



EZ2R15B

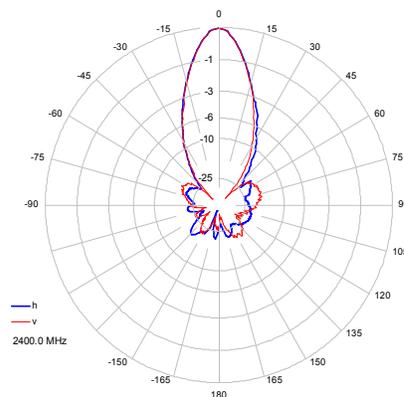
High Performance Outdoor 802.11bg Bridge/Router



- Achieve up to 15 Mbit/sec data thrupt
- Long Distance operation with good line of sight
- Best security available (WPA2)
- Field Proven Wireless Technology



Antenna Pattern





DANGER! Avoid Powerlines! You Can Be Killed!

When following the instructions in this guide to install the EZ2 take extreme care to avoid contact with overhead power lines, lights and power circuits. Contact with power lines, lights or power circuits may be fatal. We recommend to install EZ2 no closer than 20 feet to any power lines.

Safety: For your own protection, follow these safety rules.

- **Perform as many functions as possible on the ground**
- **Do not attempt to install the antenna on a rainy, windy or snowy day or if there is ice or snow accumulation at the install site or if the site is wet.**
- **Make sure there are no people, pets, etc. below when you are working on a roof or ladder.**
- **Watch out for any power lines which may be overhead, underground or behind walls., keeping safely clear of them with the antenna, ladders or any tools.**
- **See appendix for FCC RF exposure guidelines**



Recommended Tools: Pliers, Adjustable Wrench, Screws for mounting Wall Mount Bracket, Drill or Screwdriver for installing wall mount bracket, sealant for sealing any holes. **NOTE:** You should be familiar with using tools such as these before attempting installation of EZ2. You should be comfortable with working on a ladder.



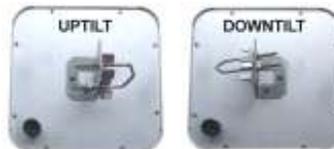
GROUNDING: Local building and electrical codes require that the antenna be properly grounded. Improper installation may seriously damage the equipment or building, as well as cause injury or death to you. Run a ground wire 10AWG or bigger from back of antenna to a good earth ground (Cold water pipe or metal stake in ground).

Qwik Install

STEP 1: Decide if install will be VERTICAL polarity or HORIZONTAL polarity.



STEP 2: Decide if UPTILT or DOWNTILT is going to be required for the particular installation. Bracket will be attached to back of antenna to provide uptilt or down-tilt by rotating the bracket install orientation 180°.



STEP 3: Choose a mounting location with good line of sight to the remote location. The antenna can be mounted to an existing pole up to 2” diameter. If only short distances are needed, the antenna can be mounted inside a building. Install the antennas.

 **TECH TIP:** *Microwaves travel in straight lines and they lose strength quickly when going thru buildings and trees. If there are objects in the microwave path, then useable distance will be reduced. If the target unit is less than 1 mile away then you won't have to worry too much about a couple obstructions but if over 1 mile and there are some obstructions in the microwave path, then the performance will be reduced.*

STEP 4: Install the CAT5 outdoor cable by inserting the RJ45 connector thru the feedthru and into the connector on the back of the antenna. Screw the feedthru into the antenna connector and tighten against the gasket. While pushing the cable towards the connector, tighten down on the feedthru cable clamp.



STEP 5: Route a CAT5 cable from the EZ2 into the building. Always create a drip loop near the antenna so the cable is not pulling on the antenna and any water running down the cable isn't going directly into the unit. Do this by creating slack in the cable and tie wrapping the cable to the pole or mount. Always seal any holes in walls or roofs properly to prevent water ingress. The Ethernet spec allows for a maximum cable length of 100 meters or about 328 feet.

STEP 6: Aim the antenna and tighten the brackets securely. There is an antenna alignment utility in the software to help with proper alignment of the antenna.

 **TECH TIP:** *Because of the specially designed wide beamwidth antenna, pointing is not critical and simply pointing in the general direction of the receiving antenna will yield great results.*

STEP 7: Install the RJ45 connector on the POE Inserter to the router, switch or computer. Attach the CAT5 cable from the antenna to the RJ45 output port of the POE Inserter. Insert power supply DC plug to the POE Inserter DC Jack. Plug in the power supply to an surge protected AC power source to power up the EZ2



Software Settings

1. There is an HTML management system built into every EZ2 unit which is accessed thru a standard web browser. The unit can communicate thru the CAT5 ethernet cable connection or thru the wireless connection, so you can manage remote units from a single location.

2. **IP ADDRESS:** Default IP address for the EZ2 is 192.168.1.1. To access the EZ2 your computer IP address must be on the same subnet ie; 192.168.1.xxx.

 **TECH TIP:** Download the EZ2 Discovery Tool from <http://www.e-zy.net/support/2plus/Utility/> . This tool will assist you in finding the EZ2 on the network and allow you to change the EZ2 IP address or set it as a DHCP client. Just select the unit, click on IP DETAILS, make selections and save changes directly to the device.

3. **SECURITY:** The following security changes are recommended :

a. **PASSWORD:** Change the user name and password on the EZ2 by going to SYSTEM | PASSWORDS and setting the first user name and password. *The default is no user name or password for ease of system setup*

b. **ENCRYPTION:** Set an encryption type and key. We recommend WPA2 because it is most secure, but if this install is as a client the encryption type and key must match the Access Point.

6. **SITE SURVEY:** The site survey is a very useful tool to determine what wireless devices are within range of your EZ2 and could be a source of interference that could cause degraded performance. Go to WIRELESS and then click on SITE SURVEY then REFRESH. The list will show all wireless devices including channel #, MAC Address and relative signal strength of all the devices within the range of the EZ2

7. **FACTORY DEFAULTS:** If at any time the system stops working because of changes made to the settings, you can get back to the original settings by resetting to factory defaults. Go to ADMIN | SAVE/RELOAD SETTINGS, then Reset Settings To Default. Any customized settings will be lost once this process is initiated.

8. **UPGRADE FIRMWARE:** For the latest firmware point your browser at <http://www.e-zy.net/support/2plus/Firmware/> . Download the latest firmware to your PC. Select UPGRADE from the menu and then browse

for the new file.

Advanced Features

The EZ2 has many advanced features if more functionality is desired. To access the advanced features, click on [Advanced Web](#) at the top of the menu tree. This will activate the advanced menu options.

The EZ2 can operate as Access Point, Client, WDS, AP+WDS, Point to Point. Go to WIRELESS | BASIC SETTINGS to change wireless mode. Go to ETHERNET | IP SETTINGS to change network operation mode from Bridge (default) to Router.

Since documentation for these advanced modes is too extensive to cover here please retrieve the documentation online at <http://www.e-zy.net/support/2plus/Documentation/> :

TECH CORNER

Additional Information you may find useful

1. **RAIN, SNOW, ICE** – The 2.4GHz frequency being used by the EZ2 will not be affected by heavy rain or falling snow. You should not see any performance degradation due to inclement weather. If snow or ice collects on the front of the antenna, you may see some reduced performance assuming you are shooting a long distance (>3miles) and the ice or snow buildup is greater than 1" thick on the surface of the antenna. For this reason, we suggest mounting under an eave of a house if feasible for your particular situation.

2. **SUN AND HEAT**– The EZ2 is constructed of all UV protected materials so it will survive for many years in the most extreme of solar environments (ie; an Arizona rooftop during the summer). The unit has been tested and qualified for constant operation at over 122 deg F ambient temperature. Even though the EZ2 is designed for long term survivability in extreme environments, we would still recommend that the unit be mounted in a more protected location, like under a roof eave, if possible. Of course if line of sight is better with the antenna mounted in a non-protected environment then we would recommend the better line of sight mounting location.

3. **LIGHTNING** – Lightning is the single worst enemy of outdoor electronics equipment. No electronics will survive a direct strike but there are close proximity strikes that can cause huge electrical fields to be

generated which can damage electronic equipment. We have taken special care in the design of the EZ2 unit to ensure proper grounding of the electronics inside the enclosure to prevent damage from electrical storms. Make sure that the POE Power Supply is plugged into a surge protected outlet such as a surge protected power strip or UPS inside the house.

5.**PAINTING** – The EZ2 unit can be painted to match a particular house color. Only non metallic enamel or latex paints should be used. If a paint with metal content is used, it will block the microwaves and cause reduced performance.

Appendix:

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.

Technical Specifications

Note: Subject to Change Without Notice

General	
Standards	802.11b/g (WLAN), 802.3/802.3u (LAN)
Modulation	(b) DSSS (DBPSK, DQPSK, CCK) (g) OFDM (64QAM, 16QAM, QPSK, BPSK)
Certifications	FCC / CE
Radio Specifications	
Operating Frequency	2400 to 2497MHz
Channels	USA/Canada 11; Japan 14; France 4; Europe 13
Available Transmit Power (software selectable)	802.11b 100, 150, 200, 250mW 802.11g 50, 100mW
Receive Sensitivity @ 11Mbps	802.11g -73 +2dBm @ 54Mbps 802.11b -84 +2dBm @ 11Mbps
Security	64/128bit WEP, WPA, WPA2
Remote Config (Web Based)	By IP Address; thru Wireless or Ethernet
Antenna Specifications	
Antenna Gain	15 dBi
Antenna Beamwidth (V & H)	35 deg
Antenna Front to Back	>18dB
Polarization	Horizontal or Vertical
POE Specification	
Power Over Ethernet Injector	INPUT: 100 – 240VAC @ 50 – 60Hz OUT- PUT: 18VDC @ 0.8A
Mechanical Specifications	
Color	White
Dimensions (L x W x H)	10.8" x 10.8" x 3" (273 x 273 x 76mm)
System Weight	4.4 lb (2 kg)
Ethernet Connector	Field Replaceable Waterproof RJ45
Mount	Pole (up to 2" dia) Mount
Environmental Specifications	
Operating Temperature	-22 to 122 Deg F (-30 to +50 Deg C)
Humidity	0 to 100% RH
Wind Loading (125MPH survivability)	100MPH / 28lbs; 125MPH / 43lbs

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 minimum distance 20cm between the radiator & your body. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Limited Warranty

All e-zy.net products are supplied with a limited 12 month warranty which covers material and workmanship defects. This warranty does not cover the following:

- Parts requiring replacement due to improper installation, misuse, poor site conditions, faulty power, etc.
- Lightning damage.
- Physical damage to the external & internal parts.
- Products that have been opened, altered, or defaced.
- Water damage for units that were not sealed or mounted according to user manual.
- Units that were not properly grounded.
- Usage other than in accordance with instructions and the normal intended use.

Do not return any products until you receive a Return Material Authorization (RMA) number. Products received without a valid RMA number will be rejected and returned to sender.

Warranty Repairs

All returns must have a valid RMA number written clearly on the outside of the box. Without an RMA number the shipment will be refused. For customers located in United States and Canada, customer pays all shipping charges incurred to ship the product to E-ZY.NET. E-ZY.NET pays shipping charges to return the product to the original purchaser. For all other countries, the original purchaser shall pay all shipping, broker fees, duties and taxes incurred in shipping products to and from E-ZY.NET. Provided the goods have not been modified or repair attempted by someone other than E-ZY.NET, at the option of E-ZY.NET, products may be returned either as repaired or replaced. If it is determined that there is no fault found (NFF) on a unit within warranty, the customer will be charged \$75 USD for testing time. For products out of warranty, the standard NFF charge is \$200. This charge will be at the discretion of E-ZY.NET. The RMA number is valid for 14 days from date of issue. The product must be received by the repair depot within these 14-days or the shipment may be refused.

Shipping and Damage Claims

All shipping damage claims are the purchaser's responsibility. Inspect each shipment upon delivery and IMMEDIATELY report all damage, to the carrier. There may be time limits and inspections may be required.