

USER'S GUIDE

Version 2.2



Power Distribution Unit

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Preface

About this Manual

Congratulations to purchase a POWERTEK PDU. This user manual provides detailed descriptions of the hardware components and how to use the product. Read this manual carefully and follow the instructions before install.

Copyright Information

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Preface

Safety Instructions

Follow these safety instructions to avoid injury to self and damage to the POWERTEK PDU.

- To reduce the risk of fire or electric shock, install the unit in a temperature-controlled indoor area free of conductive contaminants. Do not place the unit near liquids or in an excessively humid environment.
- Do not allow liquids or foreign objects to enter the unit.
- The unit does not contain any user-serviceable parts. Do not open the unit.
- Servicing, maintenance, and repair for this equipment must be performed by qualified service personnel. Remove rings, watches and other jewelry before servicing the unit.
- Before maintenance, repair or shipment, the unit must be completely switched off and unplugged and all connections must be removed.
- Before plugging in the power cord of the device, make sure that the power source rating matches the power rated indicated on the product labels.
- Use a harmonized and certified power cord when connect any device to the outlets.
- The digital output only can connect switches, indicators, or other output devices that are normally open or normally closed.

Preface

Safety Notices



Caution:

This unit has been provided with a real time clock circuit. There is a danger of explosion if the battery is incorrectly replaced. Replace only with a 3V Lithium cell (CR1220) or equivalent type. Discard used batteries according to the manufacturer's instructions.



Caution:

Rack-Mounted Equipment – The unit is intended to be rack-mounted, the Installation Instructions shall contain wording to address the following concerns when the unit is mounted in a rack system.

- A. “The equipment is to be installed in an environment with maximum ambient temperature must not exceed 60°C.”
- B. “The openings on the enclosure are for air convection hence protected the equipment from overheating. DO NOT COVER THE OPENINGS.”
- C. “Lay this equipment on a reliable surface when install. A drop or fall could cause injury.”
- D. “The equipment shall be installed according to specification as nameplate. Make sure the voltage of the power source when connect the equipment to the power outlet. The current of load and output power of loads shall be not over the specification.”
- E. “This equipment must be connected to the reliable earth before using.”

Introduction the POWERTEK

The POWERTEK PDU, is an intelligent power strip designed to measure the input and individual outlet current consumption and auto email history report to supervisor for power bill charge. At the same time, provides the useful ability of managing power for any combination of network equipment connected to it. User can control the power on/off for any device connected to the PDU remotely, using a console or Ethernet connections.

It's also equipped with a console port for connecting an EMD (Environmental Monitoring Device) for sensing temperature and humidity along with two alarms that can be activated when either of the sensors shows unusual values.

Introduction the POWERTEK

Features

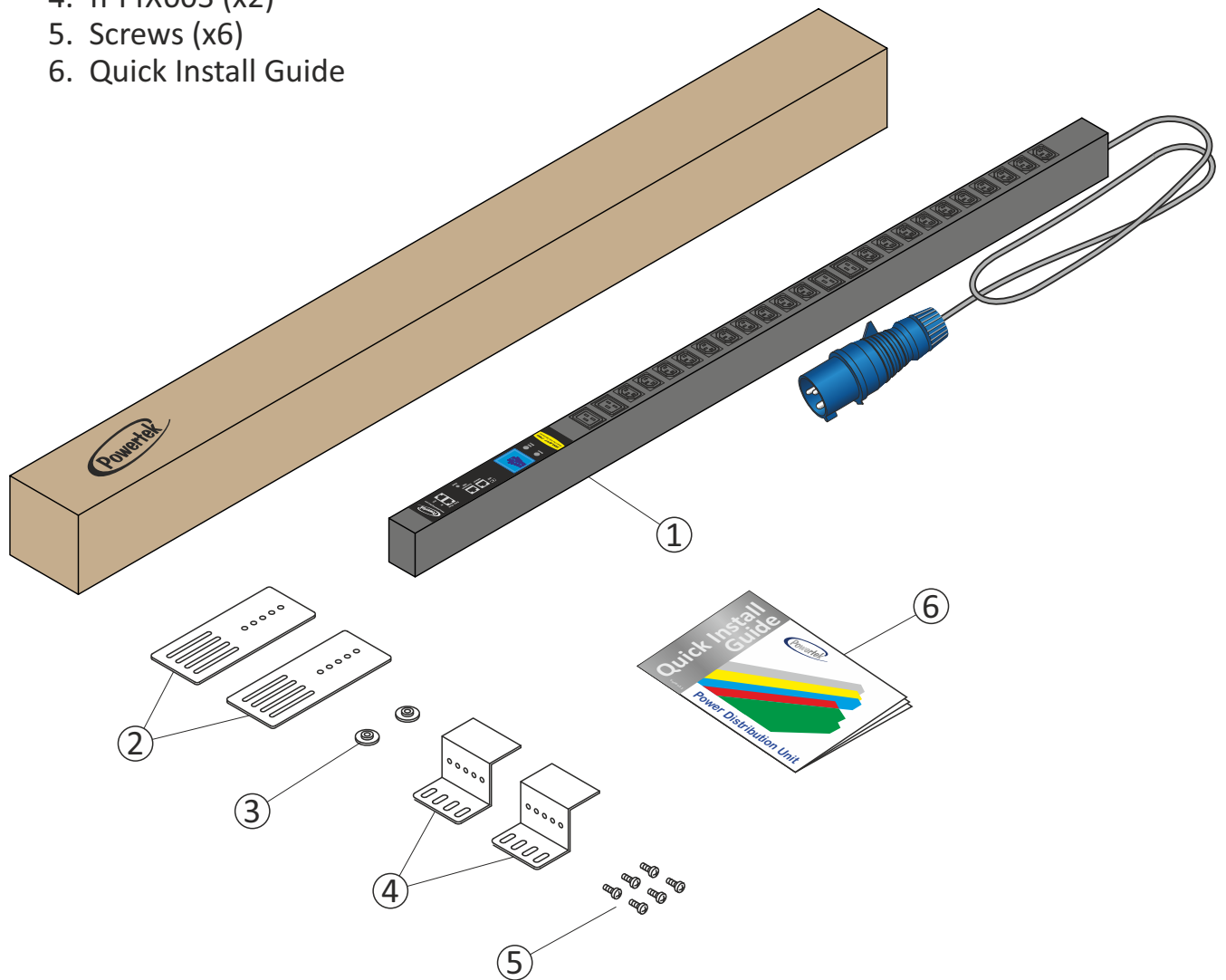
- To calculate the power consumption on hourly basis, and have an accumulation of daily
- Provide detail data-logging for statistical analysis and diagnostic then auto email daily history report
- Daisy-chaining can cascade up 4 power strips
- Sequential power-up on the outlets / Allows users to configure the sequence in which power is turned on or off for each outlet
- Intelligently turn on/off devices based on event occurrence or planned schedule
- Event notification by pop-up/Sending Trap or E-Mail for events notification
- Upto 42 power outlets that can be turned on or off in multiple ways, with easy monitoring of current consumption
- Set over-current watchdog for each outlet (Threshold settings for over-current warnings and alerts)
- Versatile sensors supported through EMD (Environmental Monitoring Device) inputs
- Comprehensive power management and flexible configuration through web browser, NMS, Telnet, SNMP V1,2,3 , or HyperTerminal (console)
- Support Secure Socket Layer V3 and Secure Shell V2 protocols
- Administrator and multiple users with password protection for double-layer security
- Address-specific IP security masks to prevent unauthorized access
- User-friendly interface to display input and output status
- Upgrade utility for easy firmware upgrade
- Models available in 240V and 380V

Introduction the POWERTEK

Package Contents

Make sure the POWERTEK PDU package has the following items. If any of items is missing or damaged, contact your nearest service center or vendor.

1. POWERTEK PDU
2. IPFIX001 (x2)
3. IPFIX002 (x2)
4. IPFIX003 (x2)
5. Screws (x6)
6. Quick Install Guide



Introduction the POWERTEK

Hardware Components

The following sections provide descriptions about the front panel components and how to use them.

	Component	Description
1.	Inlet	Power lead to be connected to the Data Centre power source
2.	Breaker	Prevent excessive current flow to protect the system
3.	Status LCD	Display input and output voltage
4.	Mounting Options	Different choice of mounting options

Status LCD

The front panel of the POWERTEK PDU has LCD that provide information about the input and output power status. It shows the data of 2 outlets in one page. Using Select button to switch to previous / next page.

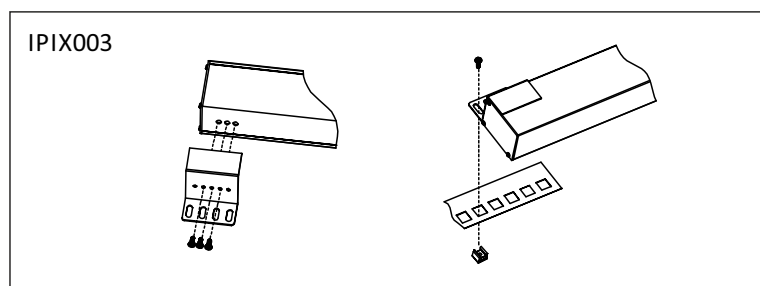
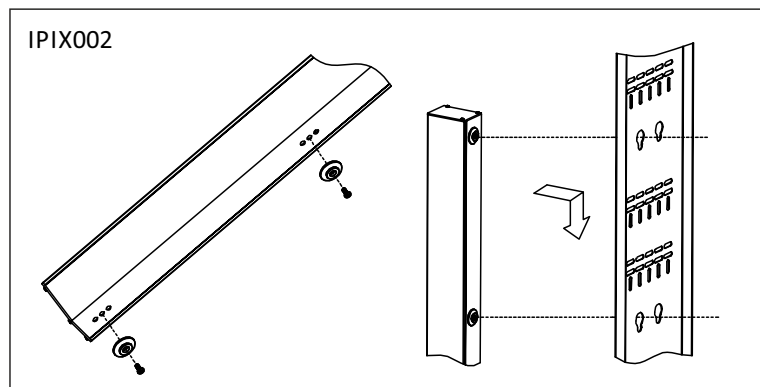
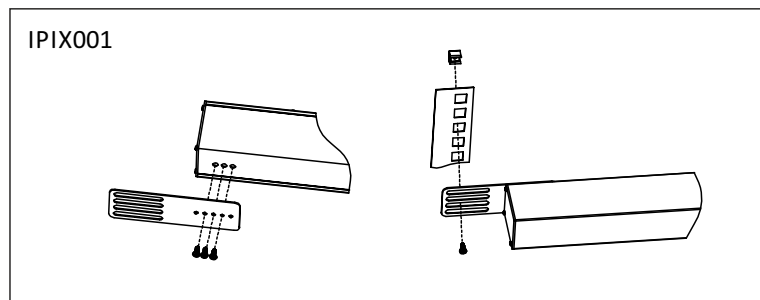


Getting Started

This section provides information about setting up the POWERTEK PDU, connecting power, and connecting devices to it before users start using it for power management. Read this section carefully to learn how to connect various devices to the POWERTEK PDU.

Rack Mounting

The POWERTEK PDU can be installed in most standard racks. After attaching the ears to each side of the device, position the device in the rack and align the holes in the ears (mounting brackets) with the hole in the rack.

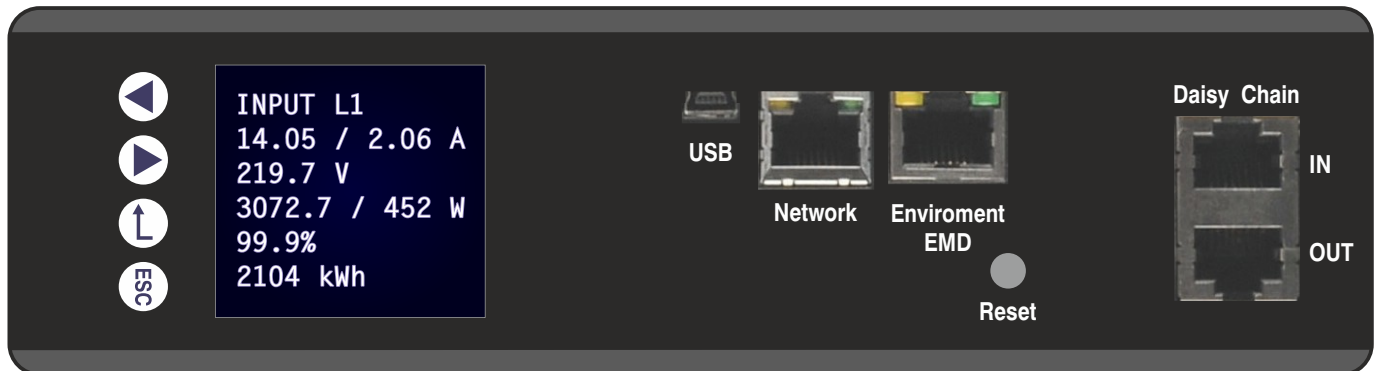


Getting Started

Making Connections

The POWERTEK PDU is a versatile product that can be connected to several different types of input and output devices. This makes it a useful tool for connecting devices to it and controlling their power on/off status through its user interface.

Also can be attached to different no. of output devices whose power status can be controlled remotely. It also supports an EMD (Environmental Monitoring Device) connecting with sensors for detecting environmental conditions as well as digital outputs for enabling devices with normally open or normally close conditions. Moreover, it supports a serial port (console) and Ethernet (LAN/WAN) connection that lets users control the PDU outputs remotely.



Getting Started

The following procedure describes the basic steps needed to set up the POWERTEK PDU:

1. To set up the hardware, connect power to the power inlet and output devices to the power outlets. Connect devices with normally open or normally close conditions to the digital output ports, and an EMD to the console port.
2. To configure the Power Strip, users can use the console or LAN port. Connect the device to a console and a LAN to enable its configuration through the console or browser menu.
3. After connecting to a console, use a console application such as Telnet or HyperTerminal to access the console menu. Select the TCP/IP submenu under the Network Management to set up the IP address and select the General Setting submenu under the System Management to set up the system date/time. This IP address will be used while accessing the web interface to configure the POWERTEK PDU parameters.
4. After connecting to LAN, open a browser from a PC in the network and use the POWERTEK's IP address specified through the console menu to open the web interface for system configuration.

The following sections provide instructions about how to make various connections.

Connecting Input Power

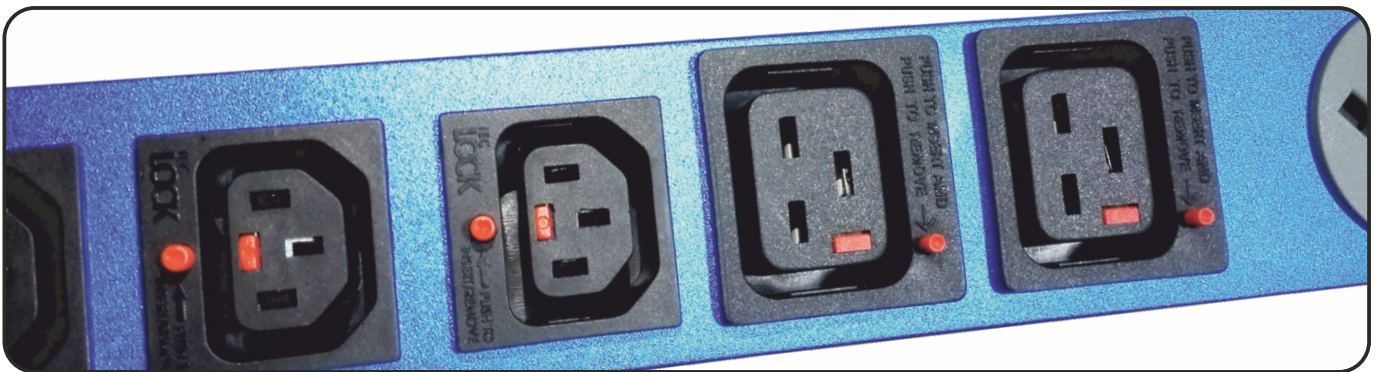
The POWERTEK PDU has different IEC 309 power inlets for supplying and managing power for the output devices. For each inlet, connect the power cord to the power inlet and plug the other end into a power outlet as shown:



Getting Started

Connecting Output Devices

The Power strips can have different number of outlets for connecting devices such as workstations, servers, and printers. Their power on/off status can be controlled remotely through the LAN and Console ports. Connect the power connectors of the devices to each of the power outlets through L with the power cords supplied with the devices as shown:



The POWERTEK PDUs are available in the following sockets:

220V/10A: IEC 320 C13, IEC 320 C13 (Lock), SEV T13

220V/13A: UK BS1363

220V/15A: AS/NZS 3112

220V/16A: SCHUKO, UTE, IEC 320 C19, IEC 320 C13 (Lock), SEV T23

125V/15A: NEMA 5-15P

125V/20A: NEMA5-20P

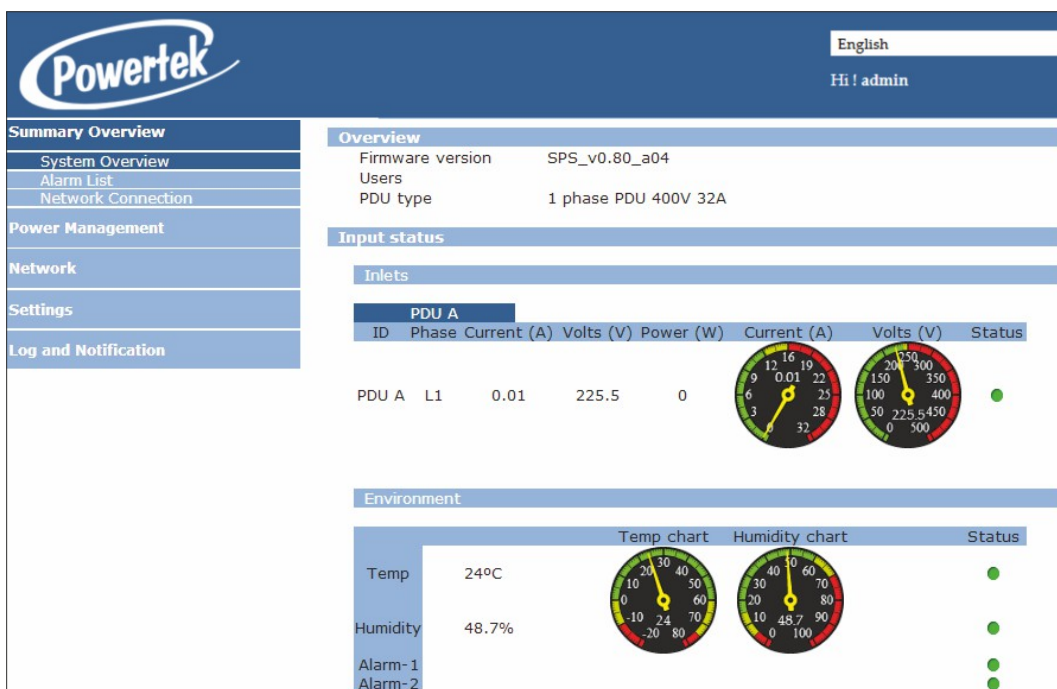
Getting Started

Connecting EMD

An Environmental Monitoring Device (EMD) that is connected to sensors for detecting temperature, humidity, and two digital inputs can be connected to the POWERTEK PDU with the console port. The EMD can also be connected to alarms or indicators and controlled through the web browser.

1. Connect the EMD to the console port as shown:

After connecting to EMD, open a browser from a PC in the network and enable environmental sensor, then the temperature and humidity status is automatically displayed on the System Overview page.



Getting Started

Connecting the Console

Users can control the output devices and manage the power status through mini USB port with a PC.

Refer to on page 21 to learn how to use the console with a console application such as HyperTerminal or Telnet.

Connecting to a LAN/WAN

The POWERTEK PDU has an RJ-45 LAN connection that enables users to monitor and manage the power outlets over the network. The POWERTEK PDU has a graphic user interface that allows users to control the device through a web browser. Connect the device to a free port on the router using an Ethernet cable as shown. Users can control the device from PC, laptop, mobile phone, or PDA which is connected to the router network. Refer to page 22 for details about how to control the POWERTEK PDU through the web.

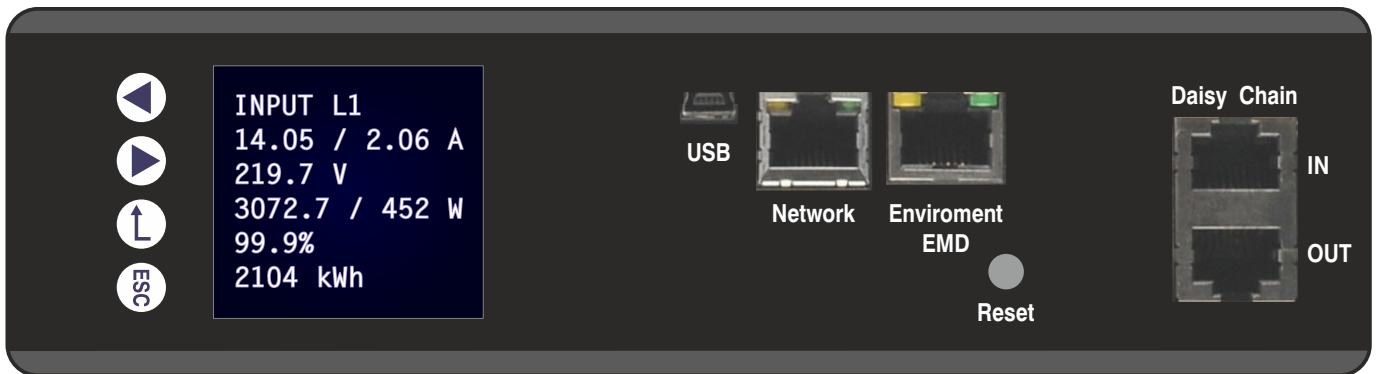


Getting Started

Using LCM operational buttons:

The following sections describe the LCM functional operation of the PDU.

Front View



The PDU has four buttons to launch particular applications and display the on-screen.

No.	Icon	Button	Description
		Down	Press the Down button to navigate through the menu options.
		Up	Press the Up button to navigate through the menu options.
		Set	Press the Set button to access the menu options and confirm user selection.
		ESC	Press the ESC button to cancel any configuration or leave to up menu.

There are two kinds of LCM operation screen for the single and three phase as shown following.

User can configure the **LCM Direction**, **Daisy Chain**, **RS485 Terminal Resistor**, **Inlet Energy**, **Outlet On/Off** of this PDU from this LCM. Regarding to turn on/off outlet, if this PDU has support network function, user can set the whole outlet configuration from **Outlet Control** webpage. The **Outlet Control** page displays.

Getting Started

Main Menu Screen of Single Phase PDU

IP:
XXX.XXX.XXX.XXX

Input:
XXX.XV

Main Menu Screen of Three Phase PDU

IP:
XXX.XXX.XXX.XXX

Input:
L1: XXX.X V

LCM Direction Screen

LCM Direction
XX



LCM Direction
Setting: XX

Daisy Chain Screen

Daisy Chain:
Master 01



Daisy Chain:
Setting :
Master 01

RS485 Terminal Resistor Screen

RS485 Terminal
Resistor: XXX



RS485 Terminal
Resistor: XXX

Inlet Screen

Inlet:
XX.XX/XX.XX A
XXX.X V
XXXX.X/XXXX.X W



Inlet Info.
Version:
Vx.XXX
Type: X-Phase
XX/XX A

Total Power Screen

Total Power:
XXXXX.X W

Total Energy:
XXXXX.X kwh

Getting Started

Clear Inlet Energy Screen

Clear All the
Inlet Energy:

XXXX.X

Clear All the
Inlet Energy:

XXXX.X

Clear Outlet Energy Screen

Clear All the
Outlet Energy:

XXXX.X

Clear All the
Outlet Energy:

XXXX.X

Save Energy

Save Energy:

XX



Save Energy:

XX

Control All the Outlet Screen

Control All the
Outlet: XX



Control All the
Outlet: XX

Outlet ON/OFF Screen

Outlet 01 & 02:
XX.XX/XX.XX A
XXX.X V
XXXX.X/XXXX.X W



Outlet 01& 02:
Version:
Vx.XXX



Relay 01: XX
Relay 02: XX



Relay 01: XX
Relay 02: XX

Outlet n & n+1:
XX.XX/XX.XX A
XXX.X V
XXXX.X/XXXX.X W



Outlet n&n+1:
Version:
Vx.XXX



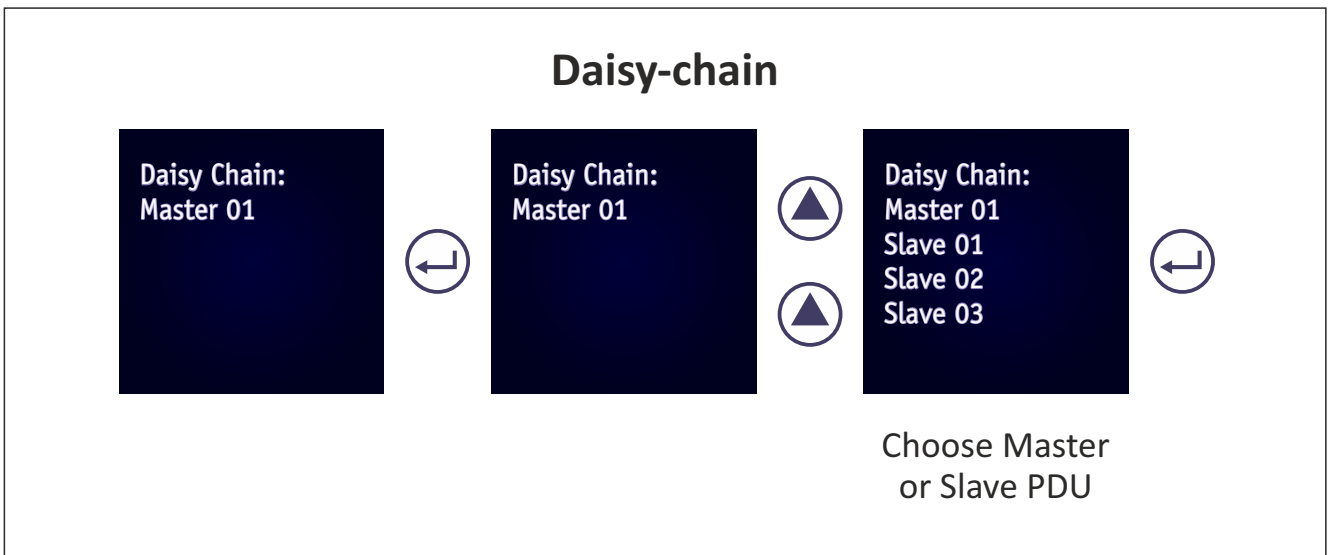
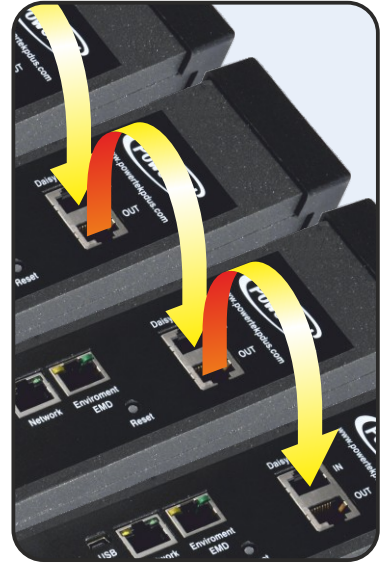
Relay n: XX
Relay n+1: XX



Relay 01: XX
Relay 02: XX

Getting Started

2. For each POWERTEK PDU that you add to the chain, use Network cables to connect it to the parent POWERTEK's Daisy-Chain Port. If there are 4 POWERTEK PDU named A, B, C and D. The output Daisy-Chain port of PDUA is connected to input Daisy-Chain port of PDU B, the output Daisy-Chain port of PDU B is connected to input Daisy-Chain port of PDU C and the output Daisy-Chain port of PDU C is connected to input Daisy-Chain port of PDU D to form a linear structure as illustrated in the following figure.



Getting Started

Using the (RCM) Residual Current Monitoring:

When residual current device is triggered, besides LCM keep flashing will display the “WARNING” signal as shown following.



User can set the related setting of residual current from Inlet Configuration webpage as shown following.

1. Alarm threshold setting range for 3mA to 50mA, Threshold default setting is 20mA, when residual current greater than or equal to threshold value, alarm is trigger.
2. When DC residual current greater than or equal to 5mA, alarm is trigger.
3. When AC residual current greater than or equal to 20mA, alarm is trigger.
4. When alarm threshold value setting less than or equal to 5mA, If DC residual current or AC residual are active, alarm is trigger.
5. When alarm threshold value setting less than or equal to 20mA, If AC residual current is active, alarm is trigger and DC residual current will be ignore.

Inlet Configuration

PDU A | **PDU B**

Inlet Load Management

Status

Power: 16.1 W ●

Energy: 0 kWh (from 28/10/2016 14:50:39)

Configuration

	Critical	Warning
Over Load Alarm (kW)	5.8	4.6

Residual Current Monitoring

Residual Current: 10.6 mA ●

Alarm Threshold (mA): 10

Phase Load Management

Phase	Current(A) Total(CB1/CB2)	Voltage(V)	Power Factor (%)	Power (W/VA) Active/Apparent	Status
1	0.24(0.00/0.24)	110.2	99.9	16.1/26.9	●
2	0.00(0.00/0.00)	111.3	99.9	0.0/0.0	●
3	0.00(0.00/0.00)	111.3	99.9	0.0/0.0	●

Using the Console Menu

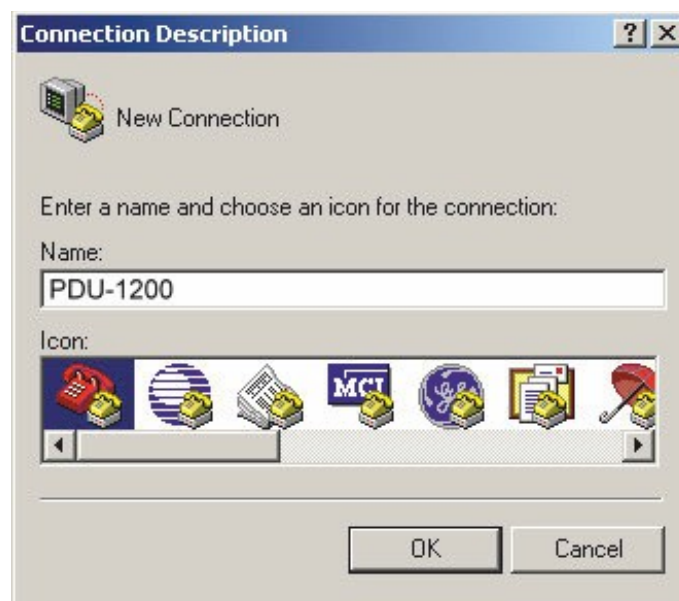
The POWERTEK PDU is provided with a mini USB port that enables users to configure and control the system through PC's USB port (Need to install driver). Use the USB cable to connect the console port to PC's USB port as described in on page . This section describes how to use a console application to control the device and configure its settings such as its IP address, outlet control parameters, access control table, and trap receivers table.

Using HyperTerminal

HyperTerminal is a console application in Windows that enables users to configure or control a device through command line parameters. Users can configure the device parameters and its outlets through simple numerical commands from PC keyboard. Users can also use Telnet or any other console application for controlling the device in a similar manner.

Follow these steps to start HyperTerminal and communicate with the device:

1. To start HyperTerminal, click Start, Programs, Accessories, Communications, and HyperTerminal from the Windows Start button.
2. A New Connection opens. Type a name for the connection in the Name field and select an icon for the connection. Click OK when done.



Using the Console Menu

Navigating through the Console Menu

Follow these steps to navigate through the console menu to modify settings:

- To select a submenu, type the number corresponding to the submenu and press Enter. For example, to select the PDU Configuration Settings menu, type 1 and press Enter. Submenus may have further nested menus which can also be accessed by typing the appropriate number.
- To modify a menu option, select the option with its corresponding number and then type the new values for the option. For instance, to change the system date, first select the System Date option by typing 1 from the Day and Time Group and press Enter. Then type the date in the specified format (dd/mm/yyyy) and press Enter to save the changes.
- Type 0 (zero) to return to a previous or higher-level menu.

```
+-----+
|                                     |
|               PDU Configuration Utility               |
|               [PDU Configuration Settings]            |
|-----+
Version   : POWERTEK System v1.00 (2M)(SN)
Ethernet address   : 00 E0 D8 00 7F 61
1. IP, Time and System Group
0. Back to Main Menu

Please Enter Your Choice =>
```

```
+-----+
|                                     |
|               PDU Configuration Utility               |
|               [IP, Time and System Group]            |
|-----+
Firmware Version : POWERTEK _v0.80_b01
Ethernet address  : 00:E0:D8:00:7F:61
1. IPv4 Group
2. IPv6 Group
3. Date and Time Group
4. System Contact : Technical Support Team
5. System Name : XXXXX
6. System Location : OOOOOOO
0. Back to Main Menu

Please Enter Your Choice =>
```

Using the Console Menu

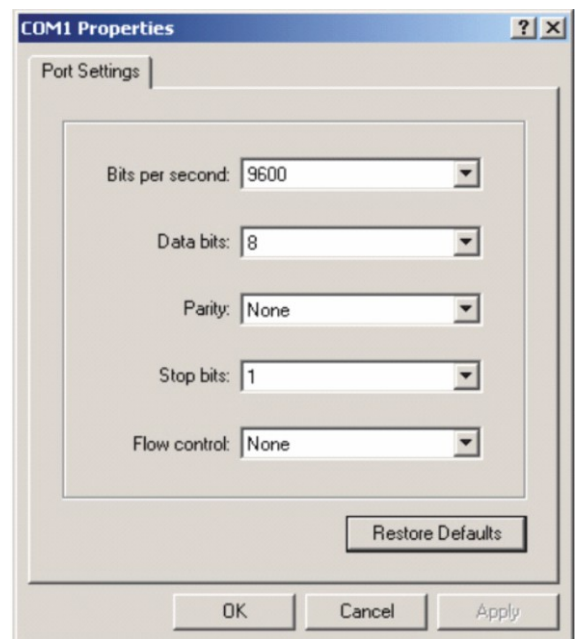
1. From the Connect using drop-down box, select the COM port that users have connected to the POWERTEK PDU. Click OK when done.
2. The Properties window opens. Click Restore Defaults to use the default settings. Make sure that the Bits per second = "9600", Data Bits = "8", Parity = "None", Stop bits = "1" and Flow Control = "None". Click OK when done.
3. Press any key. The device Configuration Utility Main menu opens and users are prompted for a password. Type the default password (admin) and press Enter to continue.

```
=====
|                                     |
|                   PDU Configuration Utility                   |
|               [Version: POWERTEK_v0.80_b01]                   |
|                                     |
|=====
```

Enter Password: *****

The main menu options are displayed

```
=====
|                                     |
|                   PDU Configuration Utility                   |
|               [Version: POWERTEK_v0.80_b01]                   |
|                                     |
|=====
| 1. PDU Configuration Settings                               |
| 2. Reset Configuration to Default                           |
| 3. Restart PDU                                             |
| 0. Exit                                                     |
| Please Enter Your Choice =>                               |
|=====
```



Using the Console Menu

The console menu consists of the following submenus:

- IPv4 Group:

Type 1 and press Enter, then input new IP address and press Enter. The IP Address has been updated.

Type 2 and press Enter, then input new Gateway address and press Enter. The Gateway Address has been updated.

Type 3 and press Enter, then input new Network Subnet and press Enter. The Network Subnet has been updated.

```
+-----+
|           IP, Time and System Group           |
|                               [IPv4 Group]      |
+-----+
1. IP Address      : 10.1.2.170
2. Gateway Address : 10.1.1.254
3. Network Subnet  : 255.255.0.0
0. Return to previous menu
```

- IPv6 Group:

Type 1 and press Enter, then input new IPv6 address and press Enter. The IPv6 Address has been updated.

```
+-----+
|           IP, Time and System Group           |
|                               [IPv6 Group]      |
+-----+
1. IP v6 Address  : 2001:b183:1:1:2e0:d8ff:feff:b585/64
0. Return to previous menu
```

- Date and Time Group:

Type 1 and press Enter, then input System Date and press Enter. The System Date has been updated.

Type 2 and press Enter, then input new System Time and press Enter. The System Time has been updated.

Type 3 and press Enter, then input [1] for Enable / [0] for Disable “NTP” and press Enter. The NTP control setting has been updated.

```
+-----+
|           IP, Time and System Group           |
|                               [Date and Time Group] |
+-----+
1. System Date (dd/mm/yyyy) : 30/05/2014
2. System Time (hh:mm:ss)   : 15:05:17
3. NTP Control               : Disabled
4. NTP Server                :
5. Time Zone                 : 62
6. Daylight Saving Time Control : Disabled
0. Return to previous menu
```

Type 4 and press Enter, then input NTP Server and press Enter. The NTP Server has been updated.

Type 5 and press Enter, then input Time Zone and press Enter. The Time Zone has been updated.

Type 6 and press Enter, then input [1] for Enable / [0] for Disable “Daylight Saving Time” and press Enter. The “Daylight Saving Time” setting has been updated.

- System Contact: Input and click enter to update System Contact.
- System Name: Input and click enter to update System Name.
- System Location: Input and click enter to update System Location.

Using the Web Interface

The POWERTEK PDU provides a graphic user interface that can be viewed from a web browser such as Internet Explorer. This enables users to access and control the device outlets and subsequently, its output devices remotely from users' desktop, laptop, PDA, or even users' mobile phone. This section provides instructions about how to use the web interface to configure and control the PDU remotely.

Summary Overview-System Overview

Start a web browser such as Internet Explorer from the host PC or laptop and enter the IP address of the Power Strip in the address bar. For details about setting the IP address of the system, see on page 33. You will be prompted to enter a Username and Password. Click Go and the main status page of the POWERTEK PDU web interface is displayed.

The default settings are:

DHCP: Enabled

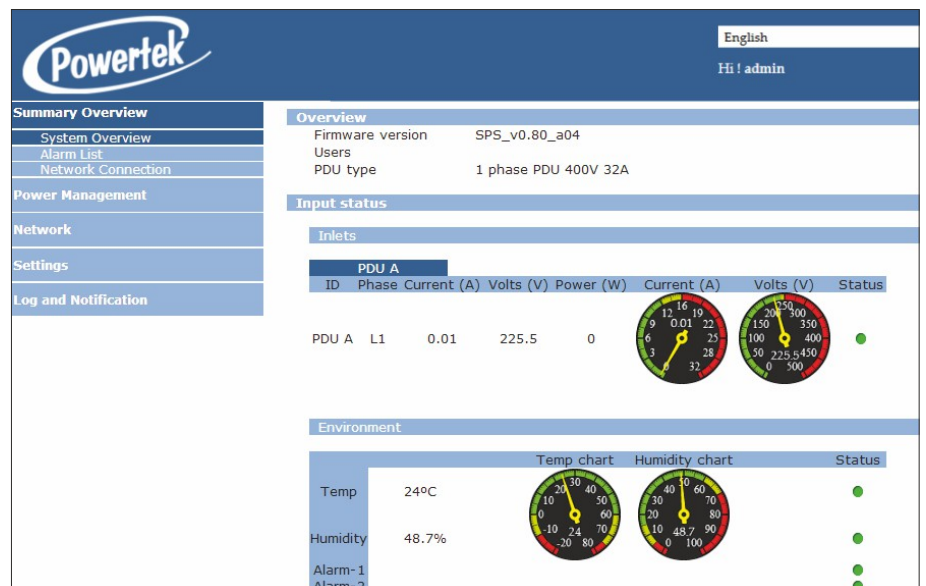
IP Address: 192.168.1.250

Subnet Mask: 255.255.255.0

Gateway: 192.168.1.10

User Name: admin

Password: admin



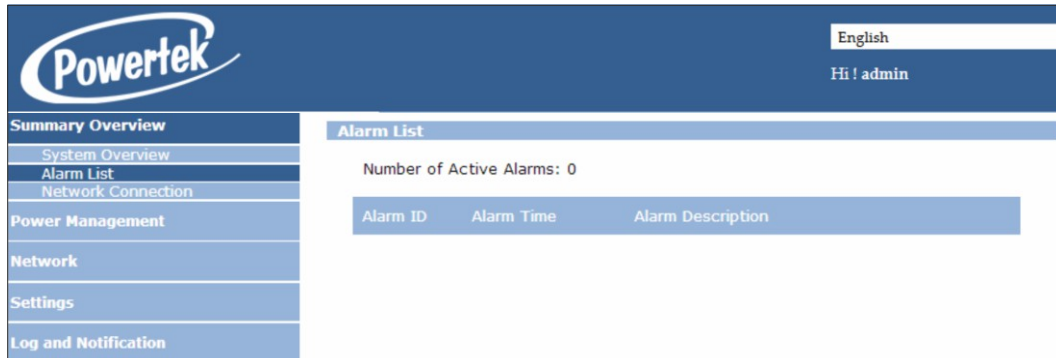
The main page shows a graphic representation of the Power Strip outlets and inputs status as described below:

- The panel shows the various menus and submenus. Click any menu to display the menu options, expand the menu items, and modify the menu options as required.
- The right panel shows the current status of the Power strip.

Using the Web Interface

Summary Overview-Alarm List

The “Alarm List” page shows the list of Alarms, which were set by user. POWERTEK PDU will follow the rules of alarm to send out notification to user.

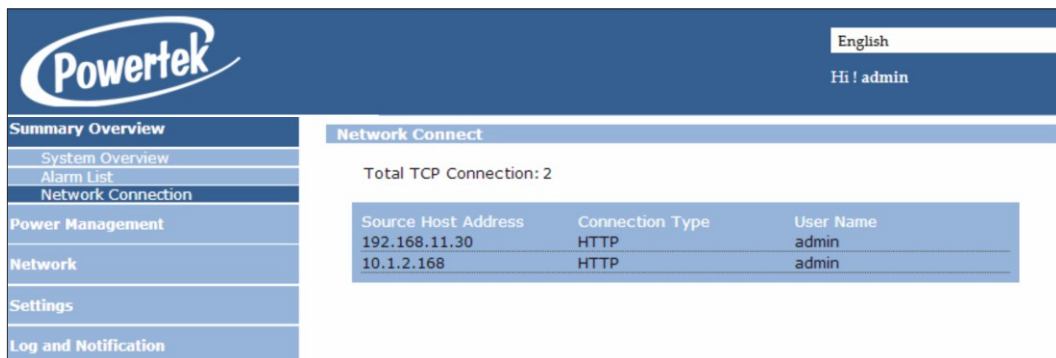


The screenshot shows the Powertek web interface. The top navigation bar includes the Powertek logo, a language dropdown set to "English", and a user greeting "Hi ! admin". A left sidebar menu contains the following items: Summary Overview (selected), System Overview, Alarm List, Network Connection, Power Management, Network, Settings, and Log and Notification. The main content area is titled "Alarm List" and displays "Number of Active Alarms: 0". Below this is a table with the following structure:

Alarm ID	Alarm Time	Alarm Description
----------	------------	-------------------

Summary Overview-Network Connection

The Network Connection page shows a list of user's connections.



The screenshot shows the Powertek web interface. The top navigation bar includes the Powertek logo, a language dropdown set to "English", and a user greeting "Hi ! admin". A left sidebar menu contains the following items: Summary Overview (selected), System Overview, Alarm List, Network Connection, Power Management, Network, Settings, and Log and Notification. The main content area is titled "Network Connect" and displays "Total TCP Connection: 2". Below this is a table with the following structure:

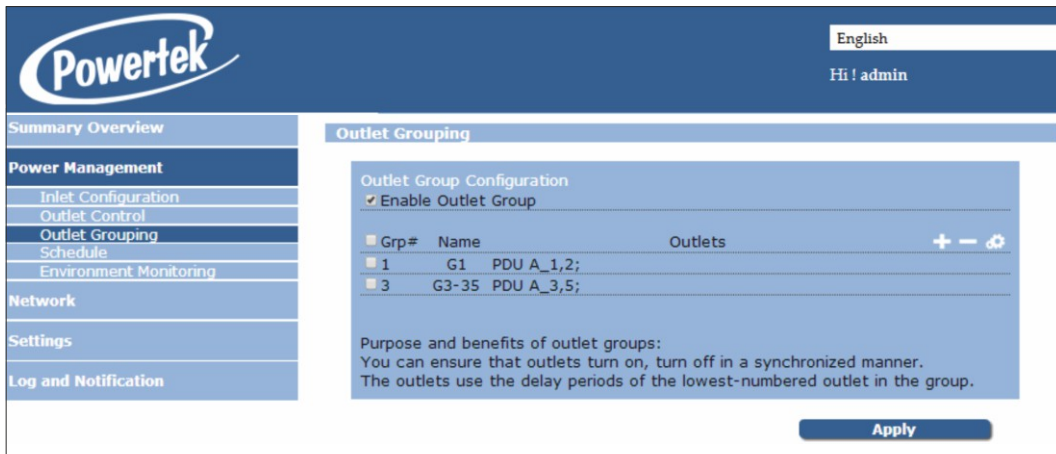
Source Host Address	Connection Type	User Name
192.168.11.30	HTTP	admin
10.1.2.168	HTTP	admin

Using the Web Interface

Power Management-Outlet Grouping

This page shows the group list and let user enable Outlet Group.

User can add/delete/modify the group list. The group list is up to 8 groups. Take Group_1 for example, I have set Outlet_1 of PDU_A, Outlet_3 of PDU_B and Outlet_4 of PDU_C into Group_1. When I set action to Outlet_3 of PDU_B and apply, Action will apply to all PDUs of Group1.



English
Hi! admin

Summary Overview

Power Management

- Inlet Configuration
- Outlet Control
- Outlet Grouping
- Schedule
- Environment Monitoring

Network

Settings

Log and Notification

Outlet Grouping

Outlet Group Configuration

Enable Outlet Group

Grp#	Name	Outlets	
1	G1	PDU A_1,2;	+ - ⚙
3	G3-35	PDU A_3,5;	

Purpose and benefits of outlet groups:
You can ensure that outlets turn on, turn off in a synchronized manner.
The outlets use the delay periods of the lowest-numbered outlet in the group.

Apply

Using the Web Interface

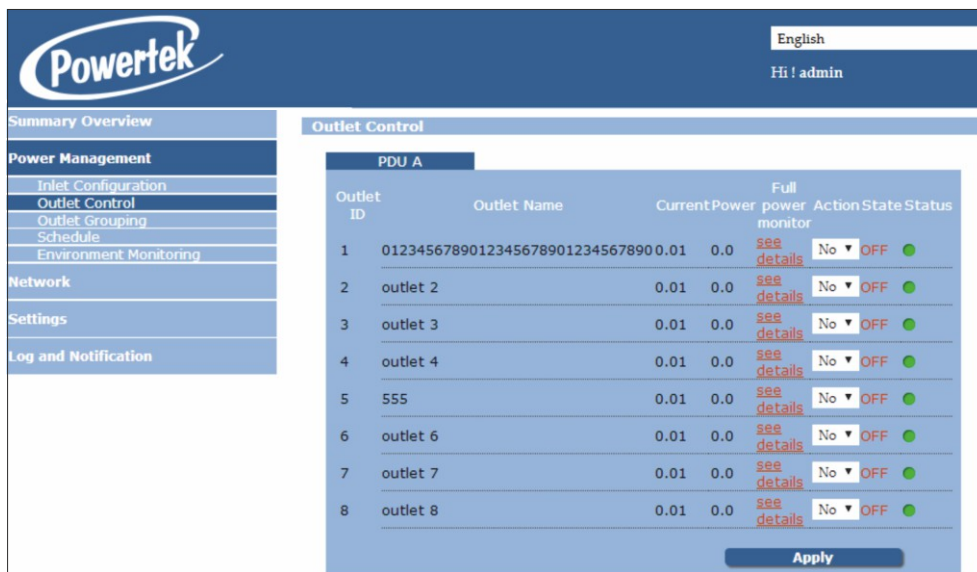
Power Management-Outlet Control

This page let user trigger action by drop-down list. After you select an action and click "Apply", server will accord to the instruction to complete the task remotely.

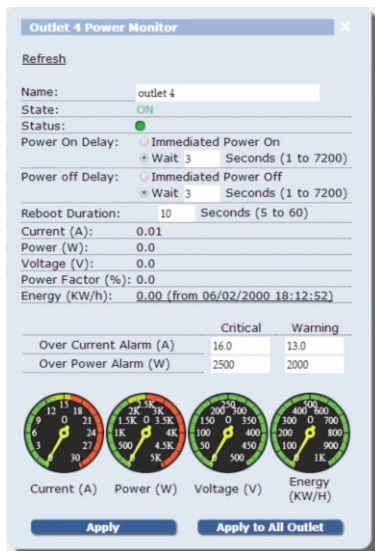
Click "See Details" to open the page as shown:

In this page, you can set "How many seconds delay" when Power ON/OFF Delay action are triggered.

You can also set the seconds of "Reboot Duration".



After set, you can click "Apply" to apply to this Outlet or click "Apply to All Outlet" to make this setting apply to all Outlets.



Take Outlet4 for example (Set Power ON/OFF Delay=3 seconds /Reboot Duration=10 seconds) , when you select Action "Off Delay" and click Apply. Outlet4 will power off after 3 seconds.

If you select Action "Power Cycle Immediate" and click Apply, Outlet4 will reboot and this procedure will cost 10 seconds.

If you select Action "Power Cycle Delay" and click Apply, Outlet4 will reboot and this procedure will cost 16 seconds.(Include 3 seconds for "Power ON Delay", 3 seconds for "Power Off Delay" and 10 seconds for "Reboot Duration").

Using the Web Interface

Power Management-Inlet Configuration

This page let user configure Inlet load. You can set the condition of "Critical" and "Warning". (The value of "Critical" must be larger then "Warning").

When Inlet Power is over the condition you set, the light of status will become correspond color.(Red means "Critical", Yellow means "Warning" and Green means "Normal") And you will receive the notification mail if you have set in Email Notification.

The screenshot displays the 'Inlet Configuration' page for 'PDU A'. It features a sidebar on the left with navigation links: Summary Overview, Power Management (Inlet Configuration, Outlet Control, Outlet Grouping, Schedule, Environment Monitoring), Network, Settings, and Log and Notification. The main content area is titled 'Inlet Configuration' and includes a 'PDU A' header. Under 'Inlet Load Management', the 'Status' is shown as 'Normal' with a green indicator. Real-time data shows 'Power: 0 W' and 'Energy: 0.02 kWh (from 06/06/2014 11:00:49)'. The 'Configuration' section for 'Over Load Alarm (kW)' has 'Critical' set to 5.8 and 'Warning' set to 4.8. Below this, 'Phase Load Management' includes a table with columns for Phase, Current(A), Voltage(V), Power Factor (%), Power (W), and Status. The table shows Phase 1 with Current 0.01, Voltage 225.5, Power Factor 0.0, and Power 0.0. Another 'Configuration' section for 'Phase Load Management' shows 'Over Current Alarm (A)' with Critical at 16.0 and Warning at 13.0, and 'Over Voltage Alarm (V)' with Critical at 250.0 and Warning at 240.0. An 'Apply' button is located at the bottom of the configuration area.

Using the Web Interface

Power Management-Environment Monitoring

This page show the status of EMD and let user set the alarm configuration. You can set the "Alarm Condition" of "Critical" and "Warning". (The value of "Critical" must be larger then "Warning") It will follow the Email Notification

The screenshot displays the Powertek web interface. The top navigation bar includes the Powertek logo, a language dropdown set to 'English', and a user greeting 'Hi! admin'. A left sidebar menu contains sections for 'Summary Overview', 'Power Management' (with sub-items: Inlet Configuration, Outlet Control, Outlet Grouping, Schedule, Environment Monitoring), 'Network', 'Settings', and 'Log and Notification'. The main content area is titled 'Environment Monitoring' and is divided into two sections: 'Environment' and 'Alarm Configuration'. The 'Environment' section shows 'Temp' at 24°C and 'Humidity' at 48.7%, each with a corresponding gauge chart. Below these are 'Alarm-1' and 'Alarm-2', both with green status indicators. The 'Alarm Configuration' section has an 'Enable' checkbox checked and a table for setting thresholds. The table has columns for 'High Critical', 'High Warning', 'Low Critical', 'Low Warning', 'Hysteresis', and 'Offset'. The 'Apply' button is at the bottom.

	High		Low		Hysteresis	Offset
	Critical	Warning	Critical	Warning		
Temperature(°C)	75.0	60.0	-10.0	0.0	0	0.0
Humidity(%)	70.0	60.0	5.0	15.0	0	0.0
Alarm-1	Normal Open					
Alarm-2	Normal Open					

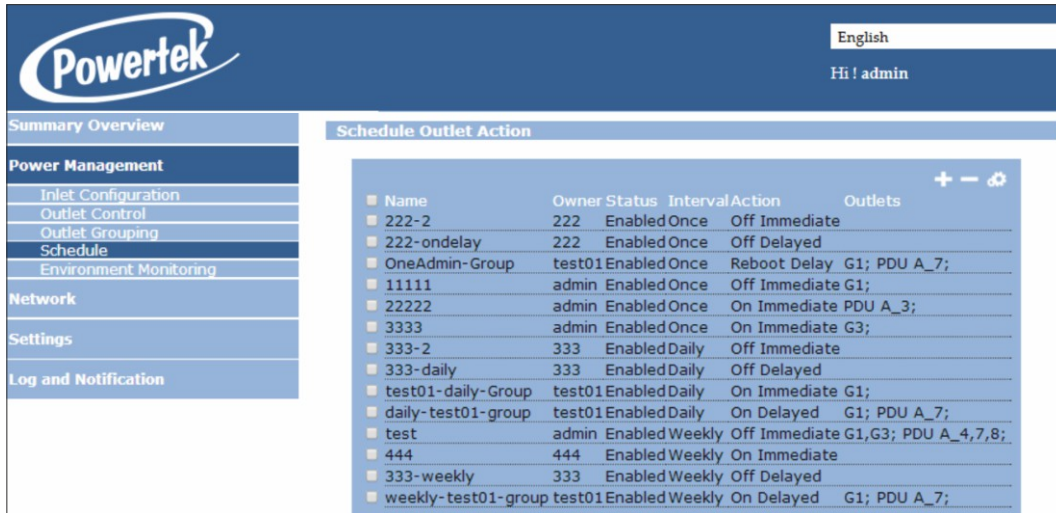
rule you set to send out mail.

POWERTEK PDU support 2 digital input of EMD. And you can set 2 alarms for EMD sensors. There are 3 options(Normal Open/Normal Close/Disable) of EMD sensor. If you set "Normal Open", the EMD sensor will become "Warning"(Yellow light) when closed.

Using the Web Interface

Power Management-Schedule

This page shows the Schedule list and let user add/delete/modify the Schedule Outlet Action list. The action list is up to 8.



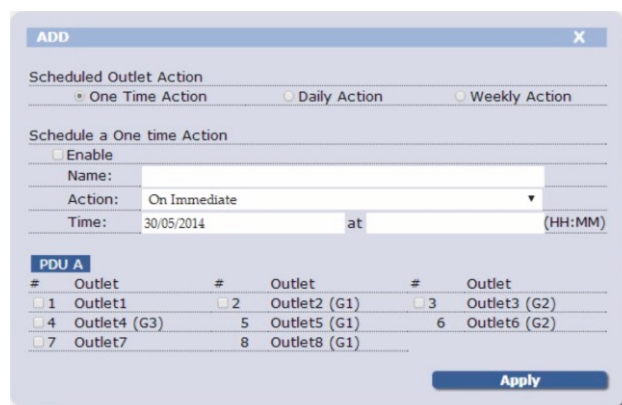
Click "+" to add a schedule Outlet Action, the page as shown:

There are 3 kinds of "Scheduled Outlet Action".

(One Time/Daily/Weekly)

The behavior of "Action"/"Group" will follow the rule of "Outlet Control"/"Outlet Grouping".

Notice: If you have set any settings with "Group" function and you modify the group list, due to the safety concern, you have to reset all settings you set before.



Using the Web Interface

Network-TCP/IP

This page let user enable DHCP and set IP address manually.

English
Hi ! admin

Summary Overview
Power Management
Network
TCP/IP
Accessible IP Setting
Security
Network Service
SNMP Setting
SNMP Trap Setting
Settings
Log and Notification

TCP/IP

Enable DHCP

IPv4 Setting

IP Address	10.1.2.170
Subnet Mask	255.255.0.0
Gateway	10.1.1.254
Primary DNS Server	127.0.0.1
Secondary DNS Server	255.255.0.0

IPv6 Setting

Enable IPv6

Configuration: Automatic

IP Address	2001:1234:100:f101:2e0:d8ff:feff:b406
Prefix Length	64
Router	
Primary DNS Server	
Secondary DNS Server	

Apply

Network Management-Accessible IP Setting

This page let user add/delete/modify accessible IP list.

English
Hi ! admin

Summary Overview
Power Management
Network
TCP/IP
Accessible IP Setting
Security
Network Service
SNMP Setting
SNMP Trap Setting
Settings
Log and Notification

Accessible IP Setting

Enable the accessible IP list

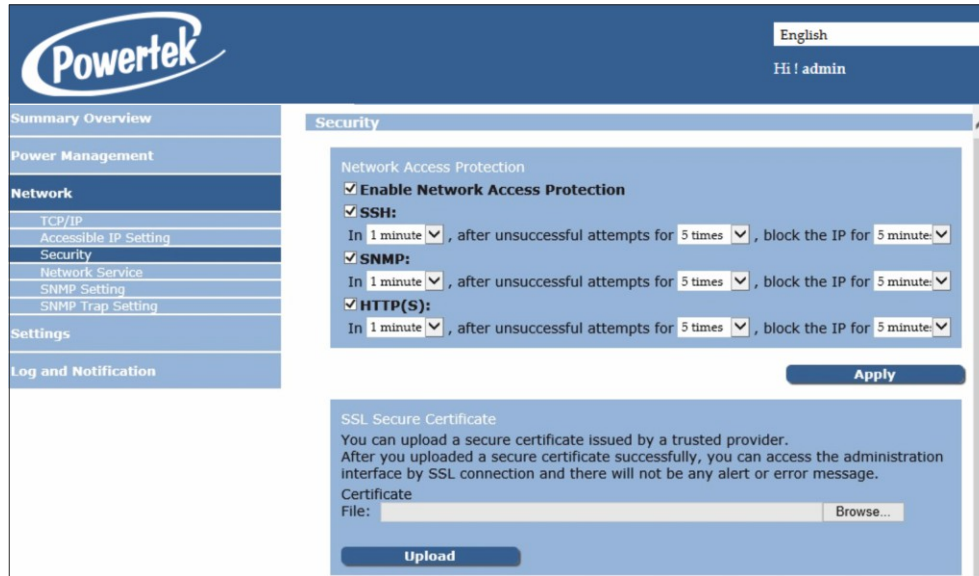
IP Address	Prefix Length	Action
		+ - ⚙

Apply

Using the Web Interface

Network Management-Security

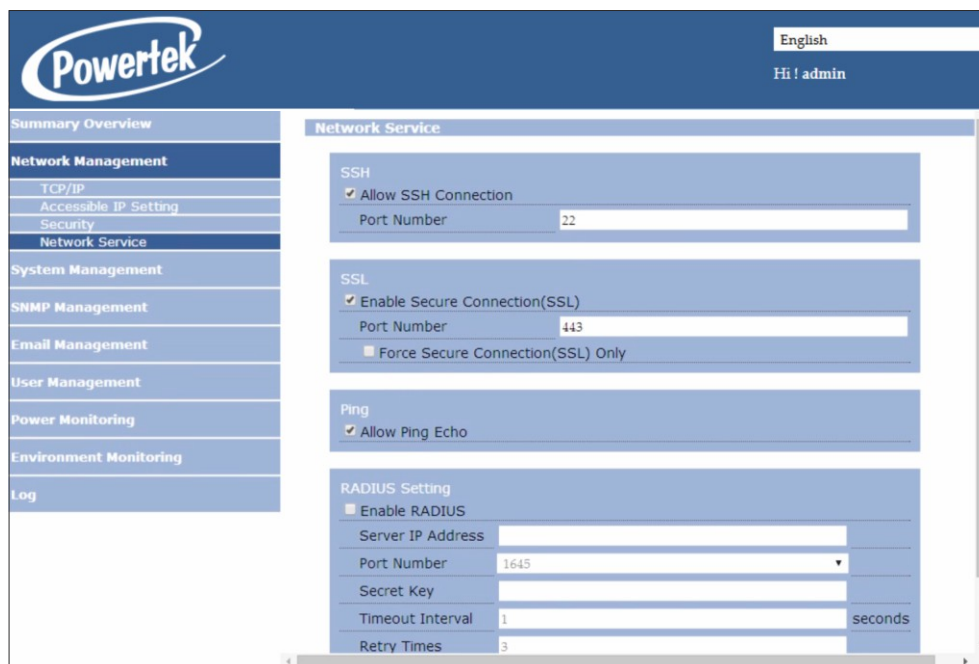
This page let user enable DHCP and set IP address manually.



The screenshot shows the Powertek web interface. The top navigation bar includes the Powertek logo, a language dropdown set to 'English', and a user greeting 'Hi ! admin'. A left sidebar menu lists various management categories: Summary Overview, Power Management, Network (with sub-items: TCP/IP, Accessible IP Setting, Security, Network Service, SNMP Setting, SNMP Trap Setting), Settings, and Log and Notification. The main content area is titled 'Security' and contains two sections. The first section, 'Network Access Protection', has a checked checkbox for 'Enable Network Access Protection'. Below it are three rows for SSH, SNMP, and HTTP(S), each with a checked checkbox and three dropdown menus for 'In' (set to 1 minute), 'after unsuccessful attempts for' (set to 5 times), and 'block the IP for' (set to 5 minute). An 'Apply' button is at the bottom right of this section. The second section, 'SSL Secure Certificate', contains a text box with instructions: 'You can upload a secure certificate issued by a trusted provider. After you uploaded a secure certificate successfully, you can access the administration interface by SSL connection and there will not be any alert or error message.' Below this is a 'Certificate' label and a 'File:' input field with a 'Browse...' button. An 'Upload' button is at the bottom of this section.

Network Management-Network Service

This page let user set SSH/SSL/Ping/RADIUS Setting. If user want to add Radius User(from Settings menu), they have to "Enable RADIUS" in this page first.



The screenshot shows the Powertek web interface. The top navigation bar includes the Powertek logo, a language dropdown set to 'English', and a user greeting 'Hi ! admin'. A left sidebar menu lists various management categories: Summary Overview, Network Management (with sub-items: TCP/IP, Accessible IP Setting, Security, Network Service), System Management, SNMP Management, Email Management, User Management, Power Monitoring, Environment Monitoring, and Log. The main content area is titled 'Network Service' and contains four sections. The first section, 'SSH', has a checked checkbox for 'Allow SSH Connection' and a 'Port Number' input field with the value '22'. The second section, 'SSL', has a checked checkbox for 'Enable Secure Connection(SSL)', a 'Port Number' input field with the value '443', and a radio button for 'Force Secure Connection(SSL) Only'. The third section, 'Ping', has a checked checkbox for 'Allow Ping Echo'. The fourth section, 'RADIUS Setting', has a radio button for 'Enable RADIUS', a 'Server IP Address' input field, a 'Port Number' dropdown menu with the value '1645', a 'Secret Key' input field, a 'Timeout Interval' input field with the value '1' and a unit of 'seconds', and a 'Retry Times' input field with the value '3'.

Using the Web Interface

Network Management-SNMP Setting

This page let user set the SNMP Agent.

English
Hi ! admin

Summary Overview
Power Management
Network
TCP/IP
Accessible IP Setting
Security
Network Service
SNMP Setting
SNMP Trap Setting
Settings
Log and Notification

SNMP Setting

SNMP Agent

Enable SNMP Service

Port Number: 161

SNMP Version: V1

Community Read: *****

Community Write: *****

Apply

Network Management-SNMP Trap Setting

This page let user add/delete/modify SNMP trap setting.

English
Hi ! admin

Summary Overview
Power Management
Network
TCP/IP
Accessible IP Setting
Security
Network Service
SNMP Setting
SNMP Trap Setting
Settings
Log and Notification

SNMP Trap Setting

Receiver Address	Event Level	Trap Version	Description	
10.1.7.253	Information	v1	testt	+ - ⚙

Using the Web Interface

Settings-General Setting

This page let user set General Settings.

English
Hi ! admin

General Setting

System Administration

System Name	BanChao	
System Contact	Technical Support Team	
System Location		
Log Interval	60	seconds
Web Refresh Interval (3 ~ 60)	15	seconds

Date and Time

Current Date and Time	06/06/2014 12:23:30	
Time Zone	[GMT +08:00] Taipei	▼
Date Format	dd/mm/yyyy	▼
Time Setting	24HR	▼

Manual Setting

Date Time (dd/mm/yyyy)	06/06/2014	12:23:13	(hh:mm:ss)
------------------------	------------	----------	------------

Sync with NTP

Server			
Sync Interval	1	day	▼

Enable Daylight Saving Time

Apply

Settings-Change Password

This page let user change password.

English
Hi ! admin

Cloudview Management

CloudView Client Setting

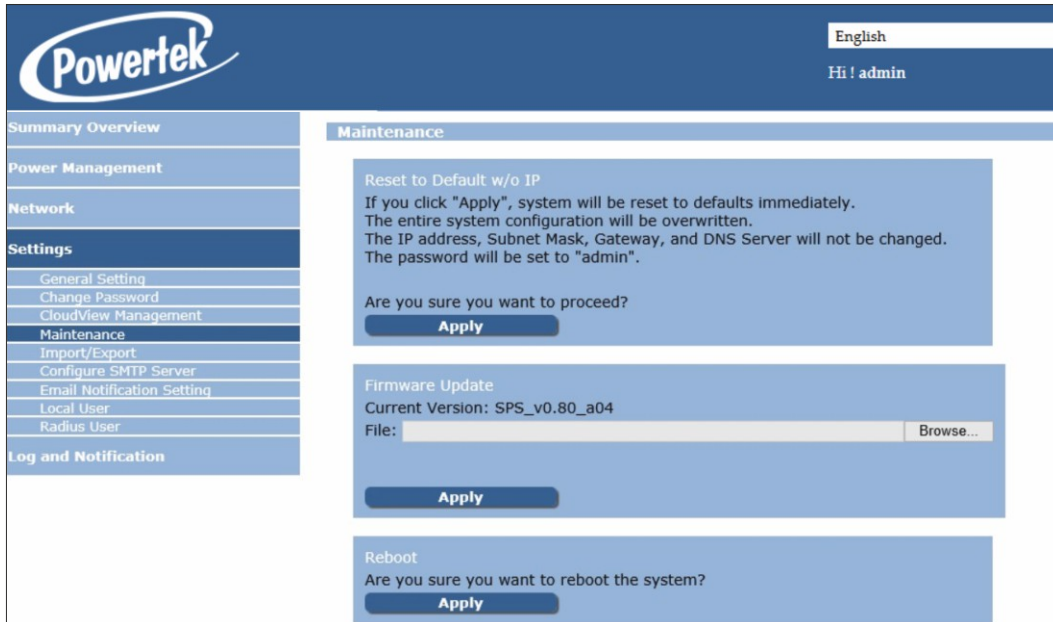
Server IP	
GUID	
undefined	80
Password	

Apply

Using the Web Interface

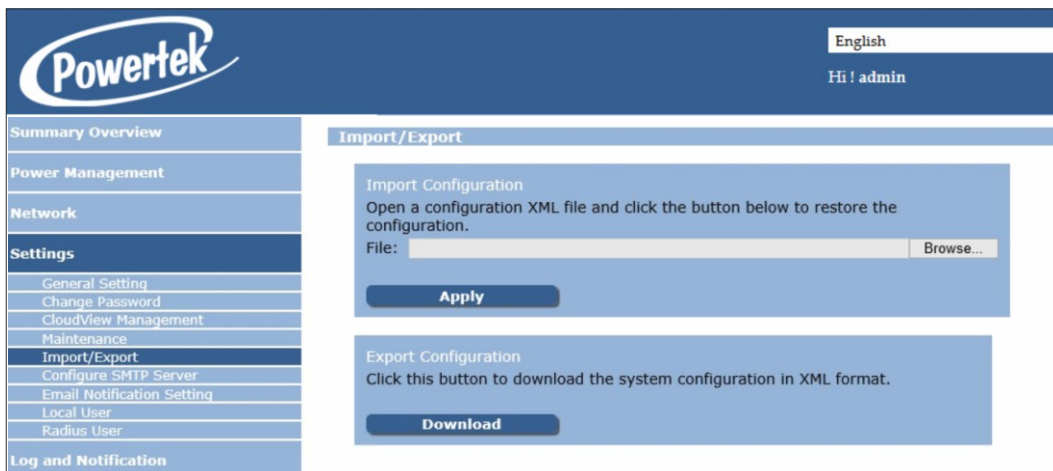
Settings-Maintenance

This page let user set Reset/Upgrade/Reboot.



Settings-Import/Export

This page let user import/export XML file to restore/download the configuration.

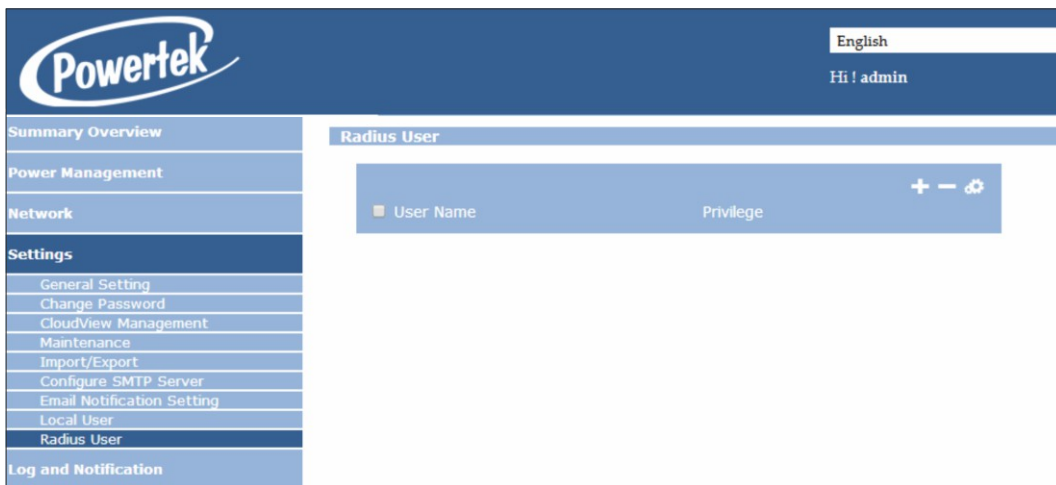


Using the Web Interface

Settings-Radius User

This page let power admin to Add/Delete/Modify Radius users.

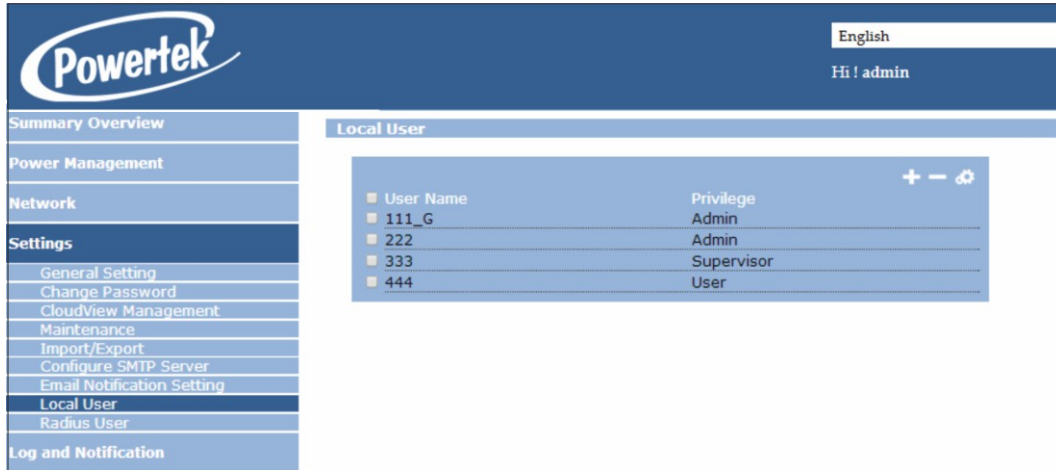
You have to Enable RADIUS and set ready in Network Service. Then you can add a Radius User and set outlet control for this user. The Grouping & Schedule function also support radius user.



NOTE: If there are 2 users with same name both existed in Local User & Radius User, Local user will become a priority in POWERTEK PDU.

Using the Web Interface

Settings-Local User



This page shows the user list and admin can add/delete/modify it. The list is up to 8 users. There are 4 kinds of privilege for the user account, the definition as below:

Privilege	Definition
Power Admin	User can be management all function.
Admin	Admin user cannot management [User Management], [Outlet Grouping], [FW Upgrade & Inlet/Outlet Upgrade], [Reset Default] function, and the other still can management.
Supervision	Supervision user only manage [Power Monitoring] beside [Outlet Grouping], [Inlet/outlet upgrade] function.
User	Cannot manage any function. Read only.

Using the Web Interface

Log and Notification-System Log

This page shows the system log

The screenshot shows the Powertek web interface. The top navigation bar includes the Powertek logo, a language dropdown set to 'English', and a user greeting 'Hi! admin'. The left sidebar contains a menu with the following items: Summary Overview, Power Management, Network, Settings, Log and Notification (highlighted), System Log, Event Log, Inlet History Log, and Outlet History Log. The main content area is titled 'System Log' and features a search filter with 'From: 06/06/2014' and 'To: 06/06/2014', along with 'Apply' and 'Clear All' buttons. Below the filter is a table of log entries:

Date & Time	Description
06/06/2014 10:26:55	Agent IP,DHCP control had changed via HTTP/HTTPS by 10.1.2.168
06/06/2014 10:26:55	Mail sent successfully
06/06/2014 09:31:00	Mail sent successfully
06/06/2014 09:31:00	Mail sent successfully
06/06/2014 09:30:56	Outlet (PDU_A_outlet 6) turned on by user
06/06/2014 09:30:56	Mail sent successfully
06/06/2014 09:30:44	Outlet (PDU_A_outlet 6) turned off by user
06/06/2014 09:30:44	Mail sent successfully
06/06/2014 09:29:52	Mail sent successfully
06/06/2014 09:29:27	Mail sent successfully

At the bottom of the log area, there is a 'Show 10 entries per page' dropdown and a pagination indicator '< < page 1 / 68 >>'.

Log and Notification-Event Log

This page shows the warnings and alarms history log.

The screenshot shows the Powertek web interface. The top navigation bar includes the Powertek logo, a language dropdown set to 'English', and a user greeting 'Hi! admin'. The left sidebar contains a menu with the following items: Summary Overview, Power Management, Network, Settings, Log and Notification (highlighted), System Log, Event Log, Inlet History Log, and Outlet History Log. The main content area is titled 'Event Log' and features a search filter with 'From: 06/06/2014', 'To: 06/06/2014', 'Device: All', and 'Severity: All Events', along with 'Apply' and 'Clear All' buttons. Below the filter is a table of event log entries:

Date & Time	Severity	Event
06/06/2014 09:31:00	Informational	Outlet (PDU_A_outlet 6) power had returned from critical to warning
06/06/2014 09:31:00	Informational	Outlet (PDU_A_outlet 6) power had returned from warning to normal
06/06/2014 09:29:52	Critical	Outlet (PDU_A_outlet 6) power was higher than critical set point
06/06/2014 09:29:27	Warning	Outlet (PDU_A_outlet 6) power was higher than warning set point
06/06/2014 09:28:08	Informational	Outlet (PDU_A_outlet 5) power had returned from warning to normal
06/06/2014 09:27:23	Informational	Outlet (PDU_A_outlet 6) power had returned from critical to warning
06/06/2014 09:26:19	Critical	Outlet (PDU_A_outlet 6) power was higher than critical set point
06/06/2014 09:25:54	Warning	Outlet (PDU_A_outlet 6) power was higher than warning set point
06/06/2014 09:24:33	Informational	Outlet (PDU_A_outlet 5) power had returned from warning to normal
06/06/2014 09:23:50	Informational	Outlet (PDU_A_outlet 6) power had returned from critical to warning

At the bottom of the log area, there is a 'Show 10 entries per page' dropdown and a pagination indicator '< < page 1 / 67 >>'.

Using the Web Interface

Settings-Configure SMTP Server

This page let user configure SMTP server.

English
Hi ! admin

Summary Overview

Power Management

Network

Settings

- General Setting
- Change Password
- CloudView Management
- Maintenance
- Import/Export
- Configure SMTP Server
- Email Notification Setting
- Local User
- Radius User

Log and Notification

Configure SMTP Server

SMTP Server	10.1.9.251
Port Number	25
Sender Email Address	test01@ia9.org
Prefix	test
<input checked="" type="checkbox"/> Enable SMTP Authentication	
User Name	test01
Password	*****

Apply

Settings-Email Notification Setting

This page let user set Email notification setting. Click "+" to set a new setting. Input "Receiver Address", select "Email Type"/"Event Level" and "Description", then click "Apply" to save setting. You can send a test mail to confirm the setting is correct or not through clicking "Send Test". After set well, you will get a notification email when event has been triggered.

English
Hi ! admin

Summary Overview

Power Management

Network

Settings

- General Setting
- Change Password
- CloudView Management
- Maintenance
- Import/Export
- Configure SMTP Server
- Email Notification Setting
- Local User
- Radius User

Log and Notification

Email Notification Setting

Receiver Address	Email Type	Event Level	Description	
test01@ia9.org	Events	Information	spsTEST	
test02@ia9.org	Events	Information	ttt	

+ - ⚙

Using the Web Interface

Log and Notification-Inlet History Log

This page shows the inlet history log. You can set the log interval in General Setting under System Management.

The screenshot displays the 'Inlet History Log' page. The left sidebar contains navigation options: Summary Overview, Power Management, Network, Settings, and Log and Notification (with sub-items: System Log, Event Log, Inlet History Log, and Outlet History Log). The main area shows filters for 'From: 06/06/2014', 'To: 06/06/2014', and 'Device: All'. Below the filters are 'Apply' and 'Clear All' buttons. A table lists log entries with columns: Date & Time, Device Name, Pwr.kW, Pwr Max.kW, Energy.kWh, Ph 1, I.A Ph 2, and I.A Ph 3. The table shows 10 entries for PDU A on 06/06/2014. At the bottom, it indicates 'Show 10 entries per page' and '< « page 1 / 85 » >'.

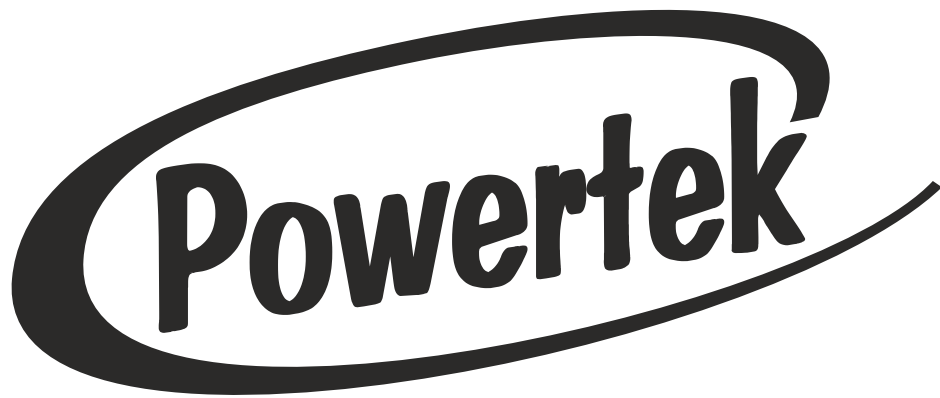
Date & Time	Device Name	Pwr.kW	Pwr Max.kW	Energy.kWh	Ph 1	I.A Ph 2	I.A Ph 3
06/06/2014 14:16:00	PDU A	4.9	8.9	0.00	0.07	0.00	0.00
06/06/2014 14:15:00	PDU A	5.0	8.9	0.00	0.07	0.00	0.00
06/06/2014 14:14:00	PDU A	5.0	8.9	0.00	0.07	0.00	0.00
06/06/2014 14:13:00	PDU A	5.0	8.9	0.00	0.07	0.00	0.00
06/06/2014 14:12:00	PDU A	5.0	8.9	0.00	0.07	0.00	0.00
06/06/2014 14:11:00	PDU A	5.0	8.9	0.00	0.07	0.00	0.00
06/06/2014 14:10:00	PDU A	5.0	8.9	0.00	0.07	0.00	0.00
06/06/2014 14:09:00	PDU A	5.0	8.9	0.00	0.07	0.00	0.00
06/06/2014 14:08:00	PDU A	5.0	8.9	0.00	0.07	0.00	0.00
06/06/2014 14:07:00	PDU A	5.0	8.9	0.00	0.07	0.00	0.00

Log-Outlet History Log

This page shows the outlet history log.

The screenshot displays the 'Outlet History Log' page. The left sidebar contains navigation options: Summary Overview, Power Management, Network, Settings, and Log and Notification (with sub-items: System Log, Event Log, Inlet History Log, and Outlet History Log). The main area shows filters for 'From: 06/06/2014', 'To: 06/06/2014', 'Device: All', and 'Outlet: All'. Below the filters are 'Apply' and 'Clear All' buttons. A table lists log entries with columns: Date & Time, Device Name, Outlet Name, Pwr.kW, Pwr Max.kW, Energy.kWh, and I.A Ph 3. The table shows 10 entries for PDU A on 06/06/2014. At the bottom, it indicates 'Show 10 entries per page' and '< « page 1 / 677 » >'.

Date & Time	Device Name	Outlet Name	Pwr.kW	Pwr Max.kW	Energy.kWh	I.A Ph 3
06/06/2014 14:18:00	PDU A	outlet 1	0.0	0.0	0.00	0.01
06/06/2014 14:18:00	PDU A	outlet 2	0.0	0.0	0.00	0.01
06/06/2014 14:18:00	PDU A	outlet 3	0.0	5.6	0.00	0.01
06/06/2014 14:18:00	PDU A	outlet 4	0.0	0.0	0.00	0.01
06/06/2014 14:18:00	PDU A	outlet 5	0.0	2.4	0.00	0.01
06/06/2014 14:18:00	PDU A	outlet 6	4.9	6.2	0.10	0.07
06/06/2014 14:18:00	PDU A	outlet 7	0.0	9.7	0.00	0.01
06/06/2014 14:18:00	PDU A	outlet 8	0.0	0.0	0.00	0.01
06/06/2014 14:17:00	PDU A	outlet 1	0.0	0.0	0.00	0.01
06/06/2014 14:17:00	PDU A	outlet 2	0.0	0.0	0.00	0.01



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