

Wi-Fi Extender

USER GUIDE

Model: E2100

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INTRODUCTION

1.1 Package Contents

1.2 System Requirements

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1.4 Getting to Know Your Wi-Fi Extender

The Wi-Fi Extender is a high performance, dual-band, tri-radio, 801.11ac range Booster built for outstanding Wi-Fi performance between the primary Access Point/Router/Gateway and forward connected, downstream clients. The Extender is designed to work with existing network router/gateway infrastructure products, such as the upcoming Quantum BHR5 and the existing Quantum BHR4

PACKAGE CONTENTS, SYSTEM REQUIREMENTS AND FEATURES

1.1/ PACKAGE CONTENTS

Your package contains:

- The Greenwave Systems Wi-Fi Extender
- Power Adapter
- Quick Start Guide
- Safety and License notice(s)

Package Contents

Network Wi-Fi Booster with Stand
Power Adapter
Quick Start Guide
GPL GNU Notice

1.2/ SYSTEM REQUIREMENTS

System requirements are:

- A supported BHR Gateway/Router, such as the Quantum BHR4 or Quantum BHR5
- Client devices supporting either Wi-Fi or Ethernet network connectivity (not provided)

1.3/ FEATURES

- Dual 5GHz Radios provide fast connection to your gateway/router and to your Wi-Fi connected clients
- Wi-Fi Extender will attempt to automatically connect to your Quantum BHR4 or Quantum BHR5 without manual configuration by the customer
- Signal Strength Indicators let you know if the Wi-Fi extender is in an optimal location for best performance
- Includes Integrated wired networking with 2-port Ethernet switch
- Connect PCs or Game Consoles over high-speed Wired Ethernet connection
- Ethernet supports speeds up to 1000 Mbps
- Integrated wireless networking with 802.11b/g/n/ac access point featuring:
 - Enabled 802.11b capable speeds (based on device) [?](#)
 - Enabled 802.11g capable speeds (based on device) [?](#)
 - Enabled 802.11n capable speeds (based on device) [?](#)
 - Enabled 802.11ac capable speeds (based on device) [?](#)
- Event logging [?](#)

1.4/ GETTING TO KNOW YOUR WI-FI EXTENDER

1.4a/ FRONT PANEL

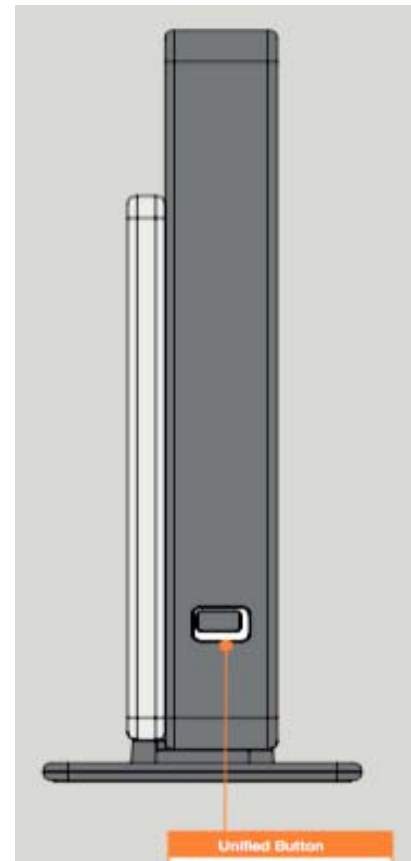
The front panel has a lighted indicator (LED) status button, which also provides the a WPS (Wi-Fi Protected Setup) function.

The Power/Internet light will be on and solid when your Wi-Fi Extender is turned on, connected to a BHR router and functioning normally.

For additional information on the front lights and error indications, refer the Troubleshooting section in this Guide.

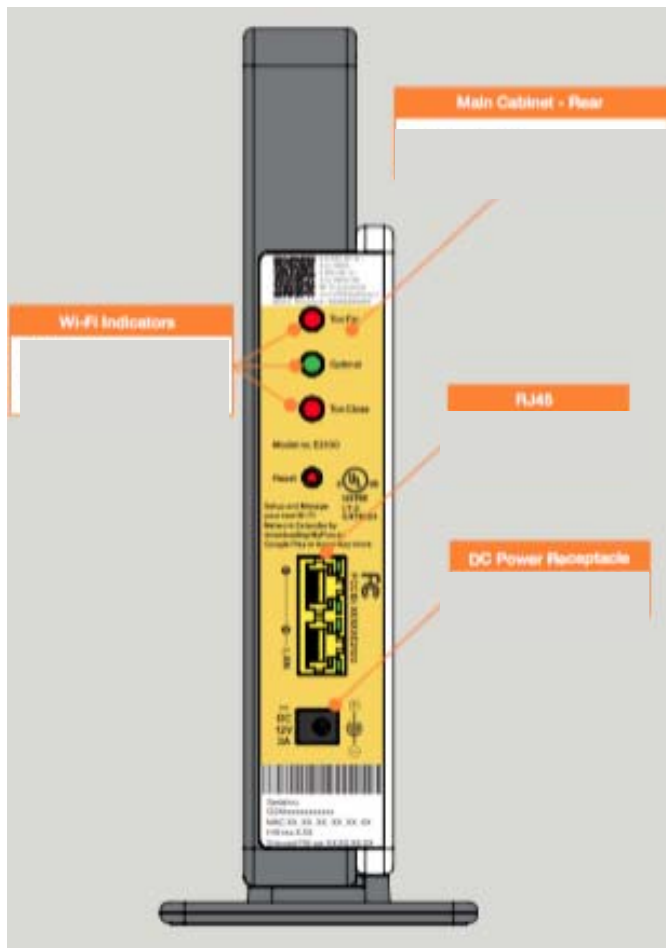
The WPS button is used to initiate Wi-Fi Protected Setup. Pressing the front Unified Button for 10 seconds will initiate a WPS pairing setup event.

See Troubleshooting section for additional details.



1.4b/ REAR PANEL

The rear panel of your Wi-Fi Extender has two (2) Ethernet ports. The rear panel also includes a DC power jack, a reset button and three Placement Indicator status LEDs.



- **Reset Button** - allows you to reset your Wi-Fi Extender to the factory default settings. To reset the Wi-Fi Extender, press and hold the Reset button for at least three seconds.

- *Ethernet LAN* - connects devices to your Wi-Fi Extender using Ethernet cables to join the local area network (LAN). The two Ethernet LAN ports are 10/100/1000 Mbps auto-sensing and can be used with either straight-through or crossover Ethernet cables.
- *Power* - connects your Wi-Fi Extender to an electrical wall outlet using the supplied power adapter. *Warning: The included power adapter is for home use only, supporting voltages from 100-240Vac. Do not use in environments with greater than 240Vac.*

02/

2.1/ SETTING UP YOUR WI-FI EXTENDER

Connecting your Wi-Fi Extender to extend your Wi-Fi network is simple.

There are three basic steps to setting up your Wi-Fi Extender:

Step1: Power on.

Step 2: Connect the Wi-Fi Extender to a BHR

Step 3: Connect your device to the Wi-Fi Extender

Detailed Steps:

2.1/ Step 1 – Power On

- a) Remove your Wi-Fi Extender and power adapter from the box.
- b) Plug in the Power Adapter pin jack into the circular port on the back of the Wi-Fi Extender.
- c) Plug the power cord into the power port on the back of your Wi-Fi Extender and then into a power outlet. The Wi-Fi Extender

automatically turns on as soon as power is plugged in.

Important: Wait until the Status light on the front of the Wi-Fi Extender stops flashing and is solid white. If the light turns yellow or red, check the troubleshooting steps in the Troubleshooting section of the user guide.

2.1/ STEP 2 - CONNECT THE WI-FI EXTENDER TO A BHR GATEWAY

Autoconfigure

- The Wi-Fi Extender will first attempt to automatically configure to a Quantum BHR4 or Quantum BHR5 during.
- If automatic configuration was successful, the Unified Button light in the front of the Wi-Fi Extender will turn White.

Wi-Fi Protected Setup (WPS)

- Press and hold the Unified Button in the front of the Wi-Fi Extender for 2-5 seconds, then release. The button will flash Blue if WPS setup has been initiated.
- If WPS configuration was successful, the Unified Button light in the front of the Wi-Fi Extender will turn White.

If the Unified Button light in the front of the Wi-Fi extender is yellow or red, there is a problem with the Wi-Fi Extender or with the connection to the Gateway/Router. See Troubleshooting section for more information.

2.1/ STEP 3 - CONNECT YOUR DEVICE TO YOUR WI-FI EXTENDER

If connecting a device using wired Ethernet

- Plug one end of an Ethernet cable (not supplied) into one of the two yellow Ethernet ports in the back of your Wi-Fi Extender.
- Plug the other end of the Ethernet cable into the Ethernet port of your network device.

If connecting a wireless device:

- Access the Wi-Fi setting on your wireless device, then select your home network name (SSID). The home network SSID should be shown on the sticker located on the side of your gateway/router.
- Enter the wireless password (WPA2 key) also shown on the sticker of the home/gateway router.

3/

TROUBLE SHOOTING

This chapter lists solutions for issues that may be encountered while using your Wi-Fi Extender.

3.1/ STATUS LIGHTS

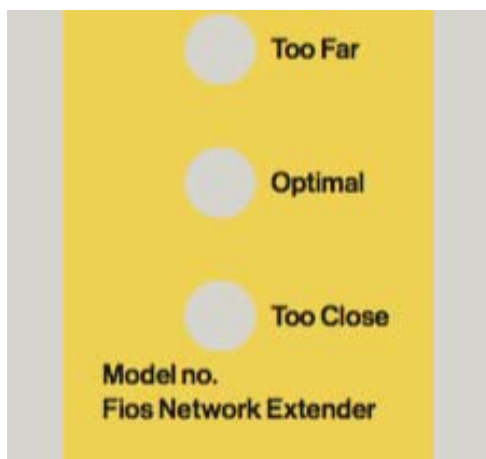
3.1a/ UNIFIED BUTTON STATUS LIGHT

(LOCATED ON THE FRONT OF WI-FI EXTENDER):

Condition Status	LED color	Wi-Fi Booster (WFB)
Normal	White	Normal Operation (solid) Booster bootup (fast blink)
	Blue	WPS Pairing Mode (slow blink) (2-5 sec hold)
	Grey	Wi-Fi off
Trouble	Yellow	No Connection to BHR4/5
	Red	Hardware Failure (solid) Overheat (fast blink) WPS Failure (1s on, 1s off, for up- to 120 seconds)
	Green	Not In Use
	OFF	Powered off

1. The first thing to check is whether your Wi-Fi Extender is powered on.
2. When powered on and starting up, the Wi-Fi Extender Status light will blink White.
3. If the Unified Button status light is yellow, then be sure your Wi-Fi Extender wireless device is within range of your Gateway or Router.
4. Refer to the Placement Indicator lights on the BACK of the Wi-Fi Extender.

**3.1b/ PLACEMENT INDICATOR LIGHTS
(LOCATED ON THE BACK OF WI-FI EXTENDER):**



5. If “Too Far” is lit solid Red, then try moving the Wi-Fi Extender CLOSER to the BHR Gateway/Router.
6. If “Too Close” is lit solid red, then try moving the Wi-Fi Extender AWAY from the BHR Gateway/Router.

3.2/ TROUBLESHOOTING TIPS

1. If the Unified Button Status light is solid red, the Wi-Fi Extender is powered on but is having a hardware issue. Try unplugging the power cable, and wait three (3) minutes before re-inserting the power plug again.
2. If the Unified Button Status light is flashing red, the Wi-Fi Extender is powered on but is having a hardware overheat issue. You should unplug the Wi-Fi Extender, and wait at least three (3) minutes before attempting to power on again. Upon powering-on, if the light continues to flash red, then you should unplug the device and leave it off. Please call the technical support department of your service provider.
3. Check to be sure you are running the latest software for your network device.
4. Try turning your network device's Wi-Fi off and on and try to connect.
5. If you have made any changes in your network settings and turning your network device's Wi-Fi off and on does not help, try to restart your network device.
6. As a final tip you may need to turn your Wi-Fi Extenders' Wi-Fi settings from on to off, and back to on again and apply the changes.

4/

NOTICES

This chapter lists various compliance and modification notices, including FCC and GPL.

4.1a/ FCC CLASS B EQUIPMENT

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 implementing one or more of the following measures:

1. Reorient or relocate the receiving antenna
2. Increase the separation between the equipment and receiver
3. Connect the equipment to an outlet on a circuit different from the one to which the receiver is connected
4. Consult the dealer or an experienced radio or television

technician for help

4.1b/ MODIFICATIONS

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Greenwave may void the user's authority to operate the equipment.

Declaration of conformity for products marked with the FCC logo – United States only.

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
2. This device must accept any interference received, including interference that may cause unwanted operation

Note: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 32 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

For operation within the 5.15 ~ 5.25 GHz / 5.47 ~ 5.725 GHz frequency range, this device is restricted to indoor environments. This device meets all the other requirements specified in Part 15E, Section 15.407 of the FCC Rules.

For questions regarding your product or the FCC declaration, contact:

Greenwave Systems Inc
200 Spectrum Center Drive, 15th Floor (Suite 1500),
Irvine, CA 92618
Attn: FCC Declaration

Caution: The Wi-Fi Extender must be installed inside the home. The Router is not designed for exterior (outside) installation.

4.2/ GENERAL PUBLIC LICENSE

This product contains certain software code that is developed by third parties, including software code subject to the GNU General Public License (“GPL”) or GNU Less General Public License (“LGPL”). Copies of the licenses and a downloadable copy of the source code for the open source software that is used in this product are available on the following website:

<http://www.greenwavesystems.com/opensource/>

You may also obtain a copy of the source code used in this product via mail-in request, for a period of three years after initial date of product purchase. For details and mailing address, please visit <http://www.greenwavesystems.com/opensource/>

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NOTE: This information is provided for those who wish to edit or otherwise change such programs. You do not need a copy of any of such open source software source code to install or operate the device.

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