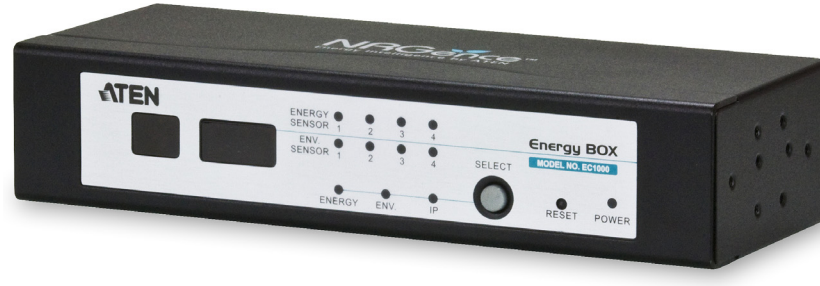
NRGence™ Energy Box
EC1000
User Manual



www.aten.com

FCC, CE Information

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the Fcc Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

Warning: Operation of this equipment in a residential environment could cause radio interference.

RoHS

This product is RoHS compliant.



User Information

Online Registration

Be sure to register your product at our online support center:

International	http://support.aten.com

Telephone Support

For telephone support, call this number:

International	886-2-8692-6959
China	86-400-810-0-810
Japan	81-3-5615-5811
Korea	82-2-467-6789
North America	1-888-999-ATEN ext 4988 1-949-428-1111

User Notice

All information, documentation, and specifications contained in this manual are subject to change without prior notification by the manufacturer. The manufacturer makes no representations or warranties, either expressed or implied, with respect to the contents hereof and specifically disclaims any warranties as to merchantability or fitness for any particular purpose. Any of the manufacturer's software described in this manual is sold or licensed *as is*. Should the programs prove defective following their purchase, the buyer (and not the manufacturer, its distributor, or its dealer), assumes the entire cost of all necessary servicing, repair and any incidental or consequential damages resulting from any defect in the software.

The manufacturer of this system is not responsible for any radio and/or TV interference caused by unauthorized modifications to this device. It is the responsibility of the user to correct such interference.

The manufacturer is not responsible for any damage incurred in the operation of this system if the correct operational voltage setting was not selected prior to operation. PLEASE VERIFY THAT THE VOLTAGE SETTING IS CORRECT BEFORE USE.

If any bodily injury or property damage with respect to operation of the product results from users not having installed the product in accordance with the instructions provided in the product’s user manual, or the product is used in an environment with a current load over the designed specifications of the product, ATEN is not liable for any loss or damage.

Package Contents

The EC1000 package consists of:

1 EC1000 Energy Box

1 Power Adapter

1 Mounting Kit

4 RJ-45 Cables

1 CD ROM (Manual, eco Sensors Software)

1 User Instructions*

Check to make sure that all of the components are present and in good order. If anything is missing, or was damaged in shipping, contact your dealer.

Read this manual thoroughly and follow the installation and operation procedures carefully to prevent any damage to the switch or to any other devices on the EC1000 installation.

---

* Features may have been added to the EC1000 since this manual was published. Please visit our website to download the most up-to-date version.

Copyright © 2020 ATEN® International Co., Ltd.

Manual Date: 2020-02-18

NRGence and the NRGence logo are registered trademarks of ATEN International Co., Ltd. All rights reserved.
All other brand names and trademarks are the registered property of their respective owners.

Contents

FCC, CE Information ii
User Information iii
Online Registration iii
Telephone Support iii
User Notice iii
Package Contents iv
About This Manual viii
Conventions ix
Product Information ix

Chapter 1.
Introduction
Overview 1
Features 2
Requirements 4
Optional Accessories 5
Sensors 5
Sensor Management 5
Components 6
EC1000 Front View 6
EC1000 Rear View 7

Chapter 2.
Hardware Setup
Rack Mounting 9
Rack Mounting - Front 9
Rack Mounting - Rear 11
Rack Mounting - Side 12
Installation 13
Securing the Sensors 15

Chapter 3.
Front Panel Operation
Overview 17
Front Panel Operation 17

Chapter 4.
Browser Operation
Operation Methods 19
Browser 19
eco Sensors 19
SNMP 19
Browser Login 20
The EC1000 Main Page 21

Page Components 21
Browser Operation 22
First Time Setup 22
Network Configuration. 23
Changing the Administrator Login 24
Access 25
Connections 25
Energy Sensor Status 26
Monitor Status 27
Configuration. 28
User 29
Administrator Information 29
User Information 29
Log 31
The System Log 31
Notification Settings 33
Setup 34
Device Configuration. 34
General 34
Service Ports 35
IPv4 Configuration 36
Date/Time 37
Security 39
Login Failures 39
Working Mode 39
Session Timeout 39
Account Policy 40
Login String / IP Filter / Mac Filter 41
Authentication & Authorization 43
Private Certificate 45
SNMP & Telnet Settings 46
SNMPv3 Account Information 46
SNMPv1/v2c Community 46
Telnet 46
Event Notification 47
SMTP Server. 47
SNMP Trap Receiver 48
Syslog Server 49
PDU 50
Firmware File 50
Upgrading the Firmware 51
Firmware Upgrade Recovery 51
Backup/Restore. 52
Backup *52*
Restore *52*

Chapter 5.
Telnet Commands

Remote Terminal Operations - Telnet 53
Setup 53
Logging In 53
Commands 55
Verification 55
Read Outlet Status 55
Switch Outlet Status 57
Read Power Value 59
Read Environmental Value 61
Close Telnet Session 62

Appendix

Safety Instructions 63
General 63
Rack Mounting 65
Technical Support 66
International 66
North America 66
Specifications 67
EC1000 67
IP Address Determination 68
Method 1: 68
Method 2: 69
Method 3: 69
Administrator Login Failure 70
Limited Warranty 71

About This Manual

This User Manual is provided to help you get the most from your EC1000 system. It covers all aspects of installation, configuration and operation. An overview of the information found in the manual is provided below.

Chapter 1, Introduction, introduces you to the EC1000 System. Its purpose, features and benefits are presented, and its front and back panel components are described.

Chapter 2, Hardware Setup, provides step-by-step instructions for setting up your installation, and explains some basic operation procedures.

Chapter 3, Front Panel Operation, explains how to operate the EC1000 from the local console.

Chapter 4, Browser Operation, describes how to login to the EC1000 with a browser, and explains the functions of the icons and buttons that appear on the opening page, and explains the administrative procedures that are employed to configure the EC1000's working environment.

Chapter 5, Telnet Commands, describes how to connect to the EC1000 and the available Telnet commands.

An Appendix, at the end of the manual provides technical and troubleshooting information.

Conventions

This manual uses the following conventions:

Monospaced	Indicates text that you should key in.
[ ]	Indicates keys you should press. For example, [Enter] means to press the **Enter** key. If keys need to be chorded, they appear together in the same bracket with a plus sign between them: [Ctrl+Alt].
1.	Numbered lists represent procedures with sequential steps.
♦	Bullet lists provide information, but do not involve sequential steps.
→	Indicates selecting the option (on a menu or dialog box, for example), that comes next. For example, Start → Run means to open the *Start* menu, and then select *Run*.
⚠	Indicates critical information.

Product Information

For information about all ATEN products and how they can help you connect without limits, visit ATEN on the Web or contact an ATEN Authorized Reseller. Visit ATEN on the Web for a list of locations and telephone numbers:

International	http://www.aten.com
North America	http://www.aten-usa.com

This Page Intentionally Left Blank

Chapter 1
Introduction

Overview

The EC1000 Energy Box solution is the latest evolution of ATEN's energy intelligence product line NRGence™. The EC1000 monitors the electrical current of 4 Energy PDU's, along with room temperature, humidity, and differential pressure using environmental sensors. The Energy Box provides instant real-time power management and energy-saving control for data centers– allowing you to upgrade and maintain your current IT power resources quickly and cost-effectively.

The EC1000 Energy Box has four RJ-45 ports to connect to four Energy PDUs and four RJ-11 ports to connect external sensors to monitor environmental conditions. Each environmental sensor can provide measured readings of temperature, humidity, and differential pressure from separate areas of a room, giving you a wide range of monitoring and protection.

The EC1000 features real-time status, system logs, threshold alerts, and event notification. The Energy Box logs power and environmental conditions according to customizable minimum/maximum thresholds set for; current, temperature, humidity, and differential pressure.

The Energy Box allows the power and environmental data to be monitored by display at the rack or remotely for easy viewing and maintenance. The Energy Box is a standalone unit with over IP monitoring that is controlled by a built-in web GUI or ATEN's eco Sensors software.

Remote monitoring offers secure access with 128bits SSL encryption, and customizable account policies for user management. Remote authentication supports RADIUS and additional management interfaces including HTTP, HTTPS, and SNMPv1&v2&v3 (Read, Write, Trap). Event notifications can be monitored via Syslog/SMTP/SNMP trap and by audible alarm for real-time local and remote alerting.

The NRGence™ EC1000 Energy Box is the intelligent cost effective solution to monitor ATEN's Energy PDUs – to ensure safe and effective energy-saving power management.

Features

Operation

- Space saving 1U and 0U rack mounting with front, rear, and side mounting
- 4 RJ-45 Energy Sensor Ports to monitor four Energy PDUs (0A to 32A per port) electrical currents
- 4 RJ-11 Environmental Sensor Ports to monitor temperature, humidity, and differential pressure*
- Maximum Amperage Monitor 32A@100V~240V (Energy Box)
- 3 digit 7 segment front panel LED displays current/sensor/IP address information
- Threshold monitoring for:
  - Current
  - Temperature*
  - Humidity*
  - Differential pressure*
- Threshold alerting through:
  - Local: audible alarm and LED lights
  - Remote: SMTP/SNMP trap/Syslog

Management

- Front panel LED indicators for current, temperature*, humidity*, differential pressure*, and IP address at the Energy Box
- Remote real-time current, temperature*, humidity*, and differential pressure* monitoring and management
- Management through eco Sensors Energy Management Software or 3rd party SNMP manager
- Supports name assignment for individual Energy PDUs
- Multi-language GUI supports: English, Traditional Chinese, Simplified Chinese, Japanese, Korean, German, Italian, Spanish, Portuguese, French, Russian
- Event Logging – 128 line event log
- Syslog support
- F/W upgradable

Remote Access

- Remote management via TCP/IP using built in 10/100Mbps Ethernet port
- Management via built in browser based GUI
- Network Interfaces: TCP/IP, UDP, HTTP, HTTPS, SSL, SMTP, DHCP, NTP, DNS, 10Base-T/100Base-TX, auto sense, Ping
- Supports SNMP Manager V1, V2, V3

Security

- Strong security features include password protection and advanced encryption technologies – utilizing 128 bit SSL
- RADIUS authorization and authentication

*Requires external sensors (see *Optional Accessories*, page 5).

Requirements

- Energy PDU PE1216, PE1324, PE2220, or PE2340
- Environmental Sensors EA1140, EA1240, EA1340 to monitor environmental data
- One Cat 5e Ethernet cable to connect the EC1000 to the local area network
- Browsers accessing the EC1000 must support SSL 128 bit encryption.

Optional Accessories

Sensors

Sensors are optional accessories. You can use the EC1000 Energy Box without sensors. However, if you want to have complete energy management of your data center with the full use of the EC1000 Energy Box, you would need to use eco Sensors software and install 4 sensors for each of the racks to generate more complete energy-efficient data and charts. Sensors help you maintain a safe and highly efficient data center by monitoring environmental conditions. Higher sensor density installations help to generate more accurate and precise data. Available sensors are show in the table, below:

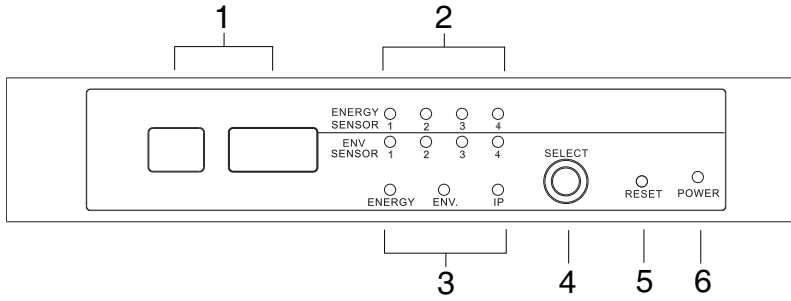
Sensor	Part Number
Temperature	EA1140
Temperature / Humidity	EA1240
Differential Pressure / Temperature	EA1340

Sensor Management

Sensors can be managed via the EC1000's browser based graphical user interface (GUI) or with NRGence™ eco Sensors software that can be downloaded from the ATEN website. The download link can be found on the software CD provided with the EC1000 package.

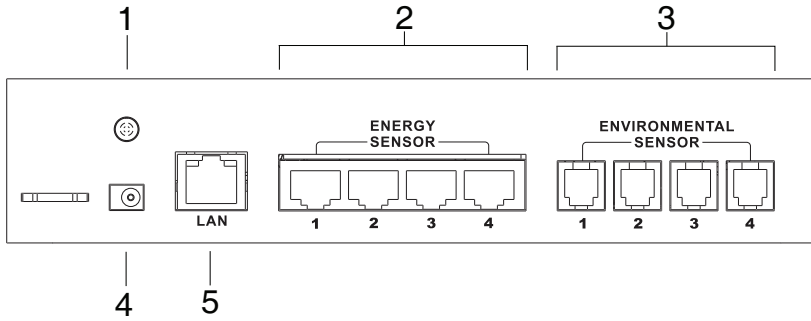
Components

EC1000 Front View



No.	Component	Description
1	Readout Section	◆ The first single-digit LED indicates the port selected: ◆ Energy Sensor (1-4) ◆ Environmental Sensor (1-4) ◆ IP Address (1) ◆ The second 3-digit LED displays information related to the first LED: ◆ Current ◆ Temperature, Humidity, Differential Pressure ◆ IP Address
2	Energy and Environmental Sensor LEDs	Lights (Orange) for connected Energy Sensors and (Green) for Environmental Sensors, currently connected to a port and taking readings.
3	Selection LED	Lights (Green) to indicate the selection (Energy, Environment, IP) that the Readout is currently displaying.
4	Select Button	Press the Select button to cycle through the selections (Energy, Environment, IP) to display their data readout on the 3-digit LED.
5	Reset Switch	This switch must be pushed with a thin object, such as the end of a paper clip. ◆ Press and release to reboot the device. ◆ Press and hold for more then three seconds to reset the Energy Box to its factory default settings
6	Power LED	Lights (Green) when the Energy Box is powered up and ready to operate.

EC1000 Rear View



No.	Component	Description
1	Grounding Terminal	The wire used to ground the Energy Box attaches here.
2	Energy Sensor Ports	The four RJ-45 cables that connect the Energy Box to your Energy PDUs, plug in here.
3	Environmental Sensor Ports	External sensors plug into these four RJ-11 ports.*
4	Power Jack	The power adapter cable plugs into this jack.
5	LAN Port	The cable that connects the Energy Box to the LAN plugs in here.

*External sensors are sold separately (see *Optional Accessories*, page 5).

This Page Intentionally Left Blank

Chapter 2
Hardware Setup

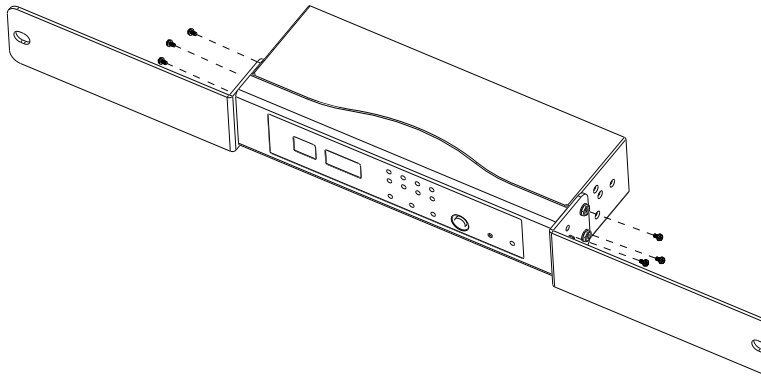
1. Important safety information regarding the placement of this device is provided on page 63. Please review it before proceeding.

Rack Mounting

The EC1000 can be mounted in a 19" (1U) rack or in an 0U configuration mounted to the side of the rack. To rack mount the device, use the rack mounting brackets that came with your device. The brackets are screwed to the front, rear or middle sides of the device, depending on the installation type and then the unit can slide into the front of the rack, or mount to the side of the rack, as shown in the diagrams below:

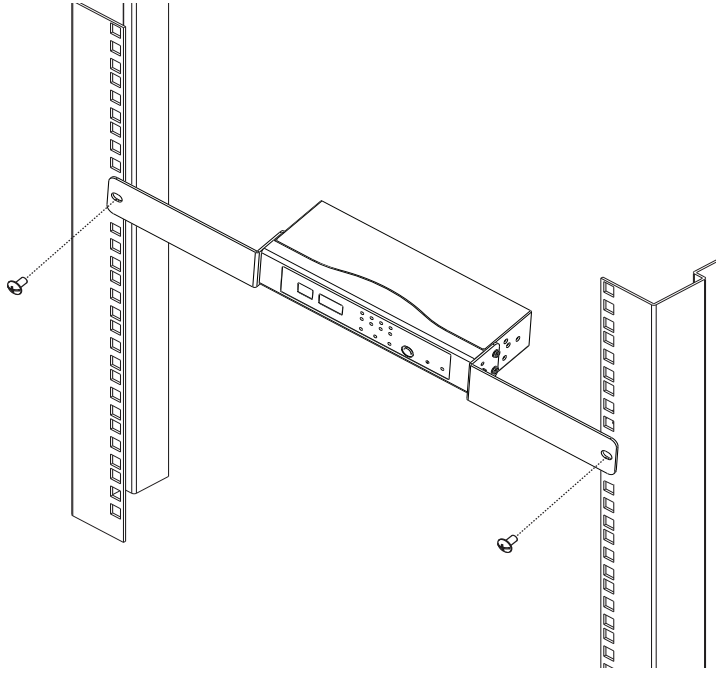
Rack Mounting - Front

1. Use 3 M3 x 8 Phillips hex head screws supplied with the rack mounting kit to screw the rack mounting brackets into the sides near the front of the unit.



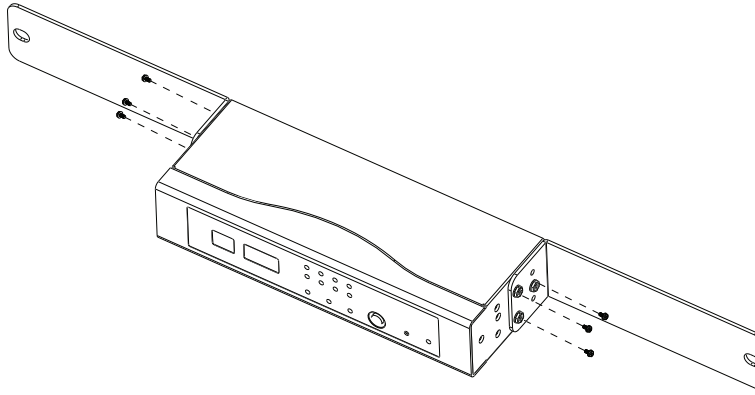
2. Position the unit in the front of the rack and align the holes in the mounting brackets with the holes in the rack.

3. Screw the mounting brackets to the rack.

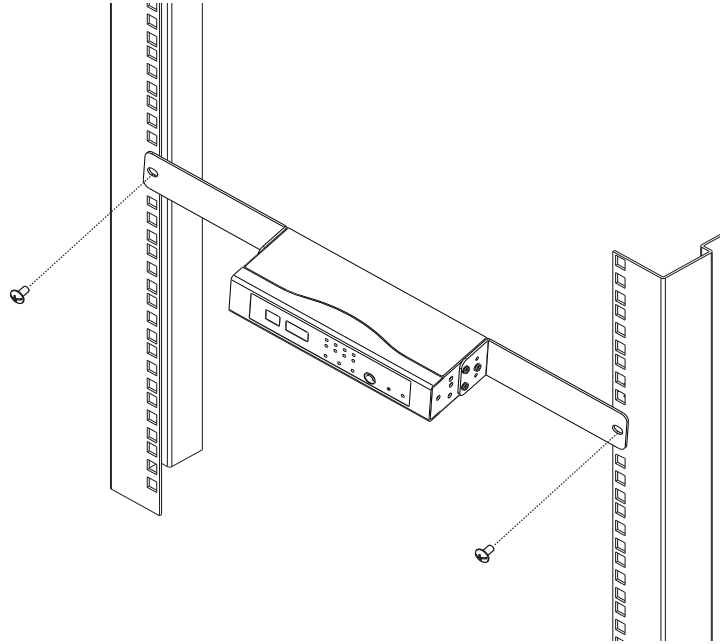


Rack Mounting - Rear

1. Use the M3 x 8 Phillips hex head screws supplied with the rack mounting kit to screw the rack mounting brackets into the sides near the rear of the unit.

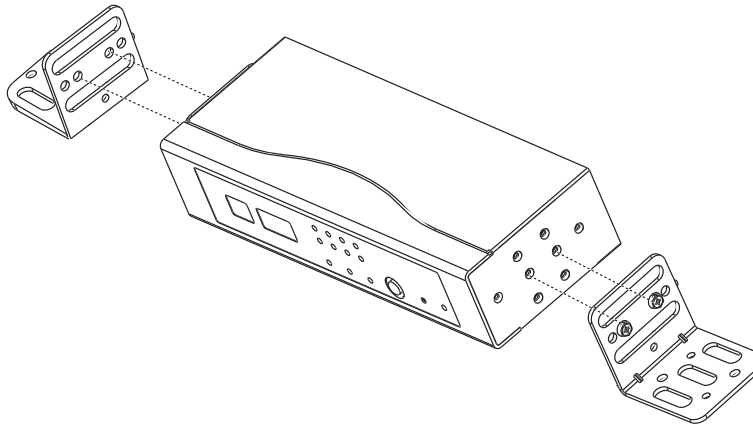


2. Position the unit in the front of the rack and align the holes in the mounting brackets with the holes in the rack.
3. Screw the mounting brackets to the rack.

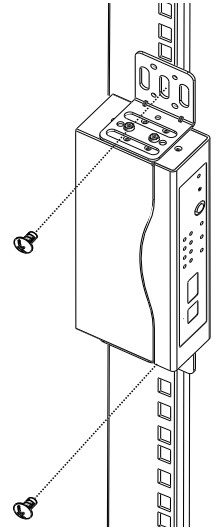


Rack Mounting - Side

1. Use 2 M3 x 8 Phillips hex head screws supplied with the rack mounting kit to screw the rack mounting brackets onto the sides at the middle of the unit.



2. Position the unit on the outer front of the rack and align the holes in the mounting brackets with the holes in the rack.
3. Screw the mounting brackets to the rack.



Installation

To set up your EC1000 Energy Box installation, refer to the installation diagram on the next page (the numbers in the diagram correspond to the numbered steps), and do the following:

1. Use a grounding wire to ground the Energy Box by connecting one end of the wire to its grounding terminal, and the other end of the wire to a suitable grounded object.

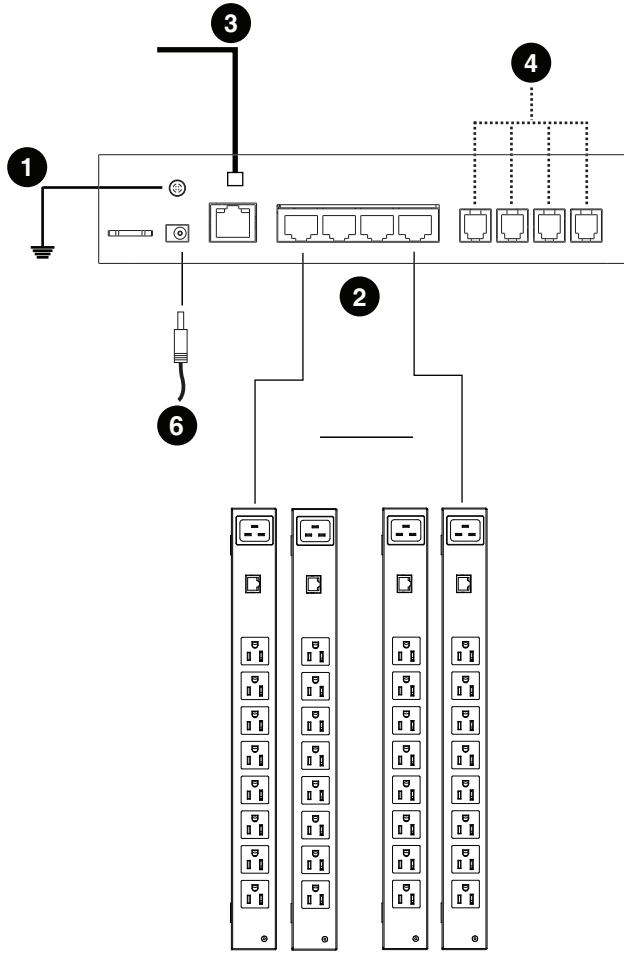
   Note: Do not omit this step. Proper grounding helps to prevent damage to the unit from surges or static electricity.

2. For each Energy PDU you want to connect, use an RJ-45 cable included with the package to connect the Energy Box to the Energy PDU.
3. Plug the cable that connects the Energy Box to the LAN, into the LAN port.
4. (Optional) If you are using environmental sensors with your Energy Box installation, connect them to the rear environmental sensor ports, and see *Securing the Sensors*, page 15 for sensor installation.

   Note: Sensors are optional. Please see *Optional Accessories*, page 5.

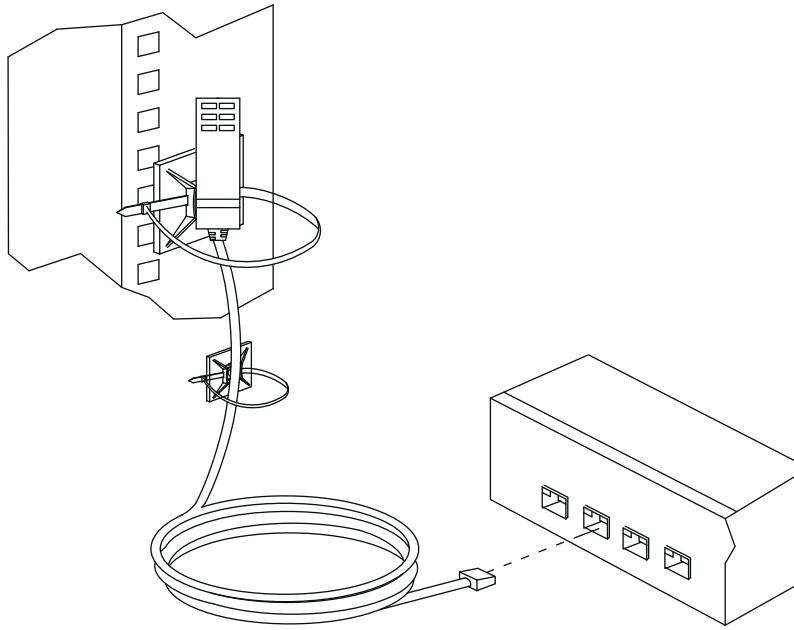
5. Connect the power adapter to an AC power source.

Installation Diagram



Securing the Sensors

Connect the sensors to the EC1000 Energy Box's rear environmental sensor ports and secure them using sensor mounts, tie wraps, and adhesive cable tie holders. If you use a tie wrap to secure the sensor, tighten the tie wrap over the recessed channel on the sensor, as shown in the following diagram:



Note: 1. The sensors shown in the above diagram are for reference purposes only. The sensors for the EC1000 may look slightly different.

2. Depending on the model and type of sensor, sensor mounts, tie wraps, and adhesive cable tie holders may or may not be provided in the package.

This Page Intentionally Left Blank

Chapter 3
Front Panel Operation

Overview

The EC1000 Energy Box displays real-time energy, environment, and IP information locally via the front panel display, for monitoring at the rack. This chapter discusses the front panel operation and monitoring.

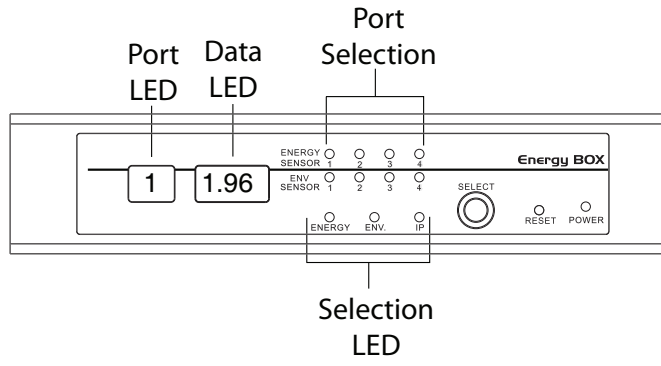
Detailed management is done remotely over a standard TCP/IP connection via graphical user interface (GUI) using a web browser or by ATEN's eco Sensor software. Over-IP operation is discussed in Chapter 4, Browser Operation.

Front Panel Operation

The EC1000 front panel display is controlled by the Select pushbutton. The Select pushbutton cycles through the energy ports, environmental ports, and IP Address in order, displaying relevant information for each selection in the Port LED, and Data LED displays.

The Port LED displays the port (1-4) you are viewing for each selection type: *Energy*, *Environment*, or *IP Address*.

The Data LED displays relevant information about the port you are viewing. The table on the next page explains the different information displayed for each section.



Selection LED	Port LEDs	Data LED Displays	Data LED Description
Energy	1-4	Current	Displays the power current of the Energy PDU connected to Energy Sensor port 1, 2, 3, or 4. The data range is 0–20 A. When an Energy port is selected the EC1000 displays real-time data for that port until you manual switch to another port.
Environment	1-4	Temperature Humidity Differential Pressure	Displays the Temperature, Humidity, and Differential Pressure of the sensor connected to Environmental Sensor port 1, 2, 3, or 4. When an Environmental Sensor port is selected the Data LED will switch between the readings, flashing a letter first to represent the data to be displayed, then displays the data reading. The letter and data ranges are: (T) Temperature: -20–60ºC (H) Humidity: 15–95 (D) Differential Pressure: -250–250* After the environmental data is displayed, the EC1000 automatically switches back to Energy Sensor port 1. *The Differential Pressure only shows absolute values due to the displays limitation of 3 digits.
IP	1	IP Address	Displays the IP address of the EC1000, switching between each of the four octets that make up the full IP address. After the IP address is displayed twice, the EC1000 automatically switches back to Energy Sensor port 1.

Chapter 4
Browser Operation

Operation Methods

The NRGence™ EC1000 Energy Box provides three methods to access and manage your installation: Browser, eco Sensors (Energy PDU Management Software), and SNMP.

Note: The following sections of this chapter contain information concerning Browser operation. For eco Sensors operation, please reference the separate eco Sensors User Manual. The eco Sensors software and User Manual can be downloaded from the ATEN website.

Browser

The EC1000 Energy Box can be accessed and controlled via any supported Internet browser from any platform. See *Browser Operation*, page 22, and the following sections in this chapter, for full details.

eco Sensors

The EC1000 Energy Box supports NRGence™ eco Sensors (eco PDU Manager Software). NRGence™ eco Sensors provides you with an easy method for managing multiple devices, offering an intuitive and user-friendly Graphical User Interface that allows you to configure a PDU device and monitor power status of the equipment connected to it. NRGence™ eco Sensors can be downloaded from the ATEN website, along with a separate eco Sensors User Manual.

SNMP

The EC1000 supports any 3rd party V1, V2, or V3 SNMP Manager Software. SNMP Management Information Database (MIB) files for the EC1000 can be found on the software CD provided with the EC1000 package.

Browser Login

The Energy Box can be accessed via Internet browser from any OS platform.

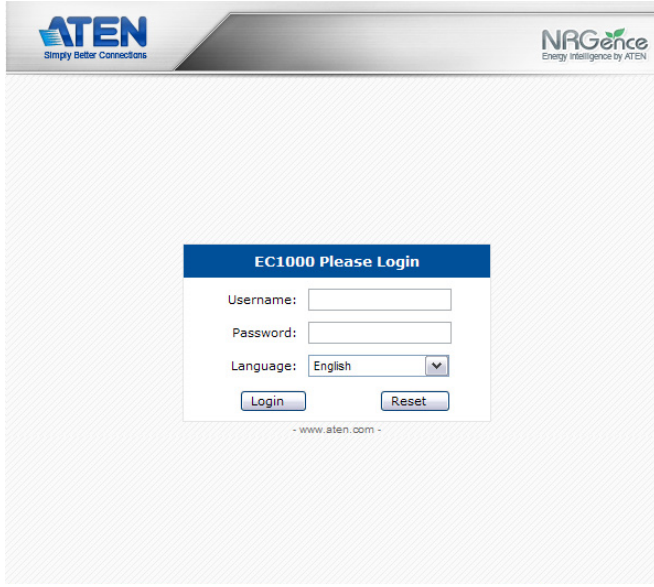
Note: Browsers must support SSL 128 bit encryption.

To access the Energy Box, do the following:

1. Open your browser and specify the IP address of the EC1000 you want to access in the browser's URL location bar.

   Note: You can get the IP address by selecting *IP* from the front panel, or see *IP Address Determination*, page 68, for information about setting it up yourself.

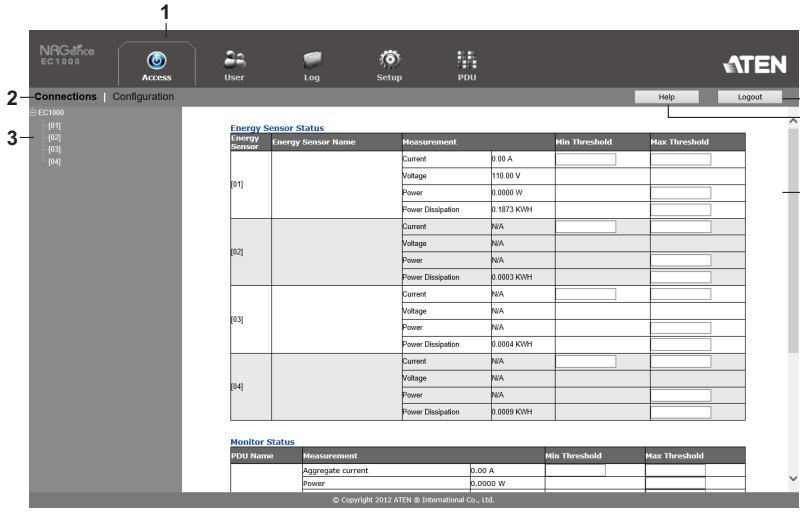
2. If a Security Alert dialog box appears, accept the certificate – it can be trusted. The Login page appears:



3. Provide a valid Username and Password (see *First Time Setup*, page 22), and select your language.
4. Click **Login** to bring up the Main Page.

The EC1000 Main Page

After you have successfully logged in, the EC1000's Main Page comes up with the Access *Connections* page displayed:



Note: The screen depicts an Administrator's page. Depending on a user's type and permissions, not all of these elements appear.

Page Components

The web page screen components are described in the table below:

No.	Item	Description
1	Tab Bar	The tab bar contains the main operation categories. The items that appear in the tab bar are determined by the user's type, and the authorization options that were selected when the user's account was created.
2	Menu Bar	The menu bar contains operational sub-categories that pertain to the item selected in the tab bar. The items that appear in the menu bar are determined by the user's type, and the authorization options that were selected when the user's account was created.
3	Sidebar	The Sidebar provides a tree view listing of outlets that relate to the various tab bar and menu bar selections.
4	Logout	Click this button to log out of your web session.
5	Help	Connects to on-line help at the ATEN website for the device's configuration and operation.
6	Interactive Display Panel	This is your main work area. The screens that appear reflect your menu choices and Sidebar selection.

Browser Operation

First Time Setup

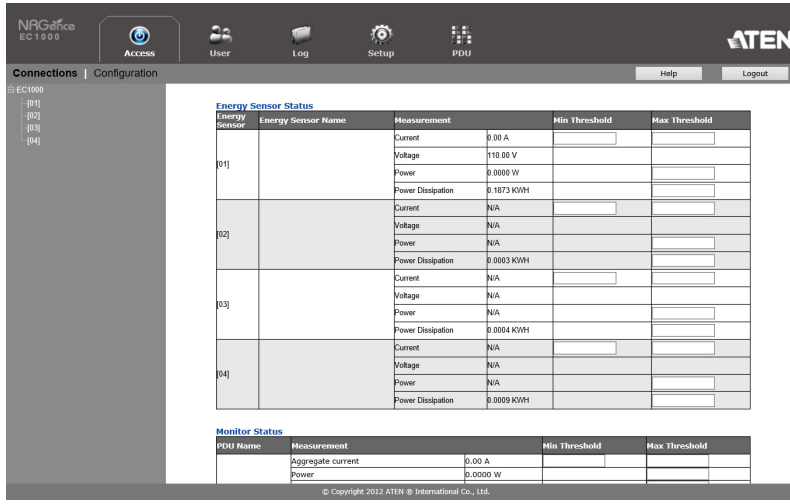
Once the Energy Box installation has been cabled up, the next task the Administrator needs to perform involves configuring the network parameters, changing the default Administrator login settings, and adding users.

To accomplish this you must login over the network with a browser (See *Browser Login*, page 20, for details).

Note: 1. Since this is the first time you are logging in, use the default Username: *administrator*; and the default Password: *password*. For security purposes we recommend changing them to something unique (see *Changing the Administrator Login*, page 24).

2. For remote methods of getting logged in, use the Select button from the front panel of the EC1000 to obtain the IP address and enter it into a web browser to access the Energy Box; or see *IP Address Determination*, page 68.

After you successfully log in, the Access/Connections page appears:

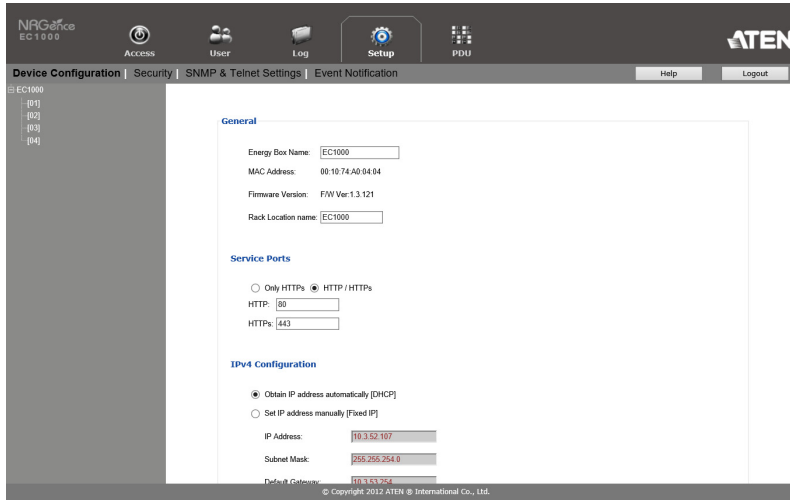


Note: Operation details are discussed in *Access*, page 25.

Network Configuration

To set up the network, do the following:

1. Click the **Setup** tab.
2. The interface displays the **Device Configuration** page. A screen similar to the one below appears:



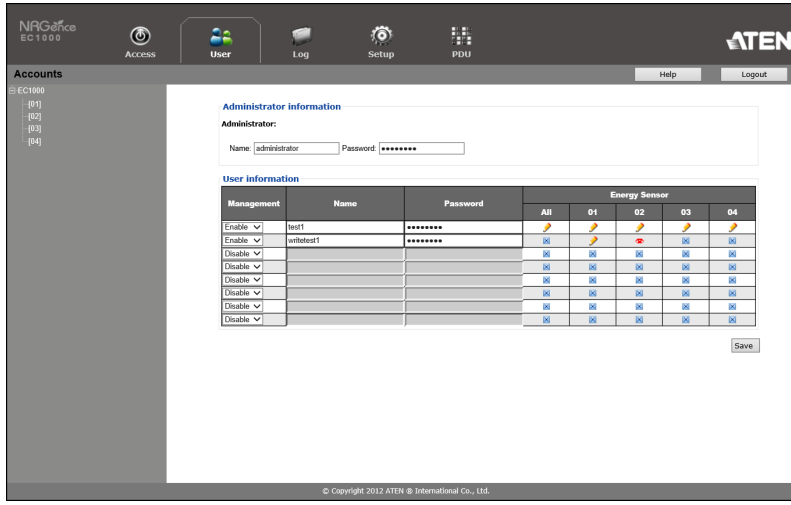
3. Fill in the fields according to the information provided under *Device Configuration*, page 34.

Changing the Administrator Login

To change the default Administrator username and password, do the following:

1. Click the **User** tab.

   The User Management page has a detailed list of administrator and user login information.



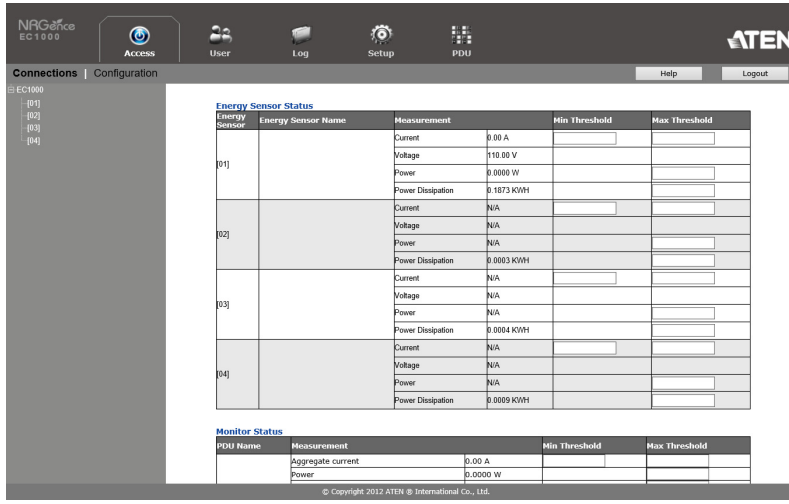
2. In the **Administrator Information** section, reset the name and password fields to something unique, then click **Save** (at the bottom of the page.)

Note: If you forget the Administrator's name or password, short the mainboard jumper to restore the default Administrator account. See *Administrator Login Failure*, page 70 in the Appendix for full details.

Access

Connections

When you login to the EC1000, the interface opens with its default selection of the *Connections* menu of the *Access* tab. The contents of the **Energy Sensor Status** and **Monitor Status** sections are displayed in the main panel.



Energy Sensor Status

The EC1000 Energy Box supports the monitoring of four Energy PDUs. The **Energy Sensor Status** section allows you to view power status and set up a power management configuration for each Energy PDU:

Energy Sensor Status

Energy Sensor	Energy Sensor Name	Measurement		Min Threshold	Max Threshold
[01]		Current	0.00 A		
		Voltage	110.00 V		
		Power	0.0000 W		
		Power Dissipation	0.1873 KWH		
[02]		Current	N/A		
		Voltage	N/A		
		Power	N/A		
		Power Dissipation	0.0003 KWH		
[03]		Current	N/A		
		Voltage	N/A		
		Power	N/A		
		Power Dissipation	0.0004 KWH		
[04]		Current	N/A		
		Voltage	N/A		
		Power	N/A		
		Power Dissipation	0.0009 KWH		

- **Energy Sensor**

  This field displays the Energy Sensor port number that the Energy PDU is connected to.

- **Energy Sensor Name**

  This field displays the custom name created for the Energy sensor port (see *Configuration*, page 28).

- **Measurement**

  This field displays the real-time current, voltage, power and power dissipation reading of an Energy PDU.

- **Threshold Settings**

  This field is used to set the maximum threshold settings for the Energy PDU's current. If a range exceeds the maximum setting an alarm is triggered.

Monitor Status

The EC1000 Energy Box supports the monitoring from four environmental sensors*. The **Monitor Status** section allows you to view the status and set up environmental management configurations for each sensor device:

Monitor Status

PDU Name	Measurement			Min Threshold	Max Threshold
EC1000	Aggregate current		0.00 A		
	Power		0.0000 W		
	Aggregate power dissipation		0.1889 KWH		
	Sensor1	Temperature	24.50 °C		
		Humidity	54.00 %		
		Pressure	N/A		
	Sensor2	Temperature	23.30 °C		
		Humidity	57.00 %		
		Pressure	N/A		
	Sensor3	Temperature	23.60 °C		
		Humidity	57.00 %		
		Pressure	N/A		
	Sensor4	Temperature	23.30 °C		
		Humidity	58.00 %		
		Pressure	N/A		

■ Measurement

This field displays the measurement type (Temperature, Humidity, Differential Pressure) and real-time reading of each sensor.

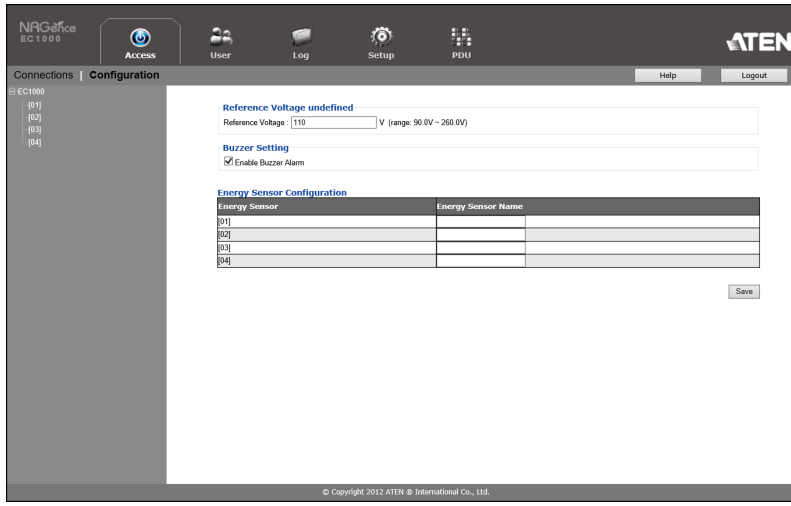
■ Threshold Settings

These fields are used to set the maximum, and minimum threshold settings for Temperature, Humidity, and Differential Pressure. If a range falls below the minimum setting, or exceeds the maximum setting an alarm is triggered.

Note: Sensors are optional accessories. see *Optional Accessories*, page 5.

Configuration

The *Configuration* page is used to set Reference Voltage, Buzzer Setting and name the sensor ports of each Energy PDU:



Enter a reference voltage between 90.0V and 260.0V.

Check/uncheck the checkbox of *Enable Buzzer Alarm* to enable/disable buzzer alarm.

Each Energy Sensor port can be given a distinctive name. The maximum number of characters is 15.

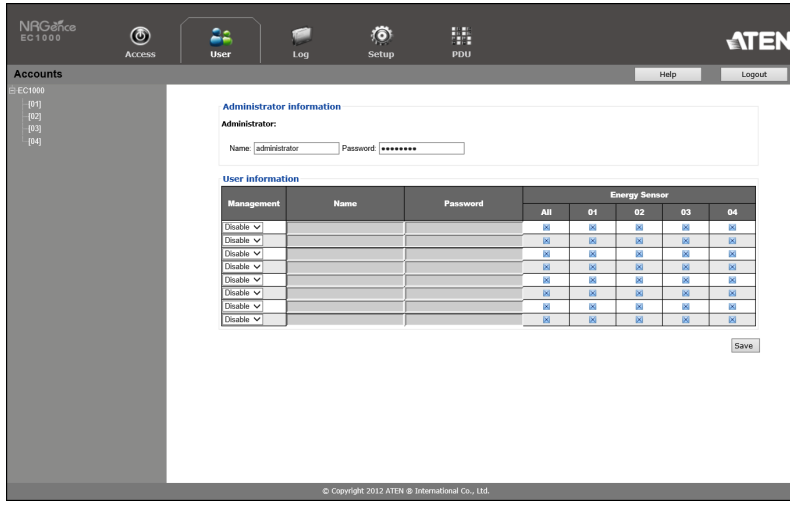
When you have finished making your changes, click **Save**.

User

When you select the *User* tab the screen comes up with *Administrator Information* and *User Information* displayed in the main panel. The EC1000 supports one Administrator account and up to eight User accounts.

Note: 1. Each account can support 2 login sessions.

2. The EC1000 supports a total of 3 concurrent login sessions.



Administrator Information

This section is used to set the Administrator name and password for browser login. Only Administrators can view this section. For details, see *Changing the Administrator Login*, page 24.

User Information

To add a user, do the following:

1. Set the Management field to *Enable*.
2. Enter a name in the Name field.
3. Click the Password field and a pop-up window will appear to ask you to enter the password and confirm it.



4. Set the sensor-by-sensor permissions of the user in the Energy Sensor field.
5. Click *Save* to save your settings.

Note: Correct values must be entered in both the Name and Password fields to enable an account. For account policies see page 40.

The various options are explained in more detail in the following table:

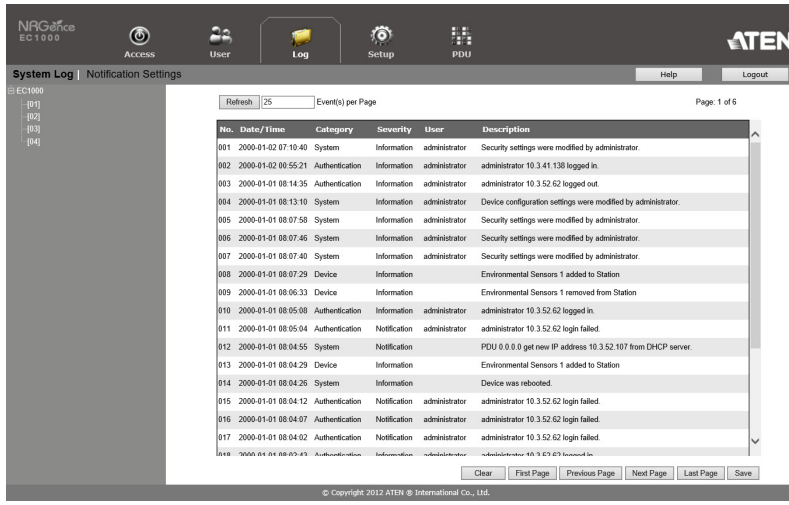
Field	Description	
Management	The Management field allows you to Enable or Disable a user's account: ◆ Enable – stores the user account ◆ Disable – disables the user account	
Name	1 to 16 characters are allowed depending on the Account Policy settings. See *Account Policy*, page 40.	
Password	1 to 16 characters are allowed depending on the Account Policy settings. See *Account Policy*, page 40.	
Energy Sensor	This field allows you to set the Energy sensor-by-sensor permissions of the user. Click on the user/port icon to cycle through the three permissions options as follows:	
		User has complete access to this sensor port.
		User has read-only access to this sensor port.
		User has no access to this sensor port.

Log

The EC1000 keeps a record of transactions that take place on its installation, and stores up to 128 events at one time. The *System Log* page (selected in the menu bar) provides functions that allow you to view and export the log file data. If you need to log more then 128 events at a time, a syslog server can be used (see *Syslog Server*, page 49).

The *Notification Settings* page (selected in the menu bar) allows you to setup email notifications of specified events as they occur.

The System Log

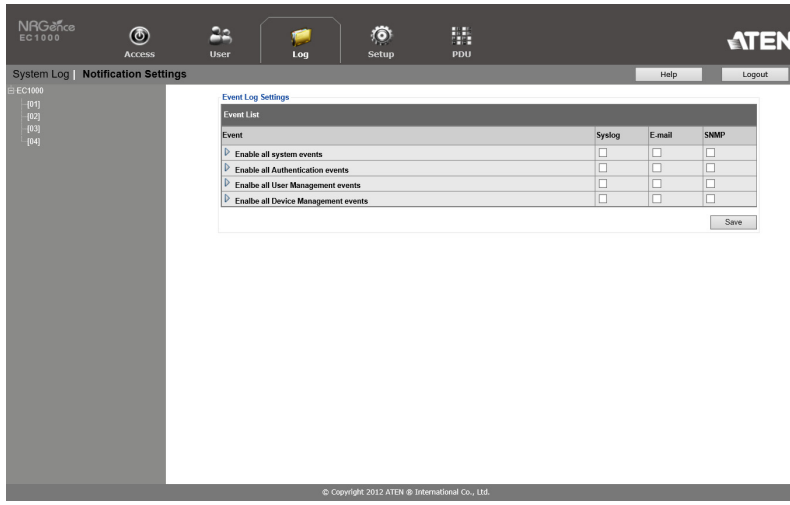


- Clicking on a device in the Sidebar displays its log events in the main panel's log event list.
- Clicking the **Refresh** button brings the log list up to date with the latest events.
- The entry box to the right of the Refresh button lets you set the number of events to display per page. Simply key in the number of your choice.
- The top right of the main panel shows the total number of pages in the log file, and what page you are currently viewing.
- The buttons on the bottom row function as follows:
  - **Clear** – click to erase the contents of the log event list
  - **First Page** – click to go to the first page of the log event list

- **Previous Page** – click to move to the previous page of the log event list
- **Next Page** – click to move to the next page of the log event list
- **Last Page** – click to move to the last page of the log event list
- **Save** – click to save the contents of the log event list to a Csv or Txt type file.

Notification Settings

This page allows you to setup email notifications of specified events.



Check the checkbox to enable the notification type for the selected event category.

For detailed events of a event category, click the right-pointing triangle in front of the event category and a list will be displayed. An example is shown below:

Event Log Settings

Event List

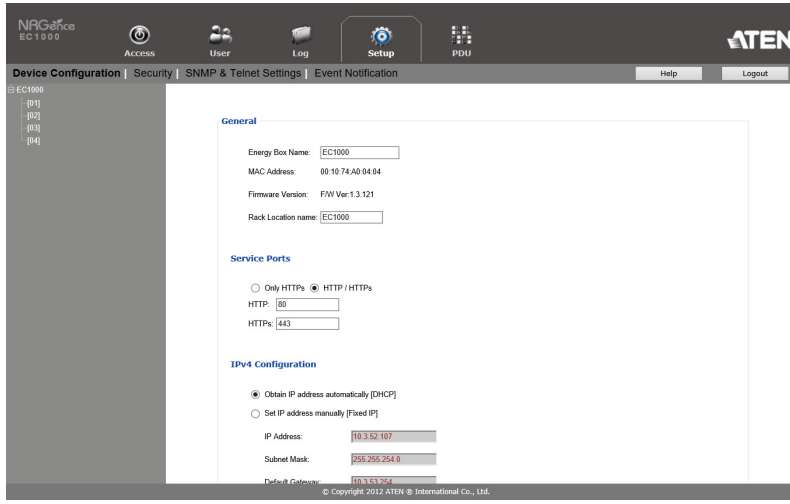
Event	Syslog	E-mail	SNMP
Enable all system events	☐	☐	☐
Log export succeeded	☑	☑	☑
System event log (SEL) cleaned	☑	☑	☑
F/W upgrade succeeded	☑	☑	☑
F/W upgrade failed	☑	☑	☑
Device configuration restore succeeded	☑	☑	☑
Device configuration restore failed	☑	☑	☑
Device configuration backup succeeded	☑	☑	☑
Device configuration settings modified	☑	☑	☑
Security settings modified	☑	☑	☑
F/W upgrade started	☑	☑	☑
Device rebooted	☑	☑	☑
PDU get new IP address	☑	☑	☑
Enable all Authentication events	☐	☐	☐
Enalbe all User Management events	☐	☐	☐
Enalbe all Device Management events	☐	☐	☐

Save

Check the checkbox to enable the notification type for the selected events.

Setup

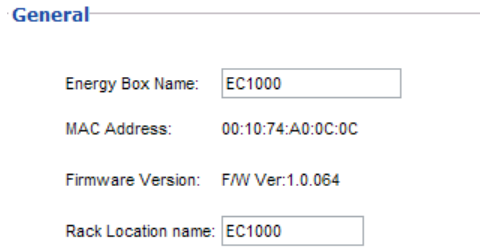
The *Setup* page allows administrators to configure and control overall EC1000 operations.



Device Configuration

This page provides information about the EC1000, as described in the following sections:

General

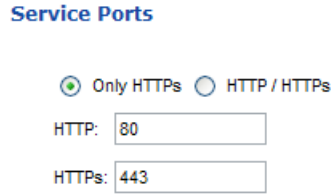


Item	Meaning
Energy Box Name	This field lets you give the device a unique name. Simply delete whatever is in the text box and key in the name of your choice. Click **Save** (located at the bottom of the page) to save the new name.

Item	Meaning
MAC Address	This item displays the EC1000's MAC address.
Firmware Version	This item displays the current firmware version number. You can reference it to see if there are newer versions available on the ATEN website.
Rack Location Name	This field lets you give the rack location a unique name for easy reference.

Service Ports

As a security measure, if a firewall is being used, the Administrator can specify the port numbers that the firewall will allow. If a port other than the default is used, users must specify the port number as part of the IP address when they login. If an invalid port number (or no port number) is specified, the EC1000 will not be found.



An explanation of the fields is given in the table below:

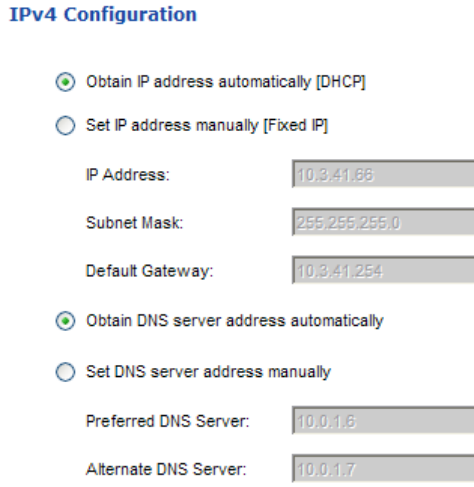
Field	Explanation
Only HTTPs	Select this button to use HTTPs service port connections.
HTTP / HTTPs	Select this button to use both HTTP and HTTPs service port connections.
HTTP	The port number for a browser login. The default is 80.
HTTPS	The port number for a secure browser login. The default is 443.

Note: 1. Valid entries for all of the Service Ports are from 1–65535.

2. The service ports cannot have the same value. You must set a different value for each one.
3. If there is no firewall (on an Intranet, for example), it doesn't matter what these numbers are set to, since they have no effect.

IPv4 Configuration

The EC1000's IPv4 IP and DNS addresses (the traditional method of specifying IP addresses) can either be assigned dynamically (DHCP), or a fixed IP address can be specified.



- For dynamic IP address assignment, select the **Obtain IP address automatically** radio button. (This is the default setting.)
- To specify a fixed IP address, select the **Set IP address manually** radio button and fill in the IP address with values appropriate for your network.
- For automatic DNS Server address assignment, select the **Obtain DNS Server address automatically** radio button.
- To specify the DNS Server address manually, select the **Set DNS server address manually** radio button, and fill in the addresses for the Preferred and Alternate DNS servers with values appropriate for your network.

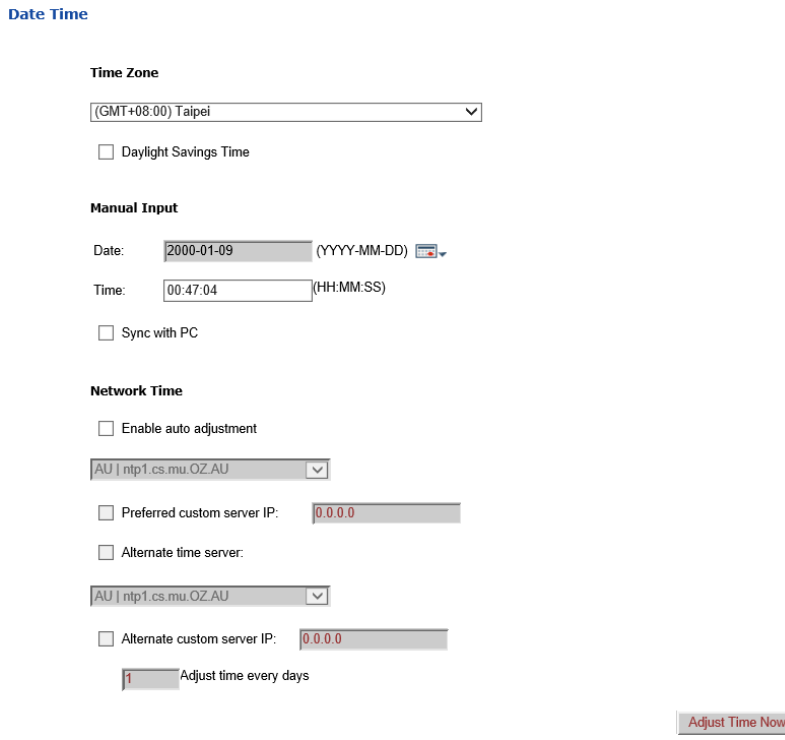
Note: 1. If you choose *Obtain IP address automatically*, when the device starts up it waits to get its IP address from the DHCP server. If it hasn't obtained the address after one minute, it automatically reverts to its factory default IP address (192.168.0.60.)

2. If the device is on a network that uses DHCP to assign network addresses, see *IP Address Determination*, page 68, for information.

3. Specifying the Alternate DNS Server address is optional.

Date/Time

The Date/Time dialog page sets the EC1000 Energy Box time parameters:



Set the parameters according to the information described below.

■ Time Zone

- To establish the time zone that the EC1000 is located in, drop down the **Time Zone** list and choose the city that most closely corresponds to where it is at.
- If your country or region employs **Daylight Saving Time** (Summer Time), check the corresponding checkbox.

■ Manual Input

Use this section to specify the EC1000's date and time manually.

- Click the calendar icon and click the calendar entry for the date.
- Key the time into the Time field, using the HH:MM:SS (hours, minutes, seconds) format.

Note: This section is only enabled when *auto adjustment* (in the *Network Time* section) is disabled (the checkbox is unchecked).

As an alternative to specifying the date and time by entering them into the date and time fields, you can click to put a check in the **Sync with PC** checkbox, in which case the EC1000 will take its date and time settings from the locally connected PC.

■ Network Time

To have the time automatically synchronized to a network time server, do the following:

1. Check the **Enable auto adjustment** checkbox.
2. Drop down the time server list to select your preferred time server

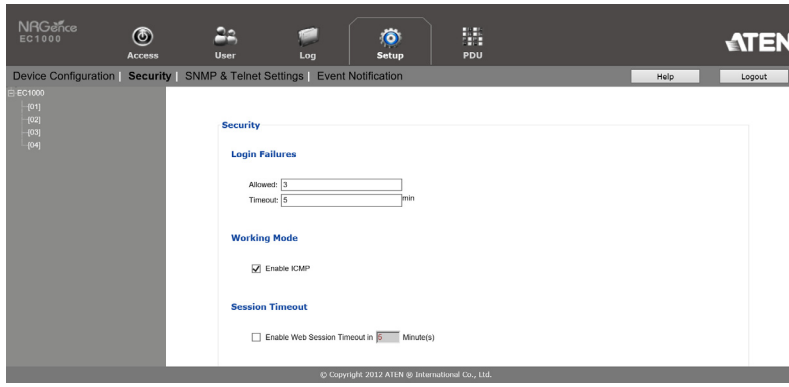
   – or –

   Check the **Preferred custom server IP** checkbox, and key in the IP address of the time server of your choice.
3. If you want to configure an alternate time server, check the **Alternate time server** checkbox, and repeat step 2 for the alternate time server entries.
4. Key in your choice for the number of days between synchronization procedures.

If you want to synchronize immediately, click **Adjust Time Now**.

Security

The Security page controls access to the EC1000.



Login Failures

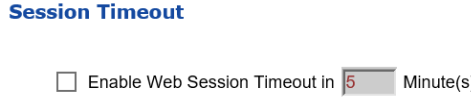
- **Allowed** sets the number of consecutive failed login attempts that are permitted from a remote user.
- **Timeout** sets the amount of time a remote user must wait before attempting to login again after exceeding the number of allowed failures.

Working Mode

- If **ICMP** is *enabled*, the EC1000 Energy Box can be pinged. If it is not enabled, the device cannot be pinged. The default is Enabled.

Session Timeout

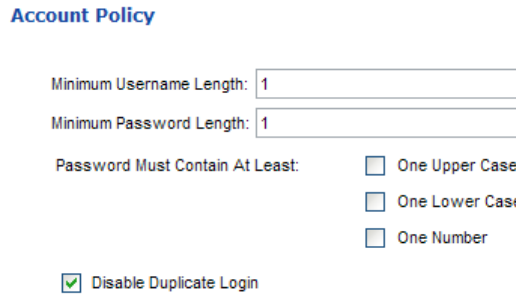
- Check to enable/disable web session timeout. When enabled, enter a number in the minute field.



When enabled, current web sessions will timeout if left idle for the entered time.

Account Policy

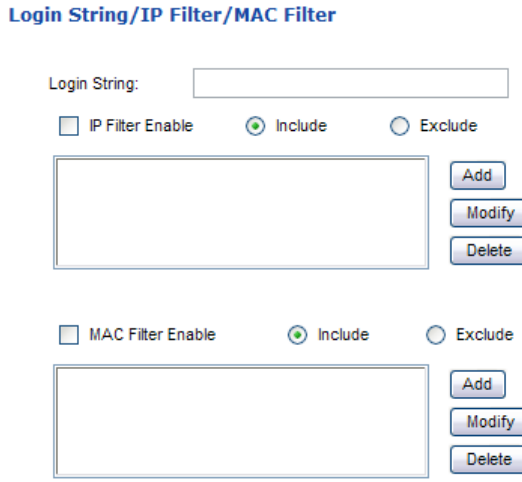
The Account Policy section governs policies in regard to usernames and passwords.



Check a policy and enter the required information in the appropriate fields.

Item	Description
Minimum Username Length	Sets the minimum number of characters required for a username. Acceptable values are from 1–16.
Minimum Password Length	Sets the minimum number of characters required for a password. Acceptable values are from 1–16.
Password Must Contain At Least	Checking any of these items requires users to include at least one of the specified items in their password. **Note:** This policy does not affect existing user accounts. Only new user accounts created after this policy has been enabled, and users required to change their passwords are affected.
Disable Duplicate Login	Check this to prevent users from logging in with the same account at the same time.

Login String / IP Filter / Mac Filter



■ Login String

The *Login String* entry field is used to specify a login string (in addition to the IP address) that users must include when accessing the EC1000 device with a browser. For example:

```
192.168.0.126/abcdefg
```

- The following characters are allowed:

  0–9 a–z A–Z ~ ! @ $ * ( ) _ ‘ ,

- The following characters are not allowed:

  & ^ { } ‘ ’ < > | " % ” : / ? # \ [Space] + - = [ ] ;

  Compound characters (É Ç ñ ... etc.)

Note: 1. There must be a forward slash between the IP address and the string.

2. If no login string is specified here, anyone will be able to access the EC1000 login page using the IP address alone. This makes your installation less secure.

3. For security purposes, we recommend that you change this string occasionally

---

■ IP Filter / MAC Filter

If any filters have been configured, they appear in the IP Filter and/or MAC Filter list boxes.

IP and MAC Filters control access to the EC1000 based on the IP and/or MAC addresses of the client computers attempting to connect. A maximum of 5 IP filters and 5 MAC filters are allowed.

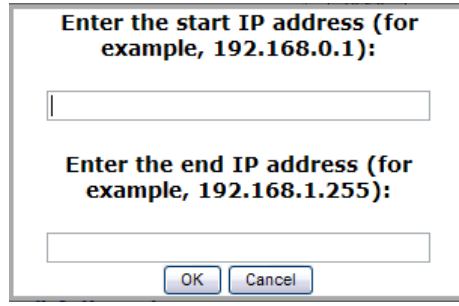
To enable IP and/or MAC filtering, click to put a check mark in the **IP Filter Enable** and/or **MAC Filter Enable** checkbox.

- If the **Include** button is checked, all the addresses within the filter range are allowed access; all other addresses are denied access.
- If the **Exclude** button is checked, all the addresses within the filter range are denied access; all other addresses are allowed access.

Adding Filters

To add an IP filter, do the following:

1. Click **Add**. A dialog box similar to the one below appears:

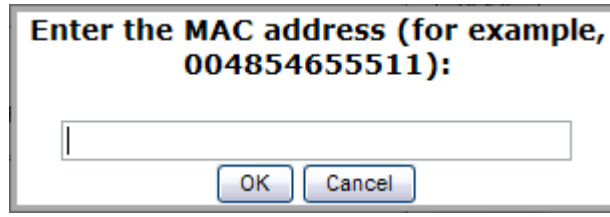


2. Enter the start and end filter addresses in the dialog boxes (for example, 192.168.0.200), then click **OK**.
3. To filter a single IP address, key in the same IP address for the start and end IP. To filter a continuous range of addresses, key in the last number of the range (for example, 192.168.0.225).
4. After filling in the address, click **OK**.

Repeat these steps for any additional IP addresses you want to filter.

To add a MAC filter, do the following:

1. Click **Add**. A dialog box similar to the one below appears:



2. Specify the MAC address in the dialog box (for example, 001074670000), then click **OK**.

Repeat these steps for any additional MAC addresses you want to filter.

IP Filter / MAC Filter Conflict

If there is a conflict between an IP filter and a MAC filter – for example, where a computer's IP address is allowed by the IP filter but its MAC address is excluded by the MAC filter – then that computer's access is blocked.

In other words, if either filter blocks a computer, then the computer is blocked, no matter what the other filter is set to.

Modifying Filters

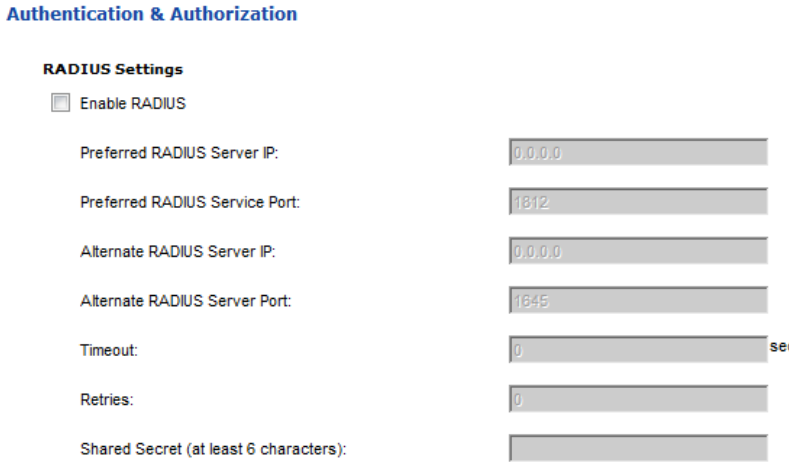
To modify a filter, select it in the IP Filter or MAC Filter list box and click **Modify**. The Modify dialog box is similar to the Add dialog box. When it comes up, simply delete the old address(es) and replace it with the new one(s).

Deleting Filters

To delete a filter, select it in the IP Filter or MAC Filter list box and click **Delete**.

Authentication & Authorization

The Authentication & Authorization page is used to set up login authentication and authorization management from external sources.



■ RADIUS Settings

To allow authentication and authorization for the EC1000 device through a RADIUS server, do the following:

1. Check **Enable RADIUS**.
2. Fill in the **Preferred RADIUS Server IP**, **Preferred RADIUS Service Port**, and (*optional*) **Alternate RADIUS Server IP** and **Preferred RADIUS Service Port**. The default port number for the Preferred server is 1812; the default port number for the Alternate server is 1645.

   Note: Make sure that the port numbers you specify here match the port numbers used by the RADIUS servers.

3. In the **Timeout** field, set the time in seconds that the EC1000 waits for a RADIUS server reply before it times out.
4. In the **Retries** field, set the number of allowed retries for attempting to connect to the RADIUS server.
5. In the **Shared Secret** field, key in the character string that you want to use for authentication between the EC1000 and the RADIUS Server.
6. On the RADIUS server, set the entry for each user as follows:

   `su/xxxx`

   Where *xxxx* represents the Username given to the user when the account was created on the EC1000. The user's access rights are the ones assigned for the EC1000, as well. (See *User Information*, page 29.)

Private Certificate

When logging in over a secure (SSL) connection, a signed certificate is used to verify that the user is logging in to the intended site. For enhanced security, the *Private Certificate* section allows you to use your own private encryption key and signed certificate, rather than the default ATEN certificate.

There are two methods for establishing your private certificate: generating a self-signed certificate; and importing a third-party certificate authority (CA) signed certificate.

■ Generating a Self-Signed Certificate

If you wish to create your own self-signed certificate, a free utility – openssl.exe – is available for download over the web.

■ Obtaining a CA Signed SSL Server Certificate

For the greatest security, we recommend using a third party certificate authority (CA) signed certificate. To obtain a third party signed certificate, go to a CA (Certificate Authority) website to apply for an SSL certificate. After the CA sends you the certificate and private encryption key, save them to a convenient location on your computer.

■ Importing the Private Certificate

To import the private certificate, do the following:



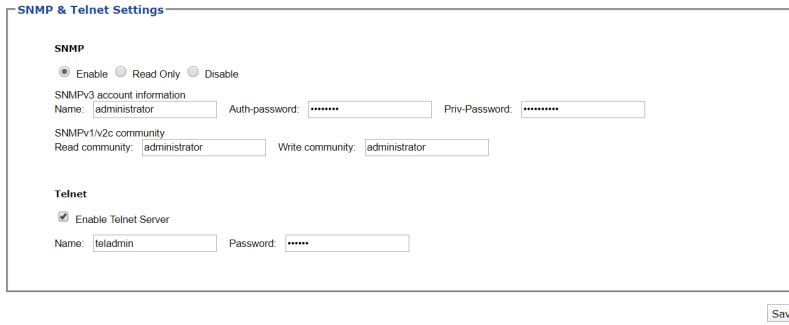
1. Click **Browse** to the right of *Private Key*; browse to where your private encryption key file is located; and select it.
2. Click **Browse** to the right of *Certificate*; browse to where your certificate file is located; and select it.
3. Click **Upload** to complete the procedure.

Note: 1. Clicking **Restore Default** returns the device to using the default ATEN certificate.

2. Both the private encryption key and the signed certificate must be imported at the same time.

When you have finished making your settings on this page, click **Save**.

SNMP & Telnet Settings



Click to select **Enable**, **Read Only** or **Disable** SNMP settings and fill in the details of the following sections.

SNMPv3 Account Information

- Enter values for **Name**, **Auth-Password** and **Priv-Password** for SNMPv3 authentication, if required.

SNMPv1/v2c Community

- Enter values **Read community** and **Write community** for SNMPv1/V2c authentication, if required.

Telnet

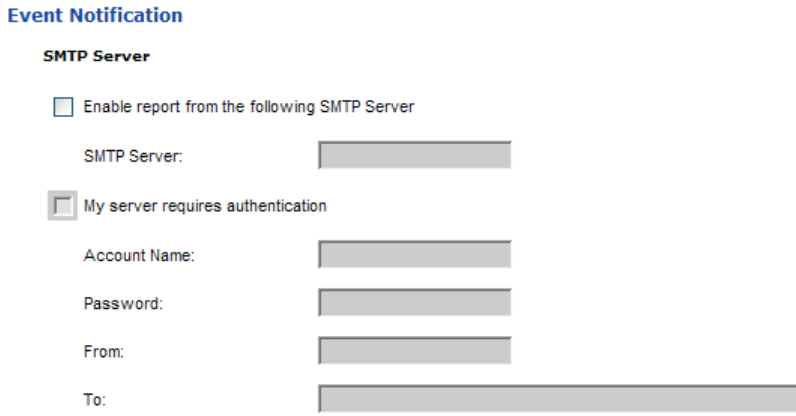
- Check/uncheck to enable/disable Telnet Server.
- Use the *Name* and *Password* fields to change the account used to login via Telnet sessions.

Click **Save** to save your settings.

Event Notification

The Event Notification section is divided into three sections: SMTP Server; SNMP Trap Receivers; and Syslog Server. Each section is described below.

SMTP Server



To have the EC1000 email reports from the SMTP server to you, do the following:

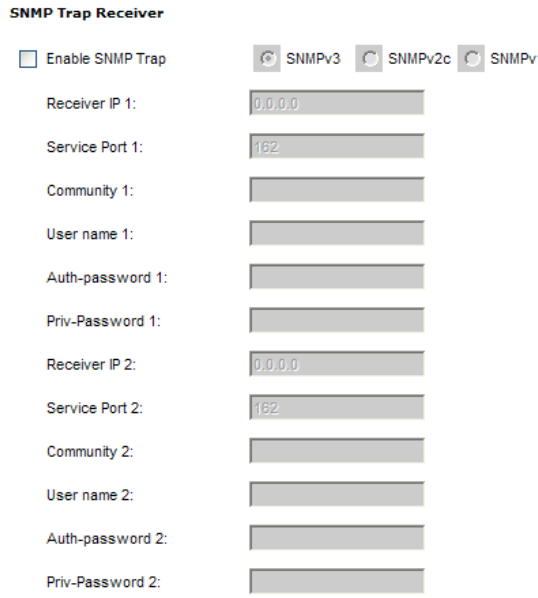
1. Select **Enable report from the following SMTP server**, and key in the IP address of your SMTP server.
2. If your server requires authentication, select the **My server requires authentication** checkbox.
3. Key in the appropriate account information in the **Account Name**, **Password**, and *From* fields.

   Note: Only one email address is allowed in the *From* fields, and it cannot exceed 64 characters.)

4. Key in the email address (addresses) of where you want the event reports sent to in the *To* field.

   Note: If you are sending the report to more than one email address, separate the addresses with a comma, or semicolon. The use of a comma or semicolon to separate the email address will depend on your mail servers settings.The total cannot exceed 256 characters.

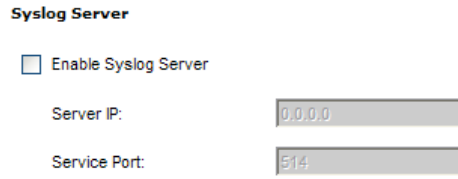
SNMP Trap Receiver



Up to four SNMP management stations can be specified. If you want to use SNMP trap notifications, do the following:

1. Select **Enable SNMP Trap**.
2. Select the type: **SNMPv3**, **SNMPv2c**, or **SNMPv1**.
3. For *SNMPv3* key in the **Receiver IP**(s), **User name**(s), **Auth-password**(s), **Priv-password**(s) and **Service Port** number(s) of the computer(s) to be notified of SNMP trap events. The valid port range is 1–65535. The default port number is 162.
4. For *SNMPv2c* and *SNMPv1* key in the **Receiver IP**(s), **Community**(s), and **Service Port** number(s) of the computer(s) to be notified of SNMP trap events. The valid port range is 1–65535. The default port number is 162.

Syslog Server

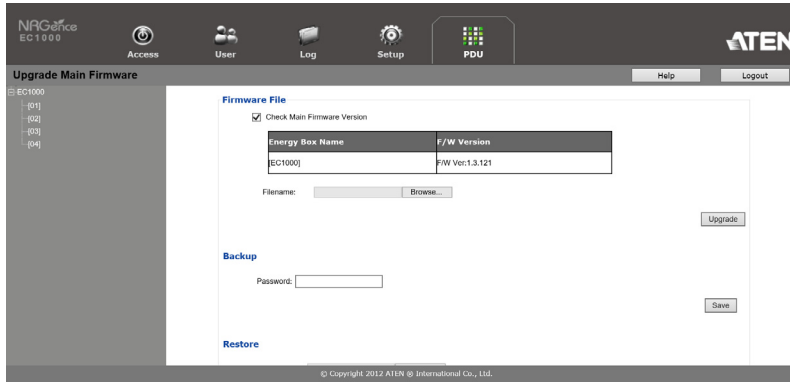


To record all the events that take place on EC1000 devices and write them to the Syslog server, do the following:

1. Check **Enable Syslog Server**.
2. Key in the **Server IP** and the **Service Port** of the Syslog server. The valid port range is 1-65535. The default port number is 514.

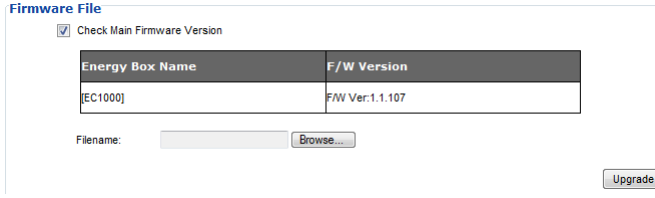
PDU

The *PDU* function is used to upgrade the EC1000's firmware, and to backup and restore the device's configuration settings.



Firmware File

When you click the **PDU** tab, the *Firmware File* section is displayed at the top of the page:



A description of the items shown in this panel are given in the table below:

Item	Description
Check Main Firmware Version	If you enable *Check Main Firmware Version*, the EC1000's current firmware level is compared with that of the upgrade file. If the current version is equal to or higher than the upgrade version, a popup message appears, to inform you of the situation and stops the upgrade procedure.
Name	Lists the name of the EC1000 Energy Box.
F/W Version	Displays the EC1000 's current firmware version.

Item	Description
Filename	As new versions of the firmware become available, they are posted on our website and can be downloaded to a convenient location on your computer. Click the *Browse* button to select the downloaded upgrade file.
Upgrade	Click this button to upgrade the firmware of the selected devices.

Upgrading the Firmware

To upgrade the firmware refer to the screen shot on the preceding page, and do the following:

1. Go to our website and download the new firmware file to a convenient location on your computer.
2. Click the **Browse** button; navigate to where the firmware file is located and select it.
3. Click **Upgrade** to start the upgrade procedure.
   - If you enabled **Check Main Firmware Version** the current firmware level is compared with that of the upgrade file. If the current version is equal to or higher than the upgrade version, a popup message appears, to inform you of the situation and stops the upgrade procedure.
   - If you didn't enable **Check Main Firmware Version**, the upgrade file is installed without checking what its level is.
   - Once the upgrade completes successfully, the EC1000 resets itself.
4. Login again, and check the firmware version to be sure it is the new one.

Firmware Upgrade Recovery

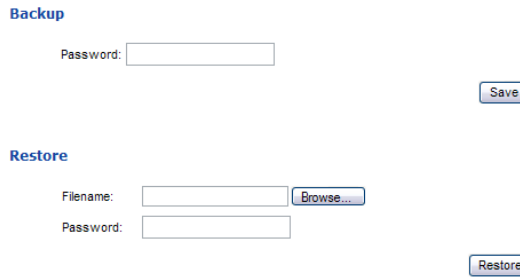
Should the EC1000's firmware upgrade procedure fail, and the device becomes unusable, the following firmware upgrade recovery procedure will resolve the problem:

1. Power off the device.
2. Press and hold the **Reset Switch** (see page 6).
3. While holding the **Reset Switch** in, power the switch back on.

This causes the Energy Box to use the original factory installed main firmware version. Once the EC1000 is operational, you can try upgrading the main firmware again.

Backup/Restore

You can use *Backup* and *Restore* to back up restore the EC1000's configuration and user profile information:



Backup

To backup the device's settings do the following:

1. In the **Password** field, key in a password for the file.

   Note: Entering a password is optional. If you do enter a password, make a note of it, since you will need it to be able to restore the file.

2. Click **Save**.
3. When the browser asks what you want to do with the file, select *Save to disk*; then save it in a convenient location.

Restore

To restore a previous backup, do the following:

1. Click **Browse**; navigate to the file and select it.
2. In the **Password** field, key in the same password that you used to save the file.

   Note: If you didn't set a password for the file, you can omit this step.

3. Click **Restore**.

After the file is restored, a message appears to inform you that the procedure succeeded, and you are automatically logged off the Energy Box.

Chapter 5
Telnet Commands

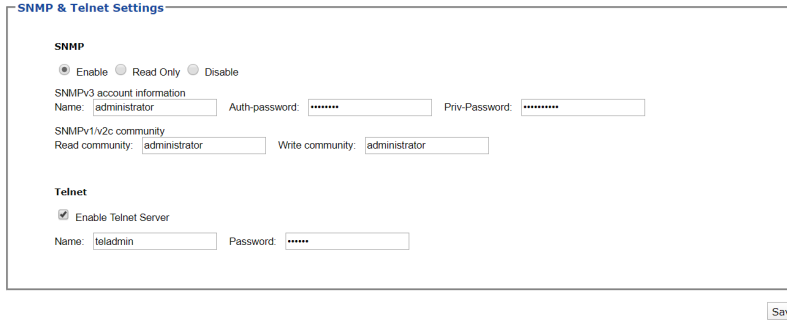
Remote Terminal Operations - Telnet

With ATEN EC1000 you can log in remotely from a computer using Telnet that allows system control through a high-end controller or PC.

Telnet is a program that connects to a device over a network to provide text-based management and control. Telnet provides some of the same management features found in the unit's web GUI. Refer to *Browser Operation*, page 19 to help you as you work your way through the text-based commands.

Setup

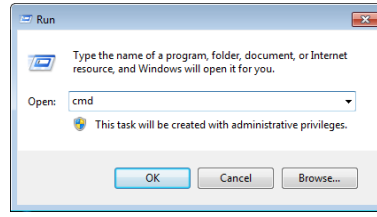
Log in to the unit's web GUI, go to the **Setup** tab and click **SNMP & Telnet Settings** from the menu bar. Under **Telnet**, check *Enable Telnet Server* and click **Save** at the bottom of the page.



Logging In

To log in to the unit via Telnet, do the following:

1. On your computer, open the start menu and select **Run**. Type: *cmd*

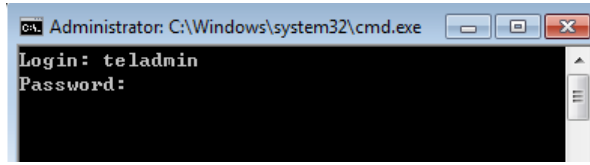


Click **OK**.

2. At the command prompt, key in *telnet* and the IP Address of the PDU, as follows:

```
telnet [IP Address]
```

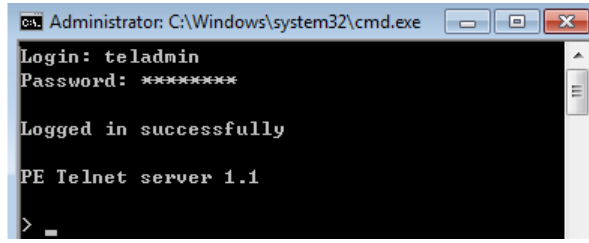
3. Press **Enter**. The login screen appears:



4. At the login prompt, enter Username: **teladmin**; and Password: **telpwd**.

Note: The Telnet username and password can be configured on the User tab of the unit's web GUI.

5. When the Telnet session is established, *Logged in successfully* appears along with the command line prompt:



Commands

Use the Telnet text commands to view and configure the unit as described in each section.

Verification

After sending an incorrect command, a verification message appears at the end of the command line.

- **Invalid command or exceed max command length** - the command has the wrong format and/or values. Try typing in the command string again using the correct format and/or values.

Read Outlet Status

The Read Outlet Status command allows you to view the power status of an outlet on the unit.

The formula for Read Outlet Status commands is as follows:

Command + Outlet + Number + Return String + **[Enter]**

1. For example, if you want to read the status of outlet 01 with a simple return string, type the following:

   read status o01 simple [Enter]

2. For example, if you want to read the status of outlet 12 with a format return string, type the following:

   read status o12 format [Enter]

The following tables show the possible values for the Read Outlet Status commands:

Command	Description
read status	Read status command

Outlet	Description
o	Outlet command
xx	PDU Outlet number xx: Outlet on PDU Example: o02

Return String	Description
simple	Return simple string status

Return String	Description
format	Return format string status

The following table lists the available Read Outlet Status commands:

Command	Outlet	Return String	Enter	Description
read status	oXX	simple	[Enter]	Read the status of outlet XX with a simple return string. XX: Outlet number
read status	oXX	format	[Enter]	Read the status of outlet XX with a format return string. XX: Outlet number

Note: 1. Each command string can be separated with a space.

2. The **Return String** command string can be skipped and **format** will be used by default.

Switch Outlet Status

The Switch Outlet Status command allows you to change the power status of an outlet on the unit.

The formula for Switch Outlet Status commands is as follows:

Command + Outlet + Number + Control + **Option + [Enter]**

1. For example, if you want to switch off outlet 04 immediately, type the following:

   sw o04 off imme [Enter]

2. For example, if you want to switch on outlet 12 with the time delay set for the outlet, type the following:

   sw o12 on delay [Enter]

3. For example, if you want to reboot outlet 08, type the following:

   sw o08 reboot [Enter]

The following tables show the possible values for the Switch Outlet Status commands:

Command	Description
sw	Switch outlet status command

Outlet	Description
o	Outlet command
xx	PDU outlet number xx: Outlet on PDU Example: o02

Control	Description
on	Switch outlet on
off	Switch outlet off
reboot	Switch outlet off and then switch outlet on

Option	Description
imme	Switch outlet status immediately
delay	Switch outlet status with time delay set for the outlet

The following table lists the available Switch Outlet Status commands:

Command	Outlet	Control	Option	Enter	Description
sw	oXX	on	imme delay	[Enter]	Switch outlet XX on with option XX: Outlet number
sw	oXX	off	imme delay	[Enter]	Switch outlet XX off with option XX: Outlet number
sw	oXX	reboot		[Enter]	Read the status of outlet XX XX: Outlet number

Note: 1. Each command string can be separated with a space.

2. The **Option** command string can be skipped and **delay** will be used by default.

Read Power Value

The Read Power Value command allows you to view the power measurement values of the unit, Bank or Outlet.

The formula for Read Power Value commands is as follows:

Command + Target + Number + Measurement + **Return String + [Enter]**

1. For example, if you want to read the voltage measurement of outlet 12 with a simple return string, type the following:

   read meter olt o12 volt simple [Enter]

2. For example, if you want to read the power dissipation measurement of bank 02 with a format return string, type the following:

   read meter bnk o02 pd format [Enter]

3. For example, if you want to read the voltage frequency measurement of the PDU with a simple return string, type the following:

   read meter dev freq simple [Enter]

The following tables show the possible values for the Read Power Value commands:

Command	Description
read meter	Read power value command

Target	Description
dev	Get value from PDU
bnk	Get value from bank
olt	Get value from outlet

Number	Description
o	Target number command
xx	Bank or outlet number xx: Bank or Outlet on PDU Example: o02

Measurement	Description
curr	Read current measurement
volt	Read voltage measurement
pow	Read power measurement

Measurement	Description
pd	Read power dissipation measurement
pf	Read power factor measurement
freq	Read voltage frequency measurement

Return String	Description
simple	Return simple string measurement
format	Return format string measurement

The following table lists the available Read Power Value commands:

Com-mand	Target	Num-ber	Measure-ment	Return String	Enter	Description
read meter	dev		curr volt pow pd pf freq	simple format	[Enter]	Read PDU measurement with return string
read meter	bnk	oXX	curr volt pow pd pf freq	simple format	[Enter]	Read bank XX measurement with return string XX: Bank number
read meter	olt	oXX	curr volt pow pd pf freq	simple format	[Enter]	Read outlet XX measurement with return string XX: Outlet number

Note: 1. Each command string can be separated with a space.

2. The **Return String** command string can be skipped and **format** will be used by default.

Read Environmental Value

The Read Environmental Value command allows you to view measurements from the unit's environmental sensors.

The formula for Read Environmental Value commands is as follows:

Command + Sensor + Number + Return String + [Enter]

1. For example, if you want to read environmental sensor 02 with a simple return string, type the following:

   read sensor o02 simple [Enter]

2. For example, if you want to read environmental sensor 01 with a format return sting, type the following:

   read sensor o01 format [Enter]

The following tables show the possible values for the Read Environmental Value commands:

Command	Description
read sensor	Read environmental value command

Sensor	Description
o	Environmental sensor command
xx	Sensor number xx: Environmental sensor on PDU (01~04) Example: o02

Return String	Description
simple	Return simple string measurement
format	Return format string measurement

The following table lists the available Read Environmental Value commands:

Command	Sensor	Return String	Enter	Description
read sensor	oXX	simple format	[Enter]	Read environmental sensor XX with return string option

Note: 1. Each command string can be separated with a space.

2. The **Return String** command string can be skipped and **format** will be used by default.

Close Telnet Session

The Close Telnet Session command allows you to disconnect the telnet session from the unit.

The formula for the Close Telnet Session command is as follows:

Command + [Enter]

1. For example, if you want to disconnect the telnet session, type the following:

   quit [Enter]

The following table shows the value for the Close Telnet Session command:

Command	Description
quit	Close telnet session command

The following table lists the Close Telnet Session command:

Command	Enter	Description
quit	[Enter]	Disconnect telnet session with unit

Appendix

Safety Instructions

General

- This product is for indoor use only.
- Read all of these instructions. Save them for future reference.
- Follow all warnings and instructions marked on the device.
- Do not place the device on any unstable surface (cart, stand, table, etc.). If the device falls, serious damage will result.
- Do not use the device near water.
- Do not place the device near, or over, radiators or heat registers.
- The device cabinet is provided with slots and openings to allow for adequate ventilation. To ensure reliable operation, and to protect against overheating, these openings must never be blocked or covered.
- The device should never be placed on a soft surface (bed, sofa, rug, etc.) as this will block its ventilation openings. Likewise, the device should not be placed in a built in enclosure unless adequate ventilation has been provided.
- Never spill liquid of any kind on the device.
- Unplug the device from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
- The device should be operated from the type of power source indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- The device is designed for IT power distribution systems with 100V to 230V phase-to-phase voltage.
- To prevent damage to your installation it is important that all devices are properly grounded.
- Do not allow anything to rest on the power cord or cables. Route the power cord and cables so that they cannot be stepped on or tripped over.

- If an extension cord is used with this device make sure that the total of the ampere ratings of all products used on this cord does not exceed the extension cord ampere rating. Make sure that the total of all products plugged into the wall outlet does not exceed 15 amperes.
- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).
- Position system cables and power cables carefully; Be sure that nothing rests on any cables.
- Never push objects of any kind into or through cabinet slots. They may touch dangerous voltage points or short out parts resulting in a risk of fire or electrical shock.
- Do not attempt to service the device yourself. Refer all servicing to qualified service personnel.
- If the following conditions occur, unplug the device from the wall outlet and bring it to qualified service personnel for repair.
  - The power cord or plug has become damaged or frayed.
  - Liquid has been spilled into the device.
  - The device has been exposed to rain or water.
  - The device has been dropped, or the cabinet has been damaged.
  - The device exhibits a distinct change in performance, indicating a need for service.
  - The device does not operate normally when the operating instructions are followed.
- Only adjust those controls that are covered in the operating instructions. Improper adjustment of other controls may result in damage that will require extensive work by a qualified technician to repair.
- Do not connect the RJ-11 connector marked “UPGRADE” to a public telecommunication network.

Rack Mounting

- Before working on the rack, make sure that the stabilizers are secured to the rack, extended to the floor, and that the full weight of the rack rests on the floor. Install front and side stabilizers on a single rack or front stabilizers for joined multiple racks before working on the rack.
- Always load the rack from the bottom up, and load the heaviest item in the rack first.
- Make sure that the rack is level and stable before extending a device from the rack.
- Do not overload the AC supply branch circuit that provides power to the rack. The total rack load should not exceed 80 percent of the branch circuit rating.
- Make sure that all equipment used on the rack – including power strips and other electrical connectors – is properly grounded.
- Ensure that proper airflow is provided to devices in the rack.
- Ensure that the operating ambient temperature of the rack environment does not exceed the maximum ambient temperature specified for the equipment by the manufacturer.
- Do not step on or stand on any device when servicing other devices in a rack.

Technical Support

International

- For online technical support – including troubleshooting, documentation, and software updates: **http://support.aten.com**
- For telephone support, see *Telephone Support*, page iii

North America

Email Support		support@aten-usa.com
Online Technical Support	Troubleshooting Documentation Software Updates	http://www.aten-usa.com/support
Telephone Support		1-888-999-ATEN ext 4988 1-949-428-1111

When you contact us, please have the following information ready beforehand:

- Product model number, serial number, and date of purchase.
- Your computer configuration, including operating system, revision level, expansion cards, and software.
- Any error messages displayed at the time the error occurred.
- The sequence of operations that led up to the error.
- Any other information you feel may be of help.

Specifications

EC1000

Function			EC1000
Energy PDU Connections			4
Port Selection			Pushbutton
Connectors	Energy Sensor		4 x RJ-45 Female
	Environment Sensor		4 x RJ-11 Female
	Power		1 x DC Jack
	LAN		1 x RJ-45 Female
Switches	Reset		1 x Semi-recessed Pushbutton
	Selection		1 x Selection Pushbutton
LEDs	PDU Status		4 (Orange)
	Sensor Status		4 (Green)
	Energy/Environment/IP		3 (Green)
	Selection		1 digit 7-segment (Orange)
	Current/Sensor/IP Address		3 digit 7-segment (Orange)
	Power		1 (Blue)
	LAN	10M/ 100Mbps	1 (Orange/Green)
		Link	1 (Green)
Monitoring Range			100–240V; 50/60Hz; 0A to 32A (per port) LED Display Resolution 0.1A Precision: ±0.1A@0 ~ 1A, ±1%@ >1A
Power Consumption			DC 5.3V
Environment	Operating Temp.		0–50ºC
	Storage Temp		-20–60ºC
	Humidity		0–80% RH, Non-condensing
Physical Properties	Housing		Metal
	Weight		0.59 kg
	Dimensions (L x W x H)		20.00 x 7.59 x 4.20 cm

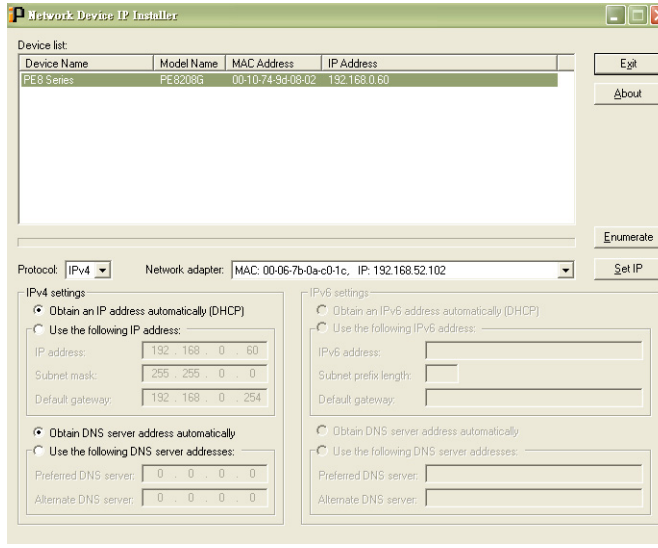
IP Address Determination

If you are an administrator logging in for the first time, you need to access the Energy Box in order to give it an IP address that users can connect to. There are two methods to choose from. In each case, your client computer must be on the same network segment as the Energy Box. After you have connected and logged in you can give the device its fixed network address. (See *IPv4 Configuration*, page 36)

Method 1:

For computers running Windows, an IP address can be determined and/or assigned with the IP Installer utility. The utility can be obtained from the *Download* area of our web site or from the software CD. Look under *Driver/SW*, and the model of your device. After downloading the utility to your computer, do the following:

1. Unzip the contents of *IPInstaller.zip* to a directory on your hard drive.
2. Go to the directory that you unzipped the IPInstaller program to and run *IPInstaller.exe*. A dialog box similar to the one below appears:



3. Select the device in the *Device List*.

Note: 1. If the list is empty, or your device doesn't appear, click **Enumerate** to refresh the Device List.

2. If there is more than one device in the list, use the MAC address to pick the one you want. The eco PDU's MAC address is located on its bottom panel.

4. Select either *Obtain an IP address automatically (DHCP)*, or *Specify an IP address*. If you chose the latter, fill the IP Address, Subnet Mask, and Gateway fields with the information appropriate to your network.
5. Click **Set IP**.
6. After the IP address shows up in the Device List, click **Exit** to end the program.

Method 2:

1. Set your computer's IP address to 192.168.0.*XXX*

   Where *XXX* represents any number or numbers except 60. (192.168.0.60) is the default address of the Energy Box.)
2. Specify the device's default IP address (192.168.0.60) in your browser, and you will be able to connect.
3. Assign a fixed IP address for the device (see *IPv4 Configuration*, page 36), that is suitable for the network segment that it resides on.
4. After you log out, reset your computer's IP address to its original value.
5. Once you have logged in, go to Network Settings to set up the permanent IP environment (see *IPv4 Configuration*, page 36).

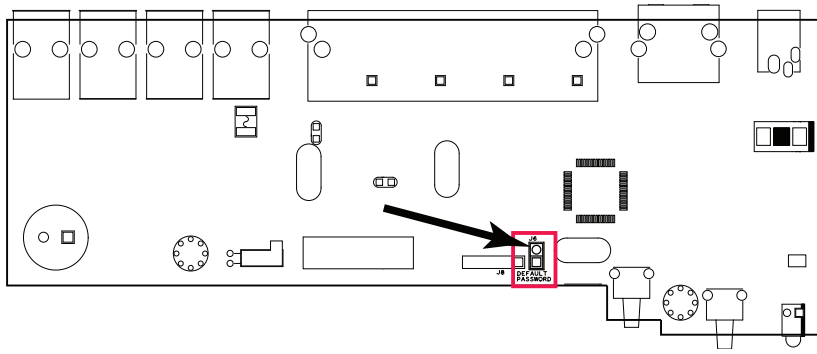
Method 3:

NRGence™ eco Sensors allows you to determine/assign an IP address in order to configure a Energy Box and monitor power status of the equipment connected to it. NRGence™ eco Sensors can be obtained from the Download area of the ATEN web site.

Administrator Login Failure

If you are unable to perform an Administrator login (because the Username and Password information has become corrupted, or you have forgotten it, for example), you can clear the login information with the following procedure:

1. Power off the Energy Box and remove its housing.
2. Short the jumper labeled J6.



3. Power on the Energy Box.
4. After the Energy Box beeps (6 seconds), power off the switch.
5. Remove the jumper cap from J6.
6. Close the housing and start the Energy Box.

After you start, you can use the default Username and Password to log in.

Limited Warranty

ATEN warrants its hardware in the country of purchase against flaws in materials and workmanship for a Warranty Period of two [2] years (warranty period may vary in certain regions/countries) commencing on the date of original purchase. This warranty period includes the LCD panel of ATEN LCD KVM switches. Select products are warranted for an additional year (see *A+ Warranty* for further details). Cables and accessories are not covered by the Standard Warranty.

What is covered by the Limited Hardware Warranty

ATEN will provide a repair service, without charge, during the Warranty Period. If a product is detective, ATEN will, at its discretion, have the option to (1) repair said product with new or repaired components, or (2) replace the entire product with an identical product or with a similar product which fulfills the same function as the defective product. Replaced products assume the warranty of the original product for the remaining period or a period of 90 days, whichever is longer. When the products or components are replaced, the replacing articles shall become customer property and the replaced articles shall become the property of ATEN.

To learn more about our warranty policies, please visit our website:

http://www.aten.com/global/en/legal/policies/warranty-policy/