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## HotPoint 1000S Wireless Mesh Router Instant Networking Guide

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#### 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

- 2 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 antennas 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.

# HotPoint 1000S Wireless Mesh Router Instant Networking Guide

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## Firetide<sup>™</sup> HotPoint<sup>™</sup> 1000S

The Firetide HotPoint 1000S Wireless Mesh Router enables you to build Wireless Instant Networks<sup>™</sup>, eliminating the need to lay hundreds or potentially thousands of feet of Ethernet cable. Now you can instantly add Ethernet ports wherever you want, especially in areas where cabling is too costly or time consuming to install.

Multiple HotPoint units automatically find each other via wireless links allowing you to create and extend a high performance wireless mesh network. The network is very adaptable, allowing you to change the network configuration in real-time.

The HotPoint 1000S acts as a portable Ethernet switch that you can place anywhere you want simply by plugging the unit into a standard

4 power outlet. Each HotPoint Wireless Mesh router has three RJ-45 Ethernet ports, allowing you to attach up to three Ethernet devices, such as a wireless access point, computer, printer server, Internet uplink, or network video camera.

#### **Firetide Wireless Instant Network**

Firetide developed the Wireless Instant Network, based on the HotPoint Wireless Mesh Router, to enable faster, easier, and more affordable network deployment. Firetide's patented mesh networking technology makes it possible to survey, plan and deploy an entire network in less than one day rather than weeks.

The Firetide network is also completely portable. Your entire network can be relocated simply by taking your HotPoint routers with you to your new location.



## What is a Firetide Mesh Network?

Firetide mesh networks feature a self-configuring, self-healing, multi-hop topology. Because of these inherent self-organizing properties, a mesh network requires no manual configuration. Thus, creating a new network or adding or relocating network equipment is as easy as powering up new nodes. The network automatically discovers the new nodes and integrates them into the mesh.

A big advantage of a mesh network is its robustness and ability to heal itself. If a node is disconnected, congested, or fails to operate, neighboring nodes are notified, and data is routed around it. There is no need for a network engineer to intervene, troubleshoot, and cure the problem.

Mesh networking can be compared to the Internet, where data can be rerouted on other paths if one path becomes disabled or congested. Losing a node or two or a link won't bring down the entire mesh network. Unlike other WLAN technologies, a mesh network's reliability and scalability can actually improve by adding more nodes and enriching the density of the mesh. More redundant paths means the network in aggregate can handle far more data traffic, and is therefore quite scalable.

Mesh networks are ideal whenever the network must be reliable, scalable, and flexible. They are very portable and can adapt well to many different physical environments.



## **Building a Firetide Mesh Network**

Installing, expanding, or even relocating a Firetide Mesh network is simple and fast. Simply place a HotPoint router wherever you need an indoor Ethernet port and plug it into an indoor AC power source. As long as the HotPoint router is within operating range of other HotPoint routers, you can connect and operate your network devices immediately.

Although network planning is often not required for basic installations, adhering to a few simple guidelines will help ensure that your network performs reliably and gives you the full benefits and performance that mesh networking has to offer.

## Important! Use the Correct RJ-45 Ethernet Cable

The type of Ethernet cable to use depends on what you connect to the HotPoint router. End devices such as PCs, printers and video cameras require crossover cables. Multi-user devices such as hubs and switches as well as most cable and DSL modems require straight-through (non-crossover) cables. Devices with auto-sensing MDI/MDIX ports can use either crossover or straight-through cables. Both cable types are readily available from your Firetide dealer or local computer store.

A simple way to determine if you have the correct cable type is to check the left LED on the HotPoint Ethernet port. If the green LED illuminates, the cable is correct.



#### **Understand HotPoint Antenna Patterns**

HotPoint routers have omni directional antennas that radiate in a broad circular pattern perpendicular to the antenna shaft. The antennas have pivoting mounts with a very wide range of motion. This allows you to install the HotPoint routers at any angle (even upside-down) and still orient the radiating pattern for maximum distance and throughput.

For optimum horizontal coverage, orient the antennas in your mesh network vertically (perpendicular to the ground). For vertical coverage, such as between floors in a building, you may need to orient some antennas horizontally.



HotPoint antenna radiating pattern

#### Line-of-Sight Improves Operating Distance

You can increase the working distance between HotPoint routers by avoiding excessive radio interference and obstacles made of dense materials such as concrete walls, metal furniture and ceilings. However

this is not always necessary, especially if you have a sufficient number of HotPoint routers. We recommend first placing your HotPoint routers wherever it is most convenient and relocating them only if these obstacles seems to impair performance.



install HotPoint routers within line of sight.

#### Create a Mesh Topology for Maximum Performance and Reliability

Unlike simple point-to-point bridging, Firetide provides true mesh networking with flexible and redundant paths. This improves overall performance, allows the network to be extended over long distances, and reduces the chance of single point failures.

To fully benefit from the self-forming and self-healing properties of the mesh, place each HotPoint router within direct range of two or more HotPoint routers. Also, do not install your HotPoint network in a linear, point-to-point configuration. The Firetide network protocol is optimized for two- and three-dimensional topologies including vertical connections between multiple floors in a building.

#### Use the Free HotPoint Manager Software

Although this software is not required for installing or operating your network, the HotPoint Manager software provides an easy way to monitor and manage the mesh and your HotPoint routers. Because wireless connections between HotPoint routers are invisible, this software lets you "see" which units are within direct range of each other. HotPoint Manager also provides additional security and optional configuration features. You can download the software free of charge from the Firetide web site. See pages 8 though 11 for information on downloading and installing HotPoint Manager.



## **HotPoint Manager<sup>™</sup> Software**

The HotPoint Manager software provides a convenient, browser-based interface for monitoring all of the HotPoint routers on your mesh network. HotPoint Manager is a Java-based application compatible with most Internet browsers and platforms including Windows, Macintosh, UNIX, and Linux.

Registered users can download the HotPoint Manager software and user documentation from the Firetide web site (www.firetide.com).

#### **Downloading and Installation Instructions**

- 1. Go to the Firetide web site www.firetide.com
- 2. Select Downloads from the Support Menu
- Read the instructions provided and download the appropriate version of the software and documentation. You may be asked to log in or to register before being permitted to download.
  - 4. Install the software on your workstation as directed in the instructions for your operating system.

#### **Connecting to the Mesh Network**

- 1. Be sure all of your HotPoint routers are installed and powered.
- 2. Connect your workstation's network adapter directly to any one of the Hot-Point routers using an Ethernet crossover cable.
- Turn on your workstation and configure your TCP/IP settings as described on the following page or by using the instructions provided for your operating system.



Connect workstation with HotPoint Manager software installed to the HotPoint router.

#### For Windows XP

- 1. Click on the Start button.
- 2. Click on the Control Panel icon.
- 3. Double-click on the Network Connections icon.
- 4. Double-click on the Local Area Connection icon for the network adapter used to connect to the Firetide mesh network.
- 5. Select Internet Protocol (TCP/IP) and click on the Properties button.
- 6. Select "Use the following IP address" and enter the following information:
  - IP address: 192.168.224.200
  - Subnet mask: 255.255.255.0
- 7. Click OK to finish.
- 8. Restart your computer and proceed to "Getting Started with HotPoint Manager."

#### For Windows 2000

- 1. Click on the Start button.
- 2. Click on Settings and select Control Panel.
- 3. Double-click on the Network and Dial-up Connections icon.
- 4. Double-click on the Local Area Connection icon for the network adapter that is connected to the Firetide mesh network.
- 5. Select Internet Protocol (TCP/IP) and click on the Properties button.
- 6. Select "Use the following IP address" and enter the following information:
  - IP address: 192.168.224.200
  - Subnet mask: 255.255.255.0
- 7. Click OK to finish.
- 8. Restart your computer and proceed to "Getting Started with HotPoint Manager."

#### For Other Operating Systems and Platforms

Please refer to the HotPoint Manager User Guide (available for registered customers at www.firetide.com) for information and setup instructions.

## **Getting Started with HotPoint Manager**

Use the following procedure to determine if your HotPoint Manager software is installed and running properly. For complete information on HotPoint manager features and more detailed instructions on its operation, download the latest HotPoint Manager User Guide available at www.firetide.com/support.

**Note:** Steps 1 and 2 are for launching HotPoint Manager under Windows. Your operating system may have a different procedure for launching applications.

- 1. From the Windows Desktop click on the Start button
- 2. Click on All Programs and select HotPoint Manager. The Login screen will appear.
- 3. Enter the following information to log into the mesh network
  - Username: admin
  - Password: admin
  - Mesh IP address: 192.168.224.100
- 4. Click on Login to start
- 5. Wait for your computer to connect to the mesh. This may take a few seconds to several minutes.
- 6. You should see the screen shown on the following page with a list of all of the HotPoint routers on the mesh.



Mesh IP Address: 1	92.168.1.100					Griretide" HotPoint	t" Managei
HotPoint Name	Serial Number	Version	Status	Uptime	Neighbor Count	Input Packets	Output Packets
FT-120	FT-120	1.6	合	up 1 day	6	80056719	2831792
FT-00128	FT-00128	1.6	Î	up 4:05	5	14220551	1274461
FT-00129	FT-00129	1.6	Î	up 14 days	5	1251750878	52512404
FT-00131		0	會	up 10 mins	4	1031705	43831
FT-00004	FT-00004	1.6	會	up 23:50	1	10629851	1255881
FT-00061	FT-00061	1.6	會	up 20 days	5	1649749949	176234880
FT-EIGHTY_NINE	FT-00089	1.6	會	up 20 days	2	1890598038	52605902
FT-00090	FT-00090	1.6	會	up 18 mins	6	2521769	120927

Note: If this screen does not appear, or some of your HotPoint routers appear to be missing from the list, refer to the troubleshooting section of the HotPoint Manager User Guide.

## **Support Information**

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

#### 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 **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

<sup>12</sup> 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.

## **Restoring Default Settings**

You can change or restore the default settings for your HotPoint router using the HotPoint Manager software. You can also use the following procedure to restore the factory default settings without HotPoint Manager.

- 1. Connect an Ethernet crossover cable between ports labeled Ethernet 2 and Ethernet 3.
- 2. Plug in the HotPoint power adapter and wait for red "fault" LED to turn on and then off.
- 3. Unplug the HotPoint power adapter and disconnect the crossover cable. The default settings are now restored.

HotPoint Factory Default Settings AES Encryption: Disabled WEP Encryption: Disabled Mesh IP address: 192.168.224.100 Ethernet ports: All ports enabled HotPoint Manager username: admin HotPoint Manager password: admin



#### Ethernet crossover cable

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## 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 at no charge from the Firetide web site. See page 8 for downloading and installation instructions.

## **HotPoint Accessories**

Consult your Firetide dealer or the Products section of www.firetide.com for a current list of available accessories. Accessories, components and additional HotPoint wireless mesh routers are available directly from your Firetide dealer.



#### **Replacement Power Adapter**

Direct replacements for your original HotPoint 120 Volt AC power adapter. For indoor use only.

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#### Replacement Antenna Set

Direct replacements for your original HotPoint router antennas. Set of two.

## Mounting Bracket

The mounting bracket allows you to install your Firetide HotPoint router on walls or ceilings. Includes a security slot for use with computer style locks.

## **Specifications**

Model: HotPoint 1000S Wireless Mesh Router **Package includes:** Firetide HotPoint wireless mesh router, power adapter, dual antennas, Instant Networking Guide Frequency band: 2.4 to 2.484 GHz Standards: • IEEE 802.11b compliant • IEEE 802.3 (10-baseT) • IEEE 802.3u (100-baseT) Protocol: Topology Broadcast based on Reverse-Path Forwarding (TBRPF) Encryption: AES, RSA certificates Wireless: WEP Ports: 3 Ethernet 10/100 RJ-45 Indicator LEDs: Power, Activity, Fault Power supply: External, 14 vDC, 1000mA Radio range (open environment): • 200 meters at 11 Mbps • 300 meters at 5.5 Mbps • 600 meters at 2 Mbps • 800 meters at 1 Mbps **Dimensions:** 9" x 5.87" x 1.06" (228 mm x 150 mm x 22 mm) Weight (minus power supply): 1.75 lbs (1.9 lbs with two antennas) Antenna height: 7" (178 mm) Certifications: FCC Class B, Part 15

Operating environment: Temperature: 0 to +50 degrees C Humidity (non-condensing): 10% to 90% Storage environment: Temperature: -20 to +80 degrees C Humidity (non-condensing): 5% to 95% Optional accessories: Mounting bracket Warranty: One year (limited)

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## Unpacking

Your HotPoint 1000S package contains the following items:



## **Easy Installation**

#### Attach antennas

Attach both antennas to connectors on rear panel.

## **Connect Ethernet devices**

Plug up to three Ethernet devices into the rear ports on the HotPoint 1000S.

### Important

Use Ethernet crossover cables to connect end devices such as computers, wireless access points, network printers, and video cameras. Use Ethernet straightthrough cables to connect multi-user switches and hubs.

## Add power

Connect HotPoint unit to AC power source. Also, start up all connected Ethernet devices.

The HotPoint power-up sequence is as follows

- 1. Green Power LED continuously ON
- 2. Red Fault LED momentarily ON, then continuously OFF
- 3. Green Activity LED, flashes during LAN activity





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