

HotView HotViewPro™

Hardware Installation Guide **HotPort 6000 Series** Indoor and Outdoor Wireless Mesh Nodes



Series 6100 - Indoor Node



Series 6200 - Outdoor Node

Firetide Limited End User Product Warranty

Pursuant to all provisions described herein, Firetide hardware products and Firetide antennas are warranted for one (1) year from the date of purchase against defects in the build materials and workmanship. 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 the AC power adapter.

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

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

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Safety Instructions & Explanation of Graphic Symbols

The HotPort outdoor wireless mesh node 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.



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 HotPort node. 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 HotPort node. Failing to comply with this instruction may result in a hazard.

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Caution! Risk of electric shock!

POWER LINES CAN BE LETHAL

Do not install the HotPort outdoor mesh node where possible contact with power lines can be made. Antennas, poles, 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, pole or antenna to the nearest power line should be at least twice the total length of the pole/antenna combination. This will ensure that the pole 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!

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.



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.
- Unit has tamper-evident labeling that indicates when the cover has been removed.

- Use approved non-conducting ladders, shoes, and other safety equipment. Make sure all equipment is in good repair.
- If a tower or pole begins falling, don't attempt to catch it. Stand back and let it fall.
- If anything such as a wire or pole 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 POLES 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 HotPort outdoor node has built-in lightning protection. Be sure that any other equipment connected to the HotPort node also has the same level of protection.
- The base of the antenna pole or tower must be connected directly to the building protective ground or to one or more approved grounding rods, using 10 AWG ground wire and corrosion-resistant connectors.
- Refer to the National Electrical Code for grounding details.

IF AN ACCIDENT SHOULD OCCUR WITH THE POWER LINES

- **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.
- Immediately have someone call for medical help.

HotPort Node Installation

This hardware installation guide describes how to install the HotPort node safely. The HotPort is intended to be installed by trained professionals. Be sure to read and understand all installation and safety instructions before proceeding with the installation.

Table 1. Summary of HotPort 6000 Series Mesh Nodes

Model	Use	No. of Radios
6101	Indoor, Worldwide, 2.4, 4.9, 5 GHz	1
6102	Indoor, Worldwide, 2.4, 4.9, 5 GHz	2
6201	Outdoor, Worldwide, 2.4, 4.9, 5 GHz	1
6202	Outdoor, Worldwide, 2.4, 4.9, 5 GHz	2

Unpacking

The HotPort node package contains the following items. If you are missing any of these items, contact your Firetide reseller.

Indoor Mesh Node

- HotPort node in plenum-rated enclosure.

Antenna Assembly

- Two detachable 2.4 Ghz omni-directional antennas.
- Two detachable 5 Ghz omni-directional antennas.

Note: HotPort nodes come with two pairs of staging antennas. Use these antennas to determine which RF frequency band (2.4 or 5 GHz) to use in your installation location. After you decide, order spectrum-specific (that is, 2.4 or 5 GHz) antennas from Firetide. Firetide offers a range of antennas; refer to the Firetide Antenna Guide for current offerings.

Power

- Power brick with NEMA5-15 (US) to IEC cord. Other IEC cords are available separately.

Note: Series 6100 nodes have an improved, positive-retention DC power cable, and will NOT work with existing Firetide Hotport 3100 and 3500 series power supply bricks.

Documentation

- 6100 Series Quick Install Guide.
- Warranty and registration card.

Compact Disk (CD)

- HotView software.
- HotView Pro User Guide.
- HotPort 6000 Series Hardware Installation Guide
- Warranty/Registration Card.
- EULA.

Outdoor Mesh Node

- HotPort node in NEMA-4X enclosure with weatherproof caps.
- Two N to reverse-polarity SMA adapters.
- Lockable bracket kit for pole and wall mounting. Designed to fit 37 mm to 50 mm (1.5 in to 2.0 in) poles. The mounting bracket also has slots for mounting straps for attaching to larger diameter or irregularly shaped poles.
- Weatherized Ethernet transition cable (2 m (6.6 ft)), circular, watertight, IP67-rated female to RJ-45/RJ-45 male connector kit with Bulgin connector housing.

Antenna Assembly

- Two detachable 2.4 Ghz omni-directional antennas.
- Two detachable 5 Ghz omni-directional antennas.

Power

- Power cord with NEMA 5-15 (US) plug. Other cords are available separately.

Note: Series 6200 nodes will work with existing Firetide Hotport 3200 and 3600 series power supply bricks.

Documentation

- 6200 Series Quick Install Guide.
- Warranty and registration card.

Compact Disk (CD)

- HotView software.
- HotView Pro User Guide.
- HotPort 6000 Series Hardware Installation Guide.
- Warranty/Registration Card.
- EULA.

Planning Your Installation

HotPort 6000 Series nodes are easy to install. They are mechanically compatible with existing HotPort nodes. 6000 Series nodes form their own mesh, however - they will not mesh with 3000 Series nodes.

6200 Series outdoor nodes are improved compared to earlier designs. For new installations, a single weatherproof power cord is provided. No external 'brick' is used. The 6200 Series can power up to two peripherals via PoE, as well. For existing installations, the 6200 Series can accept the DC power from supplies used to power 3200 Series and 3600 Series nodes. The 6200 Series will also fit the existing pole mount.

Staging Considerations

You should set up and test your nodes indoors, on a bench or table, before installing them. This will allow you to pre-configure the nodes so that they are all on the same RF channel, etc.

1. Set up your HotPort node in a lab with all other HotPort units using the two provided antennas.
2. Make all the necessary cable connections and power the HotPort units.
3. Install the HotView software on a workstation and connect the workstation to a HotPort node (see the HotView User Guide for information about installing and using HotView).
4. Use HotView to configure the HotPort nodes and create a small mesh network. Configure and test the network settings you plan to use.

Required Tools and Supplies

The following tools and supplies must be provided by the customer:

- #2 Philips screwdriver
- Small adjustable wrench
- Wire cutters to cut tie wraps around cables
- Ladders, lifts, and/or platforms to install the HotPort node on poles and structures
- 10 AWG grounding cable to connect the HotPort node to earth ground
- Grounding connectors and grounding rod
- Weatherproofing kit – this kit provides electrical tape and butyl mastic. Check your local distributor for weatherproofing antennas and coaxial cables.
- Hose clamps, band clamps, U-bolts, or similar brackets, suitable for attaching the HotPort node to your chosen antenna mast.

- Hose clamps, band clamps, U-bolts, or similar brackets, suitable for mounting the antennas to your chosen antenna mast.

If you need to build a custom cable to connect a wired-Ethernet device to your HotPort, you will need an RJ-45 crimping tool and a Category 5 Ethernet cable with at least one RJ-45 connector to connect a peripheral to the HotPort.

The following tools and supplies are optional:

- Cordless screwdriver #2 Philips
- Cordless drill
- Antenna stand (used to mount the antenna pole)

Indoor Node Installation

Indoor node installation is straightforward. Place the unit on a table or shelf, or use the optional bracket to attach it to a wall, ceiling, or cubicle partition. Attach the antennas, keeping in mind that all antennas on all units should be parallel - typically vertical. Apply power. The power LED should illuminate immediately; after about 60 to 90 seconds, the status LED should switch to steady green.

Firetide recommends that you power up and configure all nodes on a table or bench before deployment. Use HotView or HotView Pro to configure your mesh.

Note the location of the reset button in the lower right corner of the rear panel. A paperclip can be used to reset the unit after it has fully booted and the status light has come on.

Figure 1. AC Power Brick

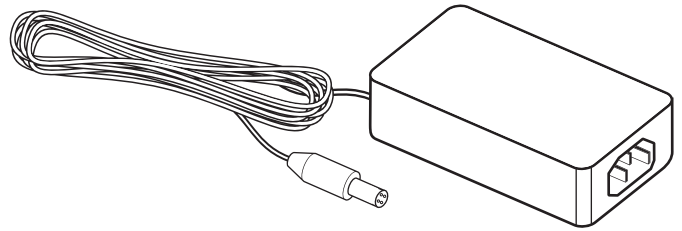


Figure 2. Optional Mounting Bracket

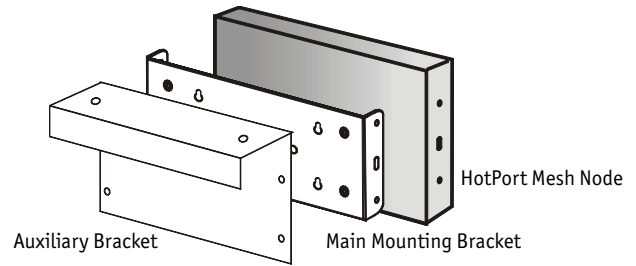


Figure 3. HotPort 6100 Series Mesh Node - Front View

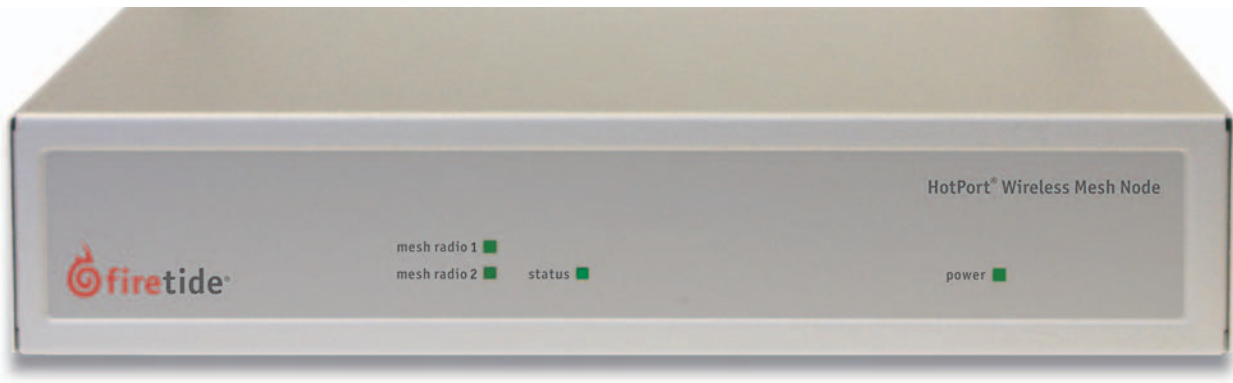
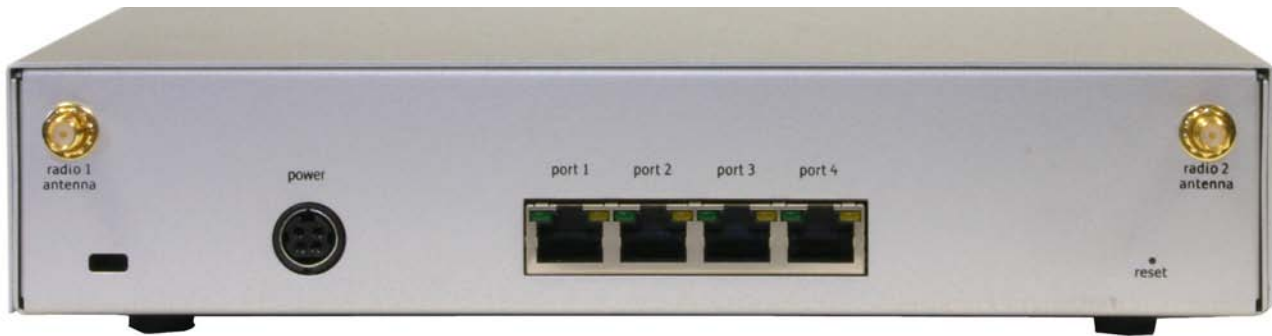


Figure 4. HotPort 6100 Series Mesh Node - Rear View



Outdoor Node Installation

Preparing the Unit

1. Pre-assemble the antenna, HotPort node, and other devices to a metal pole and antenna stand and then relocate and attach the entire stand to a roof top. It is often easier to install all devices to one object, such as a pole, and then attach the pole to the roof. In many cases, connecting the devices to a pole already attached to the roof top can be difficult and dangerous.
2. A lightning surge suppressor must be used. Some antennas include one. If not, you must install a lightning surge suppressor.
3. Install the antenna and any wireless devices higher than the HotPort node. Take care when locating the HotPort node far away from the antenna; a short antenna cable gives better performance than a longer one. Firetide recommends that you use antenna cables less than 3 meters; if you have an application which requires a long antenna cable, consult the factory.
4. The HotPort node and its antenna must both be grounded.
5. Use weatherproofing kits that include non-vulcanized rubber to weatherproof connectors and antennas. All Ethernet cables must be waterproofed; standard RJ-45 connectors do not last outdoors.
6. Power over Ethernet: Consider which devices require PoE and what the required input voltage will be.
7. Connect peripheral devices to the HotPort node.
8. Connect power to the HotPort node and peripherals.

Preparing the Site for Mounting

Prior to mounting the antenna and enclosure, prepare the site for mounting as described below.

Safety Considerations

Consider the following safety issues.

- If using a ladder, use approved, non-conducting ladders.
- Use approved and non-conducting shoes and other safety equipment. Make sure that all equipment is in good repair.
- If mounting to a pole or tower, make sure all poles and towers are securely grounded.
- Make sure antenna cables have lightning arrestors.

Weatherproofing

The two Ethernet ports on the bottom of the HotPort node feature circular, watertight IP67-rated connectors. Use the included weatherized Ethernet transition cable/RJ-45 connector kit to connect Ethernet devices with male RJ-45 connectors to the HotPort node. Be sure to weatherize the entire Ethernet cable, from end to end.



Preparing Earth Ground

The HotPort node 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 that will attract lightning strikes are the antenna, the antenna pole, and the Ethernet and power cables. Below are some guidelines for installing grounding components.

- Having a proper ground is critical. The following steps represent minimum acceptable grounding practices. Consult your location's building and electrical codes regarding antennas and follow them, or consult the National Electric Code (NEC).
- If connecting to a tower or pole, connect the base of the tower pole directly to the building's ground or to one or more approved grounding rods using 10 AWG ground wire and corrosion-resistant connectors.
- Connect the grounding cable to rain gutters only if the rain gutter or other conductive material is connected to earth ground.
- Grounding rods should be copper and between 6 - 8 ft (1.8 m - 2.4 m) long.
- Install all grounding components in straight lines. If bends are unavoidable, do not make sharp turns.
- Earth-to-ground resistance should not be more than 10 ohms.
- Understanding the soil is very important in order to create a proper earth ground. 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 grounding rods go. Then replace the grounding rods. Keep in mind that some salt compounds are corrosive and can cause copper to corrode.

Mounting the Antennas

Once you determine which RF band to use, you can order spectrum-specific high-gain antennas from Firetide.

The following material provides some general guidelines for mounting antennas. Refer to the information which came with your antenna for detailed mounting instructions.

Mounting Guidelines

- For best results, the mounting location should be selected to enable maximum performance of the antennas. Generally speaking, a higher antenna will have better overall range and coverage.
 - Most omnidirectional antennas can be mounted directly to the HotPort node, or directly to a pole. Larger or heavier antennas should be mounted to the pole.
 - Position the antennas on the pole above the HotPort enclosure.
 - The antennas should not be within 3 ft (0.9 m) of any metal bar or structure, and ideally not within 3 ft (0.9 m) of any concrete or stone structure. In general, try to locate the antennas as far from such objects as practicable.
 - HotPorts should not be placed where trees or foliage are in the line-of-sight path between any pair of units.
 - Shorter antenna cables give better performance. Plan your installation to minimize antenna cable length. However, do not attempt to splice or shorten the antenna cable. If a longer coax cable is required, the system requires a 50 ohm cable.
- Do not mount the HotPort antennas within 3 ft (0.9 m) of other antennas. If you do, interference may occur.
 - Do not mount the antenna pole near power lines.
 - If a longer coax cable is required, contact your local distributor to obtain a 50 ohm cable with the correct connectors. In order to maintain proper system operations, there should be more than 8 dB of insertion loss between the HotPort node and the antenna. 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.
 - When mounting next to an access point, mount the access point lower on the pole and at least 3 ft (0.9 m) from the antennas. You can also mount the access point on a horizontal bar to achieve the required 3 foot separation.

Wall Mounting

- Position the antennas above or to the side of the HotPort enclosure to permit easy attachment of the antenna to the connector at the bottom of the enclosure.
- RF signals can be attenuated by a wall or the composition of a building. When utilizing omni-directional antennas, connecting the antennas to a wall may limit the amount of coverage.

Mounting the Bracket

The HotPort enclosure should be mounted securely to a wall/wood structure or a pole approximately 1.5" (37 mm) to 2" (50 mm) in diameter. You can also mount the enclosure to a wall, light poles, and irregularly shaped poles. Series 6200 outdoor nodes will fit existing Series 3200 and 3600 brackets. The brackets have been designed with multiple holes and slots to allow mounting with bolts, straps, or other methods.

Mounting Guidelines

1. For best results, the location should enable maximum performance of the antenna and any attached devices, such as access points or cameras. When possible, provide clear line-of-sight access for the antennas. You can test various locations by mounting the unit to a portable stand until you can determine the ideal location for permanent mounting.
2. 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.
3. The unit must be within reach of the power cord. A two-meter AC cord is provided, or a DC cord may be used. Series 6000 nodes will work with power supplies from Series 3000 nodes, but cannot be powered over Ethernet.

Wall Mounting

1. The Universal Mounting Bracket, shown in Figure 5, contains holes and slots to allow it to be mounted via U-bolts or straps. Furthermore, it can be mounted on either a horizontal pole or a vertical pole. Use four screws to attach the universal mounting bracket securely to the wall using the four holes near the top and bottom of the universal mounting bracket. Use appropriate anchors when attaching to masonry or other materials.
2. Attach the enclosure to the universal mounting bracket by sliding the metal clips on the back of the enclosure into the metal straps on the universal mounting bracket.
3. Secure the enclosure to the universal mounting bracket using the four captive screws on the sides on the universal mounting bracket.

Pole Mounting

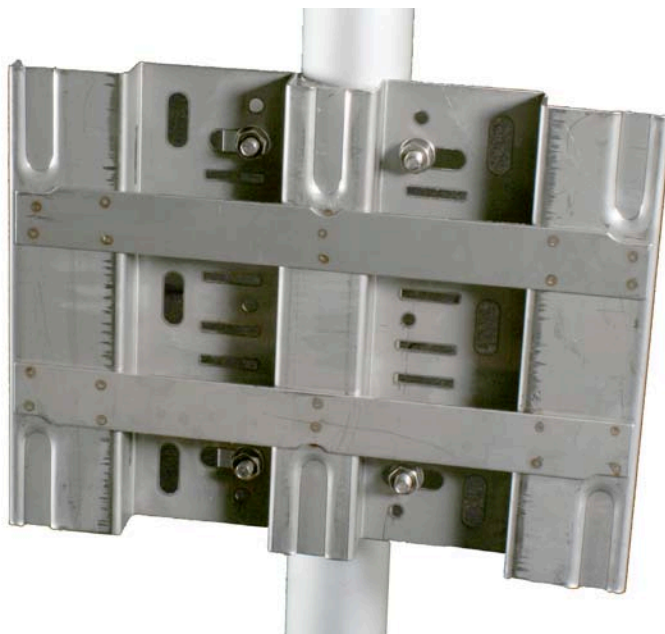
You can mount the HotPort node to a pole using U-bolts. The section below describes how to mount the enclosure to a 1.5" (37 mm) or 2" (50 mm) pole. Position the pole mounting bracket against the pole. Insert the U-bolts from behind the pole and through the pole mounting bracket.

Your installation kit includes a small T-handle socket wrench which fits the supplied nuts.

1. Insert the two U-bolts through the four holes near the top and bottom of the universal mounting bracket.
2. On each U-bolt threaded shaft, place a washer, a lock washer, and one or more 6 mm nuts as spacers. Smaller pole diameters usually require a spacer nut to hold the bracket away from the U-bolt clamp.
3. Use four lock washers and 6 mm nuts to secure the universal mounting bracket, pole mounting bracket, and U-bolts assembly.

4. Attach the enclosure to the universal mounting bracket by sliding the metal clips on the back of the enclosure into the metal straps on the universal mounting bracket.
5. Secure the enclosure to the universal mounting bracket using the four captive screws on the sides of the universal mounting bracket.

Figure 5. Universal Mounting Bracket Attached to Pole



Using Mounting Straps

For poles with diameters larger than 2" (50 mm), horizontal poles, irregularly shaped poles, or lighting lamps, you can use mounting straps to mount the HotPort enclosure. Position the universal mounting bracket against the pole.

1. Thread two mounting straps around the pole and through the slots located near the top and bottom of the universal mounting bracket. Secure the mounting straps.
2. Attach the enclosure to the universal mounting bracket by sliding the metal clips on the back of the enclosure into the metal straps on the universal mounting bracket.

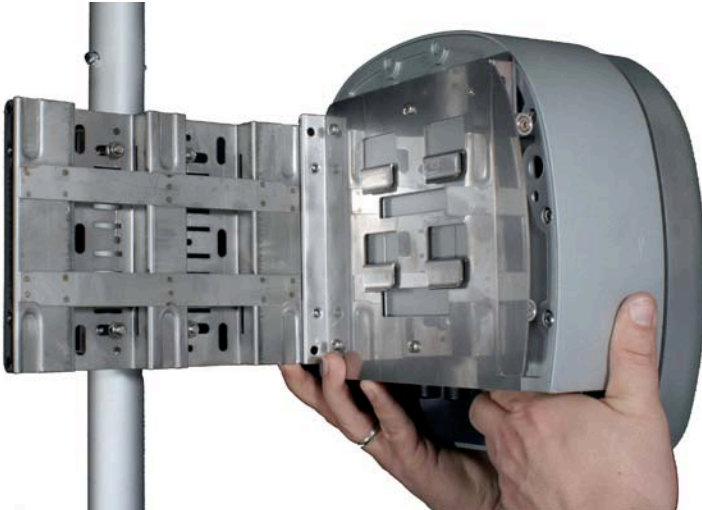
Secure the enclosure to the universal mounting bracket using the four captive screws on the sides of the universal mounting bracket.

Mounting the Node

Attach the supplied backing plate to the HotPort node, using the supplied screws. Note that the holes in the node are pre-tapped for the supplied metric screws; do not use other screws.

Next, slide the node assembly onto the bracket, so that the four tabs on the node assembly engage the straps on the bracket, as shown in the photo.

Figure 6. Mounting the Node



Then tighten the four captive screws on the node assembly. This locks the node onto the bracket. Don't leave these screws loose; if you do, it's easy to knock the node off the bracket.

Figure 7. Tighten Screws



Connecting Cables

After your node is securely mounted, attach the two antennas, the power cable, and any Ethernet cables you need, as shown in Figures 8 and 9.

Figure 8. Connected Outdoor Node



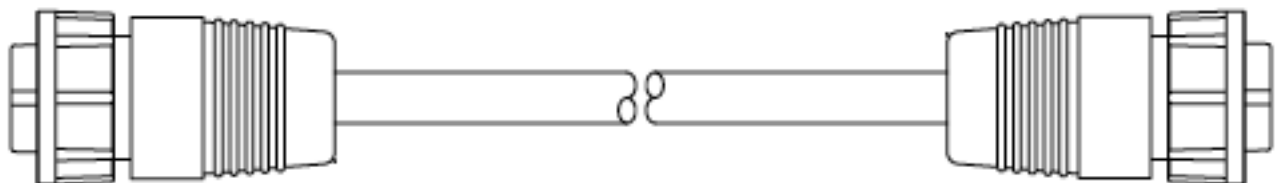
If you are using your Series 6200 with a companion Firetide Hot-Point access point, a special Ethernet cable is available to connect the two units and to supply PoE power to the AP. The cable is shown in Figure 10.

Note the locations of the reset button under the weatherproof cap, just below Ethernet port 3. To perform a factory reset on the unit, power it on and wait for the status light to come on. Then press the reset button.

Figure 9. HotPort Node Bottom Panel



Figure 10. Ethernet Cable for HotPort-HotPoint AP Connection



Power Options - Outdoor Nodes

Power Supply

The power supply can provide power to the HotPort enclosure from an AC outlet. The power supply is rated for 90-240 VAC.

Powering Other Ethernet Devices

Ports 2 and 3 on a 6200 Series node can provide Power over Ethernet (PoE) functionality to Powered Devices (PD) connected to these ports. (Port 1 cannot.) A Powered Device can receive data and the power to process the data from the HotPort node, which functions as Power Sourcing Equipment (PSE) in this configuration. To receive power from a HotPort node, the device must support the IEEE 802.3af standard, which defines PoE functionality.

DC Power

In addition to its AC input, the 6200 Series features a DC input. It is compatible with older 3200 Series external power supplies, so if you are upgrading an older node, you may re-use the supply if convenient.

Do not connect both AC and DC supplies simultaneously.

Building a Custom Ethernet Cable

Firetide supplies a cable that will connect your 6200 Series node directly to a HotPoint Access Point. To connect to other devices, you will need to assemble an adapter cable. To assist in this, Firetide supplies a weatherized Ethernet transition cable, which is PoE compatible. A weatherized RJ-45 coupler is also included.

To connect power to the unit from PSE:

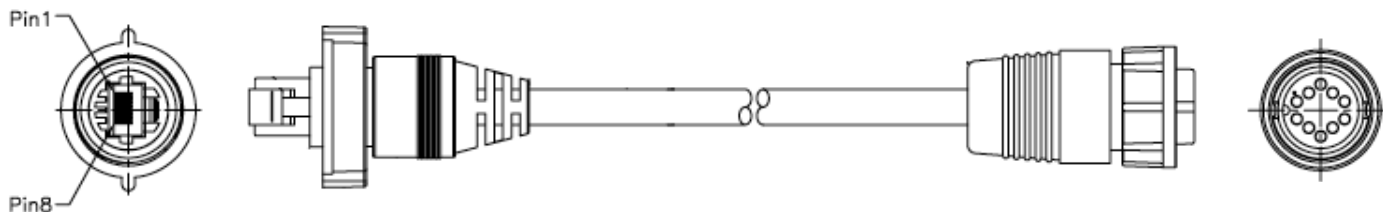
1. Construct a shielded Category 5 Ethernet cable:
2. Insert one end of the Ethernet cable (without an RJ-45 connector) through the provided coupler housing.
3. Use an RJ-45 crimping tool to attach an RJ-45 connector to this end of the Ethernet cable.
4. Insert the male RJ-45 connector on the constructed Ethernet cable into the female-to-female Ethernet coupler.
5. Connect the male RJ-45 connector on the Firetide-supplied Ethernet transition cable to the female-to-female coupler.
6. Remove the protective cap from an Ethernet port on the Hot-Port enclosure and insert the circular, 10-pin connector on the Ethernet transition cable.
7. Tighten all connectors to ensure a watertight seal.

Note: Regardless of your exact configuration of Ethernet cable and power sources, you must make sure all cables and connections are completely waterproofed. It is a good installation practice to leave enough cable slack so that there is a drip loop in each cable. This provides a low point for water to drip off the cable, rather than running down to a connector.

Figure 11.
Waterproof RJ-45 Coupler



Figure 12. Waterproof Ethernet Cable



Appendix A - Contacting Firetide

Dealer Provided Technical Support and Warranty Services

If you need additional technical assistance, please 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.

Firetide Provided Technical Support

You can also get technical support from Firetide. Simply email support@firetide.com, or call 1-877-FIRETIDE, extension 2, or +1 408 399 7771.

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. Please keep all original packaging materials in the event they are needed to return the product for servicing.

Sales Assistance

If you need additional HotPort wireless mesh nodes 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 HotPort nodes at your location.

Appendix B - Connector Wiring

HotPort Outdoor Node Ethernet Transition Cable Pin Descriptions

Table 2. Circular, Watertight IP66-Rated Connector and Port Pin Descriptions

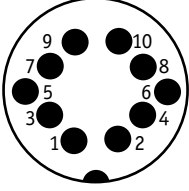
Connector Pin #	Wire Color	Port Pin #	
1	White/Orange	1	
2	Orange	2	
3	White/Green	3	
4	Blue	4	
5	White/Blue	5	
6	Green	6	
7	White/Brown	7	
8	Brown	8	
	Drain Wire	9	
	Drain Wire	10	

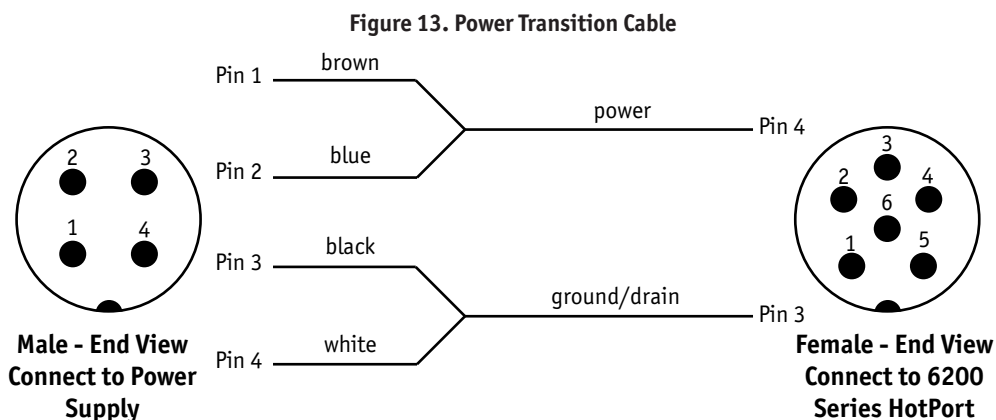
Table 3. RJ-45 Connector Pin Descriptions

Pin #	Signal	Description
1	TXD+	TX Data 10 BaseT/100 BaseTX
2	TXD-	TX Data 10 BaseT/100 BaseTX
3	RXD+	RX Data 10 BaseT/100 BaseTX
4	PoE+	+48 VDC PoE Power
5	PoE+	+48 VDC PoE Power
6	RXD-	RX Data 10 BaseT/100BaseTX
7	PoE-	-48 VDC PoE Power
8	PoE-	-48 VDC PoE Power

Power Connector Pin Descriptions

Figure 13 shows the pinout of the power connectors used to supply power to Series 6100 nodes (left) and Series 6200 nodes (right). Each view is of the cable connector, as viewed end-on.

If you wish to construct a cable to supply power to a Series 6200 node with a Series 6100 node indoor power supply, you can do so by wiring as shown in Figure 13. Likewise, other cables can be constructed for custom applications, as long as the wiring shown is followed.



Appendix C - Specifications

Common Specifications

Wireless Interface

These tables describes the technical limits of the nodes. Various country restrictions may further limit available choices.

Model	Use	No. of Radios
6101	Indoor, Worldwide, 2.4, 4.9, 5 GHz	1
6102	Indoor, Worldwide, 2.4, 4.9, 5 GHz	2
6201	Outdoor, Worldwide, 2.4, 4.9, 5 GHz	1
6202	Outdoor, Worldwide, 2.4, 4.9, 5 GHz	2

For all models:

Bands (GHz)	Frequency (GHz)	Restrictions
802.11a	5.15-5.25	
	5.25-5.35	
	5.725-5.825	
	4.9-5.090	Japan only
	4.94-4.990	US Public Safety
	5.470-5.725	ETSI 301.893, U-NII
802.11b/g	2.412-2.484	

Bands (GHz)	Max TX Power	
802.11a	5.725-5.825 UNII-3	26dBm/6-24Mbps 26dBm/36Mbps 24dBm/48Mbps 23dBm/54Mbps
	5.470-5.735 UNII	23 dBm 6-54 Mbps
	5.25-5.36 M UNII-2	23 dBm 6-54 Mbps
	5.15-5.25 UNII-1	17 dBm 6-54 Mbps
	802.11b	24 dBm/all rates
802.11g		26dBm/6-24Mbps 26dBm/36Mbps 25dBm/48Mbps 24dBm/54Mbps

Supported Data Rates & Standards

- 802.11a 6/9/12/18/24/36/48/54Mbps + 108Mbps (Turbo Mode) except Japan
- 802.11a Capable of switching to 1/4 and 1/2 rates for 4.940 – 4.990 GHz Public Safety Band
- 802.11b 1/2/5.5/11Mbps
- 802.11g 6/9/12/18/24/36/48/54Mbps
- Network Standards: IEEE 802.11a/b/d/g/e/f/h/i
- Dynamic Frequency Selection (DFS) capable in conjunction with Firetide Software application
- Transmit Power Control (TPC) capable in conjunction with Firetide Software application

Mesh Protocol

- Firetide AutoMesh Protocol

Mesh Management Software

- HotView mesh management software (bundled)
- HotView Pro™ mesh management software (optional)

Security & Encryption

- Security: WPA—64/128/152 w/TKIP, AES, IEEE 802.1x (LEAP)

Antennas

- Two detachable omni directional, vertical polarization, dual band antennas
- Single detachable, high gain, spectrum-specific, omni directional and directional antennas available (order separately). See Firetide Antenna Guide.

Regulatory Agency Certifications

- Contact your Firetide dealer for product availability and certifications for your country.

Outdoor Unit Specifications

Network Ports

- Three 10/100 Mbps Ethernet ports with weatherproof connectors, LED activity indicator
- IEEE 802.3, 802.3u compliant
- CSMA/CD 10/100 autosense
- Ports 2, 3 PSE Power over Ethernet per 802.3af

Enclosure

- Cast aluminum NEMA-4X/IP66 enclosure
- Two N-type antenna connectors
- Two weatherproof power connectors (AC and DC)
- Three weatherproof Ethernet connectors
- System indicator LEDs (power, status, mesh (per radio))
- Weight: 12 lbs (5.5 Kg) with bracket
- Dimensions: 8.8" x 11.2" x 4" (220 x 280 x 100 mm)

Power

- AC Input: 90-240 VAC, 50-60 Hz, 0.9A
- DC Input: 15 VDC \pm 15%, 3 A
- Port 2: IEEE 802.3af compliant PoE (PSE), 13.5 W max
- Port 3: IEEE 802.3af compliant PoE (PSE), 13.5 W max

Environmental Specifications

- Operating temperature: -40° C to +60° C
- Storage temperature: -40° C to +85° C
- Humidity (non-condensing): 10% to 90%
- Storage humidity (non-condensing): 5% to 95%
- Maximum altitude 15,000 feet (4600 meters)

Included Accessories

- Bracket for pole and wall mounting
- External power cord
- Removable sun shield
- One weatherized Ethernet transition cable with watertight RJ-45 coupling. Additional cable kits may be ordered.
- Staging antennas, 1 pair

Optional Accessories

- Outdoor weatherproof Ethernet cable for use with HotPoint APs
- Luminaire photocell socket power tap

Indoor Unit Specifications

Network Ports

- Four 10/100 Mbps Ethernet ports with LEDs
- IEEE 802.3, 802.3u compliant
- CSMA/CD 10/100 autosense

Enclosure

- Plenum-rated metal enclosure
- Two RP-SMA antenna connectors
- One DC power connector
- Four Ethernet connectors
- System indicator LEDs: power, status, per-radio mesh
- Weight: 3 lbs (1.4 Kg)
- Dimensions: 9.4" x 6" x 1.8" (238 x 152 x 48 mm)

Power

- DC Input: 15 VDC \pm 15%, 3 A

Environmental Specifications

- Operating temperature: 0° C to +60° C
- Storage temperature: -20° C to +70° C
- Humidity (non-condensing): 10% to 90%
- Storage humidity (non-condensing): 5% to 95%
- Maximum altitude 15,000 feet (4600 meters)

Included Accessories

- AC power adapter
- Staging antennas, 1 pair

Optional Accessories

- Wall or cubicle-mount bracket

Appendix D - Regulatory Notices

USA

FCC Class A Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

FCC Part 15 Note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in an office 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.

FCC Part 90 Note

This equipment has been tested pursuant to FCC Part 90, DSRC-C mask certification, and is approved for use in the US on Public Safety bands by licensed Public Safety agencies.

Public Safety Band

Pursuant to Part 90.1215, use of antennas with gain greater than 9 dBi and up to 26 dBi in the 4.940 - 4.990 GHz Public Safety band is permissible without reduction of TX output power. The antenna shall have a directional gain pattern in order to meet the requirement of point to point and point to multi-point operation.

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

To ensure compliance with the FCC's RF exposure limits, the antenna used for this transmitter must be installed to provide a separation distance of at least 90 cm from all persons and must not be co-located or operated in conjunction with any other antenna or transmitter. Installers and end users must follow these installation instructions.

Installation

Antenna(s) for this unit must be installed by a qualified professional. Operation of the unit with non-approved antennas is a violation of U. S. FCC Rules, Part 15.203(c), Code of Federal Regulations, Title 47.

Canadian Compliance Statement

This Class A Digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations. Cet appareil numérique de la classe A respecte les exigences du Règlement sur le matériel brouilleur du Canada. This device complies with Class A Limits of Industry Canada. 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.

Firetide HotPoint 6100 and 6200 wireless mesh nodes are certified to the requirements of RSS-210 for 2.4 and 5 GHz spread spectrum devices. The use of this device in a system operating either partially or completely outdoors may require the user to obtain a license for the system according to the Canadian regulations. For further information, contact your local Industry Canada office.

