User Manual

PDUTracker

Management Software for PDU

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1. Overview

1.1. Introduction

PDUTracker is a monitoring software for multiple PDUs via serial port or SNMP card at the same time. The major functions of PDUTrackering software include data log for devices, alarm messages and parameter setting for devices.

1.2. Features

- Automatic and real-time data acquisition of the devices and secured data log saving
- Graphic display of device data for quick and easy reading
- Warning notifications via SMS, tray message and e-mail
- Easy diagnosis of event statistics
- Online and manual upgrade

2. Install and Uninstall

2.1. System Requirement

- 512 MB physical memory at least (1 GB is recommended)
- 2GB hard disk at least
- Administrator authority is required
- More than 32-bit colors and 1280 x 800 or above resolution display is recommended
- An available communication port is needed
- Supported OS:
  - Windows XP/2000/2003/Vista/2008 (32-bit & 64-bit)
  - Windows 7/8/8.1/10 (32-bit & 64-bit)
  - Windows SBS 2011

2.2. Software Install

Step 1 After clicking “Install”, it will pop up “the installation in process” screen. Please refer to the Diagram 2-1.

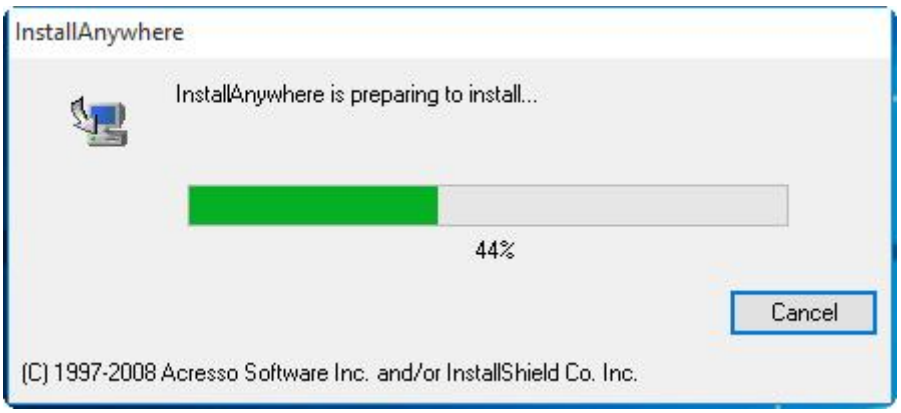


Diagram 2-1

Step 2 Choose preferred language and click “OK” as Diagram 2-2.

Diagram 2-2

Step 3 Click “Next” to proceed to the next step as Diagram 2-3.

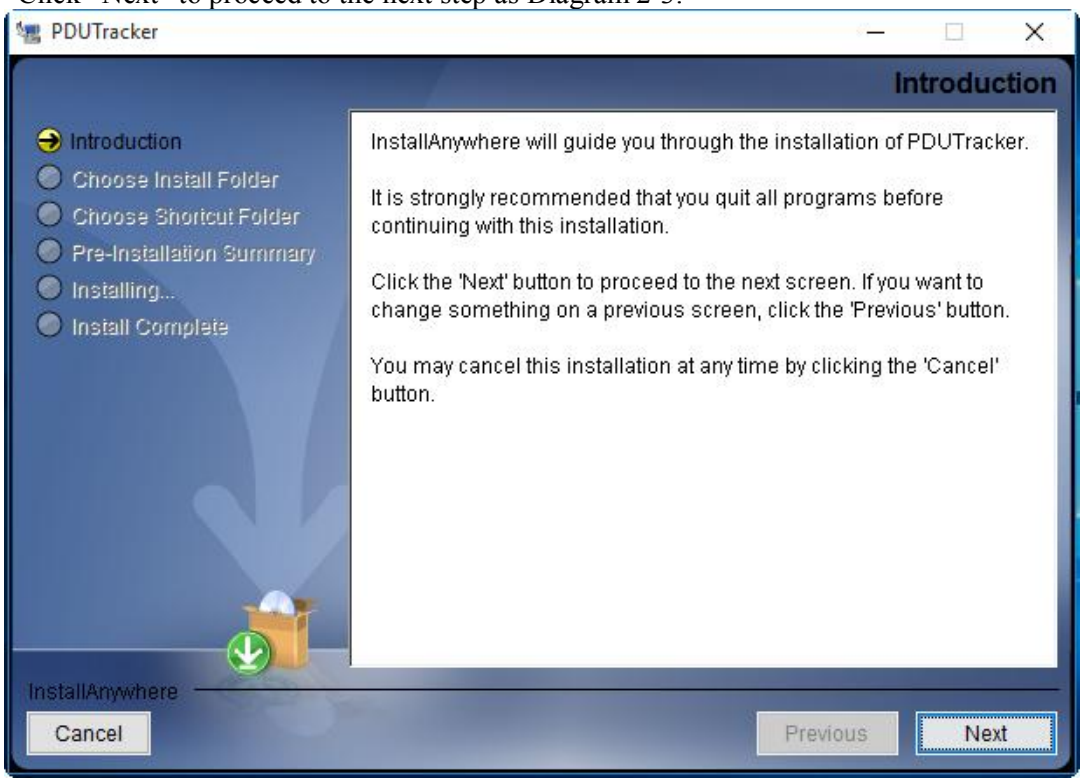


Diagram 2-3

Step 4 Click “Choose” button to change the default folder. After choosing the target folder, click “Next” button. Please refer to Diagram 2-4.

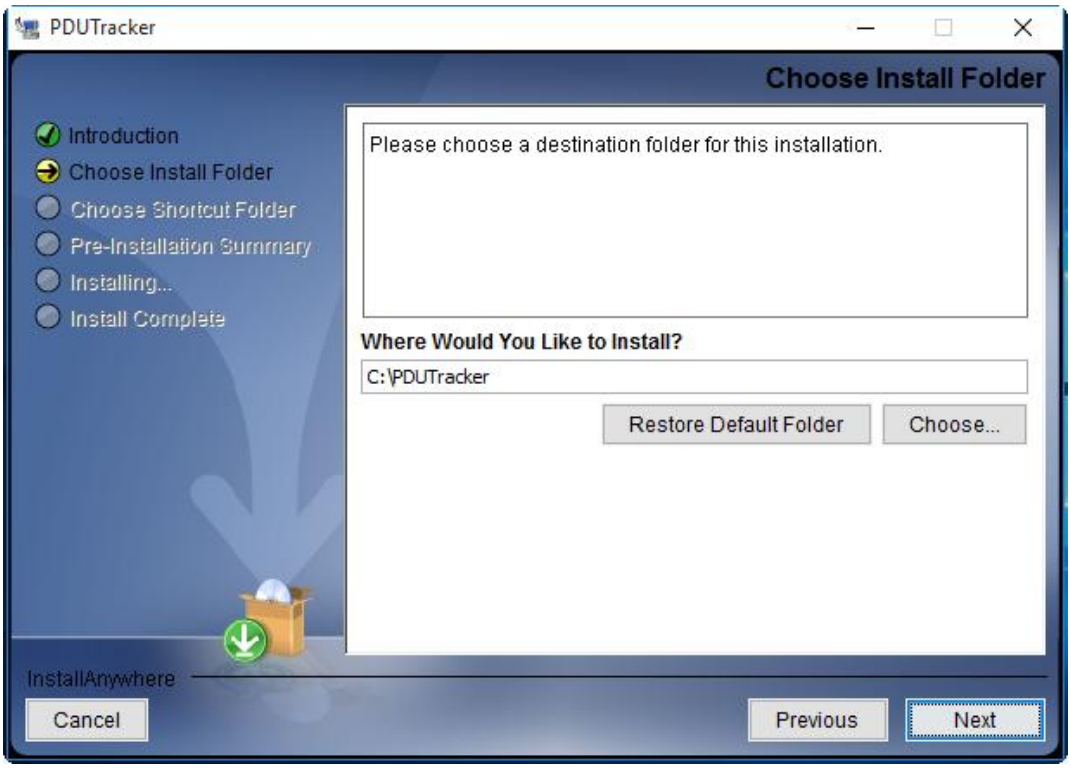


Diagram 2-4

Step 5 Choose the shortcut folder and click "Next" button. Please refer to Diagram 2-5.

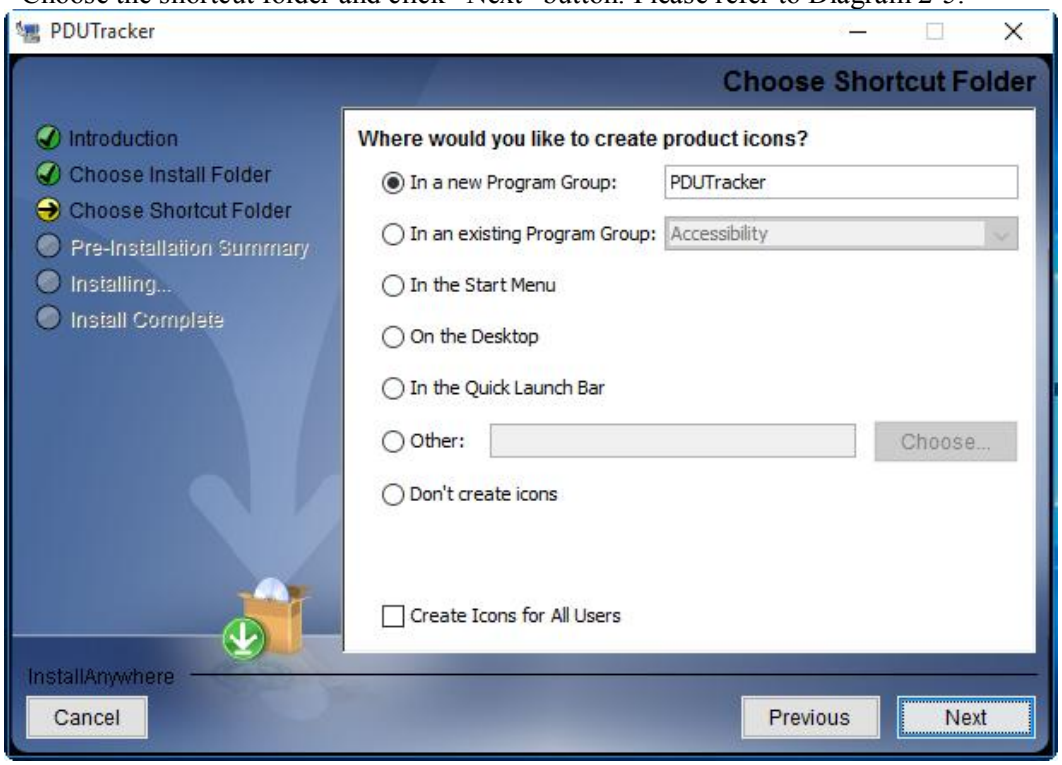


Diagram 2-5

Step 6 The software summary will be shown before installation. Click "Install" button to start the installation. Please refer to Diagram 2-6.

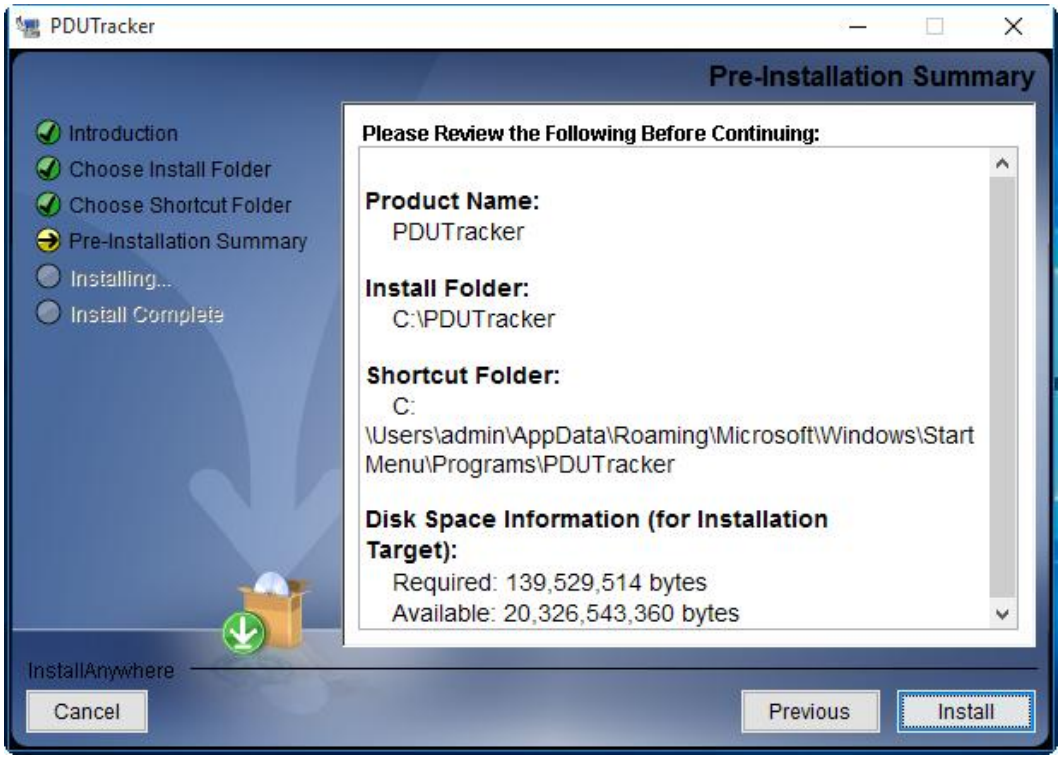


Diagram 2-6

Step 7 The dialogue shows the progress of the installation. Please refer to Diagram 2-7.

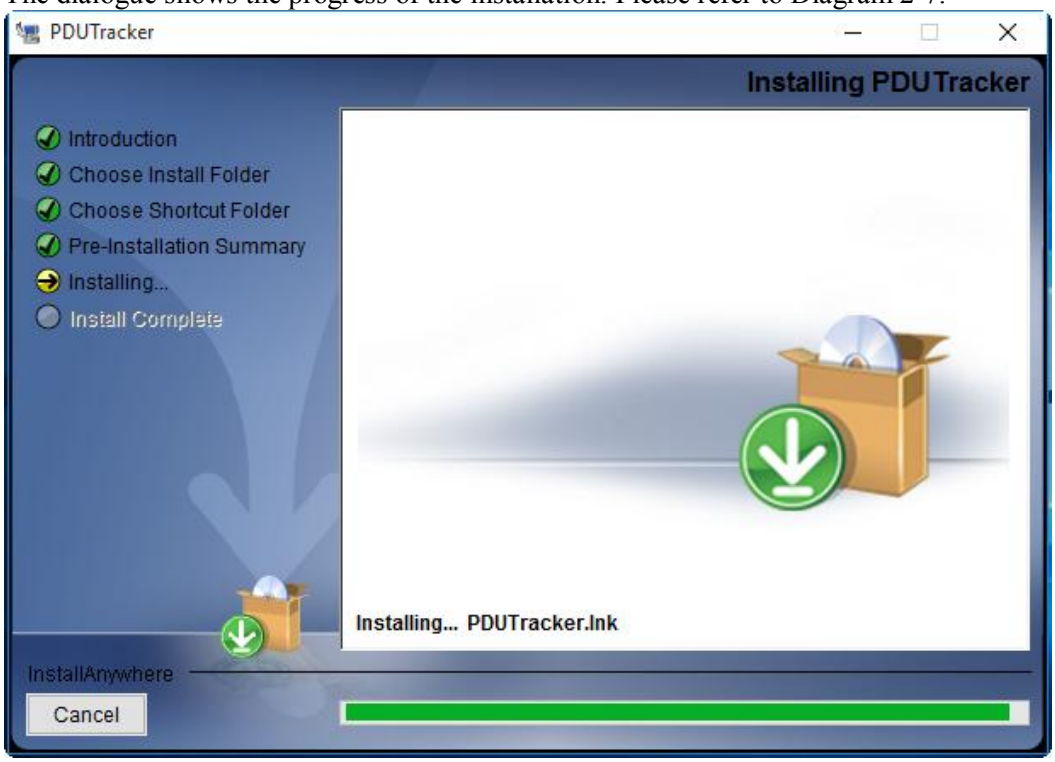


Diagram 2-7

Step 8 Click “Done” button to confirm the completion of installation. Please refer to Diagram 2-8.

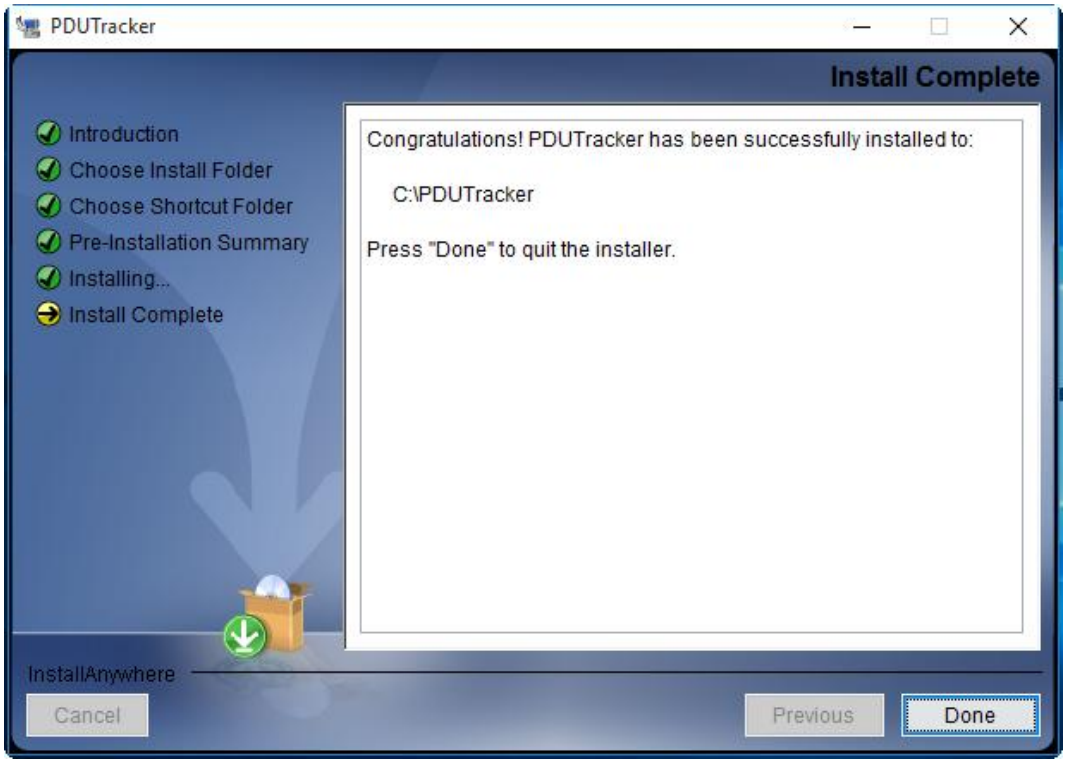


Diagram 2-8

Note: Please uninstall the previous version before installing the new version.

2.3. Software Uninstall

Please choose Start >> All Programs >>PDU >> Uninstall. Then, follow the on-screen instruction to uninstall the software.

3. Tray Application

3.1. Startup

A shortcut icon will be displayed on your desktop named "PDUTracker." Please refer to Diagram 3-1-1. Simply double click the shortcut icon. Then, it will start the software and display a service icon located in tray. The function menu will pop up after you click the right button of the mouse. Please refer to Diagram 3-1-2 below.

Diagram 3-1-1

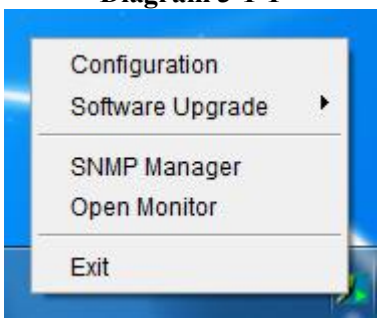


Diagram 3-1-2

3.2. Configuration

3.2.1. Software Upgrades

As shown in Diagram 3-2-1, the detailed configurations of online upgrade are:

- Specify the URL of the updated files: This is the directory of online update software. Please do not change it unless it's instructed by software manufacturer.
- Save files to "The directory" in your hard drive.
- Online auto-update: If the box is selected, the software will be automatically checked if there is any new version launched online every hour.
- If using online upgrade, please follow the configurations below:
  1. Select "Apply the proxy configuration".
  2. Enter "IP address" and "port" of server.
  3. If Identification is requested, click "Enable authentication" and enter "User Name" and "Passwords".
- Connection test: Click this button to test if all configurations are set up properly.

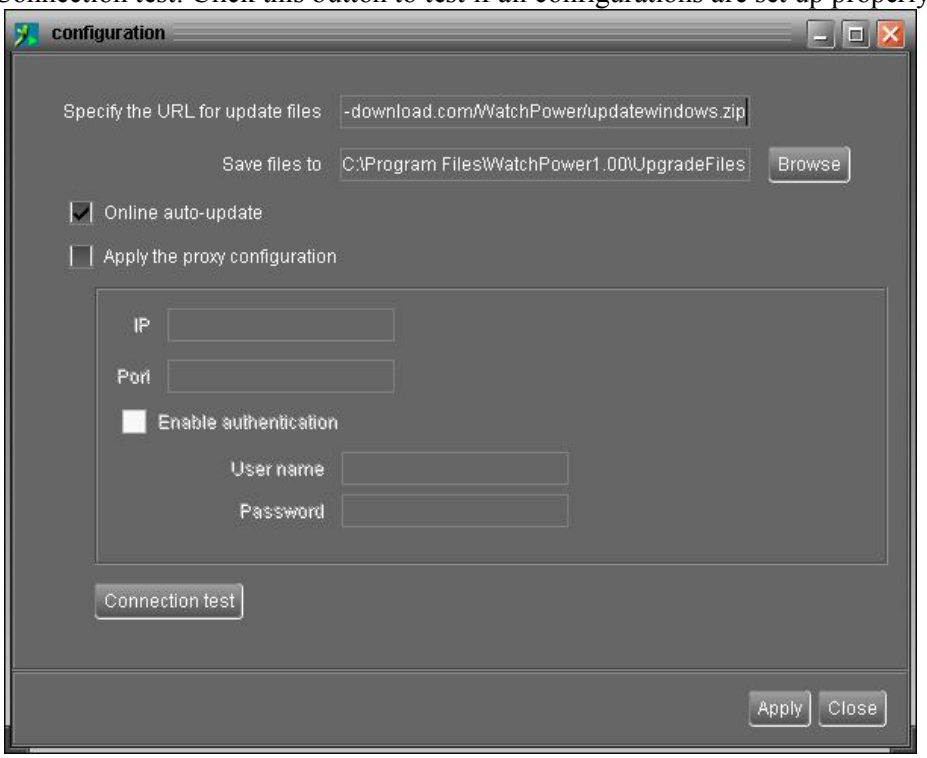


Diagram 3-2-1

3.2.2. Configuration Saved

Click "Apply" button to save all changes in Configuration page. Click "Cancel" to erase the change.

3.3. Software Upgrade

Software upgrades includes online upgrade and manual upgrade.

- Online Upgrade:
  Click "Online Upgrade" to search for the latest software version. If there is new version, it will be automatically downloaded and upgraded. Please refer to Diagram 3-4.

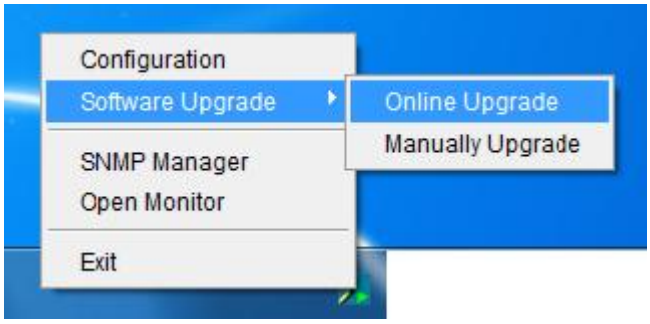


Diagram 3-3-1

- Manual Upgrade:

  Users can manually upgrade the software. Follow the steps below:

  1. Click "Manually Upgrade" from function menu. Please refer to Diagram 3-5.

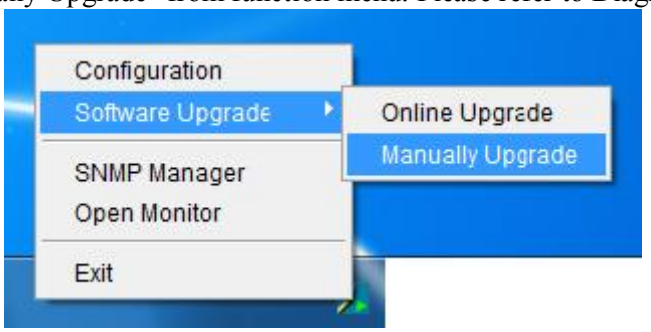


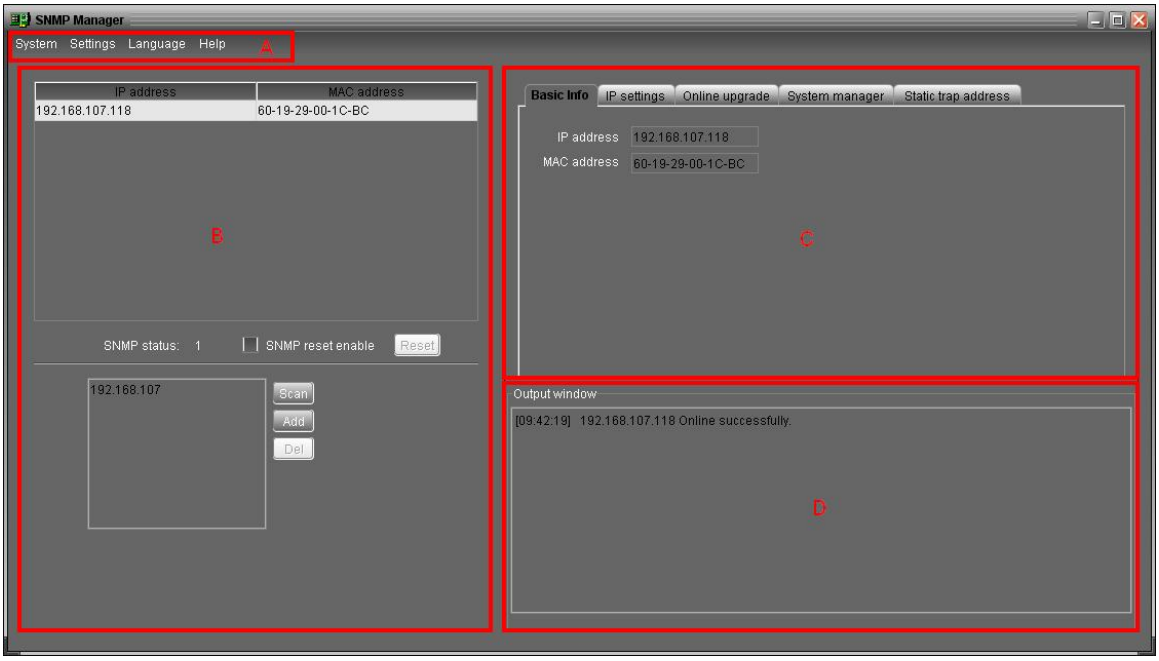
Diagram 3-3-2

  2. Click "Browse" to choose file directory. Then, click "Upgrade" to refresh the software. Please refer to Diagram 3-3-3.

Diagram 3-3-3

3.4. SNMP Manager

SNMP Manager is a plugin utility for PDUTracker software. Users can search and operate all SNMP devices in the LAN via this interface. Then, PDUTracker will automatically scan and monitor these SNMP devices. Please open "SNMP Manager" by clicking the right button of the mouse on service icon. It has four sections as marked in the illustration below:



A. Function menu offers complete tool-set for navigating and setting the GUI.

B. SNMP device list can list all SNMP devices located in current IP address.

C. Configuration area includes IP settings, online upgrade, password management, and static trap address.

D. Output window displays all messages for operations

3.4.1. SNMP Device List

The default value in window list is the IP address in use. For example, if the IP address of current PC is "192.168.102.10", it will display "192.168.102" in list when first enabling SNMP Manager.

- **Scan**

You may enter specific IP address and then click "Scan" button to search.

- **Add**

Click "Add" button and a dialogue will pop up to ask for entering specific IP address. Then, click "Apply" button to add IP address (Subnet). Please refer to Diagram 3-4-1.

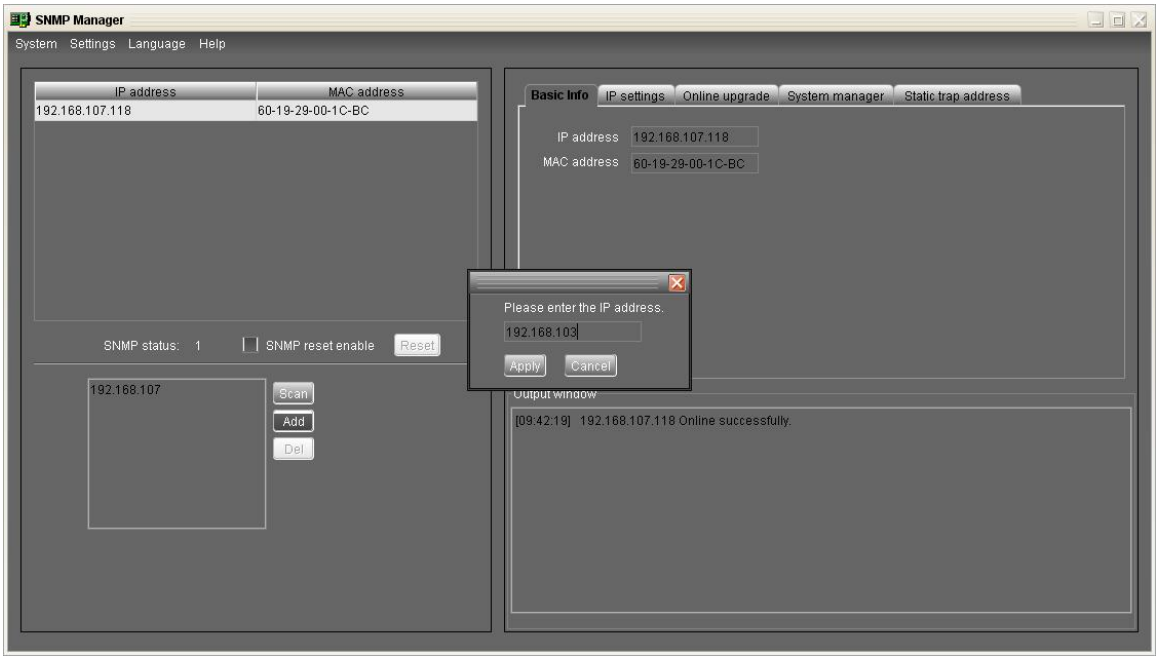


Diagram 3-4-1

- **Delete**

Select unnecessary IP addresses from list and click "Del" button to remove them from the list.

- **SNMP Status**

After one IP address is selected from the IP list, SNMP status will display 0 or 1. If there is program inside SNMP card, SNMP status will show "1". If there is no program inside, SNMP status will display "0". If there is no IP selected, SNMP status will show the default value "---". Please refer to Diagram 3-4-2.

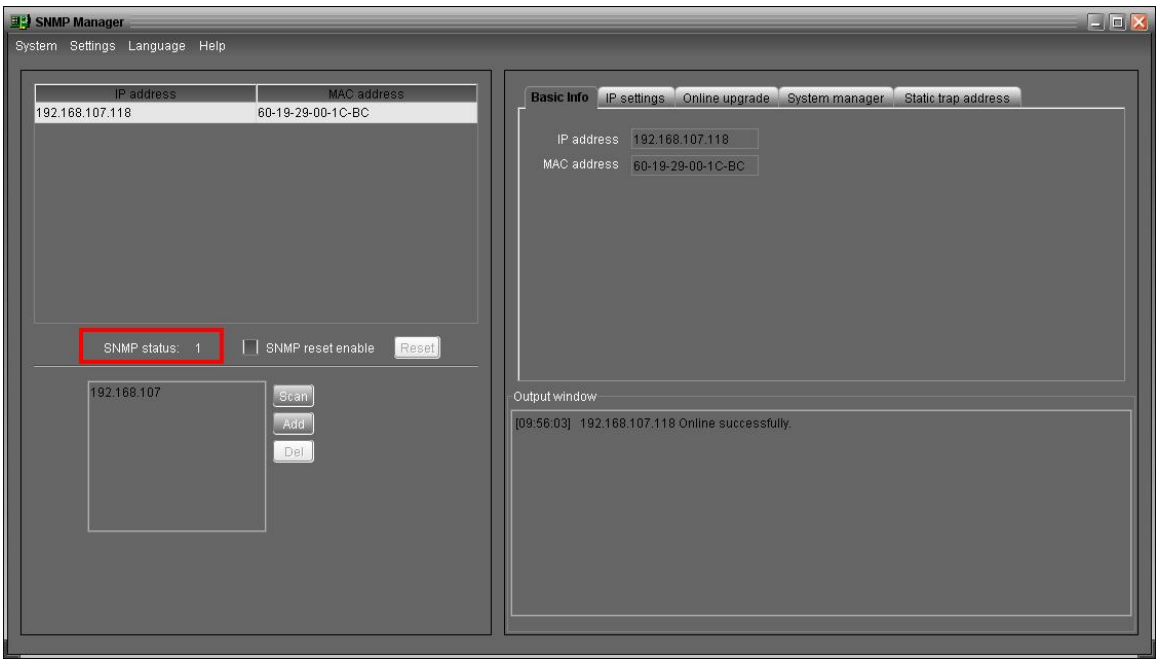


Diagram 3-4-2

- **Reset**

If it's necessary to restart the IP addresses of devices, please select the checkbox of "SNMP reset enable" and click "Reset" button. Then, after entering password to confirm the login, you can restart the device. Please follow the steps below to execute this action:

Step 1: Select the IP address to restart IP from the list. Please refer to Diagram 3-4-3.

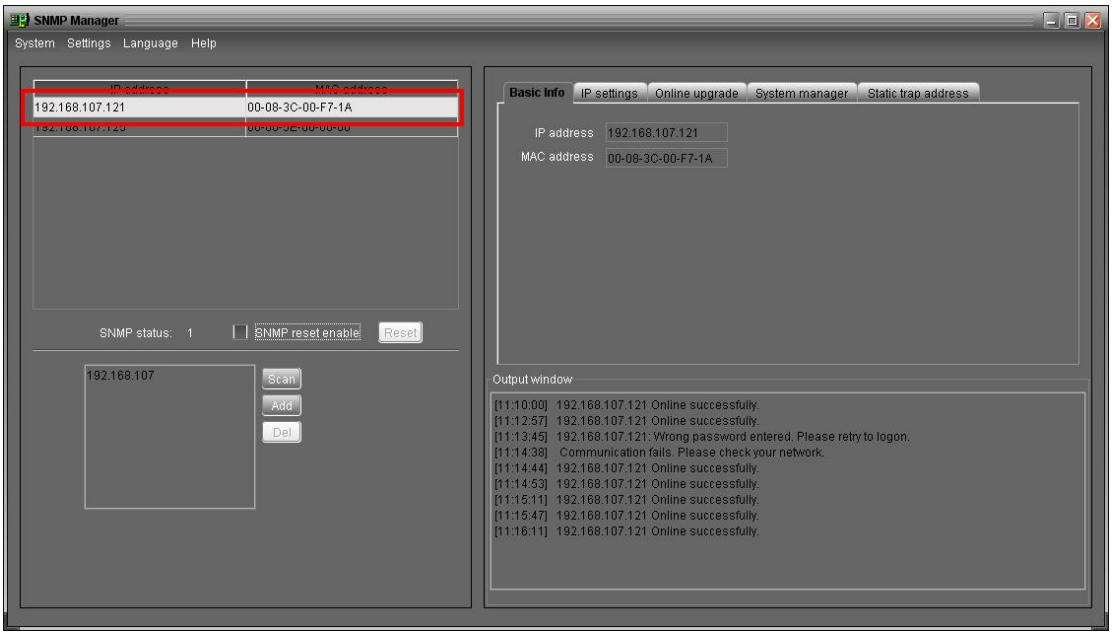


Diagram 3-4-3

Step 2: After the IP is selected, please click the checkbox of "SNMP reset enable". Then, "Reset" button will become valid. Please refer to Diagram 3-4-4.

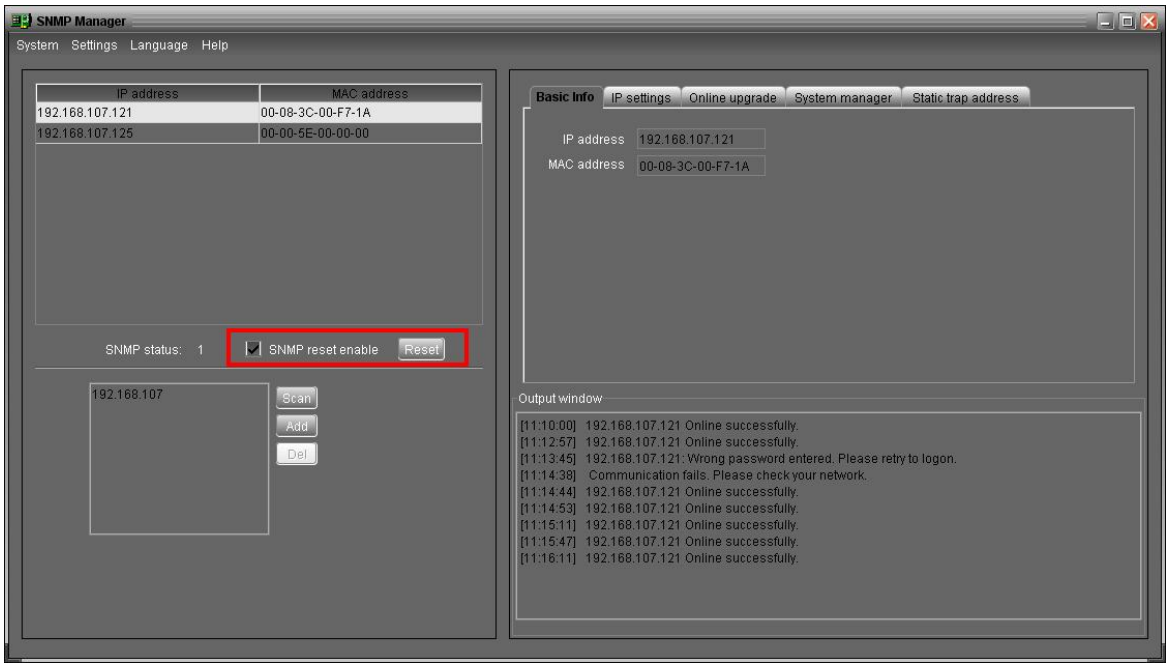


Diagram 3-4-4

Step 3: Click "Reset" button. A confirmation dialog shown “Are you sure to operate?” will pop up to ensure the execution. If “Yes” is selected, it’s requested to log in first. If “No” is selected, the operation will stop. Please refer to Diagram 3-4-5.

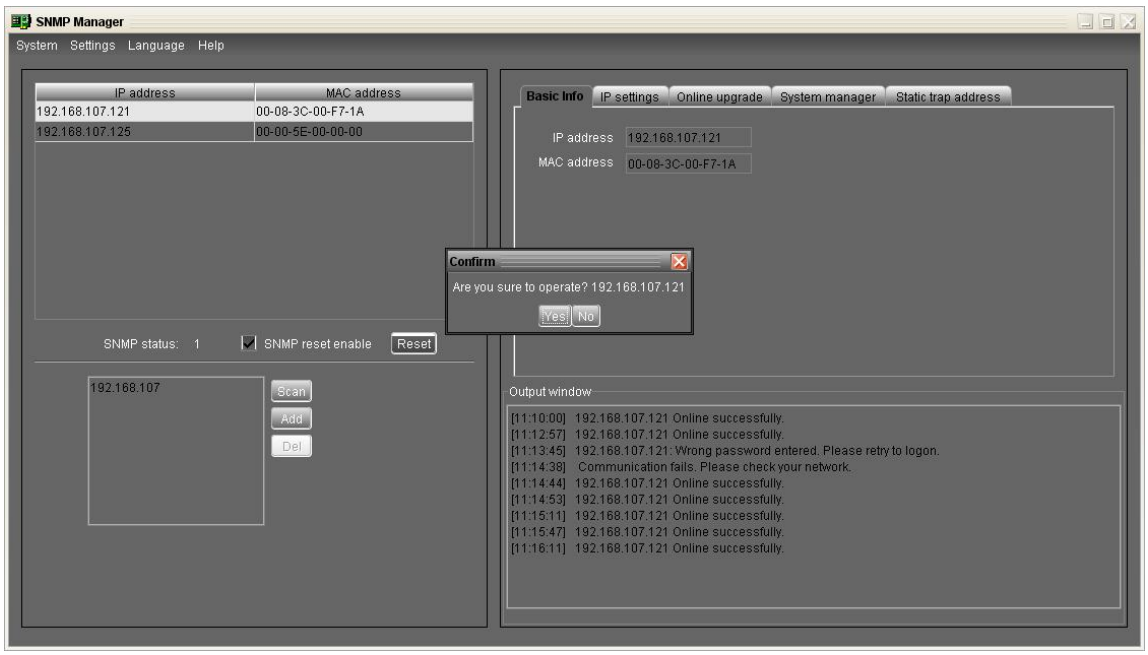


Diagram 3-4-5

Step 4: Enter the correct password and click "Login" button. The target device will be restarted. If “Cancel” is selected, the operation will stop.

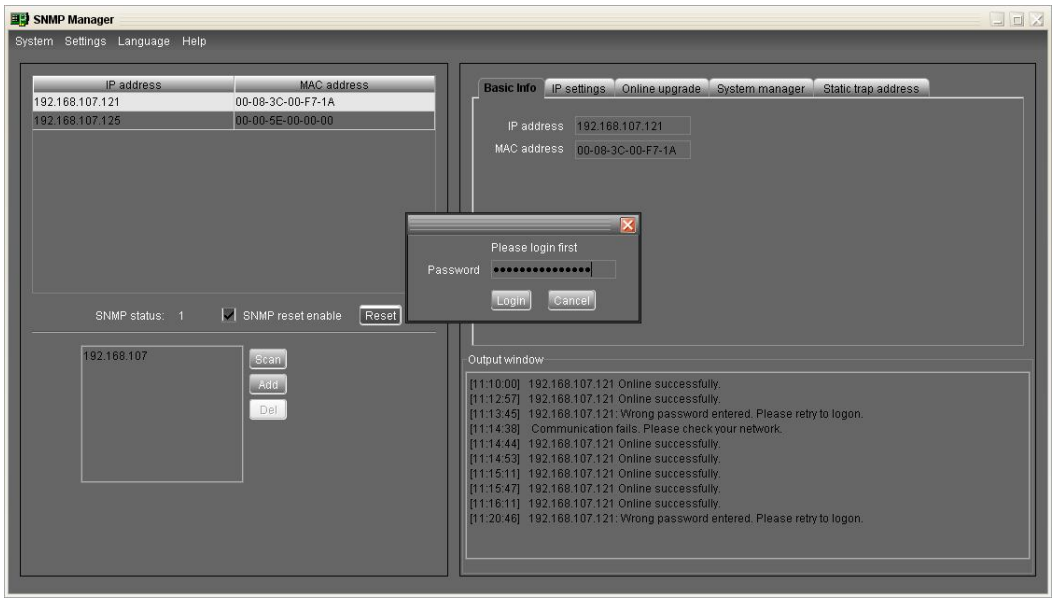


Diagram 3-4-6

NOTE: If changing MAC address of current device before reboot and current device is applying DHCP (Automatically obtain IP address) method, you need to manually click "Scan" button to start the function.

3.4.2. SNMP Manager Function Menu

3.4.2.1. System

- **Login**

When the user remotely log in to access to SNMP devices, it's necessary to verify the ID. The default passwords are "12345678".

Step1: Select System >> Login

Step2: Enter default password and then click "Login" button. Or click "Cancel" to give up login. Please refer to Diagram 3-4-7.

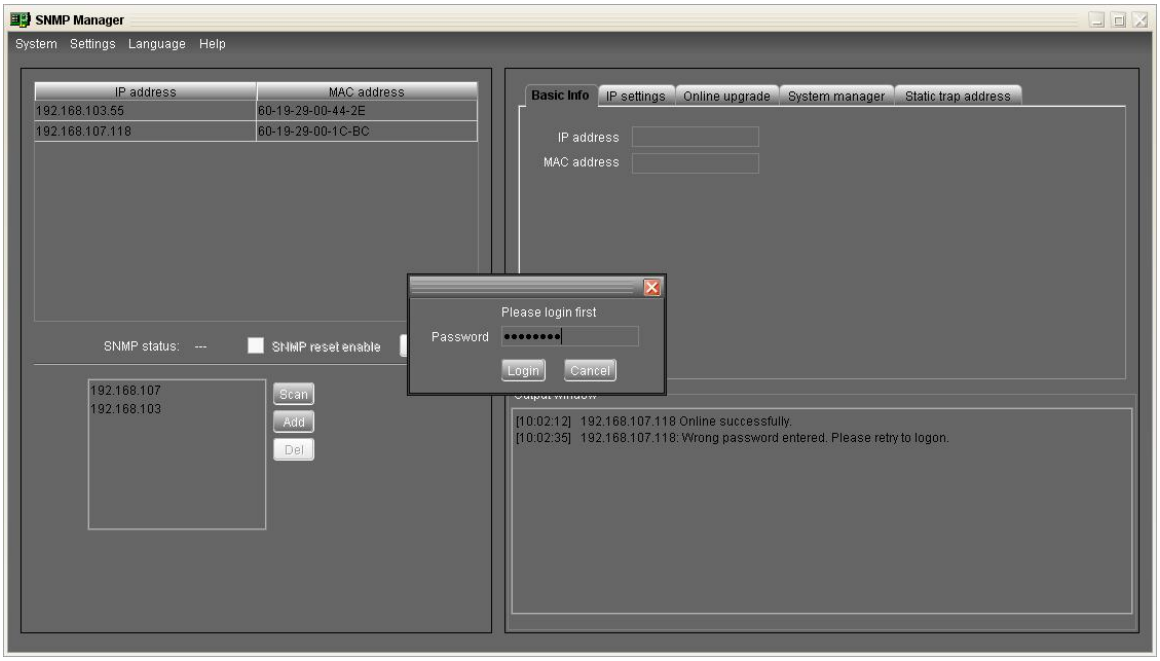


Diagram 3-4-7

- **Logout**

Log out system when access is no longer needed.

- **Quit**

Select "Quit" to exit SNMP Manager.

3.4.2.2. Settings

- **Basic Info**

IP address and MAC address are shown here. Please refer to Diagram 3-4-8.

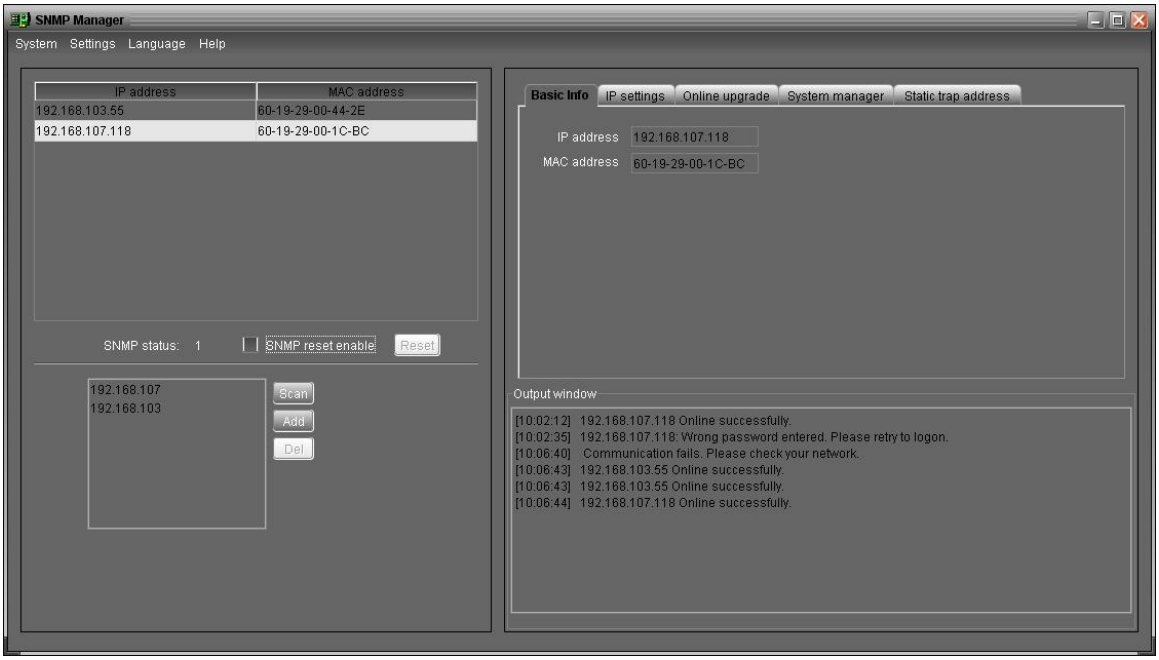


Diagram 3-4-8

- **IP Setting**

Part 1: Change MAC address

Step 1: Select IP address from IP list. It will display MAC address of device in the output window. If it's necessary to modify the MAC address of the device, click the checkbox "Change". Please refer to Diagram 3-4-9.

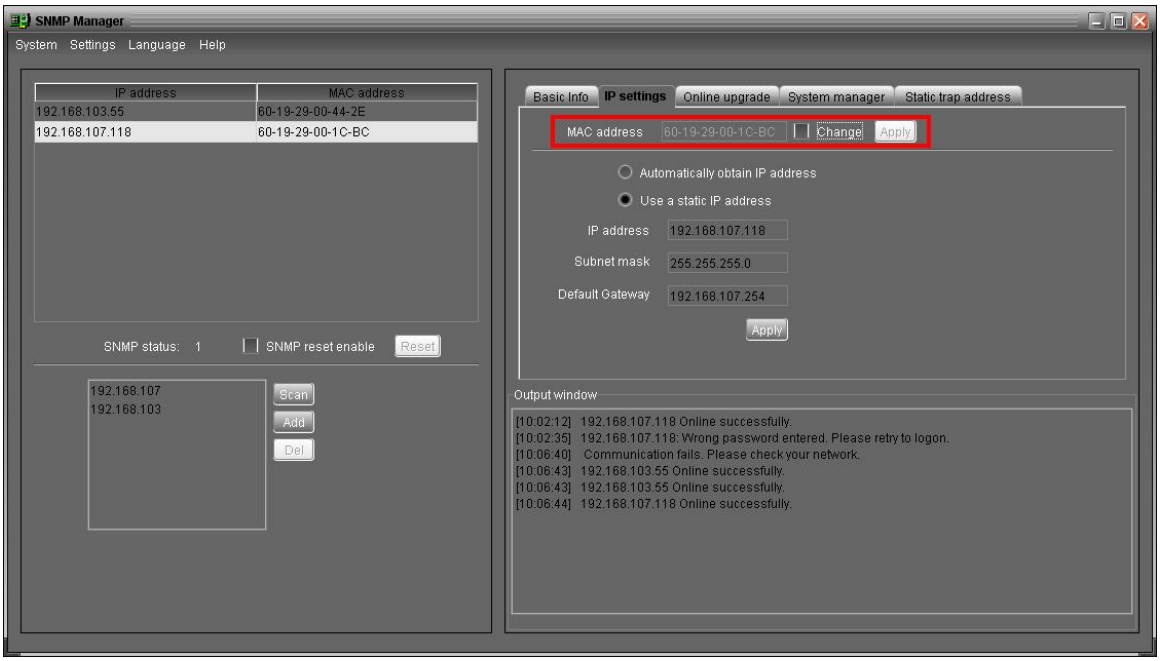


Diagram 3-4-9

Step 2: After the checkbox "Change" is selected, enter new MAC address into the box, "Apply" button will

become valid to click. Please refer to Diagram 3-4-10.

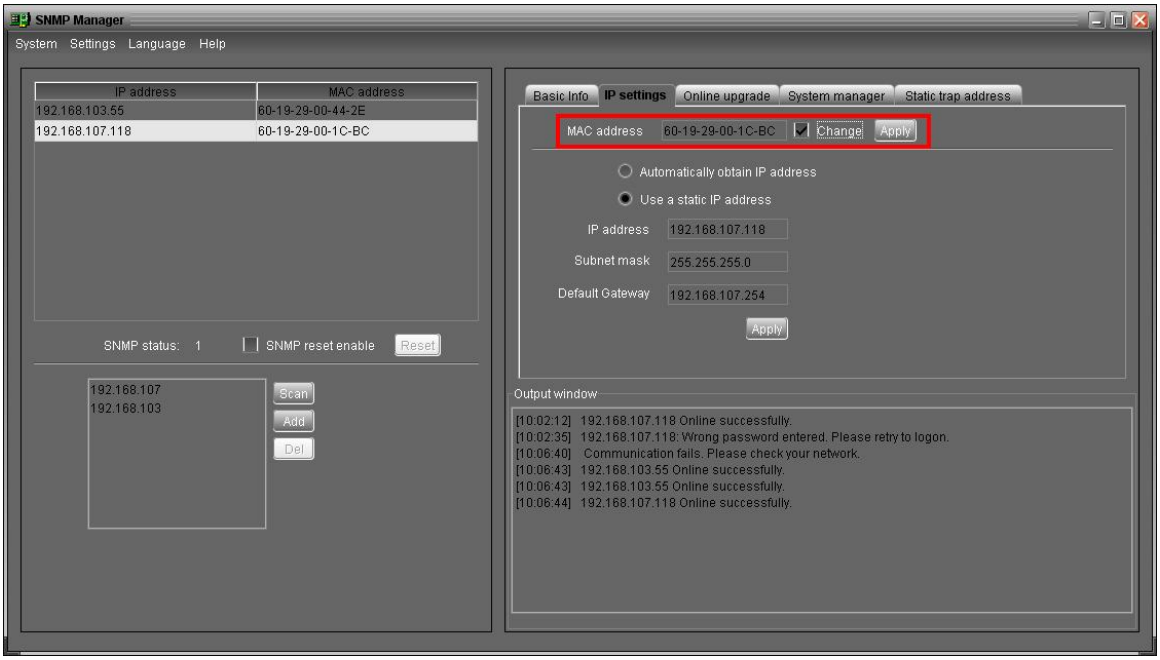


Diagram 3-4-10

Step 3: After modifying MAC address, click "Apply" button. Then, a confirmation dialog shown “Please confirm again?” will pop up to ensure the execution. Please refer to Diagram 3-4-11.

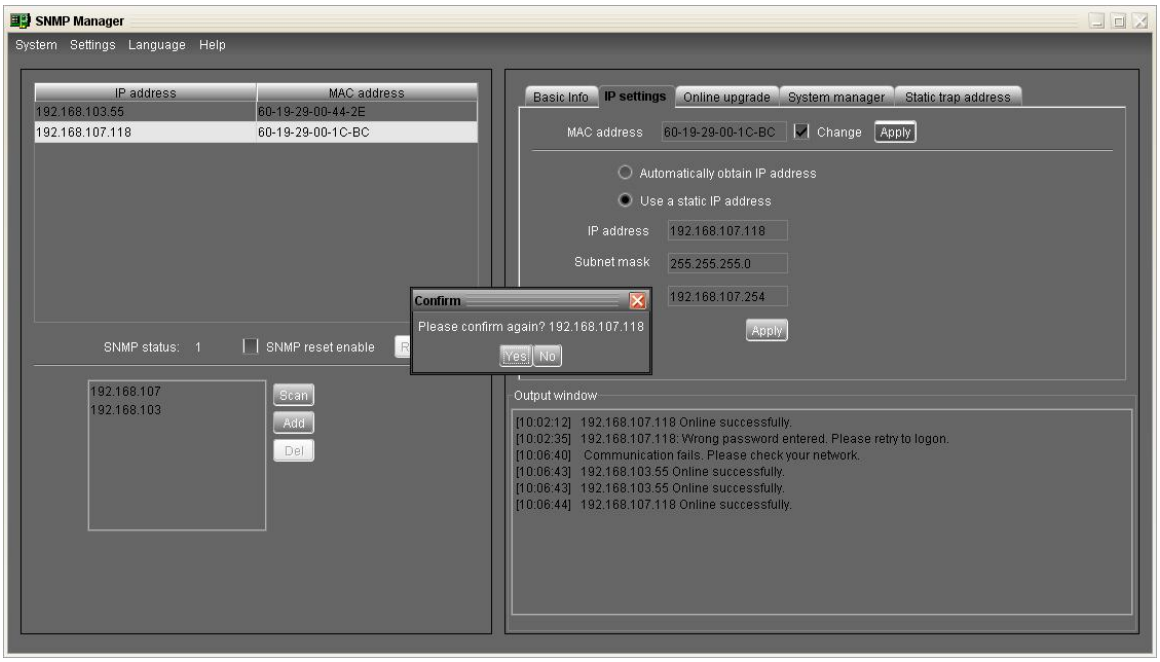


Diagram 3-4-11

Step 4: If “Yes” is selected, a phrase "Operation success" will be shown on the last line in output window. Please refer to Diagram 3-4-12.

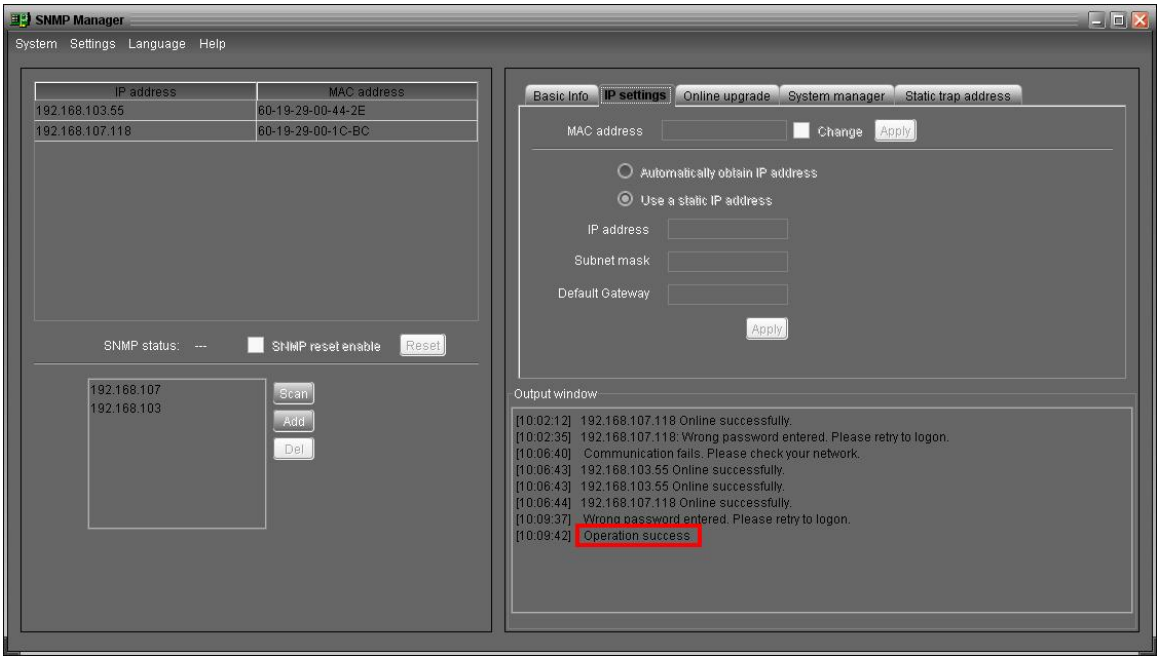


Diagram 3-4-12

Part 2: There are two methods to obtain IP address:

- Automatically obtain IP address (DHCP)
- Manually configure IP address

The system will automatically obtain IP addresses. If there is no data in LAN, the default IP will display "192.168.102.230", Net mask will display "255.255.255.0" and default gateway will display "0.0.0.0". Please refer to Diagram 3-4-13.

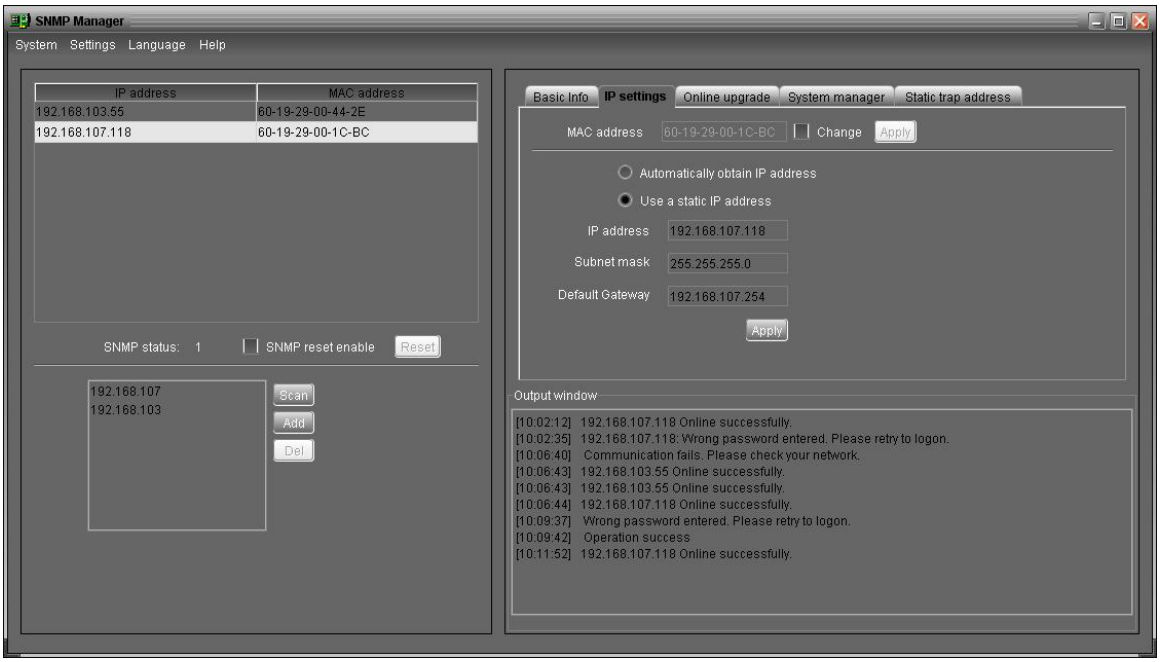


Diagram 3-4-13

- **Online upgrade**

There are three methods for online upgrade:

- Upgrade the selected devices: It will upgrade all SNMP devices listed on the window.
- Upgrade all un-upgraded devices: It will only upgrade SNMP devices which are not using the same version as current SNMP device is.
- Force to upgrade all devices: No matter what kinds of version are used for SNMP devices listed in the window list, it will be upgraded to the version currently used for SNMP device. Please refer to Diagram 3-4-14.

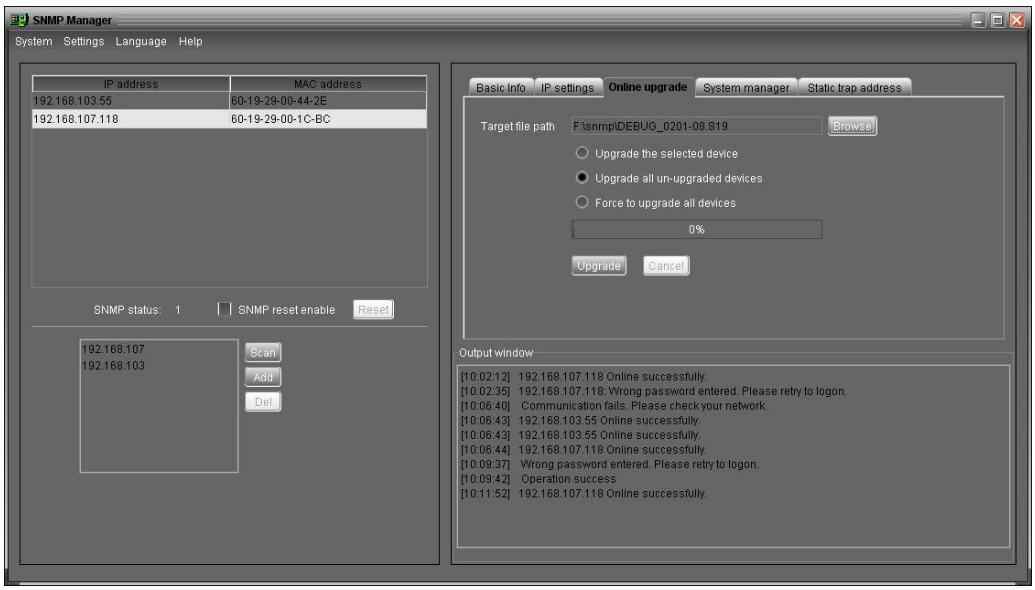


Diagram 3-4-14

Step 1: Click “Browse” button to choose program file. Please refer to Diagram 3-4-15.

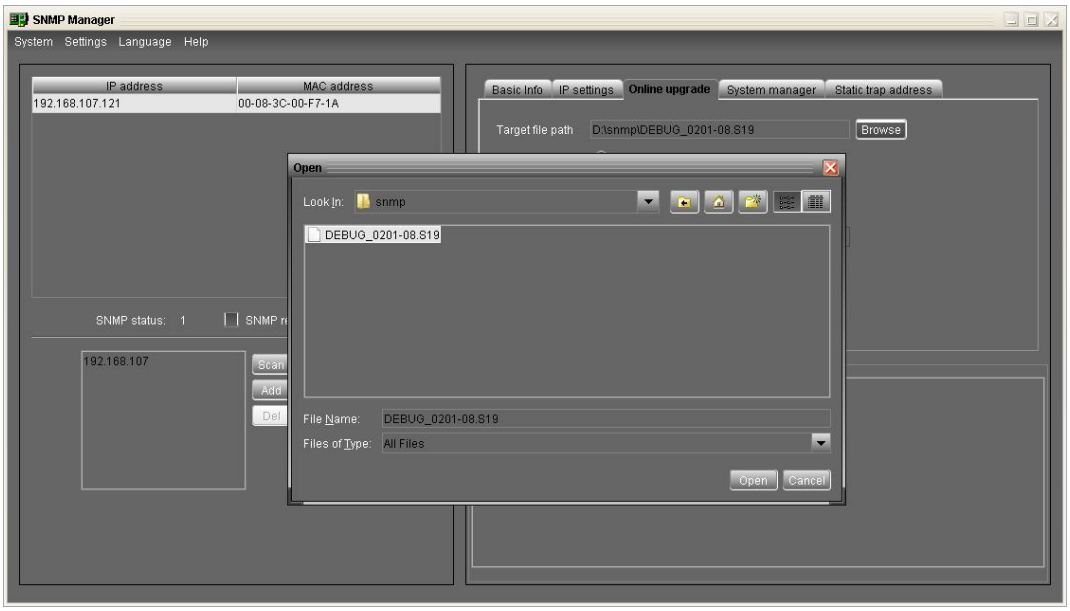


Diagram 3-4-15

Step 2: Click “Upgrade” button to execute the action. Please refer to Diagram 3-4-15.

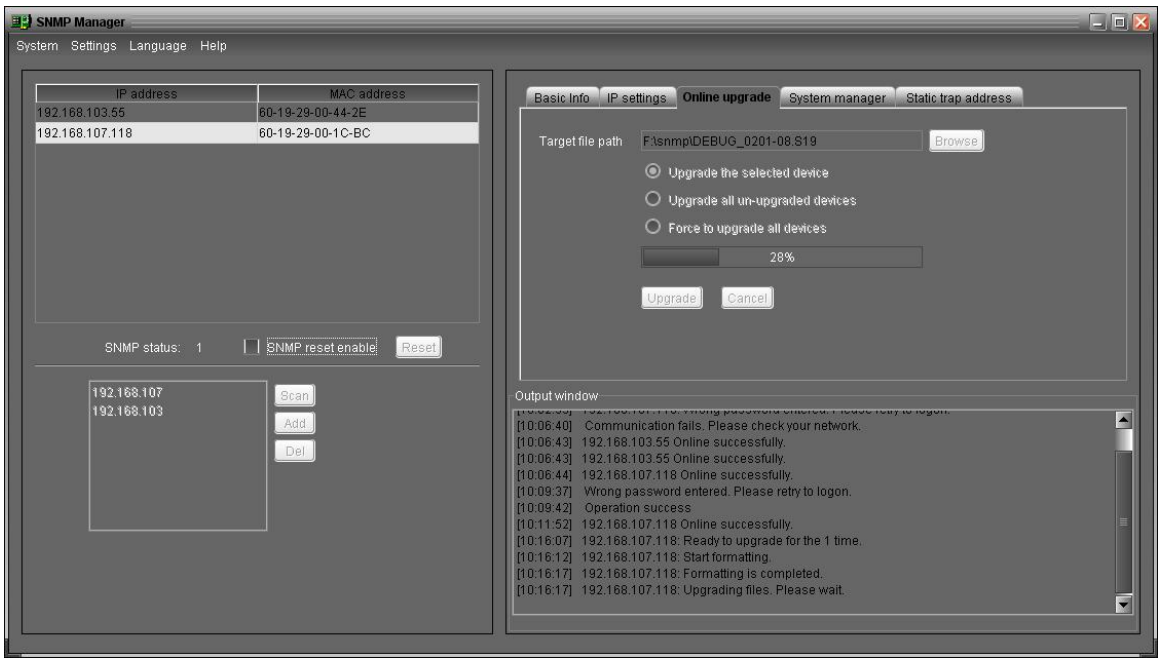


Diagram 3-4-15

Step 3: When upgrade completes, you may check the message in output window. Please refer to Diagram 3-4-16.

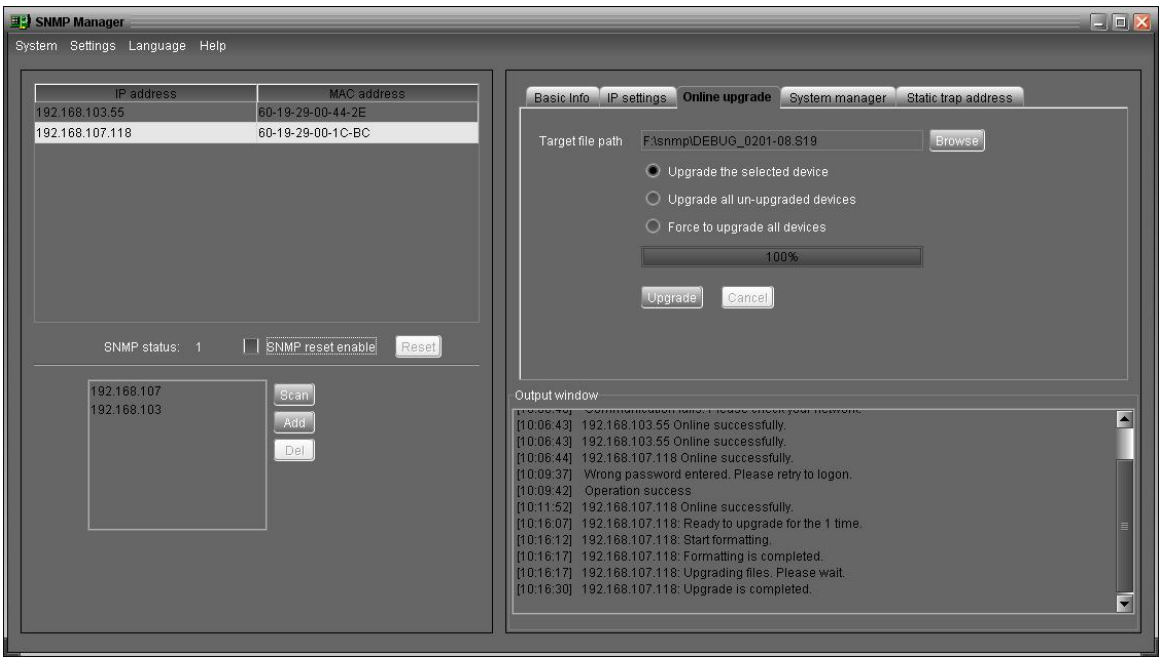


Diagram 3-4-16

NOTE: If abnormal situation occurs during upgrading process, the system will automatically re-start the upgrade operation. If the interruptions continuously occur five times, system will automatically stop this operation. At that time, please check if the LAN is working well.

- **System manager**

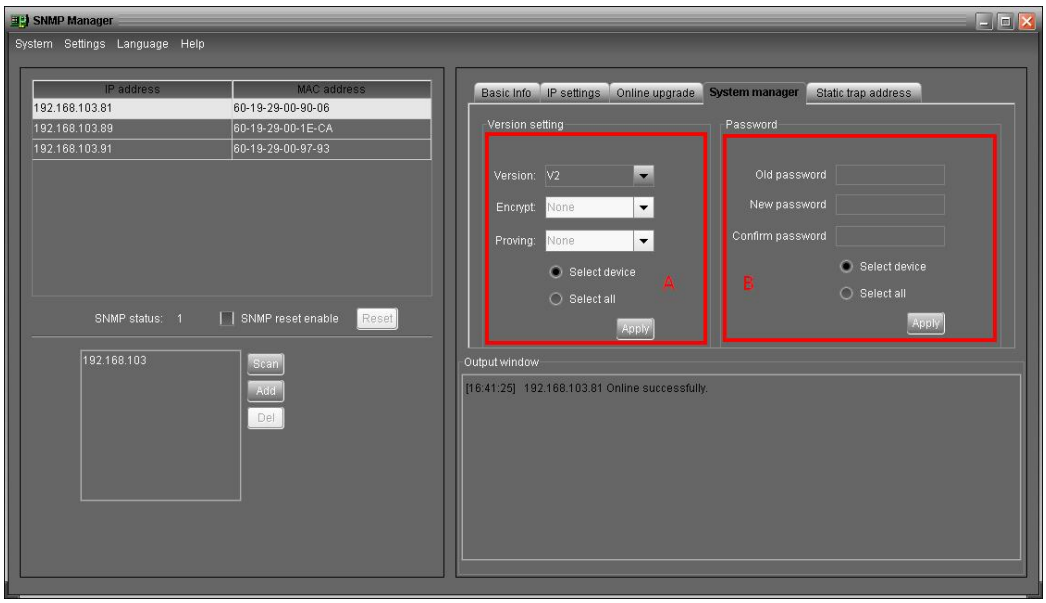


Diagram 3-4-17

Part A: You can set SNMP protocol version for selected devices or all. Simply choose SNMP protocol version first. The default setting is V2. If choosing V3, it's also necessary to set encryption. Select the devices that will apply this setting.

- Select device: Set SNMP protocol version for selected SNMP devices from the list.
- Select all: Set SNMP protocol version for all SNMP devices from the list.

Then, click "Apply" button to complete version setting.

Part B: You may modify single password for one SNMP device or all passwords for all SNMP devices. Please enter the previous passwords, new passwords and re-enter new passwords. Select devices to apply this setting.

- Select device: Choose the box to change passwords for selected SNMP device from the list.
- Select all: Choose the box to change passwords for all SNMP devices on the window list. Then, click "Apply" button to change passwords.

NOTE: The length of passwords should be 8~15 digits. If the change of password is applied to all SNMP devices, all SNMP devices passwords must be consistent.

- **Static trap address**

You may configure two static trap addresses and change trap port in SNMP Manager. The default trap port is 162. Please refer to Diagram 3-4-18.

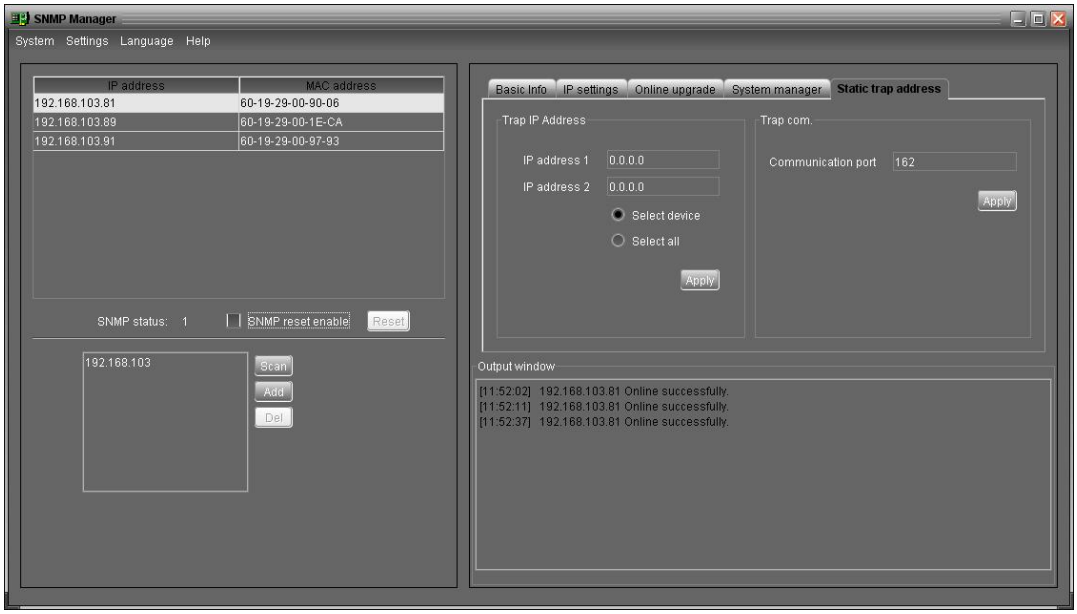


Diagram 3-4-18

NOTE: This software allows SNMP device to send trap messages to 2 static trap addresses and 8 dynamic trap addresses. It will define host computer in default with software installed as a dynamic trap address. If communication failure occurs between SNMP card and host computer for over 10 minutes, it will stop sending trap message.

3.4.2.3. Language

SNMP Manager offers 12 languages listed below:

√ Chinese (Simplified)

√ Chinese (Traditional)

√ English

√ German

√ Italian

√ Polish

√ Portuguese

√ Russian

√ Spanish

√ Turkish

√ Ukrainian

√ French

The default language setting is English.

3.4.2.4. Help

About: Click “Help” menu and select “About” item. The information of copyright about the software is represented.

3.5. Open Monitor

Click “Open Monitor” to start monitoring the GUI of PDU.

3.6. Icon and Software Status

- Connecting devices: and will rotate as an animation
- When receiving event message from connected devices: will flash for reminder
- When not receiving event message from connected devices: will flash for reminder

3.7. Message Board

Users can check message board for event list. Please refer to Diagram 3-7：

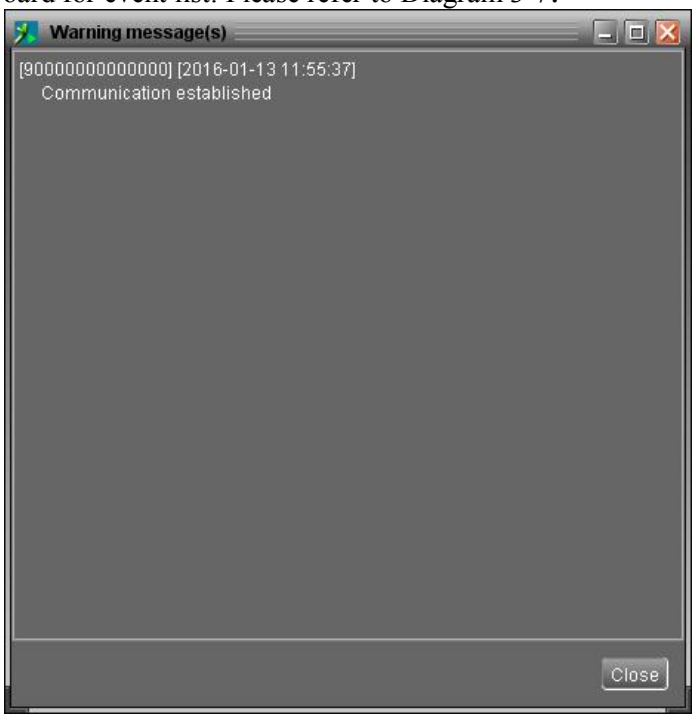


Diagram 3-7

3.8. Exit

Click “Exit” to close the application.

4. GUI Interface

There are five sections in GUI marked in the illustration below:

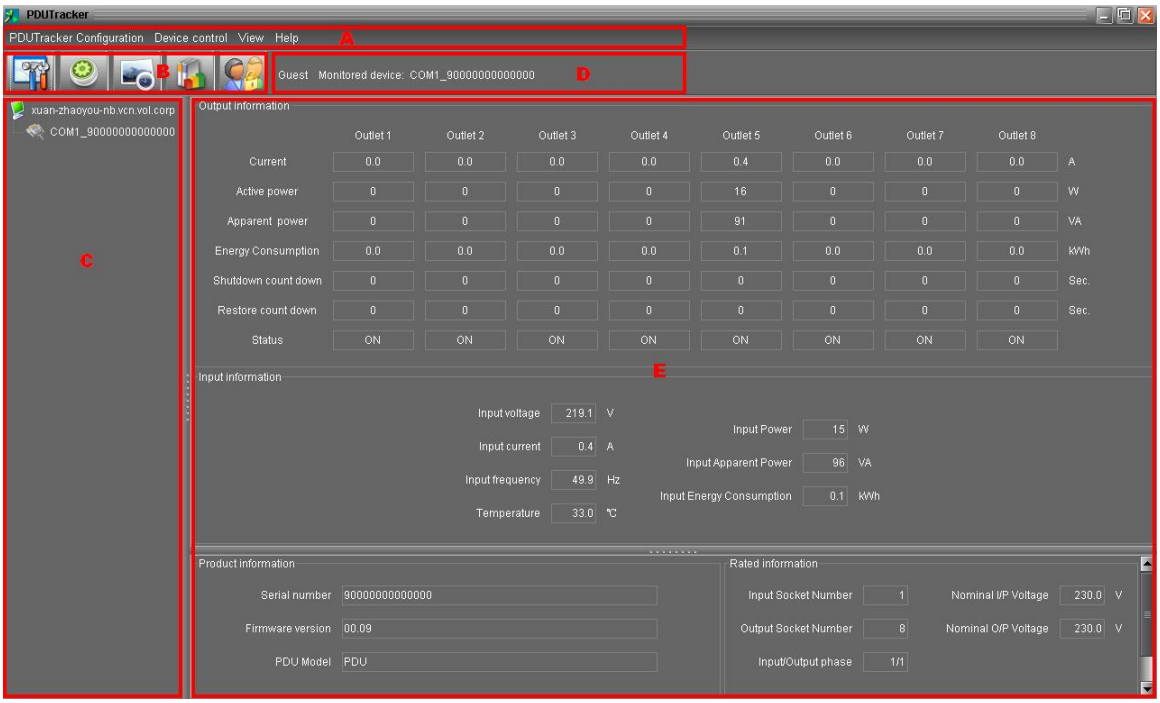


Diagram 4-1

A. Function Menu offers complete tool-set for navigating and setting the GUI.

B. Shortcut Menu provides shortcuts to the most commonly used functions.

C. Navigation indicates all devices.

D. Current Monitoring Information displays User ID, monitored device ID.

E. Main Window output information, input information, product information and rated information of current monitored device. Please refer to Diagram 4-2.

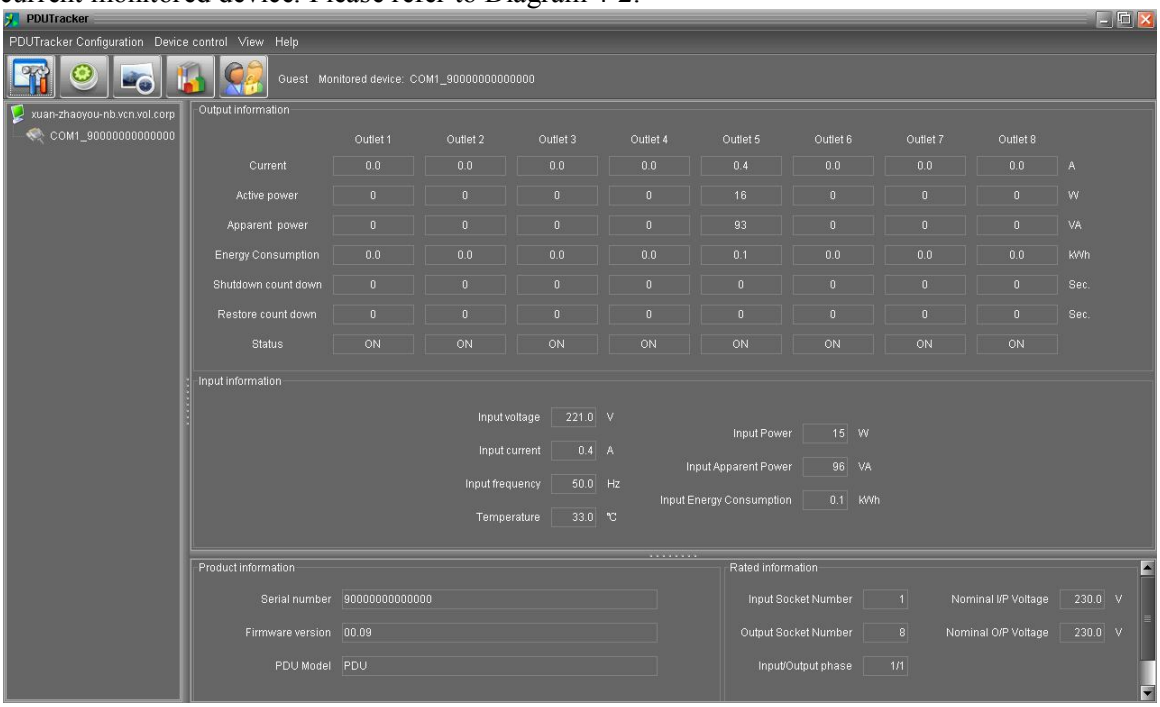


Diagram 4-2

1. Output Information:

It displays information of outlet current, active power, apparent power, energy consumption, shutdown count down time, restore count down time and status.

2. Input information:

It displays input voltage, input current, input frequency, input power, input apparent power, input energy consumption and temperature.

3. Product information:

It displays serial number, firmware version and PDU model.

4. Rated information:

It displays information of input socket number, output socket number, input/output phase, nominal I/P voltage and nominal O/P voltage.

4.1. PDUTracker Configuration

4.1.1. Basic

It is to set up parameters for display. Select PDUTracker Configuration>>Basic. Please refer to Diagram 4-1-1.

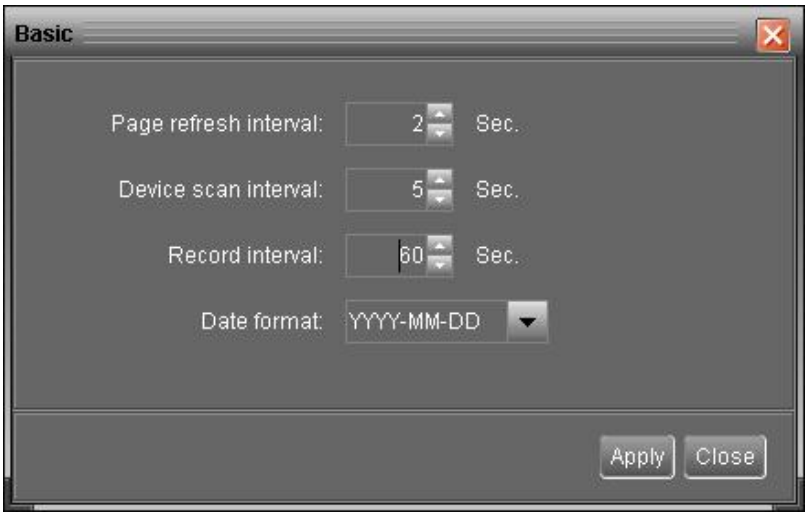


Diagram 4-1-1

1. Page refresh interval: This interval time will determine how long the web page refreshes. The setting range is from 5 to 600 seconds. The default is 5 seconds.
2. Devices scan interval: This interval time will determine how long it scans the connected devices. The setting range is from 5 to 600 seconds. The default is 5 seconds.
3. Record interval: This interval time will determine how long it records the monitoring data of the device into database. The setting range is from 30 to 600 seconds. The increment of each click is 30 seconds. The default is 60 seconds.
4. Date format: This system supports 4 different formats, i.e. “YYYY-MM-DD”, “YYYY/MM/DD”, “MM-DD-YYYY” and “MM/DD/YYYY”. The default is “YYYY-MM-DD”.

If any change is made, simply click “Apply” button. Then, the setting will be saved.

4.1.2. Password

The password configuration is used for administrator only. Before operating and configuring the software, please log in first and change the passwords. The default password is “**administrator**”. Users can only browse the status and information of the device as a Guest without logging in as an Administrator. A guest can not control or execute any setting.

Step 1 Select PDUTracker Configuration>>Password. Please refer to Diagram 4-1-2.

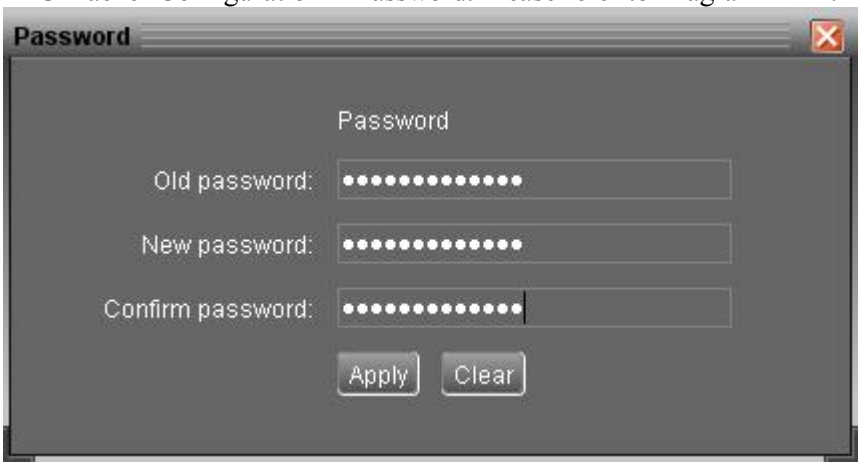


Diagram 4-1-2

Step 2 Enter old passwords, new passwords and re-type new passwords to verify the integrity. The new passwords should be at least 6 digits. Then, click "Apply" button to complete the change.

NOTE1: Simply click "Login" button on the top right corner to log in the software.

NOTE2: If passwords are forgotten, it's necessary to re-install the software.

4.1.3. SMS Setting

It's to enter SMS receiver list. If alarm occurs, a message about device status will be sent to the receivers via SMS (Short Message Service). To configure the event list, please configure in "Event Action" page (refer to section 4.1.5).

Step 1 Choose PDUTracker Configuration >> SMS Setting. Please refer to Diagram 4-1-3.

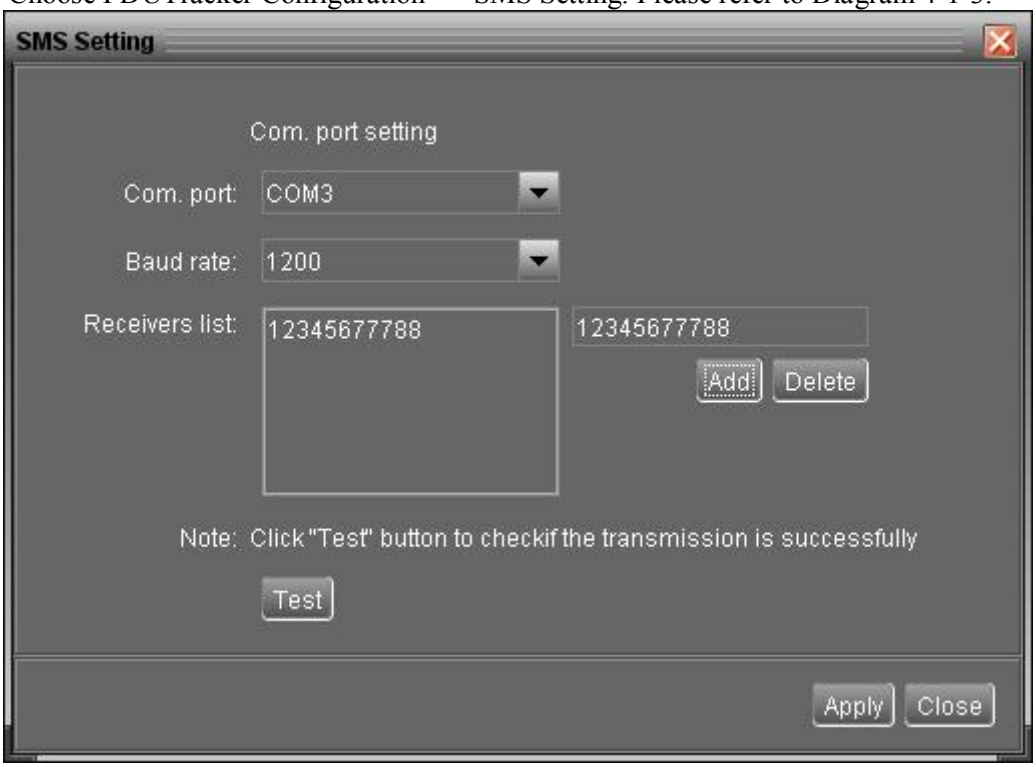


Diagram 4-1-3-1

Step 2 Select communication port and baud rate.

Step 3 Enter mobile phone numbers in "Phone no." column and click "Add" button to add phone no.

into the Receivers List. To delete numbers, simply select the phone number from “Receivers list” and click “Delete”.

Step 4 Click “Apply” button to save all changes. The “Test” button can be used to send a test SMS to make sure all setting is correct. If all parameters are set up correctly, system will send a test message to all receivers and a dialogue will pop up to show the successful message. (as in Diagram 4-1-3-2) Otherwise, a warning dialogue will pop up to show a failure message which indicates an error of the parameter setting. (as in Diagram 4-1-3-3)

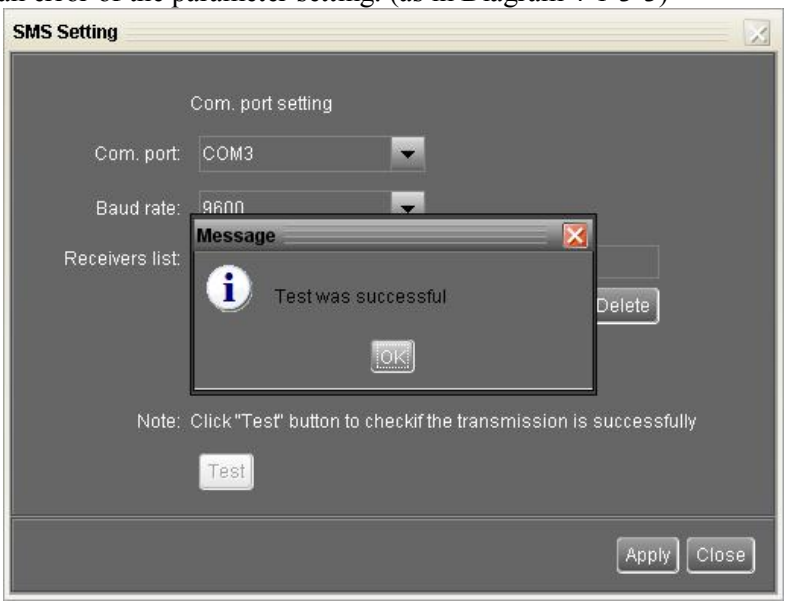


Diagram 4-1-3-2

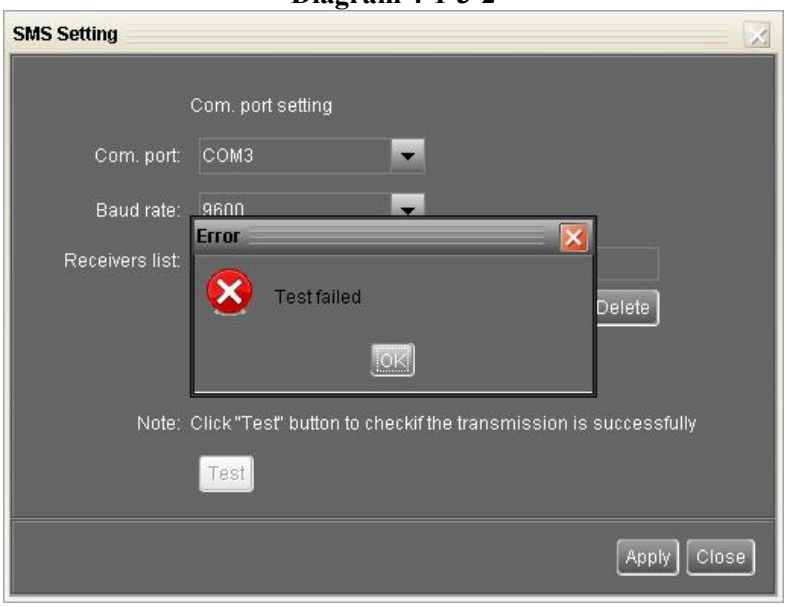


Diagram 4-1-3-3

NOTE: A GSM modem should be plugged in if SMS is required.

4.1.4. E-mail

This configuration is allowed to send an alarm mail from SMTP server. To receive the event list, please configure in “Event Action” page (Please refer to section 4.1.5).

To activate this function, the e-mail service must be correctly configured in the computer. All columns in this function page are empty in default. This action can’t be executed without the SMTP information, e-mail account and passwords. Besides, the sender account should be allowed for SMTP/POP3 forwarding.

Step 1 Select PDUTracker Configuration >> E-mail. Please refer to Diagram 4-1-4.

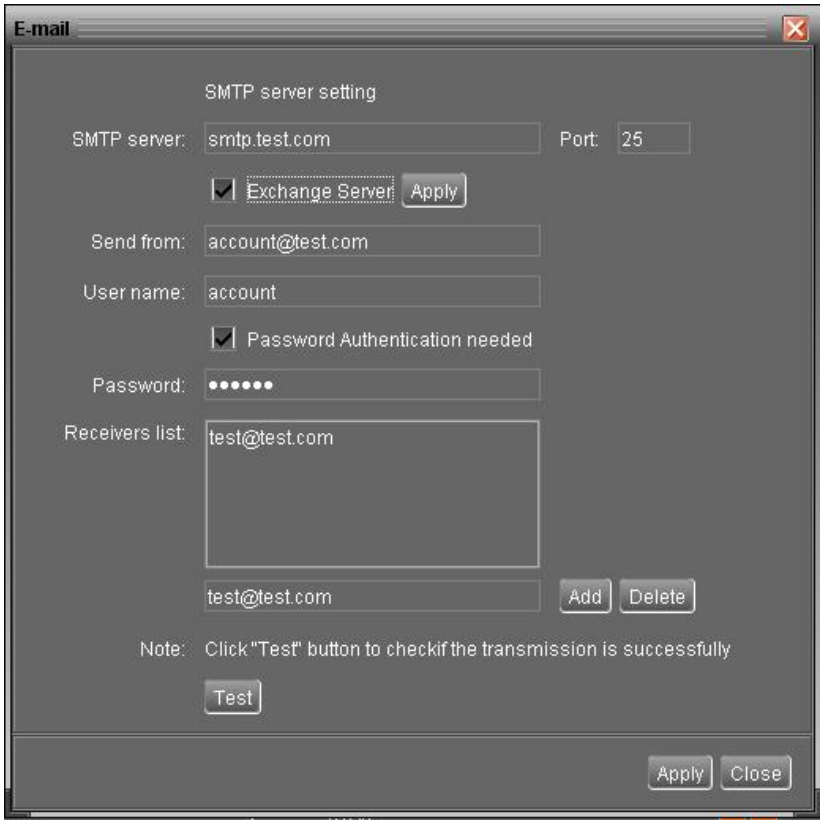


Diagram 4-1-4

Step 2 Enter requisite information in the columns, including SMTP server, Port, Send from, User name and password. Click the checkbox if password authentication is needed to verify passwords.

NOTE: If using Exchange mail server system, it's required to configure the domain name of exchange server in SMTP server. Beside, please click the checkbox of "Exchange server" and click "Apply" button.

Step 3 Enter receivers' e-mail accounts in the receivers' list column. Then, click "Add". To delete the e-mail account, simply select email accounts from Receivers list and click "Delete" button.

Step 4 Click "Apply" to save all 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 successful message will pop up on the operated personal computer. Otherwise, a failure dialog will pop up to indicate an error of the parameter setting.

4.1.5. Event action

It's to configure responsive actions if any event mentioned below occurs.

1. **Event record:** A data log will be recorded in the software if there are events occurring. This is default setting.
2. **Warning message(s):** An event message will be sent to tray.
3. **SMS:** An event message will be sent to the designees' mobile phone numbers if there are events occurring.
4. **E-mail:** An event email will be sent to the designee's e-mail accounts if there are events occurring.

Step 1 Select PDUTracker Configuration >> Event actions. Please refer to Diagram 4-1-5.

Step 2 Select action methods by clicking the checkbox.

Step 3 Click “Apply” button to save all configurations.

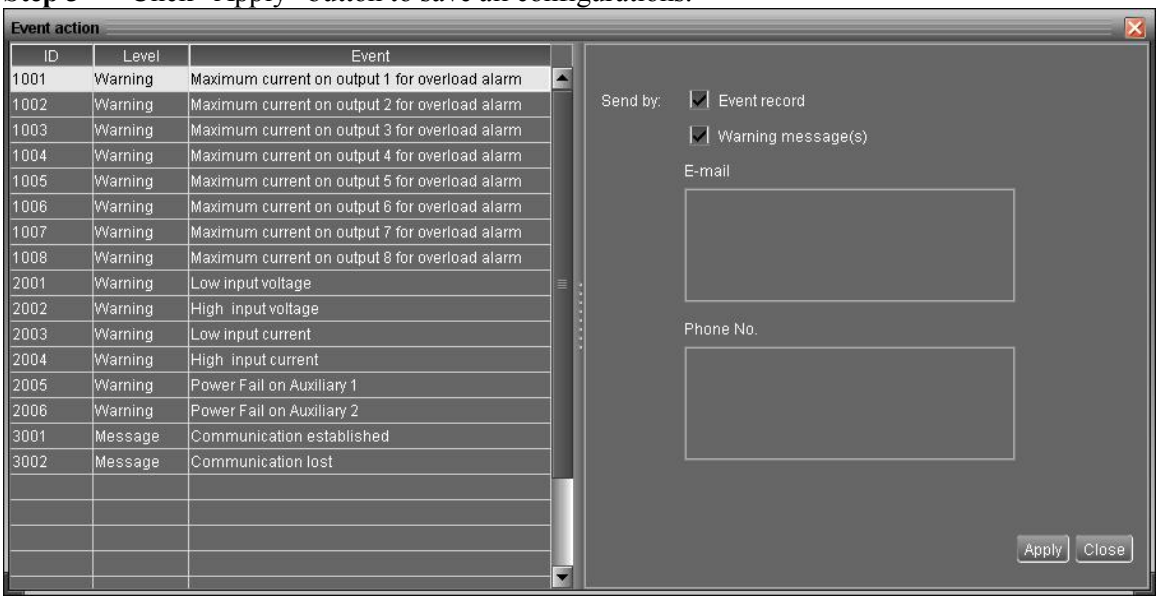


Diagram 4-1-5

NOTE1: When you modify the receiver list in SMS or e-mail pages, it’s necessary to refresh the event action page to update the latest receiver list.

4.1.6. Com. port Plug And Play Setting

When the users monitor the device in real-time, each com. port will be scanned anytime. In this way, it will occupy communication ports. The communication ports without connecting to any devices will be released. To avoid any improper operation, in-used communication ports will be displayed in disabled grey icons. Users can select "Allow scanned" to re-scan or "No scanning” to release communication ports based on the requirements.

Step 1: Select PDUTracker configuration>> Com. port plug and play setting. Please refer to Diagram 4-1-6.

Diagram 4-1-6

Step 2: Click “Refresh” to reload the status of com. ports.

Step 3: Click “No scanning” to stop scanning on this com. port. Click “Allow scanned” to start scanning on this com. port.

4.2. Device control

4.2.1. Parameter Setting

This page is to activate some features and set up parameters for PDU.

Select Device Control >> Parameter Setting or select shortcut icon. Please refer to Diagram 4-2-1.

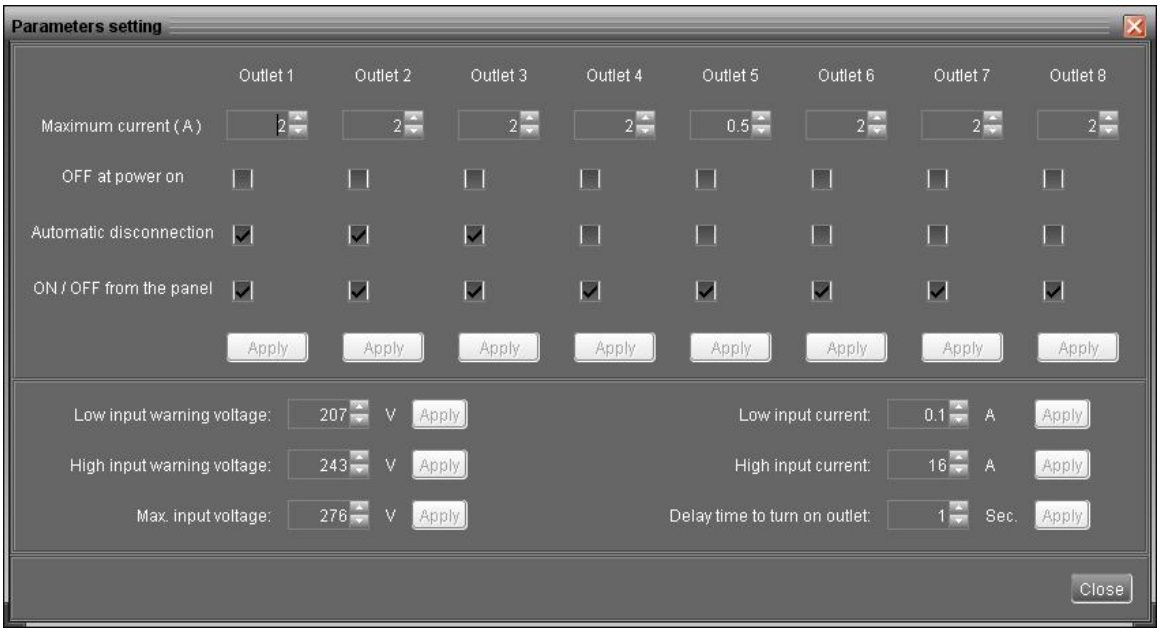


Diagram 4-2-1

Step 1 Some parameters are allowed to change the numbers by clicking up-down arrows or modify the numbers directly in the number column.

Step 2 Click "Apply" button to save the settings. Each function setting is saved by clicking each "Apply" button.

- 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 buzzer to remind users.
- High input warning voltage: Setting high input warning voltage. When input voltage is higher than this setting point, it will buzzer to remind users.
- Max. input voltage: Setting acceptable maximum input voltage point. When input voltage is higher

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

4.2.2. Restore to the defaults

This function is allowed to restore all settings back to default value.

Select Device control >> Restore to the defaults. Please refers to Diagram 4-2-2.

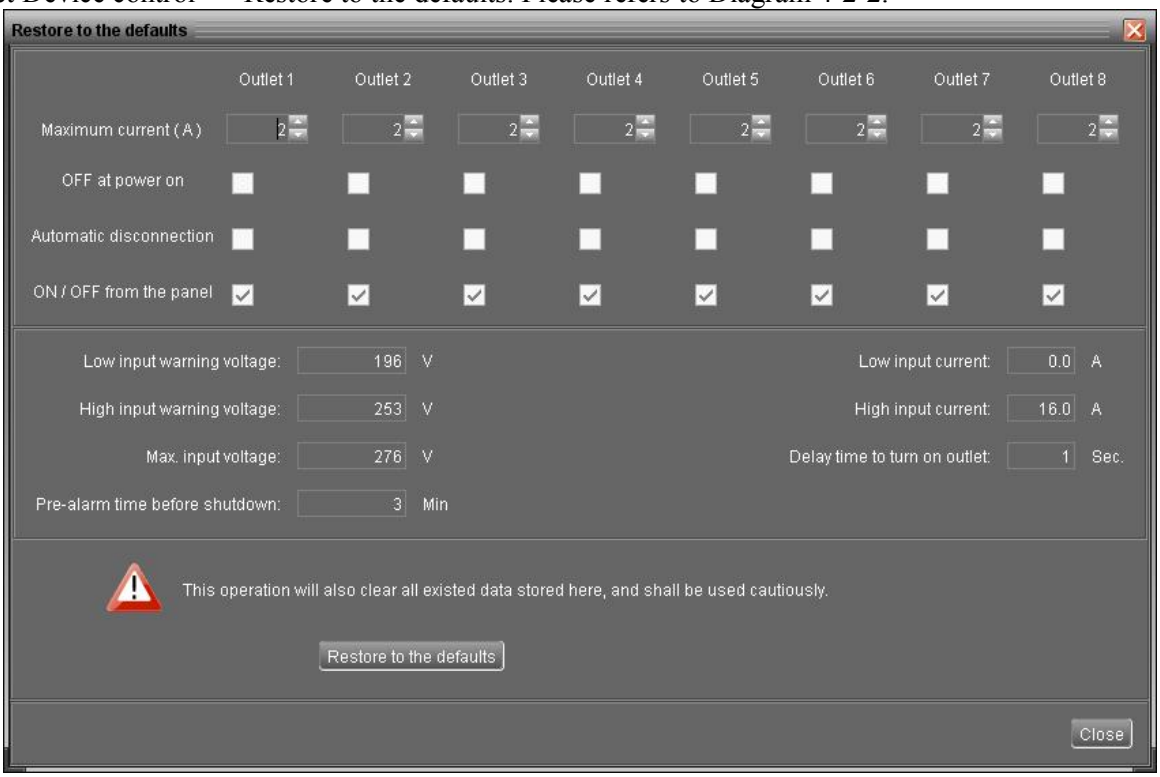


Diagram 4-2-2

4.2.3. Real-time control

It's real-time control commands.

Select Device control >> Real-time control or select shortcut icon . Please refer to Diagram 4-2-3.

- 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: Setting pre-alarm time before shutting down selected outlet.
- Shut down # no. outlet in x minute(s): It will shut down selected outlet in x minute(s).
- Shut down # no. outlet in x minute(s) and restore in x minute(s). : It will shut down selected outlet in x minutes and turn on it in x minute(s).
- Cancel shutdown # no. outlet: If selected outlet is in countdown for shutdown, this action will cancel the shutdown immediately.

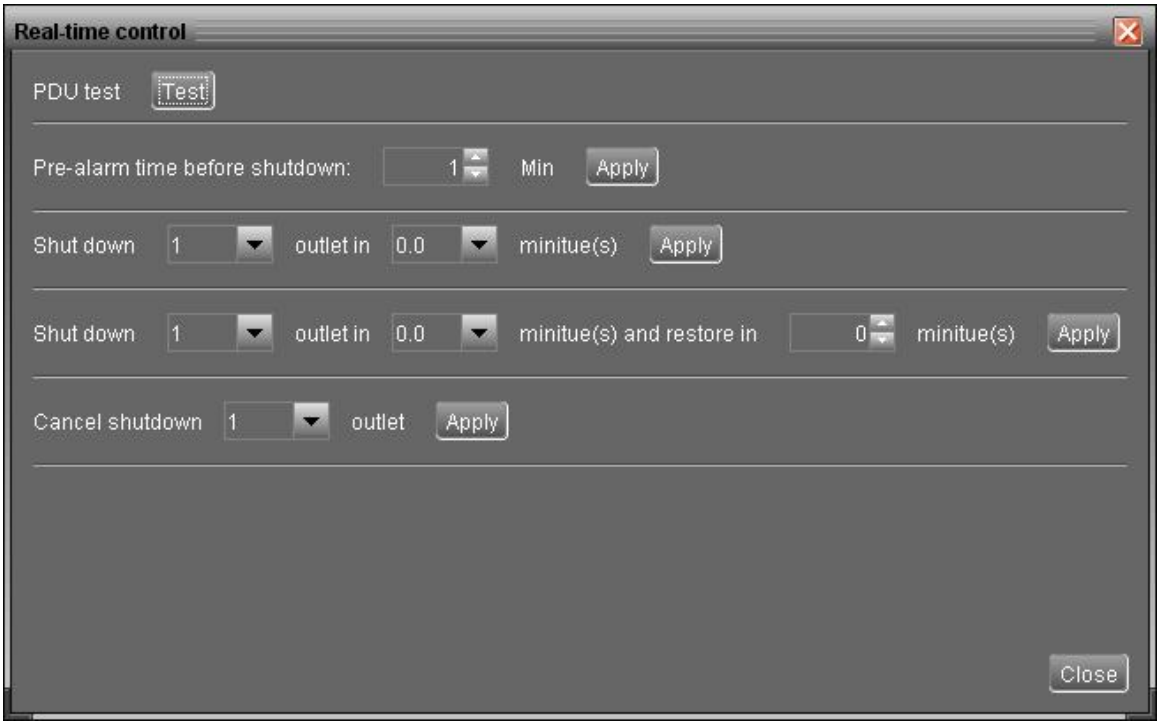


Diagram 4-2-3

4.3. View

4.3.1. Data

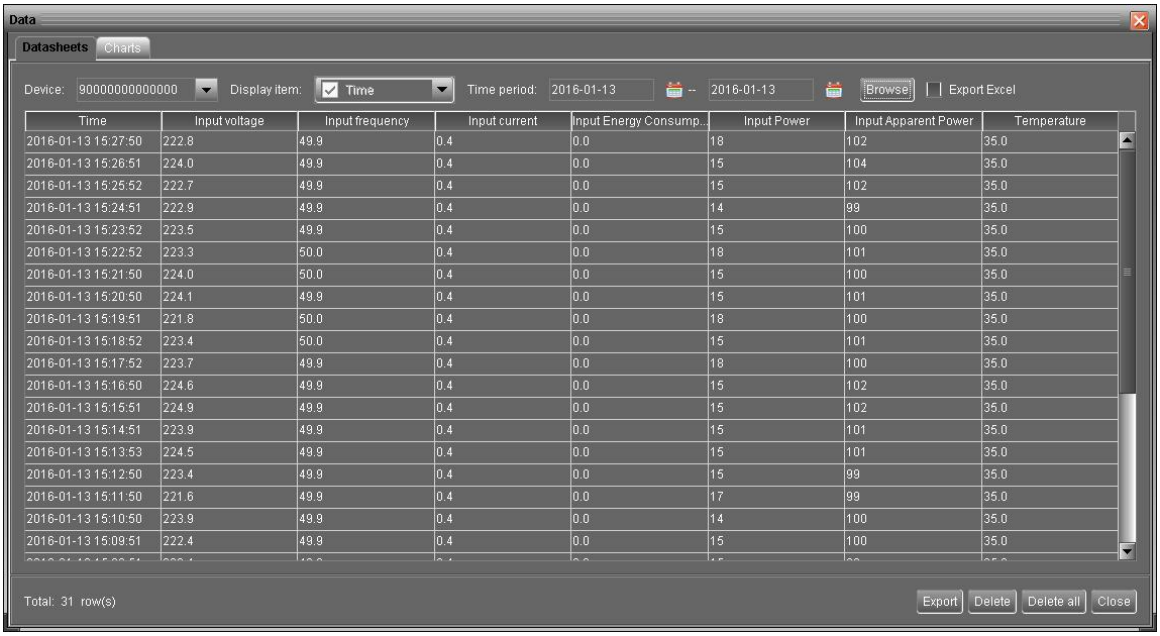
This function is to browse the working data of solar charge controller saved in table or chart format.

- Datasheets

Select View >>Data>>Datasheets or click shortcut icon . Please refer to Diagram 4-3-1-1.

Select browsed device and period to display in the screen. Click "Browse" to get the result.

- **"Export Excel":** When selected and click "Export" button, the listed table will be saved to local PC in an .xls file.
- **"Export":** Click "Export" button to save listed table to local PC in a .PDF file.
- **"Delete":** Select the specific data and click "Delete" button to remove the record. Otherwise, the record can not be deleted.
- **"Delete all":** Click "Delete All" button to remove all records in the listed table.



Time	Input voltage	Input frequency	Input current	Input Energy Consump...	Input Power	Input Apparent Power	Temperature
2016-01-13 15:27:50	222.8	49.9	0.4	0.0	18	102	35.0
2016-01-13 15:26:51	224.0	49.9	0.4	0.0	15	104	35.0
2016-01-13 15:25:52	222.7	49.9	0.4	0.0	15	102	35.0
2016-01-13 15:24:51	222.9	49.9	0.4	0.0	14	99	35.0
2016-01-13 15:23:52	223.5	49.9	0.4	0.0	15	100	35.0
2016-01-13 15:22:52	223.3	50.0	0.4	0.0	18	101	35.0
2016-01-13 15:21:50	224.0	50.0	0.4	0.0	15	100	35.0
2016-01-13 15:20:50	224.1	49.9	0.4	0.0	15	101	35.0
2016-01-13 15:19:51	221.8	50.0	0.4	0.0	18	100	35.0
2016-01-13 15:18:52	223.4	50.0	0.4	0.0	15	101	35.0
2016-01-13 15:17:52	223.7	49.9	0.4	0.0	18	100	35.0
2016-01-13 15:16:50	224.6	49.9	0.4	0.0	15	102	35.0
2016-01-13 15:15:51	224.9	49.9	0.4	0.0	15	102	35.0
2016-01-13 15:14:51	223.9	49.9	0.4	0.0	15	101	35.0
2016-01-13 15:13:53	224.5	49.9	0.4	0.0	15	101	35.0
2016-01-13 15:12:50	223.4	49.9	0.4	0.0	15	99	35.0
2016-01-13 15:11:50	221.6	49.9	0.4	0.0	17	99	35.0
2016-01-13 15:10:50	223.9	49.9	0.4	0.0	14	100	35.0
2016-01-13 15:09:51	222.4	49.9	0.4	0.0	15	100	35.0

Diagram 4-3-1-1

- **Charts**

Select View >>Data>>Charts. Please refer to Diagram 4-3-3-2.

Select browsed device and period. Then, click "Browse" to get the result.

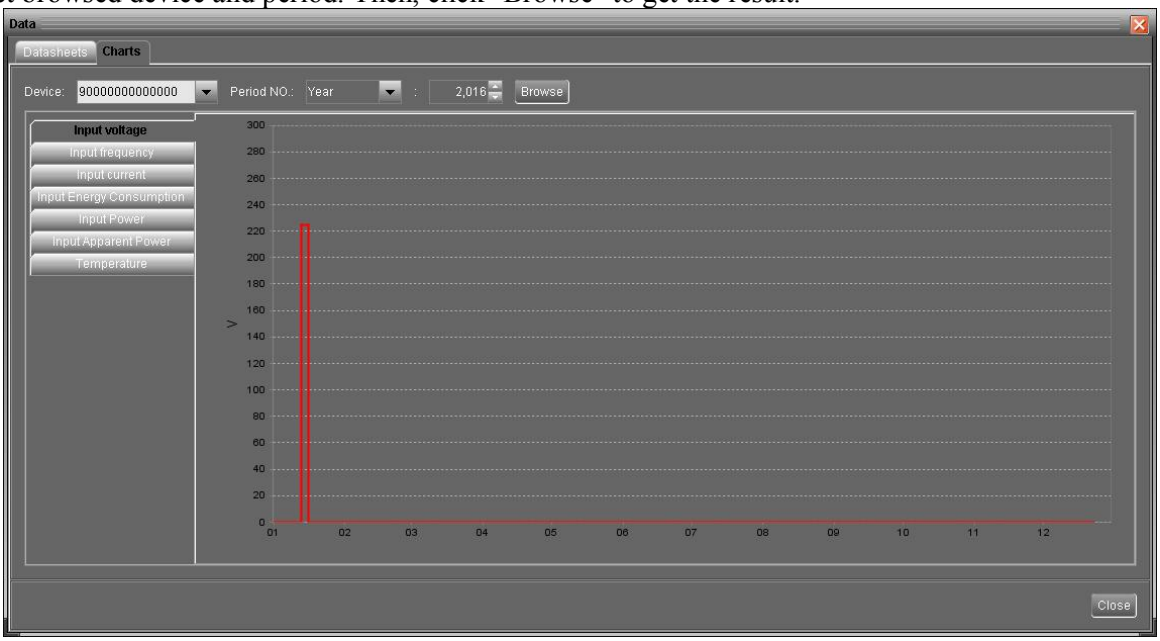


Diagram 4-3-1-2

4.3.2. Event log

Select View >>Event log or click the shortcut icon to enter event log.

To browse the history events, you can select the specific time duration. When "**Export Excel" is** selected and clicked, the listed table will be saved to the local PC in .xls file.

- **"Export":** Click "Export" button to save listed table to local PC in .PDF file.
- **"Delete":** Select specific data and click "Delete" button to remove the record.
- **"Delete all":** Click "Delete All" button to remove all records in the listed table.

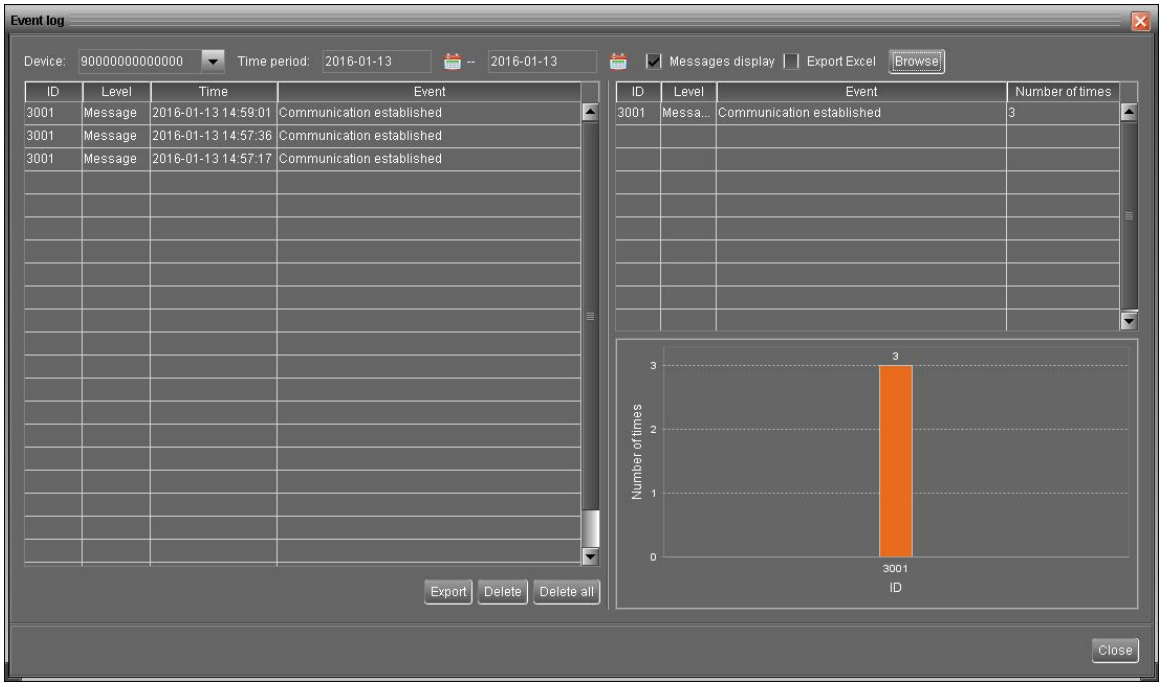


Diagram 4-3-2

4.4. Log in and Log out

This shortcut icon is to display the login status. When icon is displayed, it means user logs in as a guest. When icon is displayed, it means user logins as administrator.

Click the icon and enter password to start the software. The default password is "administrator." Please refer to Diagram 4-4-1.

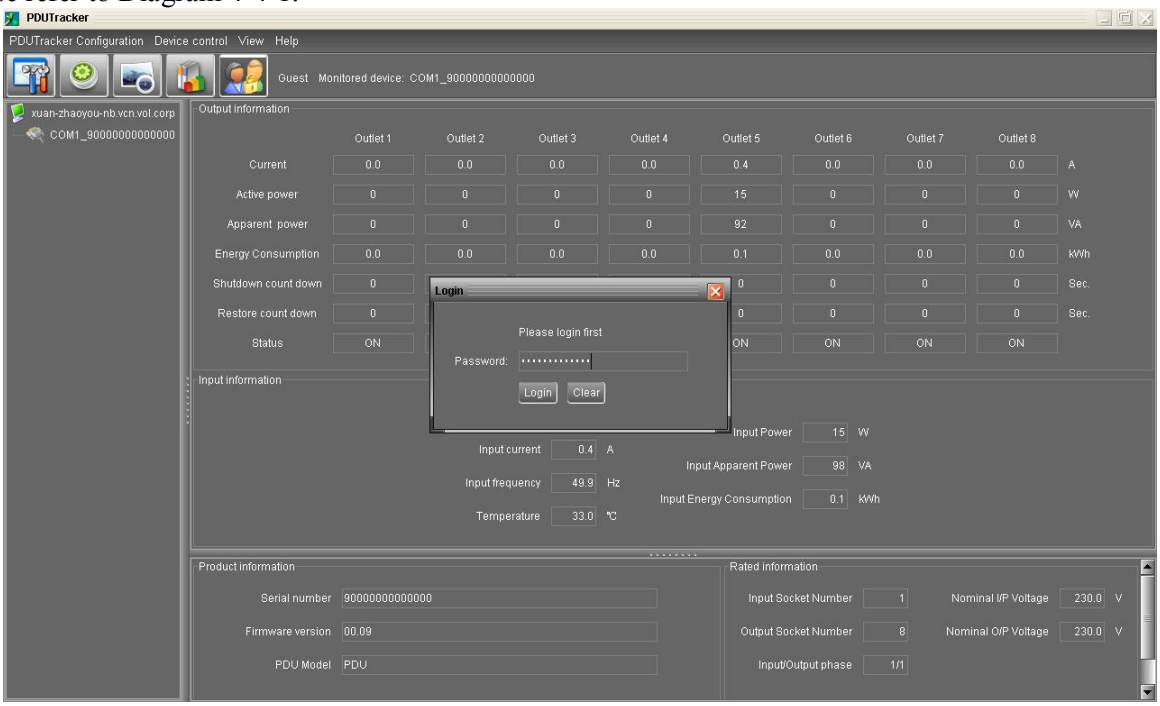


Diagram 4-4-1

Click the icon to log out. Then, the icon will become as "guest". Please refer to Diagram

4-4-2.

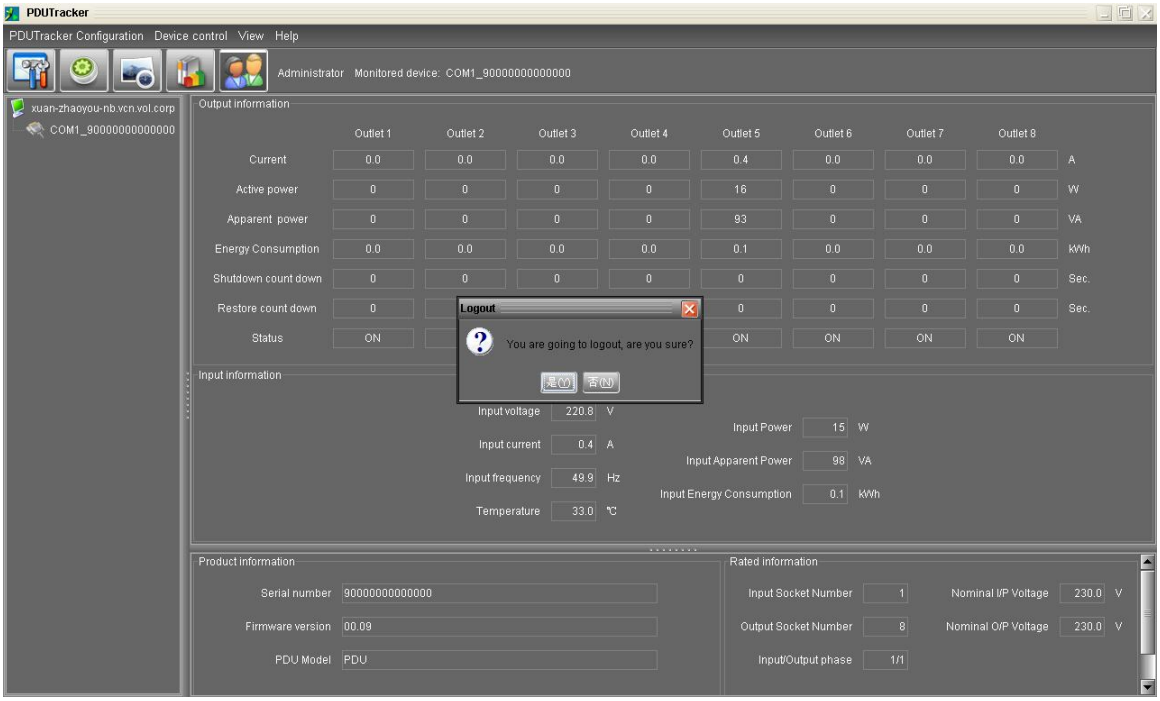


Diagram 4-4-2

4.5. Help

- **About**: Click “Help” menu and select “About”. The information of copyright about the software will be shown.
- **Help**: Click “Help” menu and select “Online help”. The help manual will be opened. Before operating the software, please read the manual carefully.