

GREEN POWERLINK

On-Line Energy Management Solution

User Manual



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Feb. 2012

All Versions

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INTRODUCTION

Thank you for purchasing the GREEN POWERLINK online energy management solution, an innovative product which is designed to manage home electricity usage efficiently and reduce home electricity bill.

In an effort to reduce your electricity bills, why not first check out what appliance uses most energy in your home.

The GREEN POWERLINK online energy management allows you to take control of home electricity usage while saving you money in the process.



With GREEN POWERLINK, you can see how much electricity you are using and with greater awareness you'll become more energy efficient.

Fully educated with the critical energy information, you are naturally motivated to adopt new energy saving habits and reduce harmful carbon emission for our environment.

The GREEN POWERLINK is the total solution for green inspiration, energy conservation, and surge protection for your everyday life.

HARDWARE FEATURES

| ZigBee Tracking Smart Socket | ZigBee Tracking Smart Strip |
|--|--|
| <p>R9P136A600</p> | <p>R9P624N100</p> |
| <ul style="list-style-type: none"> * Surge Protected Outlet * 180J Surge Protection | <ul style="list-style-type: none"> * 6 Surge Protected Outlets * 540J Surge Protection * Red Grounded Fault LED Indicator |
| <ul style="list-style-type: none"> * ZigBee Link: 2.4GHz (IEEE 802.15.4) * Transmission Time: 6 seconds * Wireless Range: 100 ft in open area * ZigBee Function: Router * ZigBee Profile: Smart Energy 1.0 * ZigBee Cluster: Simple Metering * Green Surge Protected LED Indicator * Manual ON/OFF Button w/ Green LED Indicator * Security: AES 128 bits (Optional) * Meet IEC 62053-21 class I standard (1~1.5%) | |

| ZigBee Tracking Smart Socket | ZigBee Tracking Smart Strip |
|--|---|
|  <p data-bbox="295 113 411 135">M9PC020000</p> |  <p data-bbox="643 113 758 135">M9PG040000</p> |
| <ul style="list-style-type: none"> * Transmission Time: 6 seconds * ZigBee Function: Router * ZigBee Cluster: Simple Metering * Installation type: 1-phase & 3-wire * CT Meter Input Voltage: 100~240V * CT Meter Input Current: 60A * CT Meter Frequency: 50/60Hz * CT Meter Accuracy: <1% at PF=1 * Power Supply: Power acquired from electrical meter | <ul style="list-style-type: none"> * Link up to 9 PowerLink energy tracking devices * ZigBee Function: Coordinator * Proprietary remote outlet on/off control * Remote web browsing management & power on/off control * Remote real time Cost, KWH, CO2 usage information display * RJ45 Ethernet Port Connection * Power Supply: AC/DC adaptor (included) |
| <ul style="list-style-type: none"> * ZigBee Link: 2.4GHz (IEEE 802.15.4) * Wireless Range: 100 ft in open area * ZigBee Profile: Smart Energy 1.0 * Security: AES 128 bits (Optional) | |

INSTALLATION

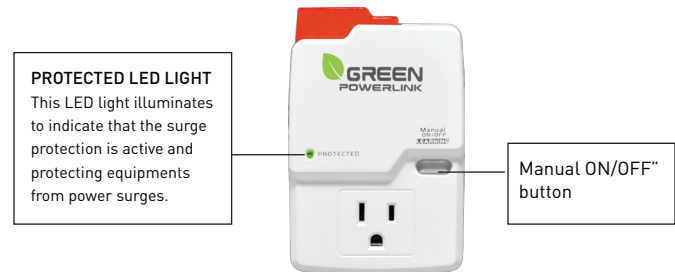
Wireless Setup Range

The energy gateway and smart socket/strip/CT meter communicate with wireless technology. To ensure the communication with no interruption, please locate and setup energy gateway, smart socket/strip/CT meter within 100 Ft of range.

Install Smart Socket

The single outlet smart socket allows the user to track electricity consumption of individual home appliance and protect it against surge and voltage spikes.

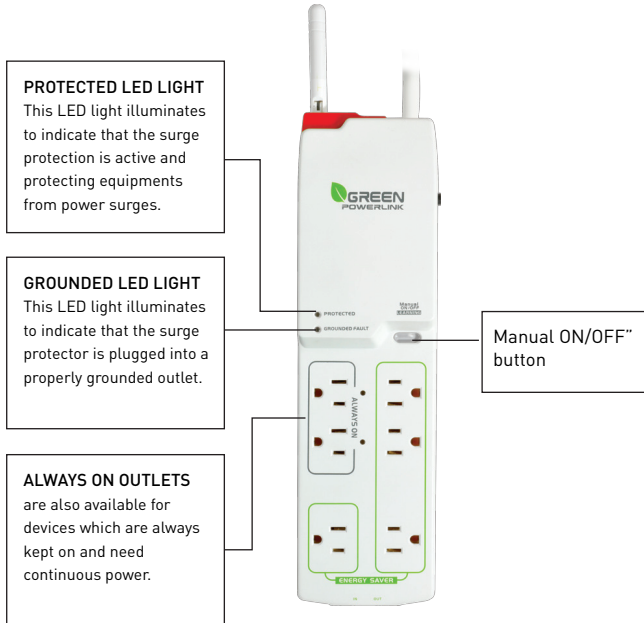
1. Plug in the smart socket to a powered AC outlet.
2. Plug in the appliance into the smart socket outlet.
3. The outlet power can be manually turned ON/OFF by pressing the "Manual ON/OFF" button on the smart socket. You may also control the outlet power remotely by using the energy monitor (see the operation instruction).
4. Perform initial energy monitor and smart socket pair up (see the operation instruction).



Install Smart Power Strip

The smart power strip allows the user to track electricity consumption of group home appliances in the same area and protect it against surge and voltage spikes.

1. Plug in the smart power strip to a powered AC outlet.
2. Plug in the appliances into the smart power strip outlets.
3. The Energy Saver outlets on the power strip can be manually turned ON/OFF by pressing the "Manual ON/OFF" button on the power strip. You may also control the energy saver outlets remotely by using the energy monitor (see the operation instruction).
4. Perform initial energy monitor and smart power strip pair up (see the operation instruction).



Install CT Smart Meter in the circuit breaker panel

The CT smart meter allows the user to measure entire electricity powerconsumption from electrical panel.



Your safety is very important to us. Please read these cautions regarding the installation of your CT Smart Meter.

* Electrical panel contains live electrical wires and components even when the main circuit breaker has been switched off. Do not attempt any installation unless you are familiar where these electrified areas are.

* Any work on or near electrical panel could induce danger or fatal electrical shock. It is highly recommended that all work should be done only by qualified electricians or certified electrical specialist.

Prepare the electrical circuit breaker

WARNING:

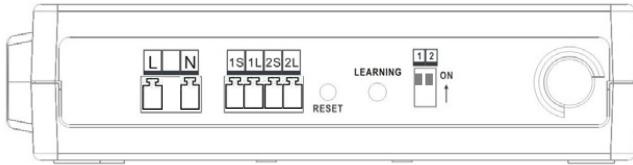
* Before you start, you must turn off all power in the electrical circuit breaker by turning off the main breaker or main switch.

* Some wires and components could still be live even when the main breaker or switch is turned off. Please indentify these wires and components before installation and pay attention to these areas at all time.

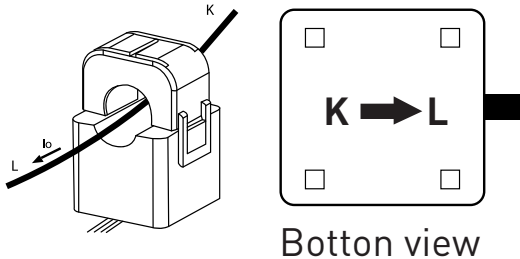
1. Turn off all power by turning off the main breaker or main switch.
2. Remove the cover of electricity circuit breaker panel.

Connect the CT clamps & voltage wires to the current & voltage input terminals

Before installation, please connect the CT clamp wires to the current input terminal following the sequence 1S(red) 1L(black) 2S(red) 2L(black). Then connect the voltage wires to the voltage input terminal following the sequence L(red) N(black).



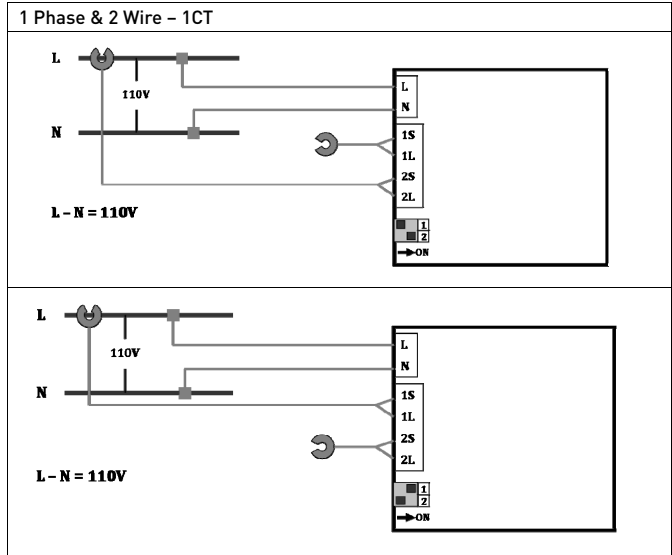
At the bottom of the current transformer, there is "K→L" indication mark. Before you clip on the CT over the power line, please make sure the power current flow direction follow the "K→L" indication mark on the CT



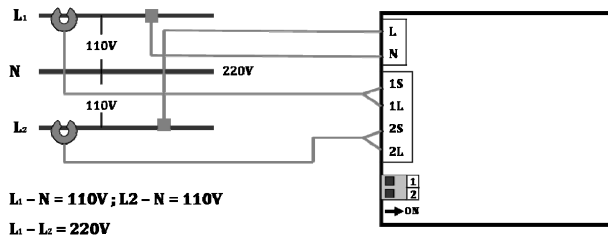
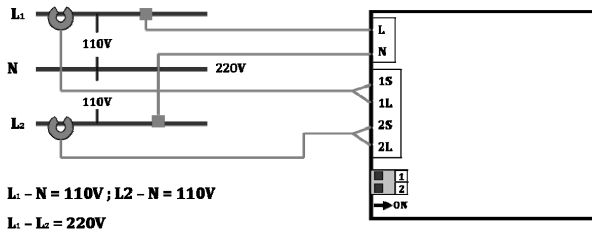
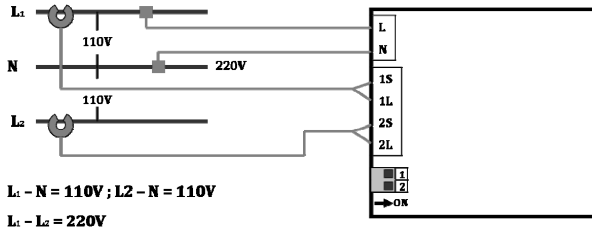
Wiring Diagram

Refer to the following wiring diagram and dial the mode switch that matches your electrical panel type. Then install CT clamp over the power line and voltage wires to L and N voltage terminals.

Once the CT smart meter is installed in the electrical panel, turn on the main breaker and perform initial energy gateway and CT smart meter pair up (see the operation instruction).



1 Phase & 3 Wire – 2CT

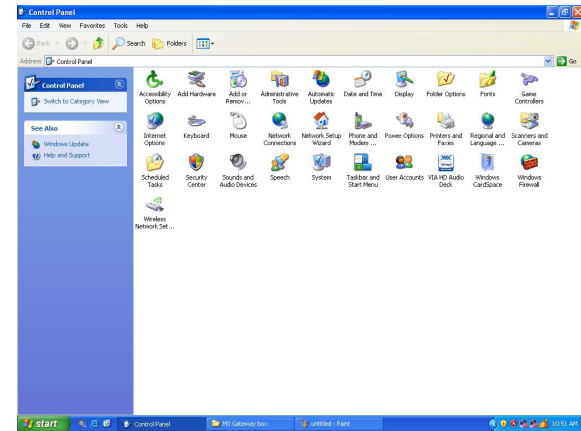


ENERGY MANAGEMENT GATEWAY INITIAL SETUP

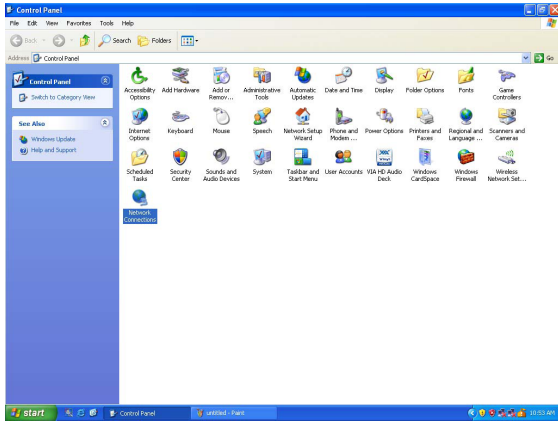
Browse and access Gateway within intranet network

On IE browser, user can browse the energy information retrieved from smart socket, smart strip and smart CT meter.

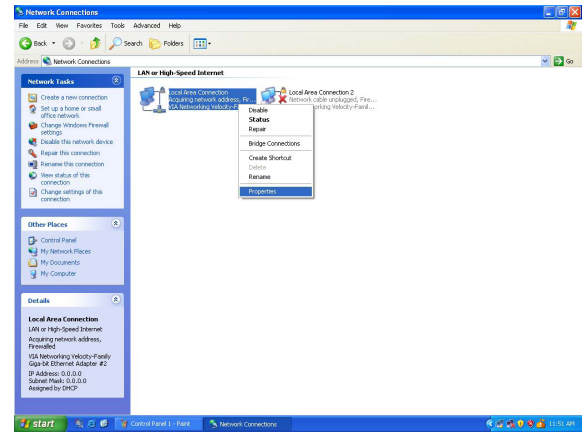
1. Enter the Control Panel of PC or notebook



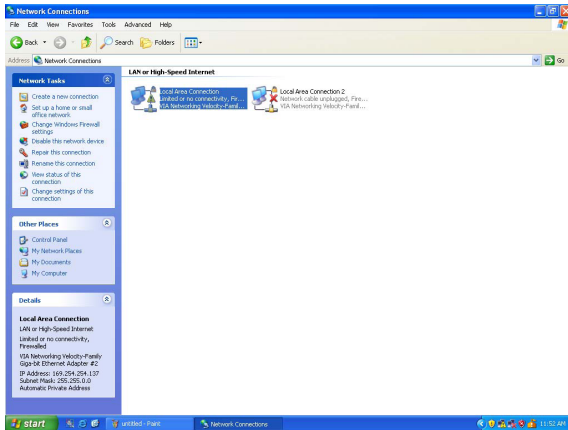
2. Select and double click Network Connections



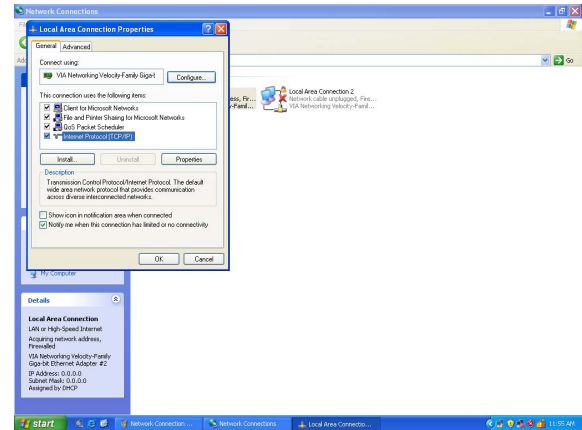
4. Right-click the mouse and select Properties



3. Select Local Area Connection

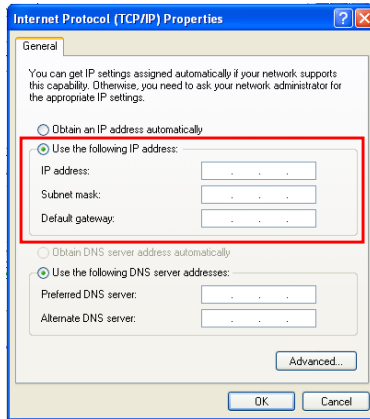


5. Select Internet Protocol(TCP/IP)

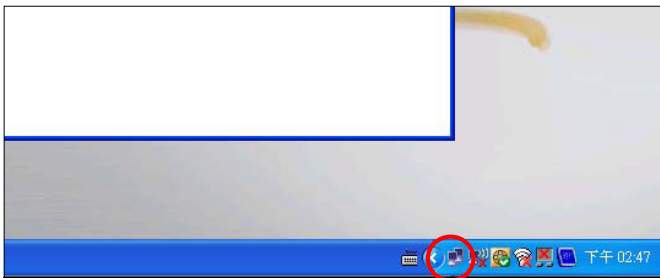


6. Select the "Use the following IP address" option and key in the following IP address information in the area, then press OK to exit.

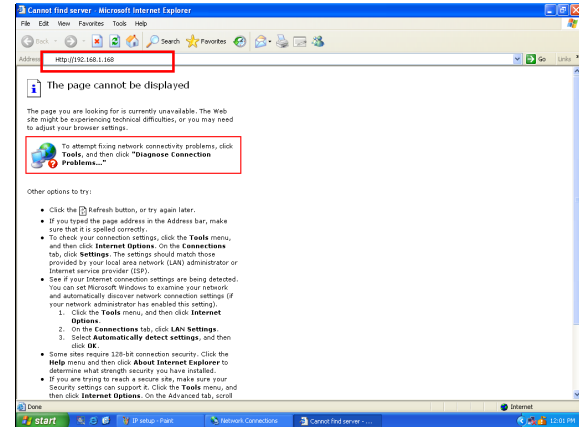
IP address: 192.168.1.100
 Subnet Mask: 255.255.255.0
 Default gateway: 192.168.1.1



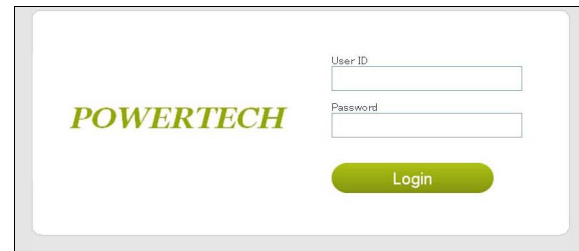
7. Connect one end of RJ45 Internet cable to the energy gateway, and the other end of internet cable to PC.
 8. Connect the included AC/DC adaptor to the energy gateway. Network connection is working when you see the connection icon.



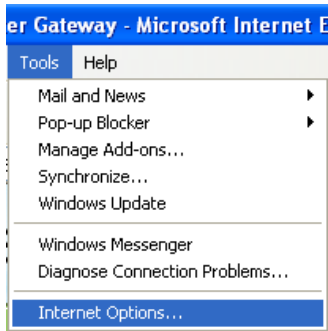
9. Open Internet Explorer web browser and key in "Http://192.168.1.168" to enter the gateway operating page.



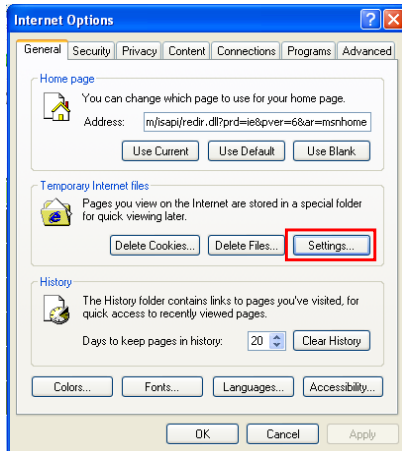
10. In the login page, enter the following default User ID and Password to enter the gateway operating page.
 Default User ID: admin
 Default Password: 00000000



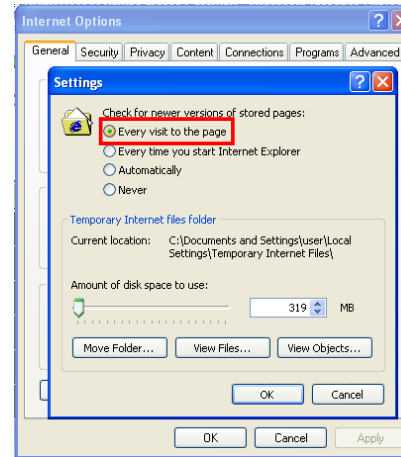
11. To set up Internet Explorer to work with the energy gateway, click on tools and select internet options



12. Select Settings in internet options page to setup temporary internet files option.



13. To check for newer version of stored pages, check on "Every visit to the page" option then press OK to exit.

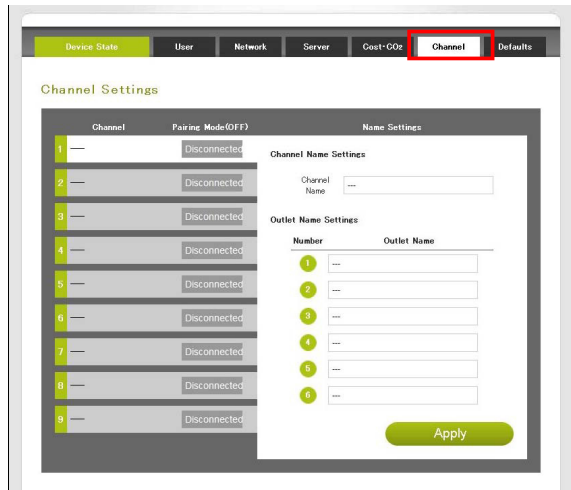


Energy Gateway and Smart Metering Devices pairing instructions

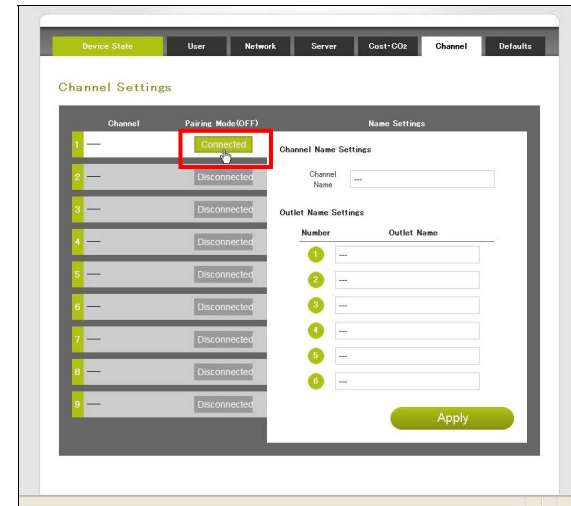
The learning function allows you to expand smart sockets/strips/CT meters later on. You may purchase more compatible smart metering devices and pair up to 9 smart metering devices to the energy monitor.

1. We suggest using a notebook when pairing up energy gateway and smart devices. Please bring the notebook and energy gateway close to smart sockets/strips/CT meter for smart devices pairing.

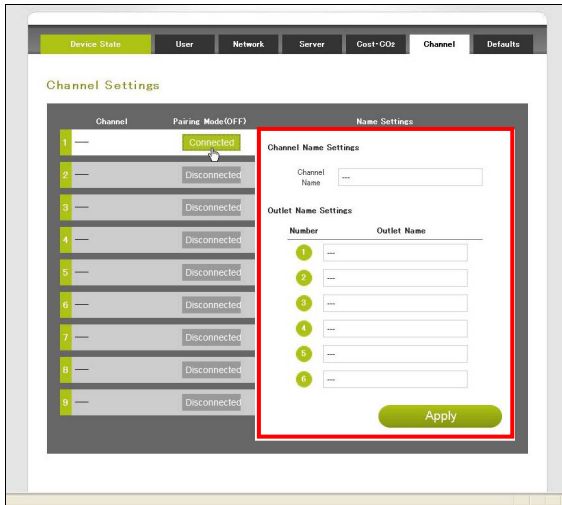
2. Click on "Channel" in the energy gateway operating page.



4. In the channel page, from CH1 to 9, select which channel you would like to add the smart device to the energy gateway. Then click on connect key to pair up the smart device with the energy gateway.

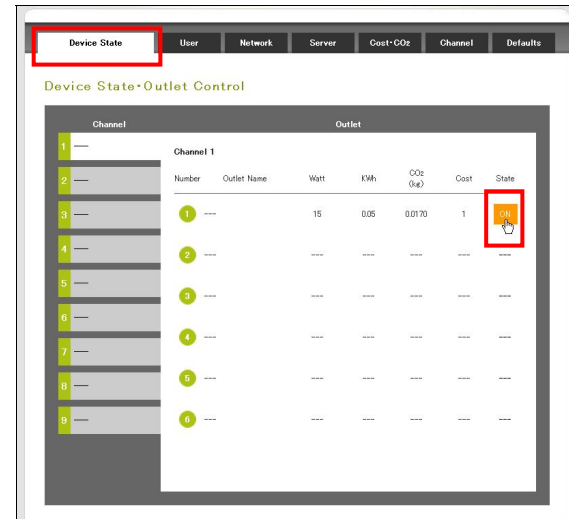


- In Channel Name Settings, you can set a name for the channel and press Apply to save it. For smart power strip user, you can set a name for individual outlet. This will help you to recognize what are the devices connected to smart power strip.



- After the smart device and energy gateway finished pairing up, the LED indicator on the smart devices will stop flashing. If the smart device has successfully paired up with the energy gateway, it will display "Connected" in the column.

- In "Device State" page, you can see the power consumption information of the smart devices. You can also control the smart socket and strip by click the ON & OFF icon.



- Repeat step2 to step5 to add more smart devices to different channel on the energy monitor.

Change User ID and Password

1. Click on "User" in the energy gateway operating page.
2. Change the User ID to your preference.
3. Enter your new password and confirm the new password.
4. Click on "Apply" to perform User ID and Password change.

The screenshot shows the 'User' configuration page. The 'User ID' is set to 'admin' and the 'Password' and 'Password Confirm' fields are empty. The 'Apply' button is highlighted with a red box.

Network Setup

The network setting allows the user to setup network as static IP or DHCP mode.

1. Click on "Network" in the energy gateway operating page.
2. According to your network environment, select Static IP or DHCP as your option.
3. Enter the network IP information.
4. Click on "Apply" to perform network setup.

The screenshot shows the 'Network' configuration page with 'Static IP' mode selected. The IP address is 192.168.1.100, subnet mask is 255.255.255.0, and gateway is 192.168.1.1. The 'Apply' button is highlighted with a red box.

This is a duplicate of the previous screenshot, showing the 'Network' configuration page with 'Static IP' mode selected. The IP address is 192.168.1.100, subnet mask is 255.255.255.0, and gateway is 192.168.1.1. The 'Apply' button is highlighted with a red box.

Electricity Cost and CO2 Emission Setup

In the event your local utility uses a tariff calculation other than flat electricity rate, please key in the average rate that most nearly resembles your utility's tariff schedule.

Carbon dioxide is emitted in the process of producing electricity by burning coal & fossil fuel. This is usually referred to CO2 footprint or carbon emission, which in turn has contributed global warming and caused abnormal weather.

The average carbon emission rate is 0.49Kg (1.08 lbs) of carbon emission for every 1 KWH of electricity produced. This can be changed depending upon your local electric utility. Please contact your local utility for carbon emission rate.

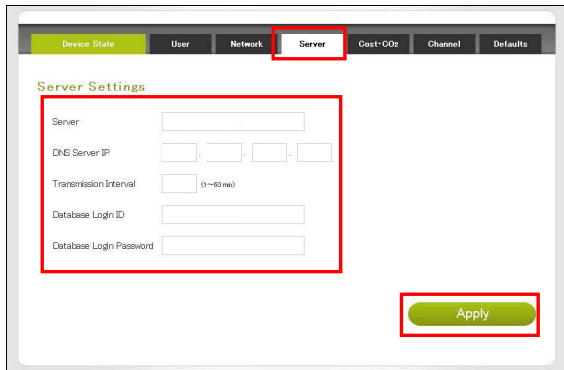
1. Click on "Cost & CO2" in the energy gateway operating page.
2. According to your local utility electricity and carbon emission rate, enter the information in the columns.
3. Click on "Apply" to perform Cost & CO2 setup.

The screenshot shows the 'Cost & CO2' configuration page. The 'Cost per kWh' is set to 24 and the 'CO2 Emission Factor' is set to 0.34. The 'Apply' button is highlighted with a red box.

Outgoing Server Setup

The energy gateway can collect energy database and transmit onto designated server for energy management service.

1. Click on "Server" in the energy gateway operating page.
2. Enter the designated server information and transmission time interval.
3. Click on "Apply" to perform confirm server setting setup.



Reset the Energy Gateway to Factory Default

There are two ways to reset the energy gateway to factory default, please follow the instruction below to reset the gateway to its factory default setting.

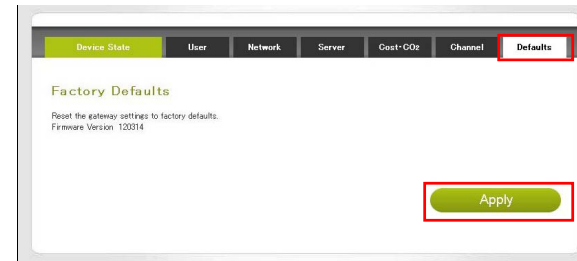
Warning: By performing resetting the gateway to factory default, all saved data, network settings & channel settings will be restored to factory default.

Reset to factory default from the energy gateway

1. Locate the reset point on the gateway.
2. Push a stylus or pen into the reset point for 5 seconds.
3. The gateway will be hard reset to factory default setting. Please perform all the necessary setup and channel setting.

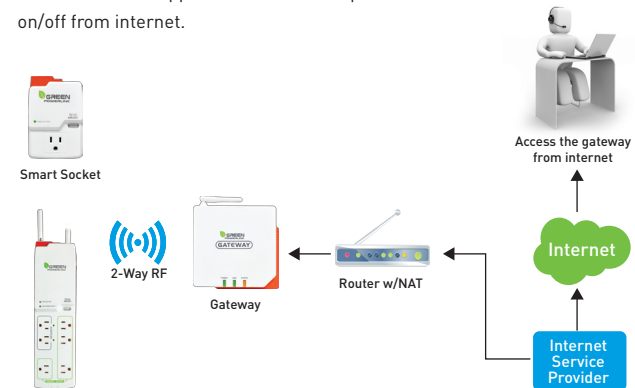
Reset to factory default from energy gateway web server

1. Click on the "Defaults" in the energy gateway operation page.
2. Click on the "Apply" to reset to factory default.
3. The gateway will be hard reset to factory default setting. Please perform all the necessary setup and channel setting.



Browse and access Gateway from internet

Anywhere and anytime, user can browse energy consumption of the connected appliances and control power on/off from internet.



In order for user to browse and access Gateway from internet, the following requirements are needed

- * Fix public IP address provided by internet service provider (ISP)
- * Router with Network Address Translation (NAT) service

User will first be required to obtain a fix IP address provided by internet service provider, then enable and setup the network address translation (NAT) service in the router. Please refer to the Network Address Translation (NAT) instruction in your router manual.

Once the NAT service is enable and setup, user can access the gateway anywhere from internet by opening IE web browser and key in the fix public IP address provided by your internet service provider. The NAT service of the router will redirect your access request to the corresponding gateway.

A typical example of Network Address Translation (NAT) setup is provided in the following example instruction.

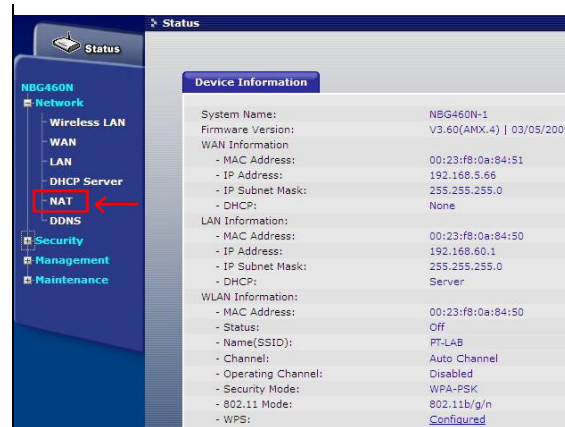
1. Login the router



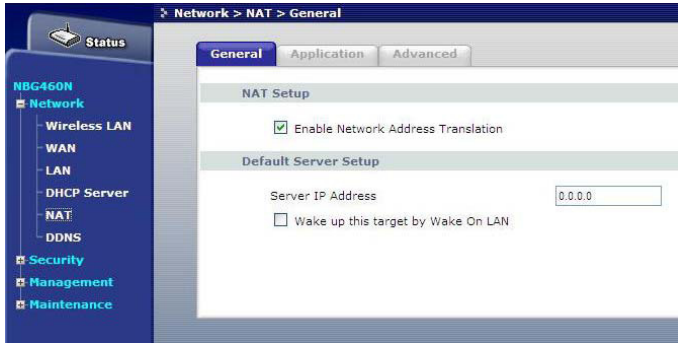
2. Select Advanced setup and choose the language



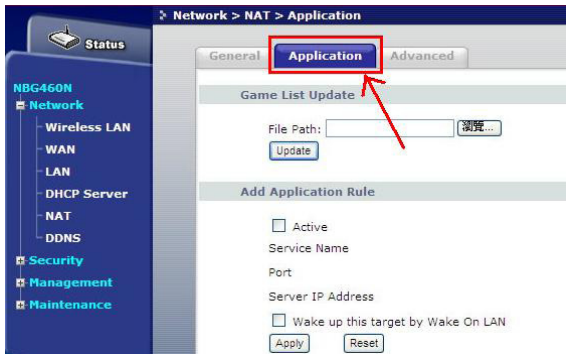
3. Enter "NAT" setup page.



4. Enable Network Address Translation (NAT) service.



5. Select "Application"

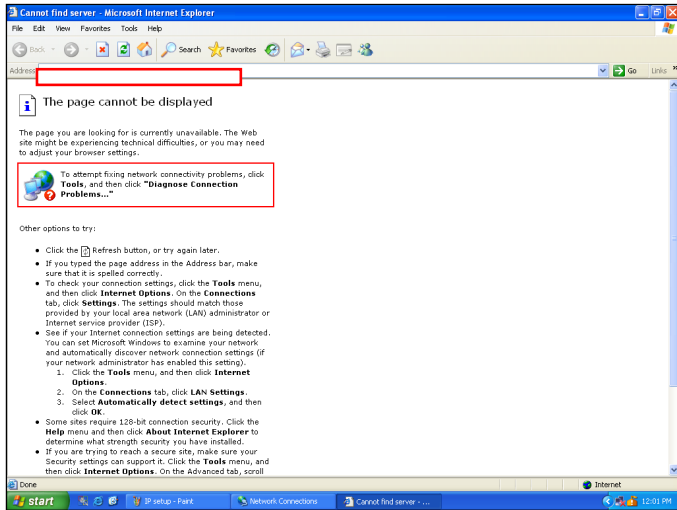


6. In the application page, key in the Gateway IP address information as following example.

- * Select "HTTP" as Service Name.
- * Select Port 80 as your Gateway port selection
- * Key in the IP address of the gateway
- * Press apply to finish NAT setup



7. Once NAT service of the router is setup, user can access the gateway anywhere from internet by opening IE web browser and key in the fix public IP address provided by your internet service provider



CAUTION:

To assure continued FCC compliance:
Any changes or modifications not expressly approved by the grantee of this device
could void the user's authority to operate the equipment.

8. The NAT service of the router will redirect your access request to the corresponding Gateway.

