

Firetide

Installation & Setup Guide **HotPort 5020 Mesh Node**



HotPort 5020 MIMO Outdoor Mesh Node

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Safety Instructions

Firetide units must be installed by a qualified professional. Failure to install properly may result in equipment damage, personal injury, or death.

POWER LINES CAN BE LETHAL

Do not install Firetide products 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.

SURVEY 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.
- 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 mesh node has built-in lightning protection. Be sure that any other equipment connected to the HotPort mesh 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.

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1 System Overview



FIGURE 1.1 HOTPORT 5020
OUTDOOR MESH NODE

The Firetide HotPort 5020 is a member of Firetide's HotPort family of wireless mesh nodes. It offers features similar to Firetide's HotPort 7000 Series in a lower-cost unit.

Fundamentally, a Firetide mesh network gives you the convenience of a wired-Ethernet switch combined with the flexibility of wireless technology. A simple mesh network can be set up in minutes, with little more effort than it takes to deploy an Ethernet switch. At the same time, Firetide offers advanced features to enhance security, quality of service, and manageability.

This design makes the mesh ideal for any location where network cabling is too difficult or expensive to install. HotPort networks operate indoors and out, in the 900 MHz, 2.4, 4.9 (public safety), and 5 GHz bands. With its self-healing capabilities and traffic-prioritization options, a HotPort mesh network readily satisfies the demands of high-bandwidth/low-latency applications, such as video, voice, and data.

In addition, Firetide meshes support mobile mesh nodes, mobile 802.11 clients, and roaming. With this capability, nodes in a Firetide mesh can move rapidly from zone to zone.

Complete Stand-Alone System

A Firetide mesh is a self-contained a fully-functional Ethernet switch, using a wireless backplane for its interconnect. There is no master node, nor does the system require a computer or other management device. Thus, the system is highly fault-tolerant; loss of a single radio will not bring down the mesh.

Mesh Design and Software Configuration

For information on how design your mesh and configure your HotPort 5020 mesh nodes, refer to the the **HotView Pro Reference Guide**, available from Firetide.

2 HotPort 5020 Installation

This appendix shows a typical installation. Details will vary depending on antenna type.

The assembly must be grounded. If the mast is not already properly grounded, you will need appropriate grounding hardware. Consult local codes.

The HotPort 5020 units have three antenna connectors for each radio. Each HotPort 5020 unit should be installed with its antenna on a sturdy pole or mast. It does not matter whether you install the antenna first or the radio unit first. In all cases, antennas should be installed by a qualified professional. Outdoor installations **MUST** have code-approved grounding and lightning-protection systems.

Antenna Installation

An assembled and mounted antenna is shown in Figure 1.2. The mounting systems consists of a pole clamp assembly, a pivot link, and an antenna bracket. These are shown in Figure 1.3.

Begin assembly by attaching the pivot link to the pole clamp assembly. Use a flat washer under the bolt head, and under the nut use a flat washer and lock washer.

Next, attach the pole clamp assembly to the pole. Again, use a flat washer under the bolt heads, and under the nuts use a flat washer and lock washer.

Mount the antenna bracket to the antenna such that the mounting lug is horizontal when the top of the antenna is up. Antenna polarizations must match between the two ends of a link.



TABLE 1.1 INSTALLATION TOOLS

1/2-inch open-end wrench
7/16-in open-end wrench
3/8-inch open-end wrench
Phillips screwdriver
Channel-lock or slip-joint pliers
RJ-45 crimping tool and male plug
Waterproofing tape or mastic for RF connections.

FIGURE 1.2 MOUNTED ANTENNA

Back and top views

FIGURE 1.3 ANTENNA WITH BRACKET; TWO-PIECE ANGLE BRACKET; POLE CLAMPS

Installing the Radio Unit

FIGURE 1.6 THE RADIO UNIT MOUNTS WITH A TWO-PIECE MOUNTING ASSEMBLY.

One half of the assembly is permanently attached to a pole or wall; the second half, on the radio itself, hooks over the first.

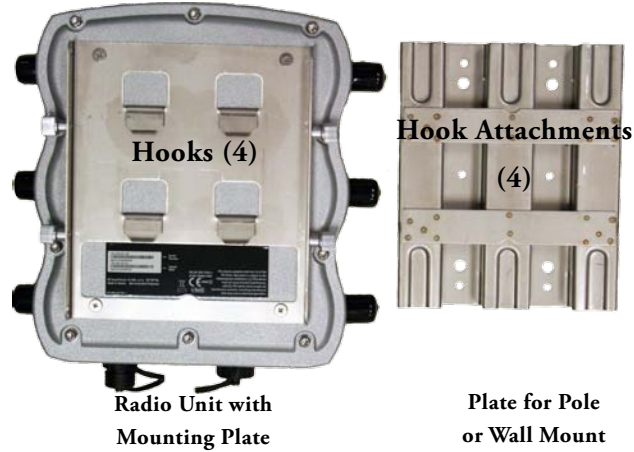


FIGURE 1.4 THE HOTPORT 5020 IS SHIPPED WITH A TWO-PIECE MOUNTING PLATE ALREADY ATTACHED.

Loosen the four fasteners, two on each side, to remove the hook-attachment plate. The captive screws are tight; you will need channel-lock or slip-joint pliers.



FIGURE 1.5 ATTACH TWO U-BOLT ASSEMBLIES TO THE MOUNTING POLE.

The U-bolts are large enough to accommodate large poles; if you are mounting on a smaller-diameter pole, you must either cut the U-bolts to length or use four additional spacer nuts.

Now you can hang the radio unit on the bracket, and tighten the four captive screws.



Connecting the Antennas



FIGURE 1.7 CABLE-TO-RADIO CONNECTIONS

Connect the radio unit to the antenna using the supplied cables. The cables are equipped with lightning-arrestor units, and should be installed with the arrestors connected to the radio unit, not the antennas.

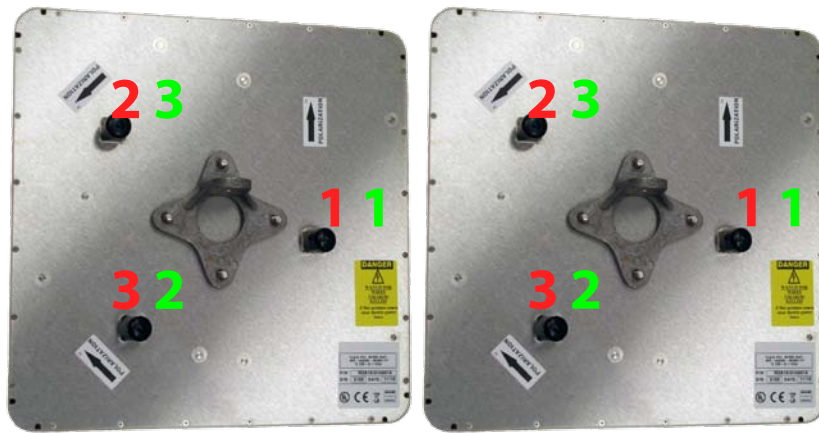


FIGURE 1.9 CABLE CONNECTION PATTERN IS CRITICAL.

You must use the Radio 2 antenna connectors; these are on the right side of the unit when viewed from the front. The panel antennas included with the HotPort 5020 are 'handed'; the individual antenna connections on the radio unit must be connected to the antenna in a specific way, and it is slightly different on each end of the link.

On one end of the link, connect the three antenna leads as shown in red. On the other end, connect them as shown in green. Not that this reverses connections 2 and 3; this preserves matching antenna polarization.



FIGURE 1.8 THE FINAL STEP IS TO FABRICATE THE WEATHERPROOF ETHERNET CONNECT.

Thread the cable as shown, and then attach it to the HotPort 5020 radio unit.

Appendix A HotPort 5020 Specifications

TABLE 1.2 WIRELESS INTERFACE SPECIFICATIONS

Model	Use	
HotPort 5020	Outdoor, Worldwide, Radio 2: 5 GHz	
Bands	Frequency (GHz)	Restrictions
802.11a	5.25-5.35	
802.11n	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
Bands	Max TX Power	
802.11a	5.725-5.825 UNII-3	26 dBm
802.11n		26 dBm
		24 dBm
		23 dBm
	5.470-5.735 UNII	23 dBm
	5.25-5.36 M UNII-2	23 dBm
802.11b	2.412-2.484	24 dBm
802.11g	2.412-2.484	26 dBm
802.11n		26 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
- 802.11g 6/9/12/18/24/36/48/54Mbps
- 802.11n 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/d/e/f/h/i/n
- Security: WPA; 64/128/256 w/TKIP, AES

POWER

- 48 VDC via DC connector or 802.3af PoE

ENVIRONMENTAL

- Humidity (non-condensing): 10% to 90%
- Storage humidity (non-condensing): 5% to 95%
- Maximum altitude 15,000 feet (4600 meters)

NETWORK PORT

- One 10/100/1000 Mbps Ethernet port 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)

SECURITY, AUTHENTICATION AND ENCRYPTION

- 802.11i, WPA2
- 40-bit, 104-bit WEP keys
- SSID suppression

NETWORK PORTS

- One 10/100/1000 autosense Base-T port
- IEEE 802.3,802.3 at based PoE

Firetide Mesh nodes 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.

Appendix B Regulatory Notices

FCC Part 15 Note	<p>These devices comply with Part 15 of the FCC Rules. Operation is subject to the following two conditions:</p> <ul style="list-style-type: none"> • 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	<p>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:</p> <ul style="list-style-type: none"> • 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	<p>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 76 cm for the HotPort 5020, 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 instructions.</p>
Modifications	<p>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.</p>
Installation	<p>Antenna(s) for the Model 5020 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.</p>
NCC Statement	<p>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。</p> <p>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。</p> <p>前項合法通信，指依電信法規定作業之無線電通信。</p> <p>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。</p>

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.
The device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel 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.
Firetide 5020 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.	Dispositifs Firetide 5100 et 5020 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.

TABLE 1.3 CANADIAN COMPLIANCE STATEMENT

DFS Rules

This section explains how to enable DFS operation, and how to correctly configure DFS channels so as to maintain compliance with FCC regulations and guidelines. Firetide equipment sold in the US has the country code pre-set to US; this cannot be altered. DFS operation can only be enabled and configured by a DFS-qualified professional installer. Contact Firetide for details. All listed channels must comply with basic DFS rules, including channel avoidance when radar signals are detected. Channels 120, 124, and 128 have been removed from DFS service completely. **These channels must not be used in the US anywhere, at any time.** They do not appear in channel listing in any Firetide product, and are only listed here for historical reference

Channels 116 and 132 may only be used when certain special rules have been followed. The channels can only be used if either of the following two conditions are met:

- The transmitting antenna is more than 35 km from all TDWR stations;
- OR**
- The TDWR is operating on a frequency more than 30 MHz different than the equipment.

DISTANCE

You must determine if there are any transmitting elements (i.e., any Firetide product) within 35 km of any TDWR system. If there are, you should register the installation.

REGISTRATION

A voluntary WISPA-sponsored database has been developed that allows registration of devices within 35 km of any TDWR location (see <http://www.spectrumbridge.com/udia/home.aspx>). This database is used by government agencies to expedite resolution of any interference with TDWRs.

CHANNEL AVOIDANCE

When a radar signature is detected on a channel, transmitters must stop using that channel. The Channel Selection control lets you configure the channels to which the system can switch, and the channels which must be avoided (blacklisted).

TDWR-Restricted Additional Requirements

Terminal Doppler Weather Radar systems operate in the 5600 MHz band, and must be kept free of interference from all other types of equipment. For this reason, the FCC has removed channels 120, 124, and 128 (5600-5640) from service, and placed additional restrictions on channels 116 (5580 MHz) and 132 (5660 MHz).

TABLE 1.4 DFS CHANNELS

This table shows channels defined as DFS. They are color-coded based on the applicable rule set.

Ch.	Center Freq.	Distance Determination	Registration	Channel Avoidance	TDWR Restrictions
52	5260	Yes	If > 35 km	Yes	No
56	5280	Yes	If > 35 km	Yes	No
60	5300	Yes	If > 35 km	Yes	No
64	5320	Yes	If > 35 km	Yes	No
100	5500	Yes	If > 35 km	Yes	No
104	5520	Yes	If > 35 km	Yes	No
108	5540	Yes	If > 35 km	Yes	No
112	5560	Yes	If > 35 km	Yes	No
116	5580	Yes	If > 35 km	Yes	Yes
120	5600	Banned			
124	5620	Banned			
128	5640	Banned			
132	5660	Yes	If > 35 km	Yes	Yes
136	5680	Yes	If > 35 km	Yes	No
140	5700	Yes	If > 35 km	Yes	No

If you are within 35 km of a TDWR, you may not operate on any channel that is within 30 MHz of the listed TDWR frequency. In some instances it is possible that a device may be within 35 km of multiple TDWRs. In this case the device must ensure that it avoids operation within 30 MHz for each of the TDWRs.

This requirement applies even if the master is outside the 35 km radius but communicates with outdoor clients which may be within the 35 km radius of the TDWRs.

The requirement for ensuring 30 MHz frequency separation is based on the best information available to date. If interference is not eliminated, a distance limitation based on line-of-sight from TDWR will need to be used. In addition, devices with bandwidths greater than 20 MHz may require greater frequency separation.

ST	City	Longitude	Latitude	Frequency	Elev	Ht
AZ	Phoenix	W 112 09 46	N 33 25 14	5610 MHz	1024	64
CO	Denver	W 104 31 35	N 39 43 39	5615 MHz	5643	64
FL	Ft Lauderdale	W 080 20 39	N 26 08 36	5645 MHz	7	113
FL	Miami	W 080 29 28	N 25 45 27	5605 MHz	10	113
FL	Orlando	W 081 19 33	N 28 20 37	5640 MHz	72	97
FL	Tampa	W 082 31 04	N 27 51 35	5620 MHz	14	80
FL	West Palm Beach	W 080 16 23	N 26 41 17	5615 MHz	20	113
GA	Atlanta	W 084 15 44	N 33 38 48	5615 MHz	962	113
IL	Mccook	W 087 51 31	N 41 47 50	5615 MHz	646	97
IL	Crestwood	W 087 43 47	N 41 39 05	5645 MHz	663	113
IN	Indianapolis	W 086 26 08	N 39 38 14	5605 MHz	751	97
KS	Wichita	W 097 26 13	N 37 30 26	5603 MHz	1270	80
KY	Covington-Cincinnati	W 084 34 48	N 38 53 53	5610 MHz	942	97
KY	Louisville	W 085 36 38	N 38 02 45	5646 MHz	617	113
LA	New Orleans	W 090 24 11	N 30 01 18	5645 MHz	2	97
MA	Boston	W 070 56 01	N 42 09 30	5610 MHz	151	113
MD	Brandywine	W 076 50 42	N 38 41 43	5635 MHz	233	113
MD	Benfield	W 076 37 48	N 39 05 23	5645 MHz	184	113
MD	Clinton	W 076 57 43	N 38 45 32	5615 MHz	249	97
MI	Detroit	W 083 30 54	N 42 06 40	5615 MHz	656	113
MN	Minneapolis	W 092 55 58	N 44 52 17	5610 MHz	1040	80
MO	Kansas City	W 094 44 31	N 39 29 55	5605 MHz	1040	64
MO	Saint Louis	W 090 29 21	N 38 48 20	5610 MHz	551	97
MS	Desoto County	W 089 59 33	N 34 53 45	5610 MHz	371	113
NC	Charlotte	W 080 53 06	N 35 20 14	5608 MHz	757	113
NC	Raleigh Durham	W 078 41 50	N 36 00 07	5647 MHz	400	113
NJ	Woodbridge	W 074 16 13	N 40 35 37	5620 MHz	19	113
NJ	Pennsauken	W 075 04 12	N 39 56 57	5610 MHz	39	113
NV	Las Vegas	W 115 00 26	N 36 08 37	5645 MHz	1995	64
NY	Floyd Bennett Field	W 073 52 49	N 40 35 20	5647 MHz	8	97
OH	Dayton	W 084 07 23	N 40 01 19	5640 MHz	922	97
OH	Cleveland	W 082 00 28	N 41 17 23	5645 MHz	817	113
OH	Columbus	W 082 42 55	N 40 00 20	5605 MHz	1037	113
OK	Aero. Ctr TDWR #1	W 097 37 31	N 35 24 19	5610 MHz	1285	80
OK	Aero. Ctr TDWR #2	W 097 37 43	N 35 23 34	5620 MHz	1293	97
OK	Tulsa	W 095 49 34	N 36 04 14	5605 MHz	712	113
OK	Oklahoma City	W 097 30 36	N 35 16 34	5603 MHz	1195	64
PA	Hanover	W 080 29 10	N 40 30 05	5615 MHz	1266	113
PR	San Juan	W 066 10 46	N 18 28 26	5610 MHz	59	113
TN	Nashville	W 086 39 42	N 35 58 47	5605 MHz	722	97
TX	Houston Intercontl	W 095 34 01	N 30 03 54	5605 MHz	154	97
TX	Pearland	W 095 14 30	N 29 30 59	5645 MHz	36	80
TX	Dallas Love Field	W 096 58 06	N 32 55 33	5608 MHz	541	80
TX	Lewisville DFW	W 096 55 05	N 33 03 53	5640 MHz	554	31
UT	Salt Lake City	W 111 55 47	N 40 58 02	5610 MHz	4219	80
VA	Leesburg	W 077 31 46	N 39 05 02	5605 MHz	361	113
WI	Milwaukee	W 088 02 47	N 42 49 10	5603 MHz	820	113

Latitude and Longitude based on NAD83 datum.

FIGURE 1.10 TDWR INSTALLATIONS

This list is current as of August 2011. Elevation and antenna height shown in feet. Refer to www.fcc.gov for the most current version.

Appendix C 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.

