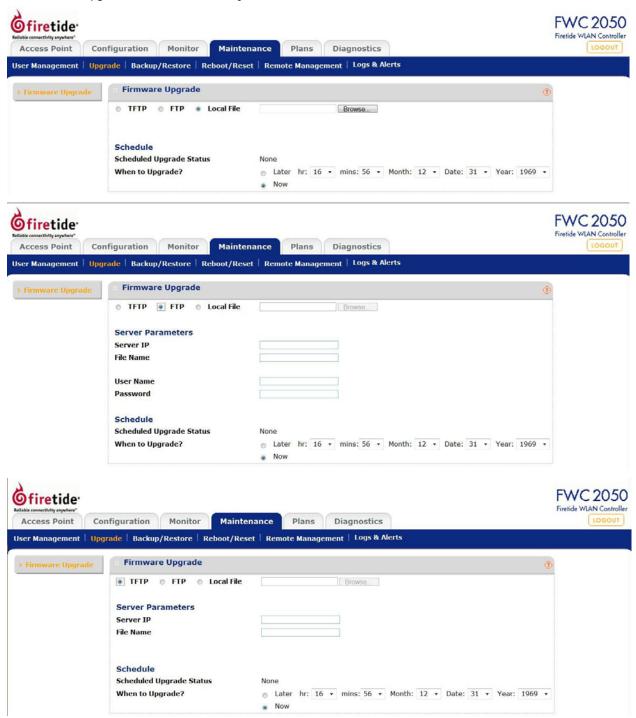
# **Upgrade**

# **Upgrade FWC2050 Firmware**

You can install a new version of the FWC2050 software using the Firmware Upgrade page. You have a choice of three methods. You can use a local file, or FTP or TFTP to access a remote file.

You can also set the upgrade to occur immediately, or at a scheduled time.



Go to the Firetide Web site (www.Firetide.com) customer service downloads section to get new versions of the FWC2050 software. Includes AP firmware.



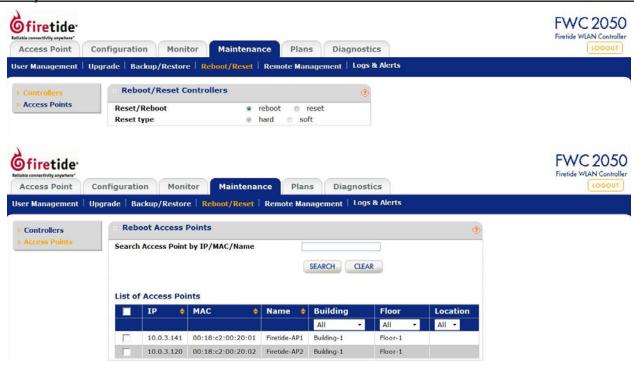
**IMPORTANT!** Once you click **Upload** do NOT interrupt the process of sending the software to the FWC2050 and restarting the FWC2050.

# **Backup/Restore**



**Backup:** Allows you to save the settings of the FWC2050 to a file. **Restore:** Configures the FWC2050 to the settings previously saved.

# Reboot/Reset



Both Controllers and Access Points can be rebooted or reset to factory parameters.

# **Remote Management**

# **Session Timeout**

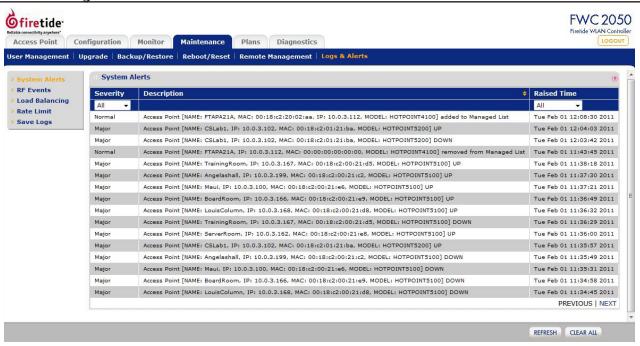


You can specify a time period for automatic disconnect if the management connection remains idle.

# **Logs & Alerts**

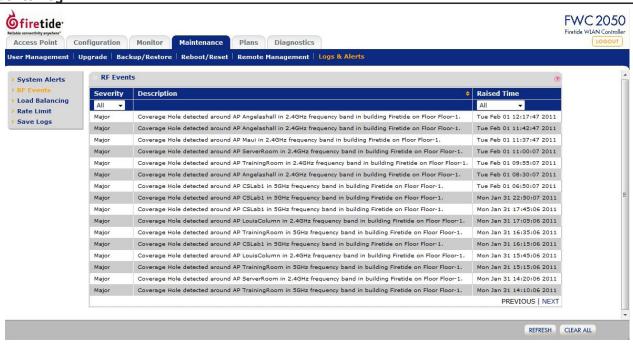
Numerous Log Types are available.

### System Alerts Log



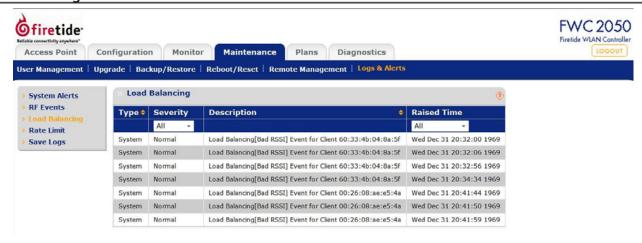
Shows logged events. The results can be filtered.

# **RF Events Loq**



Shows logged RF events.

# Load Balancing



Shows occurrences of load balancing among APs.

### **Rate Limit Events**

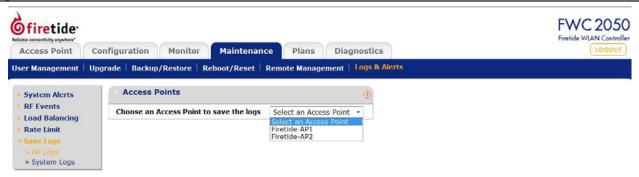


Shows occurrences of rate-limit events on clients using excess bandwidth.

# **Saving Logs**

Logs from individual APs and the FWC2050 Controller can be saved.

#### **AP Logs**



Select an AP to save a log of events associated with it. You will be prompted to enter a file name and select a location.

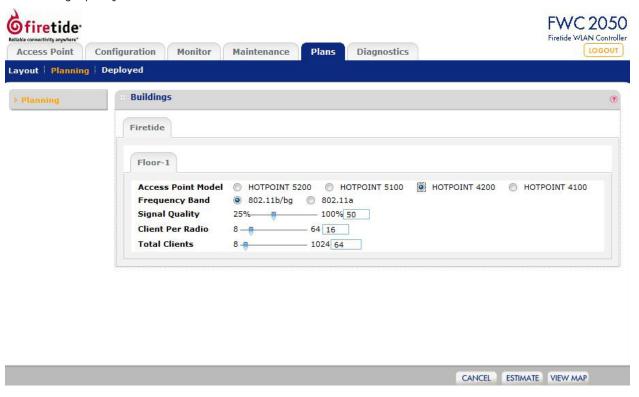
## System Logs



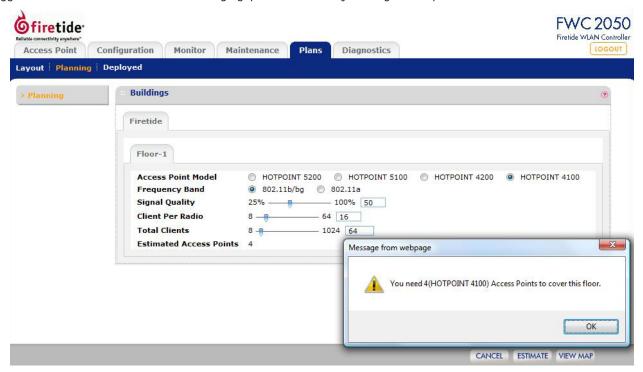
You will be prompted to enter a file name and select a location.

# **Planning Coverage**

The FWC2050 can analyze coverage of your access points. Select a group of access points and use the sliders to specify the minimum acceptable coverage quality



The analysis will tell you how many additional access points you need to provide he specified coverage. It will also show you a map of suggested locations. In some cases, coverage gaps can be fixed by moving access points.



# Appendix A Access Point Specifications

# **Common Specifications**

Model	Use
4100	Indoor, Worldwide, 2.4/4.9/5 GHz
4200	Outdoor, Worldwide, 2.4/4.9/5 GHz
5100	Indoor, Worldwide. Radio 1: 2.4, Radio 2: 5 GHz
5200	Outdoor, Worldwide, Radio 1: 2.4, Radio 2: 5 GHz

Bands	Frequency (GHz)	Restrictions
802.11a	5.15-5.25	Indoor use only
802.11n	5.25-5.35	
(5100/5200 only)	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	
802.11n (5100/5200 only)		

Bands (GHz)	Max TX Power
802.11a 5.725-5.825 UNII-3	20 dBm
802.11n (5100/5200 only)	
5.470-5.735 UNII	20 dBm
5.25-5.36 UNII-2	20 dBm
5.15-5.25 UNII-1	17 dBm
802.11b	20 dBm
802.11g	20 dBm
802.11n (5100/5200 only)	20 dBm

#### Supported Data Rates & Standards

- 802.11a 6/9/12/18/24/36/48/54Mbps
- 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
- 802.11n (5100/5200 only)
   6.5/13/19.5/26/65/130 (20MHz LGB)
   7.2/14.4/21.7/28.9/72.2/144 (20MHz SGB)
   13.5/27/40.5/54/135/270 (40MHz LGB)
   15/30/45/60/150/300 (40MHz SGB)
- Network Standards: IEEE 802.11a/b/d/q/e/f/h/i/n
- Dynamic Frequency Selection (DFS) capable in conjunction with Firetide Software application (5100/5200 only)
- Security: WPA; 64/128/256 w/TKIP, AES

#### **Environmental**

- Humidity (non-condensing): 10% to 90%
- Storage humidity (non-condensing): 5% to 95%
- Maximum altitude 15,000 feet (4600 meters) Networking
- Up to 16 SSIDs (8 groups, 8 profiles) per HotPoint
- Up to 16 independent VLANs

#### Security, Authentication and Encryption

- 802.11i, WPA2
- 40-bit, 104-bit WEP keys
- 802.1x, RADIUS authentication
- SSID suppression
- MAC-address access control

#### Management and Configuration

- Integrated mesh and access management
- Multiple user interface options:
- Centralized management via HotView Pro
- Built-in web-based management
- Command line interface (CLI)
- Remote firmware upgrade
- Auto AP discovery
- Physical AP grouping

#### **Hot Spot Services**

- Virtual AP grouping
- User-based rate limiting
- Intercell/intracell blocking
- Captive portal management
- Walled garden
- Client-based policy management

#### **Client Access Features**

- Up to 128 concurrent users simultaneously per HotPoint
- L2 Fast Roam and L3 seamless mobility with controller
- Fast handoff enabled
- 802.11e (WMM) (Quality of Service)
- Auto configuration and image download

## Warranty

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

# **4000 Series Common Specification**

Bands (GHz)	Max TX Power
802.11a, 5.725-5.825 UNII-3	26dBm/6-24Mbps 26dBm/36Mbps 24dBm/48Mbps
5 /70 5 705 UNIT	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

## Model 4100 Indoor Unit Specifications

#### **Enclosure**

- Plastic enclosure.
- Two RP-SMA antennas, 1 pair of 5 dBi 2.4 GHz omnis.
- One DC power connector.
- One RJ-45 Ethernet connector, CSMA/CD 10/100 autosense.
- 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**

- Operating temperature: 0° C to +60°C.
- Storage temperature: -40° C to +70° C.

# Model 4200 Outdoor Unit Specifications

#### Enclosure

- Cast aluminum NEMA-4X/IP66 enclosure.
- One built-in antenna, one N-type antenna connector for optional antenna.
- One Ethernet, CSMA/CD 10/100 autosense, 802.3af PoE
- 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 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**

- Operating temperature: -40° C to +60°C.
- Storage temperature: -40° C to +70° C.

## **5000 Series Common Specifications**

Bands (GHz)	Max TX Power
802.11a 5.725-5.825 UNII-3 802.11n	20 dBm
5.470-5.735 UNII 5.25-5.36 UNII-2 5.15-5.25 UNII-1	20 dBm 20 dBm 17 dBm
802.11b	20 dBm
802.11g 802.11n	20 dBm 20 dBm

## Model 5100 Indoor Unit Specifications

#### **Network Ports**

- 10/100/1000 Mbps Ethernet port
- PoE PD on Port 1
- IEEE 802.3, 802.3u compliant
- CSMA/CD 10/100/1000 autosense

#### **Enclosure**

- Plenum-rated metal enclosure
- Six RP-SMA antenna connectors
- One DC power connector, 12 VDC ±15%, 3 A
- One Ethernet connector
- Weight: 0.9 lbs (.4 Kg)
- Dimensions: 7.3" x 6.8" x 1.4" (182 x 170 x 35 mm)

## **Environmental Specifications**

- Operating temperature: 0° C to +60°C
- Storage temperature: -20° C to +70° C

### **Included Accessories**

- AC power adapter
- 3 2.4 GHz, 3 4.9-5.8 GHz 3 dBi indoor omni staqing antennas

# **Model 5200 Outdoor Unit Specifications**

#### **Network Port**

- One 10/100/1000 Mbps Ethernet with weatherproof connector
- IEEE 802.3, 802.3u compliant
- CSMA/CD 10/100/1000 autosense

### **Enclosure**

- Cast aluminum NEMA-4X/IP66 enclosure
- Six N-type antenna connectors
- Weatherproof 48VDC power connector
- Weight: 3.75 lbs (1.7 Kg) with bracket
- Dimensions: 8.2" x 8.6" x 2" (205 x 214 x 100 mm)

#### **Environmental Specifications**

- Operating temperature: -40° C to +60°C
- Storage temperature: -40° C to +85° C

#### **Included Accessories**

- Bracket for pole and wall mounting
- AC power adapter
- 3 2.4 GHz, 3 4.9-5.8 GHz 3 dBi indoor omni staging antennas

# **Appendix B FWC2050 Specifications**

Physical Specifications	<ul> <li>Four GigE 10/100/1000 Mbps Ethernet ports with LEDs</li> <li>IEEE 802.3, 802.3u compliant</li> <li>CSMA/CD 10/100 autosense</li> </ul>
Network Ports Enclosure	<ul> <li>LEDs (power, 2.4 GHz, 5 GHz)</li> <li>Reset button (recessed) • Weight: 2 lb 14 oz (1.3 kg)</li> <li>Dimensions 9.4" X 5.9" X 1.6"</li> </ul>
Power	<ul> <li>DC Input: 12 VDC, 2.5 A</li> <li>Port 1: IEEE 802.3at compliant PoE</li> <li>External power supply: 100–240 VAC, 50/60 Hz</li> </ul>
Environment Specifications	<ul> <li>Operating temperature: 0°C to +60°C</li> <li>Storage temperature: -20°C to +70°C</li> <li>Humidity (non-condensing): 10% to 90%</li> <li>Storage humidity (non-condensing): 5% to 95%</li> <li>Maximum altitude 15,000 feet (4600 meters)</li> </ul>
Included Accessories	<ul> <li>AC power adapter with cord (non-North America power cord is separate orderable item)</li> <li>Bracket for Rack Mounting</li> </ul>

# **Appendix C** Reset Procedure

Firetide Access Points may be reset to factory parameters. This is useful when returning a unit from field service or in recovering a unit you cannot communicate with. To reset a unit, apply power and wait for the unit to fully boot. This takes 60 to 90 seconds. Use a paperclip to press and hold the reset button for 15 seconds. Wait for the units to reboot before removing power. For outdoor units, remove the small cover from the reset switch and activate the reset button.

# **Appendix D Regulatory Notices**

#### FCC Part 15 Note

These devices comply 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 A Notice

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. 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 20 cm for models 4100 and 5100, 40 cm for model 5200, and 120 cm for model 4200, from all persons and must not be co-located or operated in conjunction with any other antenna or transmitter. Installers and 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 5200 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 A Digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.	Cet appareil numerique de la classe A respecte les exigences du Reglement sur le material broilleur du Canada.
The device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to cochannel mobile satellite systems.	L'artifice pour l'opération dans la bande 5150-5250 MHz est seulement pour l'utilisation en salle pour réduire le potentiel pour l'interférence malfaisante au radiotéléphone de co-canal les systèmes satellites.
The maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall comply with the EIRP limit.	l'augmentation d'antenne maximum permise pour les artifices dans les bandes 5250-5350 MHz et 5470-5725 MHz se pliera à la limite d'e.i.r.p.
The maximum antenna gain permitted for devices in the band 5725-5825 MHz shall comply with the EIRP limit specified for point-to-point and non point-to-point operation as appropriate.	l'augmentation d'antenne maximum permise pour les artifices dans la bande 5725-5825 MHz se pliera aux limites d'e.i.r.p. spécifiées pour le point-à-point et non l'opération de point-à-point comme appropriées.
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	Dispositifs Firetide 5100 et 5200 sont certifiés selon les exigences du CNR-210 pour les périphériques 2,4 GHz à étalement de spectre. L'utilisation de ce dispositif dans un système d'exploitation, partiellement ou complètement à l'extérieur peut obliger l'utilisateur à obtenir une licence pour le système en fonction de la réglementation canadienne. Pour de plus amples renseignements, communiquez avec votre bureau d'Industrie Canada.

#### **NCC Statement**

- 一、經型式認證合格之低功率射頻電機,非經許可,公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。
- 二、低功率射頻電機之使用不得影響飛航安全及干擾合法通信;經發現有干擾現象時,應立即停用,並改善至無干擾時方得繼續使用。 前項合法通信,指依電信法規定作業之無線電通信。

低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設 備之干擾。

# Appendix E 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.

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; or 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.

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.

