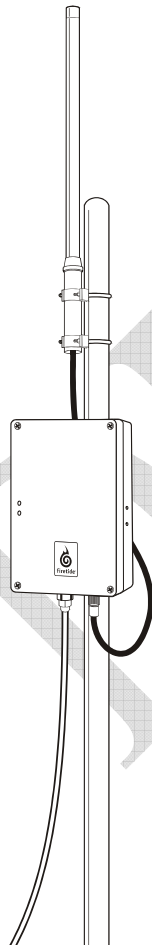




Hardware Installation Guide

HotPoint 1500R Outdoor Wireless Mesh Router



Hardware Installation Guide
HotPoint 1500R Outdoor Wireless Mesh Router
Part No. xxxxx Rev A

******Requires Part Number******

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DRAFT

HotPoint Limited End User Product Warranty

Pursuant to all provisions described herein, Firetide products are warranted for one (1) year from the date of purchase against defects in the build materials and workmanship. Firetide also warrants that the Software will materially conform to the documentation supplied by Firetide with the Software. In the event that the Software fails to materially conform to the documentation and an authorized Firetide reseller is notified in writing of such failure within the warranty period, Firetide or its reseller shall use commercially reasonable efforts to promptly correct the nonconformity. Firetide does not warrant that the use of the Software will be uninterrupted or error free. Firetide does not warrant that the Products will meet any requirements or specifications of any End User Customer. This warranty applies to the entire Firetide product, including antennas and the AC power adapter.

The above warranties are void if the alleged defect cannot be verified by Firetide or if, as determined by Firetide, the product failure was due to tampering, abuse, misuse, accident, shipping, handling, or storage; or if the product has been installed, used, or maintained in a manner not described in the product user manual, if the product has been altered in any way, or if product serialization has been altered. Any attempt to disassemble or repair the product by anyone other than Firetide immediately voids this warranty.

This warranty applies only to the original End User purchaser of the product and may not be transferred to any other individual or entity.

THE FOREGOING ARE THE EXCLUSIVE WARRANTIES APPLICABLE TO THE PRODUCT INCLUDING THE SOFTWARE, AND THE EXCLUSIVE REMEDY FOR DEFECTS IN THE PRODUCT. FIRETIDE DISCLAIMS ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED, STATUTORY OR OTHERWISE, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT OR FITNESS FOR A PARTICULAR PURPOSE. SOME LAWS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES SO TO THAT EXTENT THIS LIMITATION MAY NOT APPLY TO YOU.

In no event will Firetide be liable for any special, incidental, consequential, punitive or indirect damages whatsoever (including, without limitation, damages for loss of profits, business interruption, loss of information, or other pecuniary loss) arising out of the use or inability to use the product or the performance, interruption or failure of the product, irrespective of the cause of action, even if Firetide has been advised of the possibility of such damages. Firetide's cumulative liability for all claims arising out of or in connection with this warranty will not exceed the amount paid by the original End User purchaser to purchase the product. The amounts payable for the product are based in part on these limitations and these limitations shall apply notwithstanding the failure of essential purpose of any remedy. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so to that extent the above limitations or exclusions may not apply to you.

By using the product the original End User purchaser agrees to and is bound by these terms and conditions.

In the event that a product fails to meet this warranty and Firetide's authorized reseller is notified in writing of such failure within the warranty period, Firetide shall, at its own discretion, either repair the product or replace it with the same or a functionally-equivalent product free of charge. Replacement products may contain refurbished materials in whole or in part. Firetide will honor this warranty provided the product is returned through an authorized Firetide reseller or dealer with shipping charges prepaid, along with a proof of purchase describing the original purchase date and product serial numbers if applicable. The authorized reseller must acquire a Return Materials Authorization (RMA) number from Firetide prior to returning any product. Firetide does not accept shipments of defective products without shipping charges prepaid.

Safety Instructions

The HotPoint 1500R outdoor wireless mesh router must be installed by a qualified professional such as a licensed electrician. Failure to install this equipment properly may result in equipment damage and personal injury or death.

Explanation of Graphical Symbols:



This symbol is intended to alert the user to the presence of non-insulated dangerous voltage that may be of sufficient magnitude to constitute a risk of lethal electric shock to persons.



This symbol is intended to alert the user to the presence of important operating, maintaining and servicing instructions in the literature accompanying the 1500R. Failing to comply with this instruction may result in electrical shock.



This symbol is intended to alert the user to the presence of important operating, maintaining and servicing instructions in the literature accompanying the 1500R. Failing to comply with this instruction may result in a hazard.



Caution! Risk of electric shock!



POWER LINES CAN BE LETHAL

Do not install the HotPoint 1500R outdoor mesh router where possible contact with power lines can be made. Antennas, masts, towers, guy wires or cables may lean or fall and contact these lines. People may be injured or killed if they are touching or holding any part of equipment when it contacts electric lines. Make sure there is NO possibility that equipment or personnel can come in contact directly or indirectly with power lines.

ASSUME ALL OVERHEAD LINES ARE POWER LINES

The horizontal distance from a tower, mast or antenna to the nearest power line should be at least twice the total length of the mast/antenna combination. This will ensure that the mast will not contact power if it falls either during or after installation.

SURVEYING THE SITE

Look over the entire site before beginning any installation and anticipate possible hazards. Never assume anything without checking it out for yourself! Don't take shortcuts!



Caution! Risk of electric shock!



TO AVOID FALLING, USE SAFE PROCEDURES WHEN WORKING AT HEIGHTS ABOVE GROUND.

- Select equipment locations that will allow safe and simple installation.
- Don't work alone. A friend or co-worker can save your life if an accident happens.
- Don't attempt repair work when you are tired. Not only will you be more careless, but your primary diagnostic tool - deductive reasoning - will not be operating at full capacity.
-
- Use approved non-conducting ladders, shoes and other safety equipment. Make sure all equipment is in good repair.
- If a tower or mast begins falling, don't attempt to catch it. Stand back and let it fall.
- If anything such as a wire or mast does come in contact with a power line, **DON'T TOUCH IT OR ATTEMPT TO MOVE IT.** Instead, save your life by calling the power company.
- Don't attempt to erect antennas or towers on windy days.
- **MAKE SURE ALL TOWERS AND MASTS ARE SECURELY GROUNDED, AND ELECTRICAL CABLES CONNECTED TO ANTENNAS HAVE LIGHTNING ARRESTORS.** This will help prevent fire damage or human injury in case of lightning, static build-up, or short circuit within equipment connected to the antenna. The HotPoint 1500R has an external ground connector and built in lightning protection. Be sure that any other equipment connected to the HotPoint 1500R also has the same level of protection.
- The base of the antenna mast or tower must be connected directly to the building protective ground or to one or more approved grounding rods, using 10AWG ground wire and corrosion-resistant connectors.
- Refer to the National Electrical Code for grounding details.

IF A PERSON COMES IN CONTACT WITH ELECTRICAL POWER, AND CANNOT MOVE.

- **DON'T TOUCH THAT PERSON, OR YOU MAY BE ELECTROCUTED.**
- Use a non-conductive dry board, stick or rope to push or drag them so they no longer are in contact with electrical power.
- Once they are no longer contacting electrical power, administer CPR if you are certified, and request emergency medical aid immediately.



DO NOT OPEN THE COVER



- Dangerous voltages inside.
- No serviceable parts inside.
- Refer to qualified service personnel.
- Unit must be disconnected from power prior to servicing

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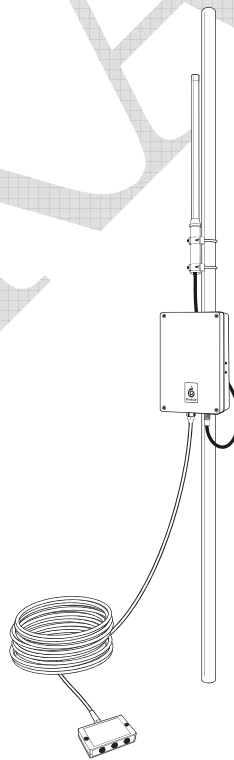
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Firetide™ HotPoint™ 1500R Outdoor Wireless Mesh Router

Firetide™ HotPoint™ 1500R outdoor mesh routers provide dual-spectrum (2.4GHz/5GHz) high-bandwidth operation for outdoor mesh networking applications. They employ a 100mW radio covering distances up to 2600 ft/800 m while operating in the 5GHz spectrum and distances up to 5000ft/1600m while operating in the 2.4GHz spectrum. By operating in a less crowded frequency spectrum and a NEMA certified enclosure, these rugged mesh routers enable mesh networks to operate in outdoor environments and to provide greater bandwidth for both rural and metro applications. Operating in the 5GHz band, the HotPoint 1500R units are ideal for operation in environments that are congested with 2.4GHz wireless traffic. Alternatively, the HotPoint 1500R can also operate in the 2.4GHz spectrum where the 5GHz is not permitted for use in the outdoor environment.

The HotPoint 1500R also provides two weatherproof Ethernet ports for provisioning Ethernet instantly without the need for a wired backhaul. Eliminating the wired backhaul enables the installation of outdoor networking equipment such as weatherized access points, computers, and surveillance cameras virtually anywhere at a fraction of the time and cost associated with installing wired outdoor solutions.

A remote power module, with a 50 foot/15 meter cable, supplies power from an external transformer or optional third party power sources such as solar cells and batteries. The HotPoint 1500R mesh router can supply power over Ethernet to auxiliary network devices such as surveillance cameras and outdoor access points. Additionally, the HotPoint 1500R mesh router can receive its power from auxiliary network devices that provide power over Ethernet, up to a maximum of 48VDC.



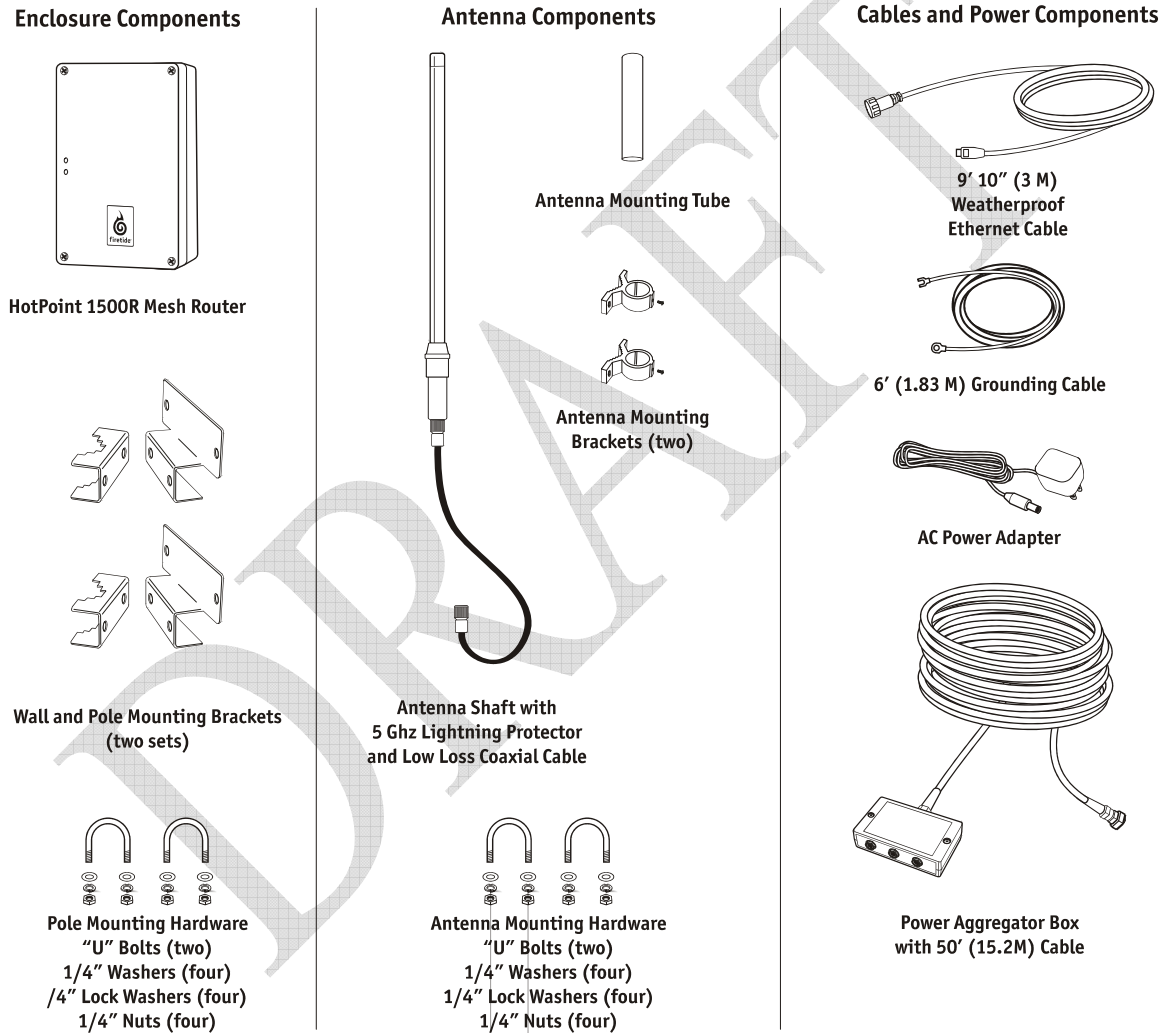
Firetide HotPoint 1500R Outdoor Wireless Mesh Router

HotPoint 1500R Installation

The Hardware Installation Guide describes how to install the HotPoint 1500R safely and is intended to be installed by trained technical professionals. Be sure to read and understand all installation instructions and safety instructions before proceeding with the installation.

Unpacking

The HotPoint 1500R Outdoor Wireless Mesh Router package contains the following items. If you are missing any of these items, contact your Firetide reseller.



HotPoint 1500R Wireless Outdoor Mesh Router Components

Mesh Router

- HotPoint 1500R Outdoor Mesh Router with NEMA 4 enclosure with weatherproof connector caps.
- Mounting brackets, bolts, washers and nuts to install the enclosure to a pole or wall.

Antenna Assembly

- 8dB Gain Omni antenna with coaxial cable attached
- 5 GHz Lightning protector
- LMR 400 Low Loss Coax Cable with RP-TNC Male Connector
- Mounting kit to install the antenna to a pole.

Remote power module

- Remote power cable (20 meters) with indoor power adapter.

External Grounding Cable

- 6', #10AWG, stranded ground wire with ring/fork attachment connectors.

External Ethernet Cable

- 15 meter, shielded, straight-through, one-side watertight, one-side non-watertight, RJ-45 to RJ-45 CAT 5e Ethernet patchcord with black cable jacket.

Documentation

- End user license agreement (EULA)
- Warranty and registration card
- Hardware Installation Guide (this document)

Compact Disk (CD)

- HotPoint Manager Software and Manual
- 1500R Hardware Installation Manual (PDF Format)
- HotPoint 1500R User Manual (PDF Format)
- EULA (PDF Format)
- Warranty Information (PDF Format)

Site Planning

To ensure a safe installation of the HotPoint 1500R follow the appropriate electrical and building codes like the National Electrical Code (NEC), country codes or local building codes.

- Having proper antenna placement and utilizing the appropriate antenna type is critical in maximizing the radio range.
- Look for physical obstruction such as building or trees and avoid installation of antennas where there is obstruction between antennas. Installations in winter months around trees will not pose a problem but once the leaves appear then you will have obstruction.
- Buildings may cause obstruction depending on the material used in construction.
- Direct line of site installations is best.
- Install the units away from devices operating in the 2.4 GHz frequency range. Such as cordless phones, microwaves, home cameras, Industrial, Scientific and Medical (ISM) radio band, amateur radios, etc.
- Avoid areas with heavy vehicle and foot traffic. Do not install near rain gutters and downspouts or areas subject to flooding.
- Survey the site for grounding options. It is crucial to have earth ground, see grounding section in this manual.

Required Tools and Supplies

Firetide provides accessories listed in the Unpacking section enable a proper installation.

The following tools and supplies must be provided by customer:

- # 2 Philips Screwdriver
- ½" Crescent wrench
- Wire cutters to cut tie wraps around cables
- Ladders, lifts and or platforms to install the 1500R on poles and structures.
- 10 AWG Grounding cable to reach from 1500R to earth ground.
- Grounding connectors

The following tools and supplies are optional:

- Cordless Screwdriver # 2 Philips
- Cordless Drill
- Antenna Stand (used to mount the antenna pole)

Staging Considerations

If the Antennas, Access Points, devices and Hotpoint 1500R are staged properly the installation will be smooth. This section will describe some staging scenarios which will ease overall installation of Hotpoint 1500R Outdoor Wireless Mesh Router.

- Pre-assemble antenna, HotPoint 1500R and devices to metal pole and antenna stand and then connect relocate the entire stand to a roof top. Often many times it is easier to install all devices to one device such as a pole and then connect the pole to the roof. Often many times connecting the devices to the pole after it is on the roof top can be difficult and dangerous.
- Install the antenna first and then install the HotPoint 1500R enclosure, this will ensure you have adequate height on the antenna.
- Install the antenna and wireless devices higher than the 1500R. Having the 1500R at a location lower than the antenna will provide easy access to the 1500R Outdoor Wireless Mesh Router. You must use care when having the 1500R away from the antenna; you do not want to exceed a distance of 60 feet from the 1500R to the antenna.
- Utilize weatherproofing kits that include non-vulcanized rubber to weatherproof connectors and antenna.
- Have earth ground completed prior to installing the 1500R Wireless Mesh Router.

Mounting the Antenna

The antenna consists of an antenna shaft with an attached lightning protector and coaxial cable. The antenna can be mounted directly to the Hotpoint 1500R or directly to a pole. The pole structure can be either metal or wood.

Note: FCC regulations require Firetide to provide the antenna, lightning protector and cable connected together. Disconnecting these items from each other is not supported by Firetide.

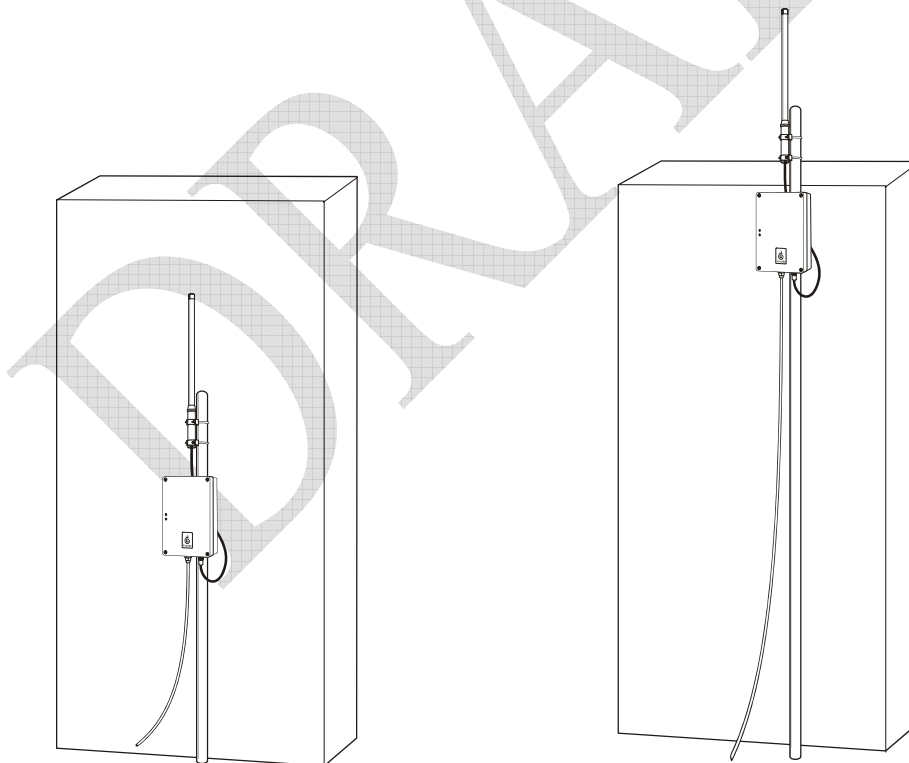
If longer distances of the coax cable are required, the connector requires a 50 ohm RP-TNC (Reverse-Polarity- TNC) cable.

Mounting Guidelines

For best results, the mounting location should enable maximum performance of the antenna.

Note: Do not mount the antenna within 3 ft or 91.44 cm of another antenna. Interference may occur.

OEM Integrators, end users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance. When mounting next to an Access Point having the access point lower on the pole can achieve the spacing required and utilizing a horizontal bar can also achieve the 3 feet spacing required.



Correct


For best results, position the HotPoint 1500R antenna above obstructions.

Wall Mounting

1. Position the Antenna above or to the side of the HotPoint 1500R enclosure to permit easy attachment of the coaxial antenna to the connector at the top of the enclosure.
2. RF signals can be attenuated by a wall or the composition of a building. When utilizing an omni antenna connecting the antenna to a wall may limit the amount of coverage.

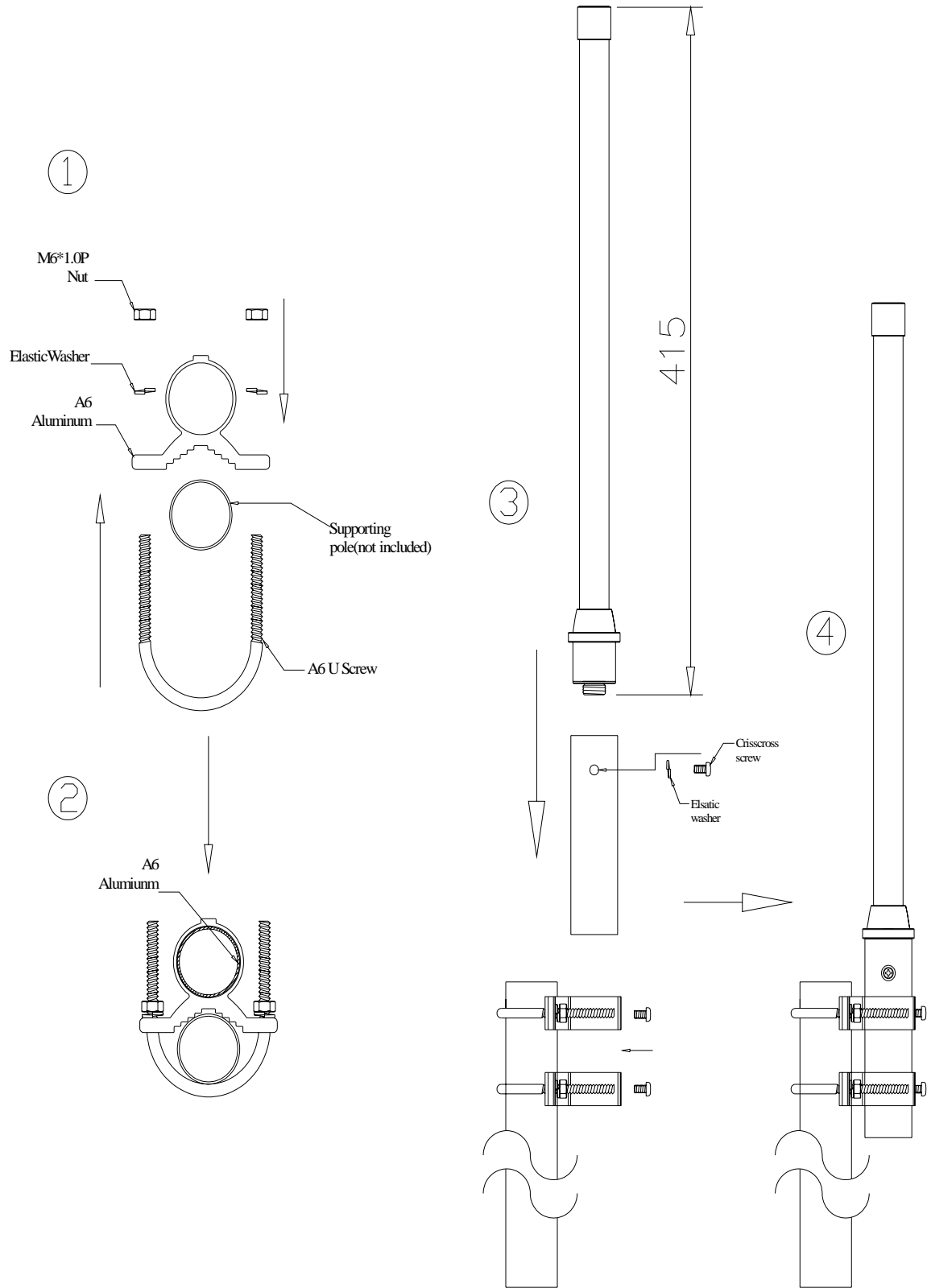
Pole Mounting

1. Position the antenna on the pole above the HotPoint 1500R enclosure.
2. Clamp the antenna securely to the pole using the two “U” bolts provided.
3. Connect the end of the coaxial cable from the antenna connector at the bottom of the HotPoint 1500R enclosure.

 **Note: If longer distances of the coax cable are required, the connector is requires a 50 ohm RP-TNC (Reverse-Polarity- TNC) cable. You cannot have more than 8dB of insertion loss.**

Insertion Loss is defined as the loss of signal strength when a cable is inserted between the transmitter and the receiver. Insertion loss is measured in dB.

For a detailed drawing on how the antenna connects to the pole refer to the diagram on the next page.



HotPoint 1500R Antenna Assembly

Mounting the Enclosure

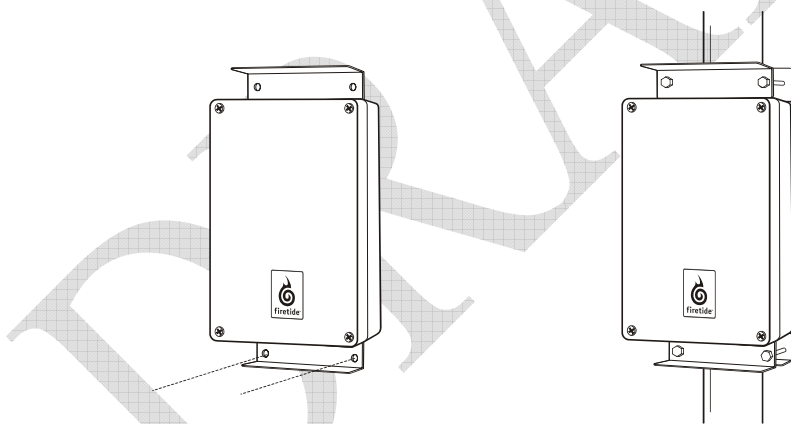
The HotPoint 1500R enclosure should be mounted securely to a wall/wood structure or a pole approximately 2" (51 mm) in diameter.

Mounting Guidelines

- For best results, the mounting location should enable maximum performance of the antenna and any attached devices such as access points or cameras. Whenever possible, provide clear line-of-sight access for the antenna. You can test various locations by mounting the unit to a portable stand until you can determine the ideal location for permanent mounting.
- The location must allow for a solid connection to earth ground. Be sure the earth ground wire or strap does not obstruct access to the enclosure.
- The unit must be within 50' (15.24 M) of an indoor AC outlet for power. Note: AC power is not required if the HotPoint 1500R will receive power via PoE (power over Ethernet) from an attached peripheral device or from DC Voltage source.

Wall Mounting

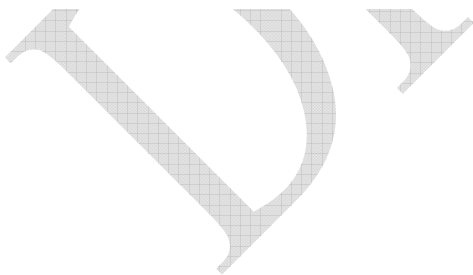
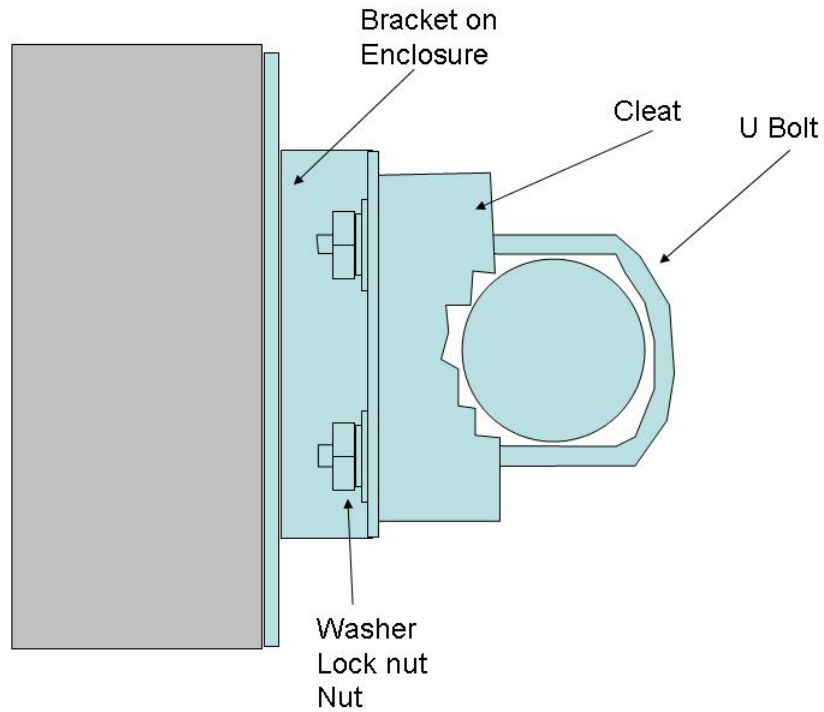
1. Attach the angled mounting brackets to the rear of the enclosure as shown.
2. Use four screws to attach the enclosure securely to the wall. Use appropriate anchors when attaching to masonry or other materials



Wall and Pole Mounting

Pole Mounting

1. Attached the angled mounting bracket to the rear of the enclosure as shown.
2. Position the unit against the pole and clamp it securely in place using the rear “U” brackets and washers and nuts provided.



Connecting to Earth Ground



CONNECT TO EARTH GROUND



The HotPoint 1500R must be properly connected to earth ground. Failure to do so may result in equipment damage, injury or death. The product warranty does not cover damages resulting in part or in whole from improper grounding. The components which will attract lightning strikes are the antenna, the antenna pole and the Ethernet cable which provides power to the 1500R.

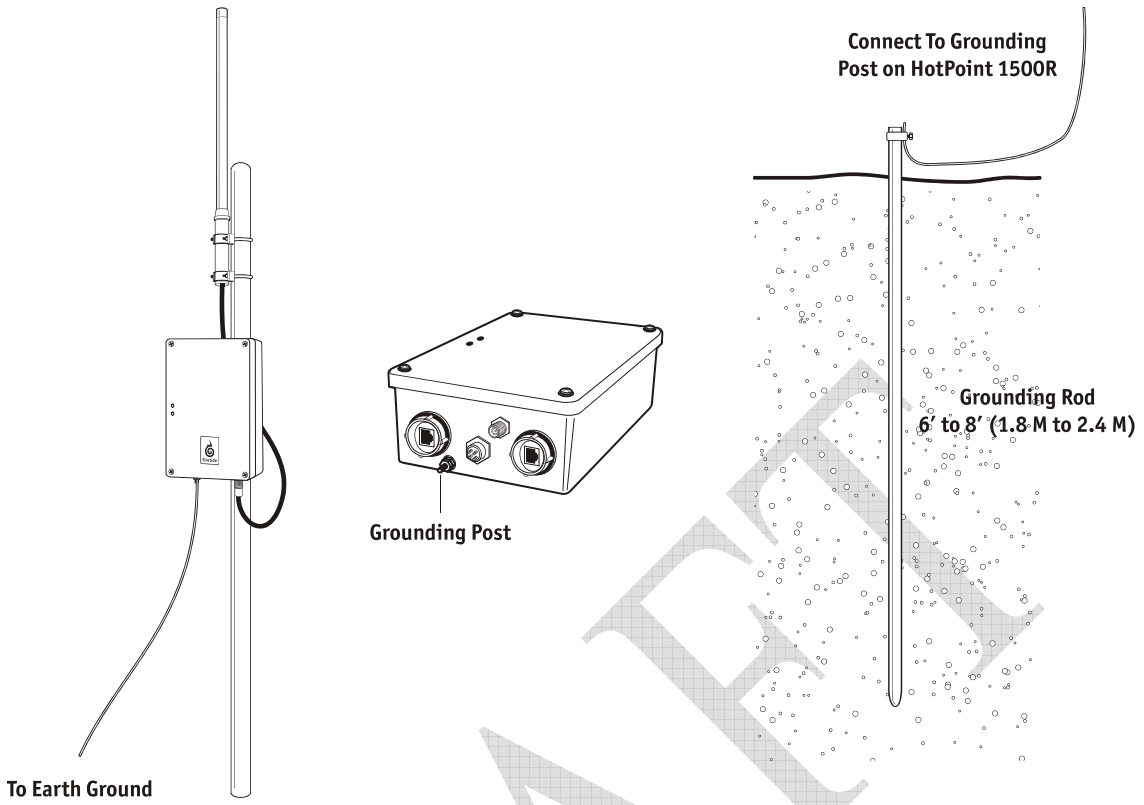
The HotPoint 1500R outdoor mesh router has an external, threaded grounding post at the base of the enclosure. After mounting the unit securely, secure the ground wire lug to the threaded post using the two nuts supplied with the post. Connect the other end of the ground wire to an existing earth ground point or a grounding rod. Connecting the ground cable to rain gutters can be done only if the rain gutter or other conductive material is connected to earth ground.

In order to have proper earth ground the understanding the soil is very important. If your soil is rocky or sandy, drive your ground rods and then pull them back out and dump an approved ground enhancement material into the holes where the ground rods go. Then replace the ground rods. Keep in mind some salt compounds are corrosive and can cause copper to erode. Ground rods should be copper and between 6 – 8 feet long.

Install all grounding components in straight lines and if bends are necessary do not make sharp turns. Earth to ground resistance should not be more than 10 ohms.

Having proper earth ground is critical and for more information on earth ground refer to the National Electric Code (NEC).

Firetide provides a 6 foot ground cable that connects the 1500R to the antenna pole. Taking the ground from the antenna pole to earth ground is a requirement of the installer. The following diagram displays the grounding connector and earth grounding.



Power Options

There are various options for supplying power to the HotPoint 1500R outdoor mesh router.

Remote Power Aggregator Module

The remote power aggregator module provides power to the HotPoint 1500R enclosure from an indoor AC outlet. The power supply is rated for 100-240VAC and you can utilize any country power cord to provide power to the 1500R. You can also plug an optional power over Ethernet (PoE) injector into the module to power two peripheral devices connected to the HotPoint 1500R Ethernet ports.

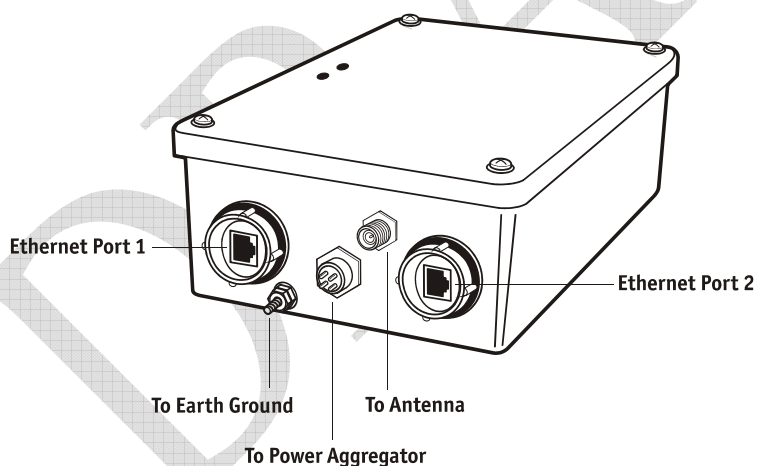
 **Note:** It is important to mount the Power Aggregator box with the Firetide logo upright. Not doing so may cause confusion when connecting PoE devices.



THE REMOTE POWER MODULE IS FOR INDOOR USE ONLY



Feed the supplied power cable from the indoor AC outlet location to the HotPoint 1500R enclosure.



INCORRECT WIRING MAY RESULT IN EQUIPMENT DAMAGE



When attaching the connectors, be sure to connect each of the four conductors to the correct terminal. The connector is keyed so do not force the connector on the enclosure. Incorrect wiring may result in equipment failure and possible damage.

1. Remove the protective cap from the power connector on the HotPoint 1500R enclosure and attach the power cable connector. Tighten the connector to ensure a watertight seal.
2. Plug the AC adapter into the indoor AC outlet.
3. On the front of the enclosure you will see 2 lights and the red Fault light should go off and the green Power light should only be illuminated.
4. If you are using a PoE injector, plug it into the auxiliary power connector on the remote power module and connect the injector to an indoor AC power source.

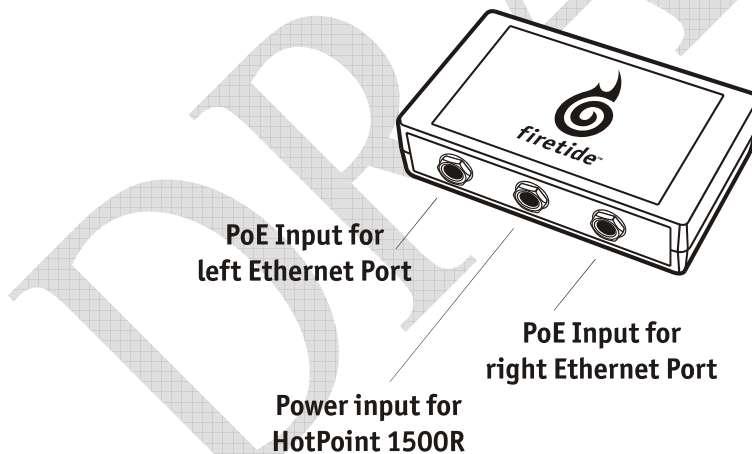
Power over Ethernet (PoE)

The HotPoint 1500R outdoor mesh router has two weatherproof Ethernet ports to provide Ethernet connectivity to outdoor peripheral devices such as access points or surveillance cameras. Use of these ports is optional.

Note: Do not daisy chain PoE devices. You must be aware of distances and lower voltages when providing Power over Ethernet (PoE).

Lower voltage Access Points and devices may not work well with PoE if the distances are too great. You will encounter noise and drooping on the voltage signal. It is recommended to use higher voltage AP's and devices when using PoE.

Note: Save the weatherproof caps on the enclosure in the event that you may need to utilize them in the future.



Connecting Peripheral Devices

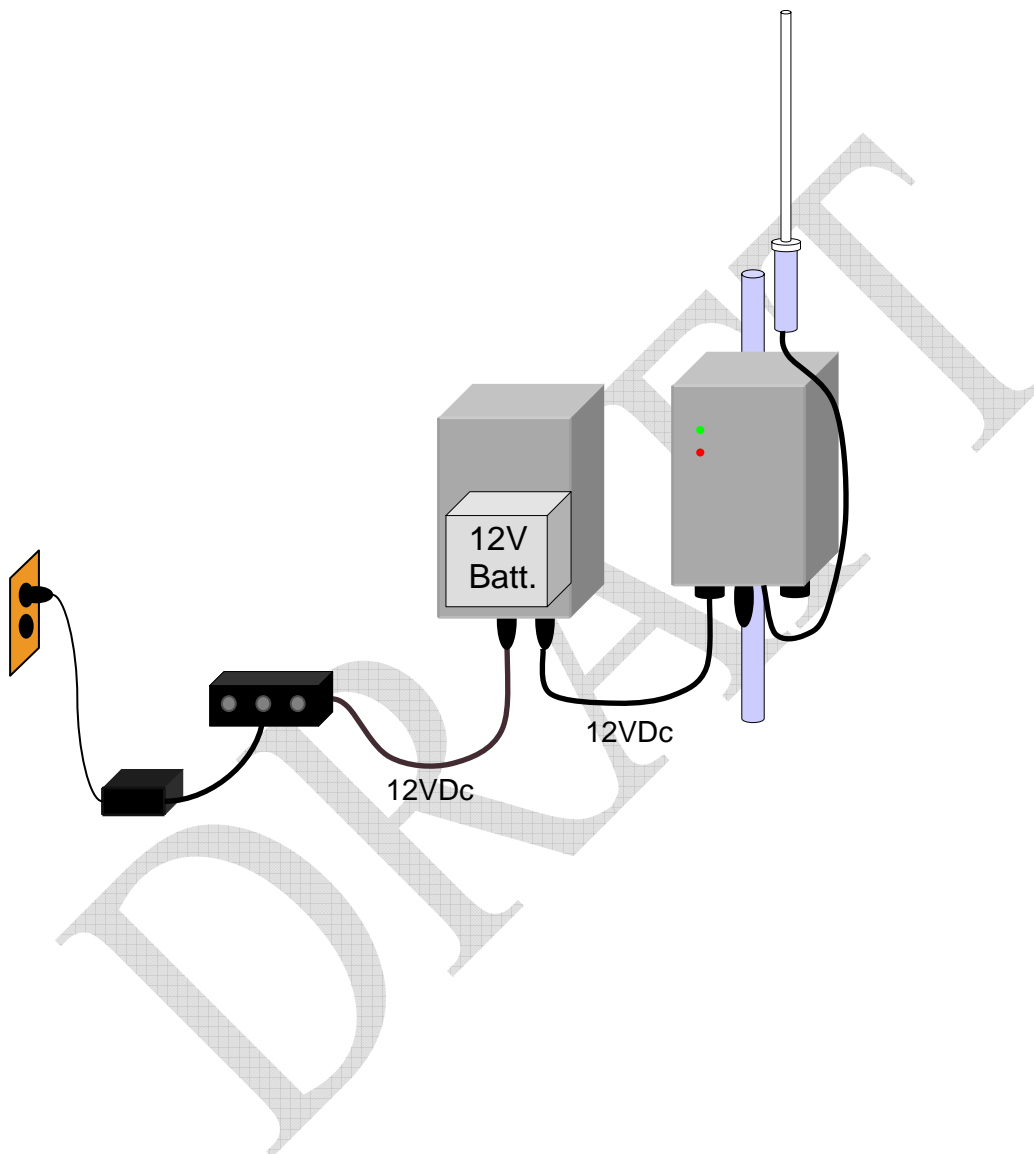
1. Remove the protective cap from the Ethernet port you want to use and plug in the Ethernet cable. Tighten the cable connector to ensure a watertight seal.
2. Attach the other end of the Ethernet cable to the peripheral device.

Note: when connecting to peripheral devices it is recommended to utilize their weatherproof caps and the weatherproof caps provided by Firetide to ensure weatherproofing on both ends.

- The Firetide Ethernet cable is designed to work with the 1500R enclosure and not utilizing the weatherproof cap will make it very difficult to disconnect the Ethernet cable from the 1500R.

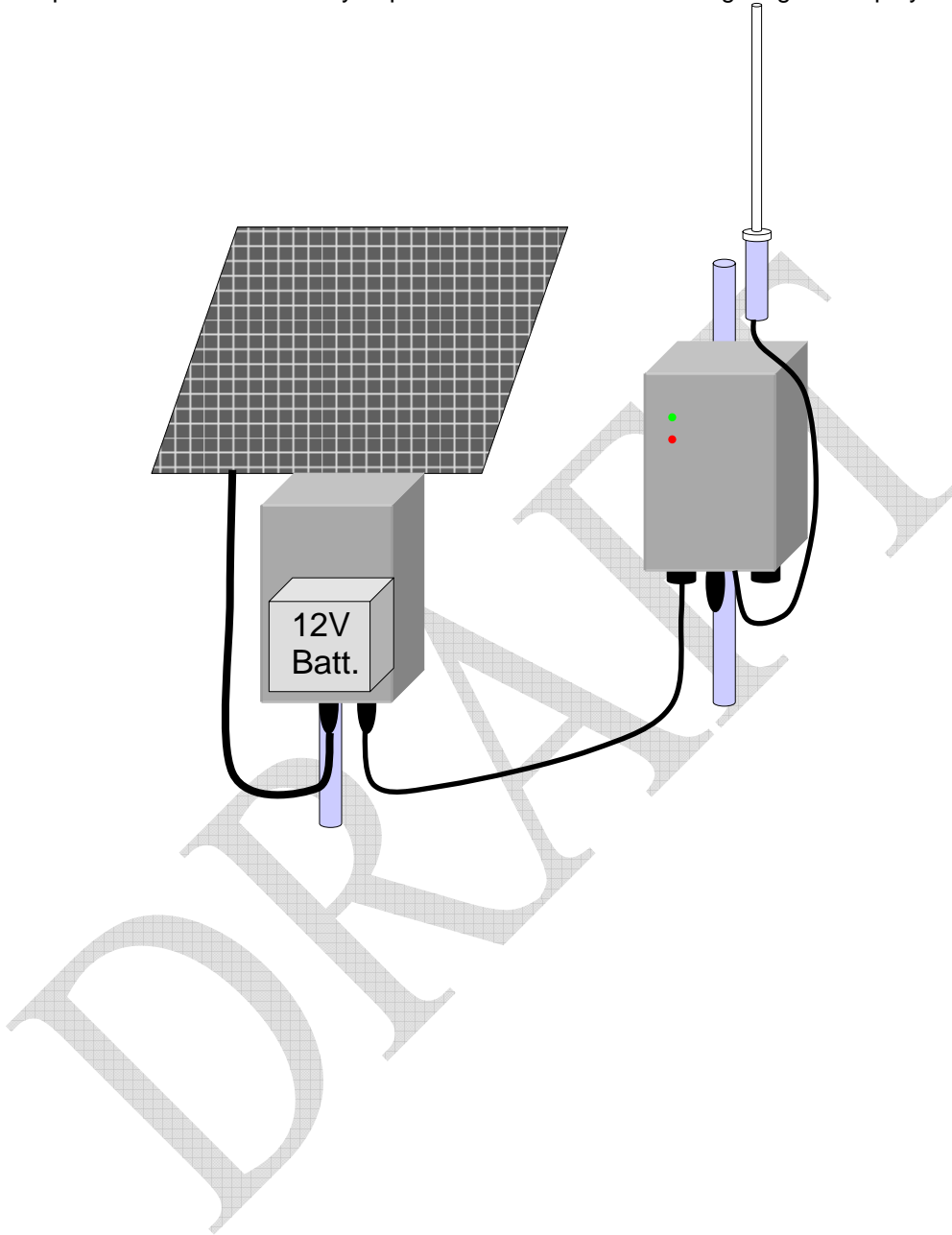
Battery Backup

The HotPoint 1500R provides the ability to utilize battery backup to supply a backup battery in the event of a power outage. The following diagram displays this option.



Solar Powered

The Hotpoint 1500R has the ability to provide solar and the following diagram displays this option.



Appendix A - Contacting Firetide

As a Firetide customer you are entitled to receive free support services on our web site and from your authorized Firetide dealer.

Troubleshooting

The best way to troubleshoot individual HotPoint routers and your entire Firetide mesh network is to use the HotPoint Manager software. With HotPoint Manager you will be able to view mesh activity, customize your network configurations and change the default settings on your HotPoint routers. This software is available from the Firetide web site.

Register with us now to Access our Support Web Site

Registering as a customer on our web site entitles you to free information and materials to help you get the most from your Firetide mesh network. Visit <http://www.firetide.com/support> for information on becoming a registered customer and for access to our support materials.

Dealer Provided Technical Support and Warranty Services

If you need additional technical assistance that is not available on our web site, please don't hesitate to contact your Firetide dealer directly. All authorized Firetide dealers are trained and authorized to provide technical support and warranty services for our products and have qualified technical staff available to help you build and maintain your Firetide mesh network.

Product Returns

Please contact your Firetide dealer for instructions on returning defective or damaged products for repair or replacement. Do not return products to Firetide, Inc.

Sales Support

If you need additional HotPoint wireless mesh routers or accessories, please contact your Firetide dealer directly. If you do not know your dealer's name, simply email sales@firetide.com and we will send you the dealer information you need. To help us provide the best service possible, be sure to include your phone number, address and the serial numbers of the HotPoint routers at your location.

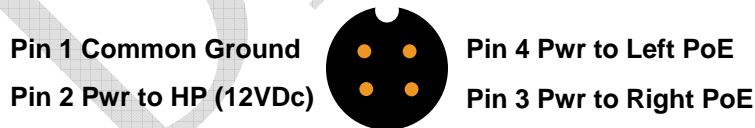
Appendix B - Connectors

HotPoint 1500R RJ45 Pin Descriptions

Pin #	Signal	Descriptions
1	TXD+	TX Data 10/100BaseT
2	TXD-	TX Data 10/100BaseT
3	RXD+	RX Data 10/100BaseT
4	PoE+	Power Input 5Vdc to 48Vdc+
5	PoE+	Power Input 5Vdc to 48Vdc+
6	RXD-	RX Data 10/100BaseT
7	PoE-	Power Input 5Vdc to 48Vdc-
8	PoE-	Power Input 5Vdc to 48Vdc-

DC Power Connector

The following diagram describes the pinout for the DC connector on the HotPoint 1500R enclosure. The power to Hotpoint 1500R is 12VDC. The HotPoint can provide any voltage (PoE) required by devices connected to the Hotpoint 1500R.



Appendix C - Regulatory Notices

FCC Class B Notice

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 undesired operation.

Note

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 or more 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/television technician for help.

Modifications

Any modifications made to this device that are not approved by Firetide, Inc. may void the authority granted to the user by the FCC to operate this equipment.

FCC Radiation Exposure Statement

The antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. OEM Integrators, end-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

Appendix D - Specifications

Specifications

Model Numbers

HotPoint 1500R Outdoor Wireless Mesh Router

1500R-0101-NAM	US and Canada (5GHz)
1500R-0102-NAM	US and Canada (2.4GHz)
1500R-0101-UK	UK (5GHz)
1500R-0102-UK	UK (2.4GHz)
1500R-0101-JAP	Japan (5GHz)
1500R-0102-JAP	Japan (2.4GHz)
1500R-0101-SNG	Singapore (5GHz)
1500R-0102-SNG	Singapore (2.4GHz)
1500R-0101-SKR	South Korea (5GHz)
1500R-0102-SKR	South Korea (2.4GHz)

Protocol

Topology Broadcast based on Reverse-Path Forwarding (TBRPF)

Encryption

AES, RSA certificates; Wireless: WEP

Wireless interface

- 5.25 – 5.35 GHz
- 5.725 – 5.825 GHz
- 2.4 -2.835 GHz
- 128 bit WEP Encryption
- Radio TX Power: Maximum 100MW
- Certified Regions of Operation
 - United States
 - Canada
 - Japan
 - UK (ETSI)
 - Singapore
 - South Korea

Network ports

Two weatherized, Auto-sensing 10/100 Ethernet ports

Lightning protection

(1kV/5kA with replaceable isolation cell)

Antennas

- Lightning protectors 1kV/5kA
- 16" White Fiberglass
 - Type: Omni, Horiz. Pol. 20° Elev
 - Range: .5 Miles (800 Meters)
 - Gain: 8dB

Weight (enclosure only)

4 lb (1.81 kg)

Power

- 120 VAC, 60 Hz
- 802.3af Power over Ethernet (24VDC)
- 12 W power consumption

Regulatory Agency Certifications

- FCC CFR47 Part 15, Class B
- OET-65C,

Environmental specifications

- Operating temperature: -30° C to +70° C
- Storage temperature: -40° C to 85° C
- Humidity (non-condensing) 10% to 90%
- Weather rating: NEMA 4 weatherproof
- Wind shear: 150 mph (241.395 kph)
- Wind loading: 100Mph: 1025 Newtons
- Altitude: 14,000 feet

Warranty

One year (limited)