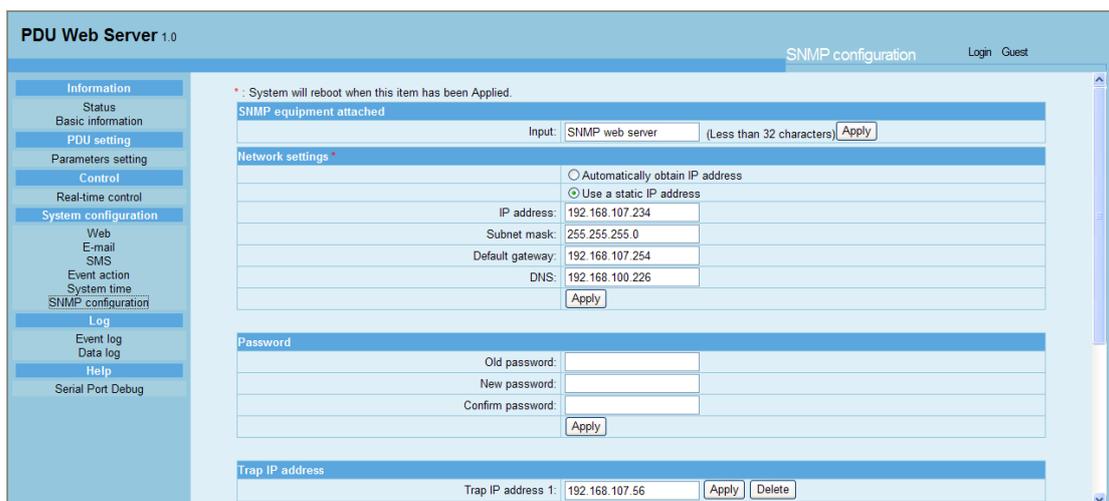
- Automatic time correction interval
- Time server: The SNTP server IP address or domain name.
- Time Zone (Relative to GMT)
- Applying daylight saving time
- System Time (mm/dd/yyyy hh:mm:ss): It is to set up SNMP web local host time
- Auto Restart system for Every (0: Disable): XX Minute(s)
- Manual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

3.4.6. SNMP configuration

Setting SNMP web card basic information such as set IP address, passwords, trap IP address, SNMP UDP port and restore to the default settings.

Note: It's normal to reboot after some operations are executed.

Select System Configuration >> SNMP configuration. Please refer to Chart 3-11.



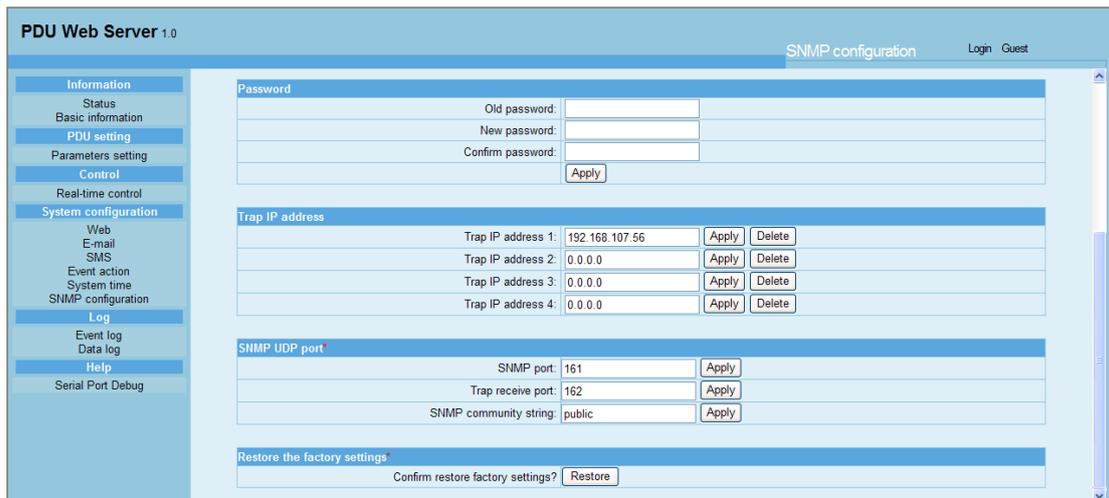


Chart 3-11

- IP address: There are two methods to obtain IP address
 1. Automatically obtain IP address (DHCP, default)
 2. Manually configure IP address

The system will automatically obtain IP addresses in default. If there is no this kind of service provided in 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 required length of password is 8~15 digits.
- Trap IP address: It provides 4 static trap addresses in the SNMP device.
- SNMP UDP port: You may change SNMP port and trap port.
- Restore to the default settings

Note: The system will automatically obtain IP addresses in default and the default password is 12345678.

3.5. Log

3.5.1. Event log

In the Event Log window, history events are listed and can be saved as .csv file. The event log includes PDU warnings, fault info and EMD warnings. Please refer to Chart 3-12.

Select Log >> Event log.

Time	Event name
02/12/2014 00:00:33	Connect to time server error

Chart 3-12

3.5.2. Data Log

In the Data Log window, all history logs will be listed and can be save as .csv file. Please refer to Chart 3-13.

Select Log >> Data log.

Time	voltage (V)	Outlet 1 current(A)	Outlet 2 current(A)	Outlet 3 current(A)	Outlet 4 current(A)	Outlet 5 current(A)	Outlet 6 current(A)	Outlet 7 current(A)	Outlet 8 current(A)	frequency (Hz)	Temp.(°C)
01/21/2016 11:00:45	223.6	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	50.0	35.0
01/21/2016 10:59:45	222.3	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	49.9	35.0
01/21/2016 10:58:46	223.1	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	49.9	35.0
01/21/2016 10:57:45	223.7	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	49.9	35.0
01/21/2016 10:56:45	223.6	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	49.9	35.0
01/21/2016 10:55:45	222.9	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	49.9	35.0
01/21/2016 10:54:45	223.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	50.0	35.0
01/21/2016 10:53:46	223.7	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	49.9	35.0
01/21/2016 10:52:45	222.8	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	49.9	35.0
01/21/2016 10:51:44	222.5	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	49.9	35.0
01/21/2016 10:50:44	224.1	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	50.0	35.0
01/21/2016 10:49:44	223.9	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	50.0	35.0

Chart 3-13

3.6. Help

3.6.1. Serial Port Debug

It's to test communication condition between SNMP card and device.

Select Log >> Event log. Refer to Chart 3-14.

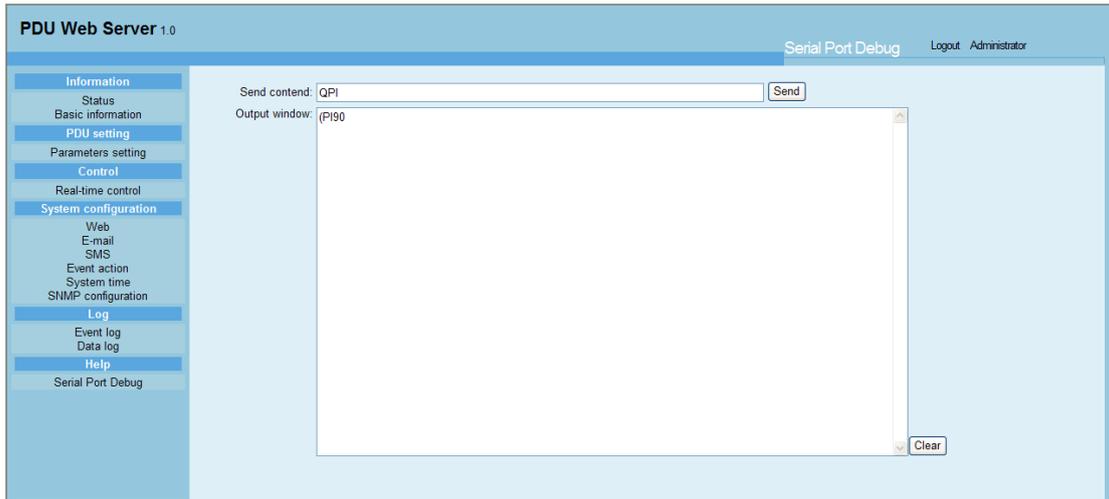


Chart 3-15