



# HotPort® 7000 (7010/7020) Wireless Mesh Nodes

## Viable Alternative to Fiber

Infrastructure mesh technology from FireTide provides municipal, industrial and enterprise users with the bandwidth needed to expand the reach of their existing networks, while adding a variety of fixed and mobile applications: city-wide video surveillance, traffic management and intelligent transportation systems, Wi-Fi access for mobile city workers and wireless broadband for underserved areas.

## Convenient Upgrade Paths

HotPort® 7000 mesh nodes ship as 802.11a/b/g/n dual-radio capable hardware, with enhanced functionality enabled through software licenses. Projects that do not require 802.11n MIMO (multiple input, multiple output) capacity or dual-radio capability can start with 802.11a/b/g-enabled single-radio configuration. Dual-radio functionality can easily be enabled through a software license at an additional cost. Similarly, a separate software license can enable MIMO functionality for operation in 40 MHz channels, and to take advantage of 802.11n technology to achieve throughput of up to 300 Mbps outdoors and 400 Mbps indoors.



HotPort 7000 Indoor Mesh Node



HotPort 7000 Outdoor Mesh Node

## Easier Deployments & Network Management

Unlike wired networks, where deployment is cumbersome, the self-forming nature of the FireTide mesh network ensures rapid deployment of large-scale networks. The HotPort 7000 mesh features integrated spectrum analysis, network capacity planning and antenna alignment tools for easier deployments and network management.

## Higher Reliability

The HotPort 7000 nodes form a multi-point to multi-point ad hoc wireless mesh network with no single point of failure. Unlike a wired network, where a cut in the cable could take several days to resolve, the FireTide mesh routes the traffic immediately on an alternate link ensuring continuous service and network availability.

## Dual-radio Performance

To maximize performance, dual-radio HotPort 7000 nodes support two radio modes. In the "bonded" mode, both radios are combined to operate as a single unit that provides double the bandwidth of a single radio equivalent. In the "linear" mode, both radios operate independently enabling sustained bandwidth levels over an unlimited number of hops. This enables long linear topologies, such as when networking a railway line, and provides a sustained level of service to every node, which is also critical for large municipal networks.

## Quality of Service

FireTide's patented AutoMesh™ flow based routing protocol supports advanced load balancing and congestion control mechanisms for optimal routing within the mesh network. The HotPort 7000 mesh infrastructure also provides extensive VLAN capabilities critical for deploying a multi-service network on a large scale.

## Metro-scale Deployments

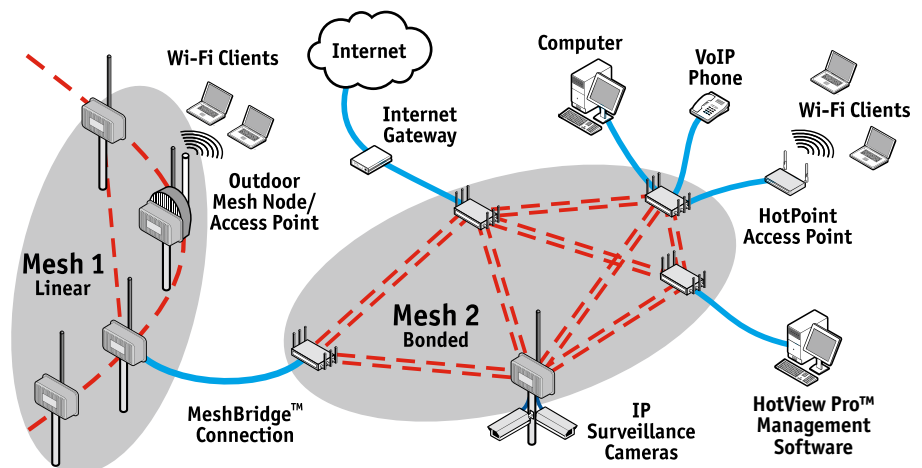
FireTide's network easily scales up to several hundreds of mesh nodes for city-wide deployment. Advanced features like MeshBridge™ and Gigabit EthernetDirect™ support mesh connectivity across multiple locations.

## Multicast & Security

FireTide infrastructure provides reliable multicast capabilities critical for large-scale public safety and broadband access networks. FireTide mesh provides advanced security, including 802.11i support, dual-layer of FIPS140-2 certifiable 256-bit AES encryption, digital certificates on network elements, digitally signed firmware files, MAC based access control lists and VLAN based access control lists.

## Flexible Configuration

Indoor and outdoor HotPort 7000 nodes feature dual or single configurable radios in the 2.4, 4.9 (U.S. public safety licensed band) and 5 GHz frequency ranges. HotPort 7000 mesh can utilize channel widths of 5, 10, 20 and 40 MHz (MIMO only), with 5 and 10 MHz channel widths only available on the 4.9 GHz band.



## HotPort® 7000 (7010/7020) Wireless Mesh Nodes

### Specifications

#### Models

- HotPort 7010—Indoor Mesh Node\*
- HotPort 7020—Outdoor Mesh Node\*
- \* Purchase of software license(s) required for dual-radio and/or 802.11n MIMO functionality

#### Mesh Protocol

- Firetide AutoMesh™ Protocol

#### Security and Encryption

- 40 bit, 104 bit WEP keys
- 128 bit, 256 bit AES keys (WPA2, end-to-end data)
- MAC address filtering
- Digitally signed firmware files
- Digital certificates on nodes

#### Traffic Prioritization

- Quality of Service (QoS 802.1p)

#### Wireless Interface

- IEEE 802.11a/b/g/h/n ad hoc; 3X3 MIMO with 2 streams\*
- \* Purchase of software license required for 802.11n MIMO functionality
- 3X3 MIMO with 2 streams
- Transmit power up to 400 mW per stream
- Frequency ranges
  - 2.412 – 2.483 GHz
  - 4.94 – 4.99 GHz (US public safety band)
  - 5.15 – 5.25 GHz (Indoor use only)
  - 5.25 – 5.35 GHz
  - 5.470 – 5.725 GHz
  - 5.725 – 5.850 GHz
- Receive sensitivity (typical)
  - 2.4 GHz, DSSS
    - 1 Mbps: -95 dBm
    - 11 Mbps: -88 dBm
  - 2.4 GHz, OFDM
    - 6 Mbps: -90 dBm
    - 54 Mbps: -73 dBm
  - 5 GHz, OFDM
    - 6 Mbps: -90 dBm
    - 54 Mbps: -73 dBm
- Ability to configure 5, 10, 20 and 40 Mhz (MIMO only) channel bandwidth
- Dynamic Frequency Selection (DFS)
- Transmit Power Control (TPC)

#### Mesh Management Software

- HotView Pro™ mesh management software (required)

#### Regulatory Agency Certifications

- Contact your Firetide dealer for product availability and certifications for your country
- RoHS and WEEE compliant

#### Warranty

- Hardware: one year limited warranty
- Software: 90 days limited warranty



HotPort 7000 Outdoor Connectors

### Outdoor Model—7020

#### Network Ports

- Three GigE 10/100/1000 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
- Six type-N female antenna connectors
- Two weatherproof power connectors: AC and DC
- Three weatherproof Ethernet connectors
- System LEDs (power, status, mesh)
- Weight: 12 lbs (5.4 kg) with bracket and sunshield
- Dimensions: 11.6" X 8.1" X 4.1"

#### Power

- AC Input: 100–240 VAC, 50–60 Hz, 0.9 A
- DC Input: 12 VDC ±15%, 4 A powering 2 PoE devices; 1.7 A without PoE
- Ports 2 and 3: IEEE 802.3af compliant PoE (PSE) consumption

#### 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

- Antennas: Six 2.4 GHz and six 5 GHz, 5 dBi, indoor-rated omni directional (included for network staging only)
- Bracket for pole and wall mounting
- External AC power cord (non-North America power cord is separate orderable item)
- Removable sunshield
- Three weatherized Ethernet connectors for watertight RJ-45 coupling

#### Optional Accessories

- Outdoor weatherized Ethernet transition cables for use with HotPoint® access points
- Omni, directional & panel antennas (Please see Antenna Guide)



HotPort 7000 Indoor Connectors

### Indoor Model—7010

#### Network Ports

- Four GigE 10/100/1000 Mbps Ethernet ports with LEDs
- IEEE 802.3, 802.3u compliant
- CSMA/CD 10/100 autosense

#### Enclosure

- System LEDs (power, status, mesh)
- Ethernet port LEDs (link, status, activity)
- Connectors: Six RPSMA female antenna, one power, four Ethernet (RJ-45)
- Reset button (recessed)
- Weight: 2 lb 14 oz (1.3 kg)
- Dimensions 9.4" X 5.9" X 1.6"

#### Power

- DC Input: 12 VDC, 2.5 A
- Port 1: IEEE 802.3at compliant PoE (PD)
- External power supply: 100–240 VAC, 50/60 Hz

#### 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 with cord (non-North America power cord is separate orderable item)
- Antennas: Six 2.4 GHz and six 5 GHz, 5 dBi, omni directional

#### Optional Accessories

- Wall or cubicle-mount bracket

### Other Firetide Products



#### Access Points

HotPoint Indoor & Outdoor Access Points



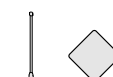
#### CPE

HotClient Indoor & Outdoor Customer Premises Equipment



#### Software

HotView Pro Network Management Software, Firetide Mobility Controller, Firetide WLAN Controller



#### Accessories

Antennas, Mounting Kits, Cables, etc.

