HotClient

Hardware Installation Guide
HotClient 2100 / 2200
Customer Premises Equipment

Model 2100 Indoor CPE

Model 2200 Outdoor CPE

firetide®

Reliable connectivity anywhere™

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.

Pursuant to all provisions described herein, Firetide software products are warranted for ninety (90) days 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.

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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.

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.

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.

Chapter 1. Setting Up Your Equipment

Introduction

The Firetide Model 2100 and 2200 HotClient Customer Premises Equipment (CPE) provide connectivity to the Internet without the need for cable, DSL, or other wired connection. The HotClient uses a radio connection to provide Ethernet-equivalent connectivity in your home or business.

You connect to the HotClient via a wired Ethernet connection. You can connect a single computer or multiple devices on a LAN. You can also connect an 802.11 a/b/g/n access device, if desired.

Unpacking and Setup - Indoor

Setup of your new Firetide HotClient is simple. The package contents are shown in Figure 1.
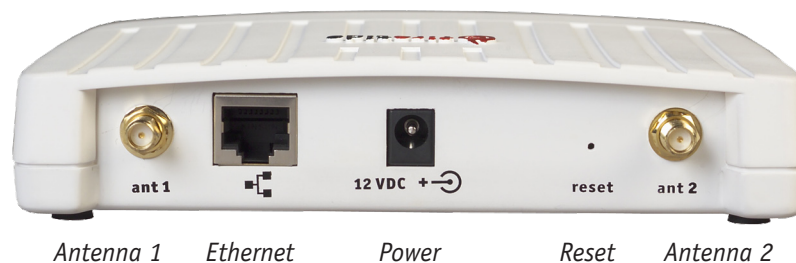
Your HotClient needs power. Note that the AC adapter has interchangeable inserts to fit most AC receptacles in the US, Europe, the UK, Australia, and elsewhere. The adapter will operate on any voltage from 100 to 240 VAC, from 50 to 60 Hz.

Figure 1. Series 2100 Indoor Unit - Package Contents

Your Firetide equipment needs to connect via a standard Ethernet (RJ-45) cable to your computer or home network. Pick a suitable location for the device, and use the supplied power supply to provide power to the unit. The Power LED should illuminate immediately. Attach the supplied antennas to the two antenna connectors. Tighten them firmly, by hand, and point them vertically.

Figure 2. Indoor Unit Important Points

Antenna 1   Ethernet   Power   Reset   Antenna 2

The Firetide device needs about two minutes to boot itself and then find the wireless signal. When it completes this process, the Status LED will turn green.

Setup - Outdoor

If your ISP has chosen to use an outdoor HotClient, it will have been installed by a professional installer. The installer will have provided a hard-wired Ethernet connection into your home or place of business.

The Firetide HotClient does require power. Power is fed to it via the Ethernet cable. Connect the power-feed unit to AC power. The ON light should turn green. Plug the cable from the HotClient into the port marked OUT. The CONNECT light should turn green. If the FAULT light comes on, contact your ISP.

Figure 3. Power-Feed Unit Connections.

Connect the device to your PC or home network via the RJ-45 connector. A crossover cable is NOT required. Your Internet Service Provider has pre-configured your device. Set your computer to obtain an IP address automatically (DHCP) and you can connect to the Internet.

Setup is now complete.

ISP-Provided Technical Support and Warranty Services

If you need additional technical assistance, please contact your ISP directly. Your ISP is trained and authorized to provide technical support and warranty services for Firetide products and has qualified technical staff available to help you configure and maintain your Firetide Internet Connection.

Chapter 2. Outdoor Installation

Introduction

Installation of the Firetide HotClient outdoor device should only be done by qualified and experienced personnel. Outdoor installation involves many safety hazards, including electrocution, lightning strikes, and falls. Please be careful.

Unpacking and Setup - Outdoor

The Firetide HotClient device is packed as shown in Figure 4. Note that an Ethernet cable is NOT included. You should obtain a weatherproof 4-pair cat-5 cable long enough to reach from the HotClient unit to the indoor location where you will connect with a PC, Ethernet switch, or other equipment.

The cable must be a 4-pair cable; smaller cables will not seal in the waterproof connector. The cable can be pre-terminated; the waterproof connector will pass an RJ-45 plug.

Figure 4. Series 2200 Outdoor Unit - Package Contents

Assembling the Ethernet Cable

Test the unit before mounting it on the pole or mast. Begin by making the cable.

1. Remove the weatherproof Ethernet connector cover - the black plug - from the unit.
2. Dismantle it. You will have a housing, a housing insert, a cap, and a gasket.
3. Place the cap over one end of your Ethernet cable.
4. Place the housing insert over the cable.
5. Thread the cable through the housing.
6. Plug the cable into the RJ-45 port visible inside the HotClient.
7. Thread the housing back into the HotClient. Make sure the gasket is still in place.
8. Tighten the cap so that it compresses the housing insert to the housing.

Now you can connect the Ethernet cable to the power feed unit, via the OUT port on the power feed unit. Use a second Ethernet cable to connect the IN port to your PC. Verify operation of the HotClient before proceeding.
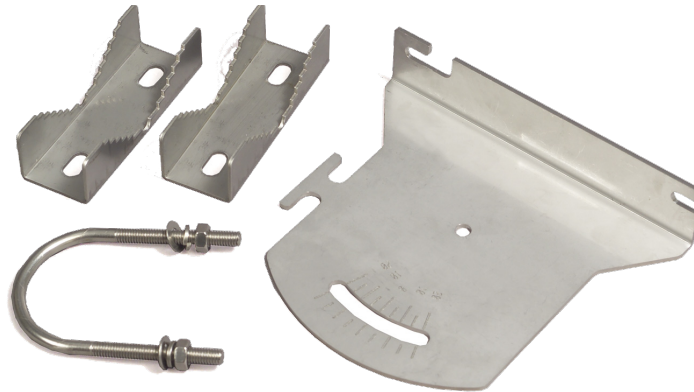
Using the Mounting Bracket

The bracket is designed to allow easy tilting and aiming of the HotClient device. The bracket allows the HotClient to be mounted with its internal antenna oriented for either vertical or horizontal polarization. It is also designed to allow mounting on either a horizontal or vertical pole. Note that the internal antenna polarization is vertical when the connectors are pointed down.

Note that the antenna is built in to the HotClient. In general, the HotClient should face the equipment it is intended to connect with. Typically this is a Firetide HotPoint AP.

There is an external antenna connector, but in most applications it is not needed. Keep the plastic cover on this connected to prevent water from getting into the unit.

Figure 5. HotClient Mounting Bracket

In order to avoid climbing up and down the pole twice, power up the HotClient before proceeding with the installation. The only connection you need is the Ethernet; it provides power as well.

Figure 6. HotClient Outdoor Unit Connections

Attach the bracket to the back of the HotClient, using the two slotted holes shown on the right side of the bracket, as shown in Figure 5. Select two holes on the HotClient according to the desired orientation of the pole and the antenna, as shown in Figure 7.

Figure 7. Attaching the Bracket to the HotClient

The bracket is attached to the pole using the U-bolt and one or two of the supplied jaw-clamps (top left in Figure 5). One jaw-clamp is used between the bracket and the pole; the second clamp may be used on smaller-diameter poles by placing it over the U-bolt before putting the U-bolt around the pole.

After placing the U-bolt around the pole, place the bracket over the legs of the U-bolt such that one leg passes through the round hole and the other leg passes through the curved slot. Snug the bracket slightly with the supplied nuts and lockwashers, but do not tighten until you have aligned the unit. The result should resemble Figure 8.

Figure 8. U-bolt Mounting Assembly

Aligning the HotClient

The Alignment LED provides a visual indication of signal strength. Point the HotClient in the direction of its signal source, then carefully adjust it, both horizontally and vertically, using the Alignment LED as a guide. When you receive the strongest signal, tighten the nuts. Figure 9 shows how the bracket can be used to tilt the unit.

Figure 9. Tilting the Unit for Signal Alignment

Appendix A Specifications

Common Specifications

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

Model	Use
2100	Indoor, Worldwide, 2.4 GHz
2200	Outdoor, Worldwide, 2.4 GHz

For all models:

Bands (GHz)	Frequency (GHz)	Restrictions
802.11b/g	2.412-2.484	Available frequencies subject to specific country regulations.

Bands (GHz)	Max TX Power
802.11b	24 dBm/all rates
802.11g	26dBm/6-24Mbps
	26dBm/36Mbps
	25dBm/48Mbps
	24dBm/54Mbps

Supported Rates & Standards

The Model 2100 and 2200 support the following data rates and standards.

- 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 .
- Transmit Power Control (TPC) capable in conjunction with Firetide Software application.

Security & Encryption

WPA—64/128/256 w/TKIP, AES, IEEE 802.1x (LEAP).

Regulatory Agency Certifications

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

Series 2100 Indoor Unit Specifications

Network Port

One 10/100 Mbps Ethernet port.

IEEE 802.3, 802.3u compliant.

CSMA/CD 10/100 autosense.

Enclosure

Plastic enclosure.

Two RP-SMA antenna connectors, with 1 pair of 5 dBi 2.4 GHz omnidirectional antennas.

One DC power connector.

One Ethernet connector.

System indicator LEDs: power, status.

Weight: 10 oz. (270 g).

Dimensions: 6" x 4.75" x 1" (150 x 120 x 25 mm).

Power

DC Input: 11-16 VDC. 0.7 A at 12 VDC.

AC power adapter: 100-240 VAC, 50/60 Hz input; 12 VDC, 1.5A rated output.

Environmental Specifications

Operating temperature: 0° C to +60°C.

Storage temperature: -40° C to +70° C.

Humidity (non-condensing): 10% to 90%.

Storage humidity (non-condensing): 5% to 95%.

Maximum altitude 15,000 feet (4600 meters).

Series 2200 Outdoor Unit Specifications

Network Port	One 10/100 Mbps Ethernet port with weatherproof connector, IEEE 802.3, 802.3u compliant, CSMA/CD 10/100 autosense. PoE-compliant per 802.3af.
Enclosure	Cast aluminum NEMA-4X/IP66 enclosure.
	One built-in antenna, one N-type antenna connector for optional antenna.
	One weatherproof Ethernet connector.
	System indicator LEDs (power, status, align).
	Weight: 2 lbs (0.9 Kg) without bracket.
	Dimensions: 7.8" x 8.3" x 2.4" (195 x 210 x 60 mm).
	Bracket for pole and wall mounting.
	One weatherized Ethernet transition cable with watertight RJ-45 coupling.
Power	Unit power is via 802.3af Power-over-Ethernet.
	PoE PSE module: AC Input 90-240 VAC, 50-60 Hz, 0.15A.
	Unit power dissipation < 9W.
Environmental Specifications	Operating temperature: -40° C to +60°C.
	Storage temperature: -40° C to +70° C.
	Humidity (non-condensing): 10% to 90%.
	Storage humidity (non-condensing): 5% to 95%.
	Maximum altitude 15,000 feet (4600 meters).

Appendix B Regulatory Notices

FCC Part 15 Note

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 Class B Notice

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/TV technician for help.

FCC Radiation Exposure

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 70 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.

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.

Installation

Antenna(s) for the Model 2200 outdoor 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 B Digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations. Cet appareil numerique de la classe B respecte les exigences du Reglement sur le material broilleur du Canada.

Firetide 2100 and 2200 devices are certified to the requirements of RSS-210 for 2.4 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.

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