

DOCUMENT TRACKING – REMOVE THIS SECTION BEFORE FINAL PRODUCTION

| Date | By | Notes |
|-------------|-------------|---|
| 6/27/2011 | Kevin Lewis | Created new version based on 1.0.2 to add US specs and FCC statement. Blue highlighting represents changes since v.1.0.2. |
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Gateway

GW110 / GW112

GW120 / **GW122**

GW140 / GW142

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Introduction

The GreenWave Reality platform helps create a smart, energy-efficient home through the monitoring and controlling of your appliances and electronics (referred to as “devices”). You can conserve energy with minimal impact to your lifestyle by using our products to easily manage your devices. Simply connect our Gateway to your GreenWave Reality energy management system, plug your devices into our PowerNodes, and then monitor and control the devices’ power usage through a Web browser or smartphone application.



Gateway Overview

The GreenWave Reality Gateway provides the network connection for GreenWave Reality PowerNodes (our smart outlet adapters that connect your devices to electrical outlets). This connection enables the Gateway to securely connect the devices you have powered through PowerNodes to your energy management system and our servers, allowing you to monitor and control your devices' power usage remotely through a Web browser or smartphone application.

The Gateway automatically connects to your PowerNodes, collecting information on energy consumption by each connected device. Once the PowerNodes are connected to the Gateway, you can control the energy consumption of each connected device automatically using GreenWave Reality Smart Controls. These user-defined Smart Controls allow you to turn devices on or off remotely through a Web browser or smartphone application or to set a schedule for automatically turning your devices on or off at pre-defined times.





1. Sync button: Button that syncs devices and shows current activity and status of synced devices.
2. WAN (Internet connection) error indicator: Indicator that shows whether or not the Gateway is connected to the Internet.
3. LAN (home network) error indicator: Indicator that shows whether or not the Gateway is connected to your network.
4. Power indicator: Indicator that shows whether or not the Gateway is powered.
5. Network socket (RJ45): Ethernet port to connect the Gateway to your network.
6. USB socket (on some models): Socket providing a USB connection that can be used for alternate network connections (for example, through a 3G USB network adapter).
7. Power adapter socket: Socket to plug in the Gateway power adaptor.

Indicators

Your Gateway has sync and network indicators that display the following patterns and colors to show you its current status:



Power indicator—off (no color): Gateway is off.



Power indicator—steady white: Gateway is on.



Sync button—two rotating green bars: Gateway is in inclusion mode to connect with other GreenWave Reality devices. When inclusion is successful, the rotating bars stop and all bars turn green for five seconds.



Sync button—one rotating green bar: Gateway is in exclusion mode to disconnect from other GreenWave Reality devices. When exclusion is successful after a few seconds, the rotating bar turns off.



Network indicator—off (no color): Gateway is connected to the network.



Network indicator—red: Gateway is not connected to the network. Check that the Gateway is connected to your network router.



Internet indicator—off (no color): Gateway is connected to the Internet.



Internet indicator—red: Gateway is not connected to the Internet. Check that your network router has an active Internet connection.

Installation

Before you install your Gateway, make sure that your home network is operating and connected to the Internet.

There are four basic steps to install your Gateway:

1. Connect the Gateway to your network router.
2. Power the Gateway.
3. Verify that the Gateway is connected.
4. You are ready to install GreenWave Reality PowerNodes.

1. Connect the Gateway to Your Network Router



Connect the Gateway to any available port in your home network router using the included Ethernet cable.

2. Power the Gateway

Power the Gateway by plugging it into an electrical outlet using the included power adaptor.

The Gateway illuminates while it is attempting to connect to the Internet.



3. Verify that the Gateway is Connected

Your Gateway is connected when both the network indicator and the Internet indicator turn off, and the sync button changes from white to green.

4. Ready to Install Your PowerNodes

The GreenWave Reality PowerNode is a smart outlet adapter that connects your devices to electrical outlets and your GreenWave Reality energy management system. This connection allows you to monitor and control your devices' power usage remotely through a Web browser or smartphone application.

Your PowerNode has a corner wheel with colored numbers to represent the room or device that the PowerNode is powering. Set the PowerNode to the colored number you want to use to identify the room or device (this is referred to as the "room color"). For example, you can set the room color to blue. Then, when you access your account through the Web or smartphone application, the corresponding room is identified by the same blue color as your PowerNode.

You can set PowerNodes in different rooms to different colors to make those rooms easy to identify when managing the power sources on the Web or smartphone application.

To activate your PowerNode, follow the instructions that came with the PowerNode to plug in your device and connect it to your energy management system.



Installation Tips

Review the safety information. Be sure to review the information contained in the “Safety Information” chapter for important safety information you should follow.

Keep radio signals clear. Your Gateway and PowerNodes have antennas built-in for radio communication with Internet services and other devices on your energy management system. Just as you might experience reception problems on your mobile phone inside a building, your Gateway can have trouble communicating with PowerNodes if their radio signals are blocked by obstacles such as large metal panels or walls containing wire mesh. When placing these devices in your home, imagine invisible lines connecting between them. Try to keep these lines clear from obstruction as much as possible. Also place your Gateway at least 5 feet (1.5 meters) above floor level to promote reception.

Common Z-Wave Tasks

The Gateway combines various wireless technologies, such as Z-Wave and ZigBee, into a standard IP-based mesh home network. As a Z-Wave enabled device, the Gateway is compatible with Z-Wave enabled networks and hardware from other manufacturers.

Network Inclusion Process

Note: If your PowerNodes or other GreenWave Reality devices came as part of a package with your Gateway, then you can skip this section since the devices in the package were already connected at the factory. This section applies only for adding additional devices or for including a device that you previously excluded.

The process for adding a GreenWave Reality device (such as a PowerNode) to your energy management system is called “inclusion.” It must only be performed once, and you must have the Gateway plugged in and working first.

Steps for Network Inclusion

You can start the inclusion process by pressing and holding the Gateway sync button for two seconds so the rotating “inclusion mode” pattern appears on the Gateway activity indicator. When this is completed, the Gateway is ready to perform the inclusion of the other GreenWave Reality device.

If you attempt to include a GreenWave Reality device from another energy management system with an “alien” Gateway, the inclusion will fail and the indicator bars will flash rapidly.

To complete the inclusion process on a **PowerNode**, you must perform the following steps (refer to the user guide that came with your PowerNode for more information):

1. Plug the PowerNode into an electrical outlet.
2. Locate the sync button on the PowerNode. It is a small round button on the side of the device, marked with the sync symbol.
3. Press and hold the sync button for one second until the PowerNode activity indicator begins to display a clockwise-rotating pattern, which shows that the PowerNode is attempting inclusion.
4. After a few seconds, the rotating pattern should stop and all bars turn green for five seconds to indicate successful inclusion. The PowerNode is now part of your energy management system, and you can connect an appliance and electronic device (refer to the instructions that came with your PowerNode to plug in your appliance or electronic device).

If the rotating pattern has stopped but all bars did not turn green for five seconds, then the PowerNode inclusion process has failed, and you must start over.

To complete the inclusion process on an **In-Home Display**, you must perform the following steps (refer to the user guide that came with your Display for more information):

1. Make sure you are on the **JOIN NETWORK** screen on the In-Home Display.
2. Press the select button on the Display to have it start the inclusion process.
3. When the Display connects successfully, the screen shows the message **CONNECTED**.

*If the screen shows the message **UNSUCCESSFUL**, then the inclusion process has failed, and you must start over.*

Network Exclusion Process

Note: If the GreenWave Reality device that you are connecting to the Gateway is new and has never been used before, then you should not need to perform the exclusion process.

A GreenWave Reality device that has been previously used with a different Z-Wave network must have its association (homeID) with the other network removed before you can connect it to your GreenWave Reality energy management system. This process is called “exclusion” and requires two steps: one that must be performed with the Gateway and then one that is performed with the other GreenWave Reality device.

Steps for Network Exclusion

You can start the exclusion process through your Gateway user interface or by pressing and holding the Gateway sync button for five seconds until the “exclusion mode” pattern appears on the Gateway activity

indicator. When this is completed, the Gateway is ready to perform the exclusion of the other GreenWave Reality device.

To complete the exclusion process on a **PowerNode**, you must perform the following steps (refer to the user guide that came with your PowerNode for more information):

1. Unplug the PowerNode from the electrical outlet.
2. Locate the sync button on the PowerNode. It is a small round button on the side of the device, marked with the sync symbol.
3. Press and hold the sync button while plugging the PowerNode into an electrical outlet. Keep the button pressed for five seconds until all bars turn green for five seconds, indicating that the exclusion process has completed. Your PowerNode is now free of its former association, and you can perform an inclusion process to include it in your GreenWave Reality energy management system (refer to the "Network Inclusion Process" section above).

If the network indicator and power button symbol flash together slowly for five seconds, then the exclusion process failed, and you must start over.

To complete the exclusion process on an **In-Home Display**, you must perform the following steps (refer to the user guide that came with your Display for more information):

1. Make sure you are on the **LEAVE NETWORK** screen on the In-Home Display.
2. Press the select button on the Display to have it start the exclusion process.
3. When you are prompted to confirm, press the select button again.
4. When the Display disconnects successfully, the screen shows the message **COMPLETED**.

If the screen shows the message **UNSUCCESSFUL**, then the exclusion process has failed, and you must start over.

Safety Information

Indoor Use Only

Your Gateway should be used only in dry, indoor locations. Do not use your Gateway in high-humidity locations such as greenhouses, saunas, washrooms, or patios. Do not use your Gateway in locations where it can get wet such as near aquariums or running water.

Do Not Disassemble

Your Gateway has no user-serviceable parts inside. In case of persisting malfunction, please contact Customer Service to arrange for repair at a certified service location. Do not attempt to disassemble the Gateway for any reason.

Arrange for Service if Needed

Should you encounter any problems with your Gateway, turn the device off by unplugging it from the electrical outlet. Contact Customer Service to arrange for repair at a certified service location under the following conditions:

- When the power cable or plug is damaged or frayed
- If the product has been exposed to rain or water
- If the product casing has been damaged

About GreenWave

GreenWave Reality is a global innovator in the emerging Home Energy Management market. GreenWave Reality provides an affordable, easy-to-use, standards-based platform that allows utilities enhance their relationship with consumers and better balance energy on the grid while consumers can conserve energy with a minimal impact to their lifestyle by easily monitoring and controlling their appliances and adding intelligent LED lighting. GreenWave Reality is led by a diverse team of proven leaders with global experience.

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Product Specifications

| Model | GW110/GW112 | GW120/GW122 | GW140/GW142 |
|---|----------------------------|----------------------------|----------------------------|
| Z-Wave Radio Frequency | 868.42MHz | 908.42MHz | 921.42MHz |
| ZigBee Frequency | 2.4GHz | 2.4GHz | 2.4GHz |
| RJ45 Port for LAN/WAN network connection | • | • | • |
| USB Port for alternate network connection | • | • | • |
| Operating Temperature | 0°C ~ +40°C | 0°C ~ +40°C | 0°C ~ +40°C |
| Storage Temperature | -20°C ~ +60°C | -20°C ~ +60°C | -20°C ~ +60°C |
| Operating Humidity | 20% ~ 85% RH | 20% ~ 85% RH | 20% ~ 85% RH |
| Storage Humidity | 5% ~ 95% RH | 5% ~ 95% RH | 5% ~ 95% RH |
| Size | 120 x 60 x 33 mm | 120 x 60 x 33 mm | 120 x 60 x 33 mm |
| Weight | 101 g | 101 g | 101 g |
| Power Adapter | | | |
| Plug | Type C | Type A | Type I |
| Input | 100-240V ~50/60Hz, 0.7A | 100-240V ~50/60Hz, 0.7A | 100-240V ~50/60Hz, 0.5A |
| Output | +5V DC, 3A | +5V DC, 2A | +5V DC, 2A |

Document Version

1.03a

Model Numbers

GW110, GW112, GW120, GW122, GW140, GW142



Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.

(Back Cover)