

FLASH TECHNOLOGY



FLASH TECHNOLOGY FTM 190-3

**Monitoring System
Reference Manual
Part Number F7911903**

SERIAL NUMBER

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Front Matter

Abstract

This manual contains information and instructions for installing, operating and maintaining the FTM 190-3 Monitoring System.

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In no event will Flash Technology be liable for direct, indirect, special, incidental, or consequential damages arising out of the use of or the inability to use this manual.

Warranty

Flash Technology warrants all components, under normal operating conditions, for 1 year.

Personnel Hazard Warning

Dangerous Voltages

Dangerous line voltages reside in certain locations in this equipment. Flash Technology has incorporated every practical safety precaution, exercise extreme caution at all times when you expose circuits and components, and when you operate, maintain, or service this equipment.

Avoid Touching Live Circuits

Avoid touching any component or any part of the circuitry while the equipment is operating. Do not change components or make adjustments inside the equipment with power on.

Disconnecting Power

When removing power from the equipment, ensure that the red wire to the battery is disconnected first. Reconnect battery after work is completed.

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Section 1 – Introduction

Introduction

The FTM 190-3 Monitoring Unit provides Cellular Eagle 2.0 remote monitoring of Flash Technology FTB 3XX medium intensity strobe systems (29038XX PCB required), FTS-371 smart systems and all FLC series controllers via RS 485. The FTM 190-3 can also monitor up to eight dry contact inputs. The unit is equipped with an internal battery back-up which allows continued operation and alarm reporting during power failures.

Dry contacts are typically alarm relays provided by equipment for external monitoring of alarm conditions. Each input of the FTM 190-3 can be configured by Flash Technology's NOC (National Operations Center) to alarm on either open or closed status. **Alarm on open is preferred for fail safe monitoring.**

All Cellular Eagle alarm and communication monitoring is handled by the NOC.

The FTM 190-3 can additionally perform monitoring using an SNMP protocol.

Note: If the FTM 190-3 is equipped with a wireless modem, power-up the system on-site to ensure wireless service is available before permanently installing or wiring the system. Refer to Section 2 for detailed instructions.

Description

The internal wiring of the unit is shown in Figure 2-1. A component location diagram is shown in Figure 6-1. The dry contact inputs are located on J6 and J7 of PCB 1 (PN 2410000) as shown in Figure 2-5.

Specifications

Physical

Dimensions H x W x D (millimeters)
13.51" x 11.32" x 7.11"
(343.15 x 287.5 x 180.6)

Weight (kilograms)
10 lbs. (4.5)

Electrical

AC Voltage 120 VAC, 60 Hz
Power 10 VA
Battery Operation 2+ hrs

Section 2 – Mounting and Installation

Unpacking

Inspect shipping cartons for signs of damage before opening them. Check package contents against the packing list and inspect each item for visible damage. Report damage claims promptly to the freight handler.

Wireless Modem Service Verification

If the FTM 190-3 is equipped with a wireless modem, service at the location where the unit will be installed must be verified before it is installed. The following steps will verify that service is available.

Figure 2-1 shows an internal wiring diagram of the unit with the input power connections on TB1. Temporarily apply 120 VAC to the unit at TB1 terminals “L1”, “N”, and \perp . The LEDs located on PCB1 will illuminate during the initialization process. Up to two minutes may be required for signal strength indication to occur on PCB1. The Signal Strength Indicator LEDs labeled “SSI” (see Figure 2-5) will light up to indicate the strength of the available signal. After a wireless signal is found, the unit will attempt to connect to the NOC. While

communication is underway, the “ACTIVE” LED will blink and the “STATUS” LED will be off. When communication is successfully completed, the “ACTIVE” LED will be off and the “STATUS” LED will be on to indicate that all information has been communicated successfully.

Note: LED indicators on the modem provide further details on cellular connection. See Figure 2-1 “Modem LED’s” table for a description of each LED.

Finding the Best Installation Location

Move the external antenna to various locations to determine the maximum signal strength available at the site, as indicated by the number of Signal Strength Indicator LEDs labeled “SSI” on PCB1 which are lit. The SSI LED’s will indicate the Signal Strength approximately 35 seconds after the antenna is moved. This will help determine the location where the FTM 190-3 should be mounted.

Upon successful completion of these steps, shut off power to the unit and proceed with installation.

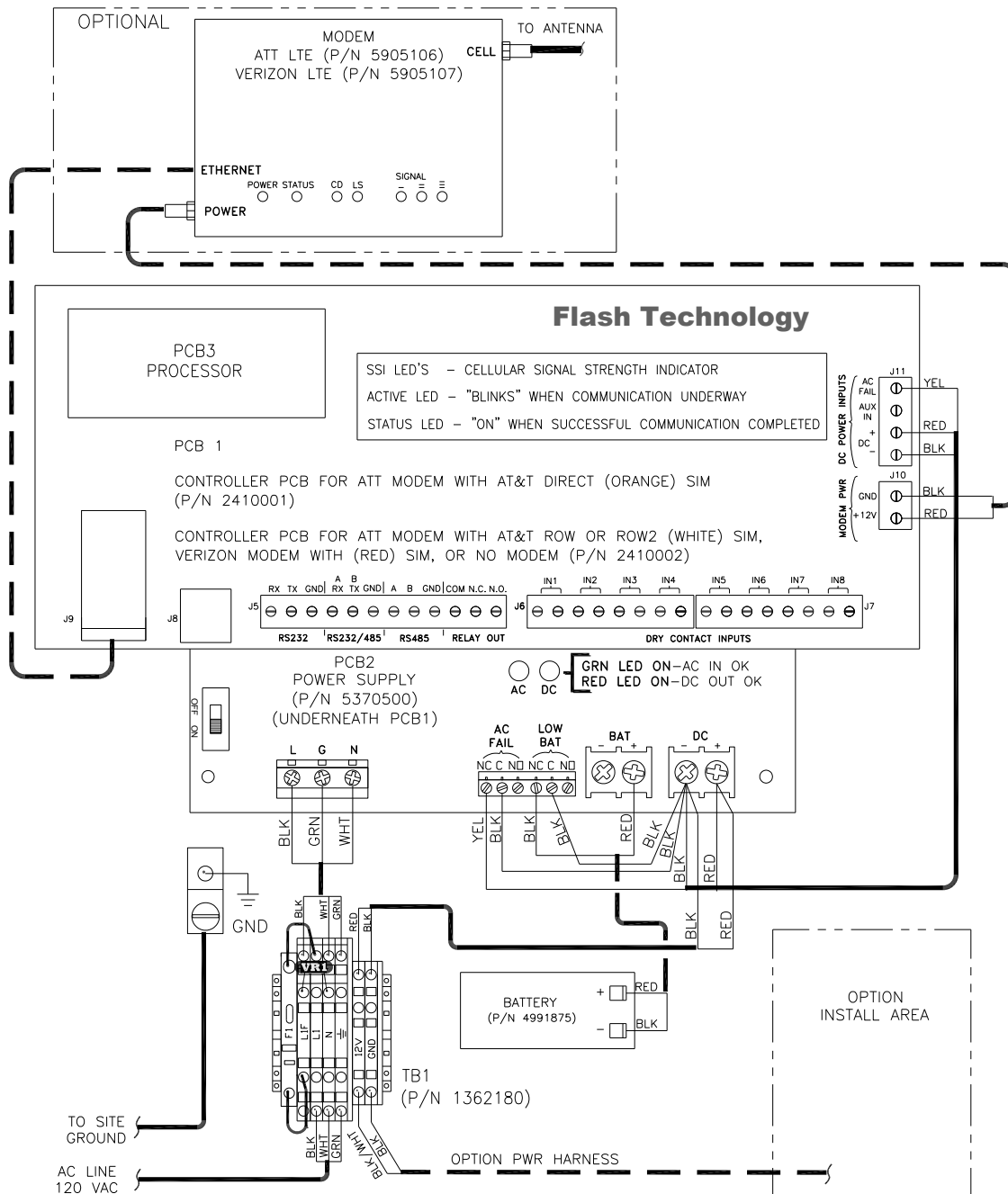


Figure 2-1 – FTM 190-3 Internal Wiring

Installation

WARNING!

Read the warning on Page i now. Disconnect primary power before opening enclosures.

Recommended Tools

Flash Technology recommends the following tools for installation and maintenance:

- Tools for securing mounting hardware
- 1/8" non-flared flat blade screw driver
- #2 Phillips® head screwdriver
- Long-nose pliers
- Wire Strippers
- Digital volt-ohm meter
- Level
- Cable Ties
- Camera (for documentation)

FTM 190-3 Access

The cover is hinged and secured with latches. Release the latches and swing the cover open for internal access.

Mounting

The FTM 190-3 enclosure mounting outline and dimensions are shown in Figure 2-2. Ensure that adequate space exists around the equipment for access during installation, maintenance and servicing. Mounting hardware is not provided unless it is ordered as part of an installation kit.

AC Power Wiring

The AC line connections are made at "L1", "N", and \perp located on TB1 in the

lower left of the unit. Also located on TB1 is a Metal Oxide Varistor (VR1) and a fuse (F1). The incorporation of VR1 and F1 on TB1 provides increased protection against AC power transients. The F1 fuse holder also acts as a power disconnect to the unit. Grasp the fuse holder at the top and pull down to disconnect power. Connect 120 VAC power to terminal block TB1 (L1, N, \perp) as shown in Figure 2-1.

Note: Leave power turned off until you are ready for activation (see Section 3).

The terminal block uses spring-cage contacts to provide rugged, trouble-free connections which are vibration-proof and gas-tight, thus providing long-term stability. The conductor contact force is determined by the spring tension and so is independent of the user tightening torque as with screw type terminals.

To install a wire, follow these steps:

1. Strip the insulation, exposing 0.4 inch (10 mm) or more of conductor.
2. Insert a standard 1/8" width screwdriver into the rectangular slot and push. This causes the spring clip to open.
3. Insert the conductor fully into the round terminal compartment and then remove the screwdriver. The conductor automatically makes contact.
4. Check that contact is made to conductor metal and not insulation.

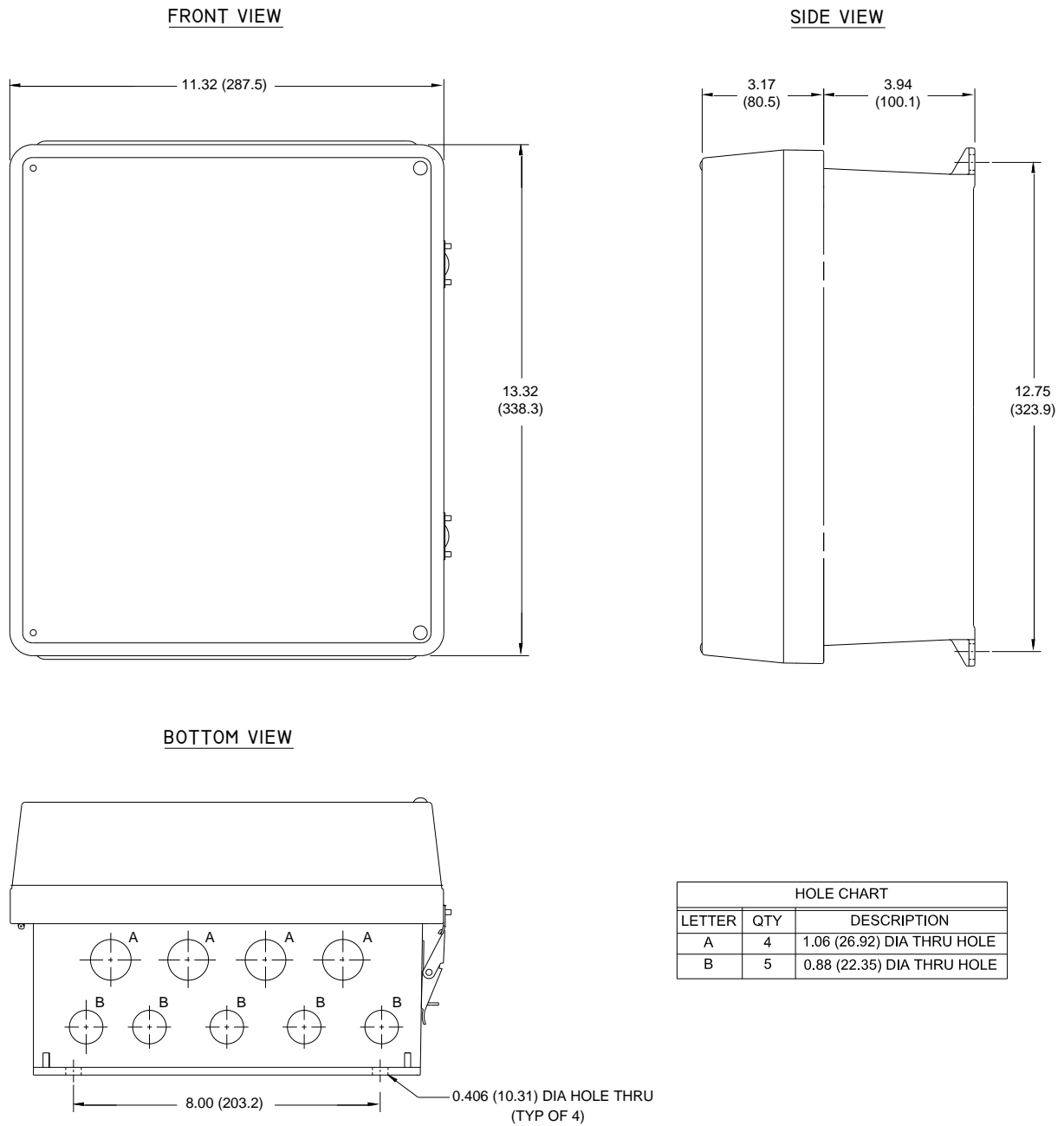


Figure 2-2 – Enclosure Mounting Footprint

Dry Contact Input Wiring

Connect the equipment to be monitored via dry contact inputs as shown in Figure 2-5. A label has been provided on the inside cover of the unit to record each input, up to eight (8), that is connected. Figure 2-3 depicts the dry contact input label.

Note: Each input can be configured by Flash Technology's National Operations Center (NOC) to alarm on either open or closed status. **Alarm on open is preferred for fail safe monitoring.**

RS-485 Wiring

Connect the Flash Technology FLC Controller or FTB 3XX medium intensity strobe system (29038XX PCB required) to be monitored via RS-485 as shown in Figures 2-6 and 2-7. Figure 2-5 shows the layout of PCB1 located in the FTM 190-3.

Antenna Mounting Bracket

The Flash Technology **Antenna Universal Mounting Bracket Kit** (PN 1905355) is supplied with units equipped with a wireless modem. As seen in Figure 2-4, it accommodates the body mount style antenna and provides multiple mounting options (wall, Uni-strut, or pole) permitting antenna installation in the optimum location for best signal strength and reliable communication.

Important: The antenna bracket must be grounded with a minimum AWG 14

Ground wire to the site Grounding System. Observe proper Grounding procedures.

The FTM 190-3 is shipped with the antenna preinstalled and the antenna cable's SMA connector torqued to specification onto the modem antenna connector for optimal performance. **Do not remove or disconnect unless replacing the modem or antenna.**

To install the bulkhead mount style antenna, loosen the antenna mounting nut and washer and slide the antenna mount through the bracket's center hole slot. Tighten the hardware.

Important! For best communication performance and to minimize potential for surge damage to the modem radio module, it is very important that the supplied antenna mounting bracket be used for mounting the antenna and that the bracket be grounded with a minimum 14 AWG Ground wire connected to the site Grounding System. Also, if any excess antenna cable is coiled up, the coil diameter must not be less than 18 inches.

Grounding

To provide increased immunity from lightning damage to the FTM 190-3, it is essential that the Ground Lug located in the lower left corner of the baseplate (Figure 2-1) be properly connected by a No. 2 AWG conductor to the site Grounding System. Observe proper grounding procedures.

DRY CONTACT INPUTS	
DESCRIPTION	ALARM (CIRCLE ONE)
1 _____	OPEN / CLOSED
2 _____	OPEN / CLOSED
3 _____	OPEN / CLOSED
4 _____	OPEN / CLOSED
5 _____	OPEN / CLOSED
6 _____	OPEN / CLOSED
7 _____	OPEN / CLOSED
8 _____	OPEN / CLOSED

Figure 2-3 – Dry Contact Input Label

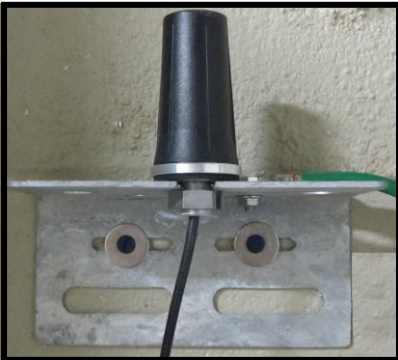
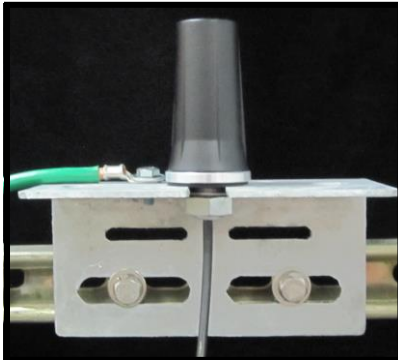
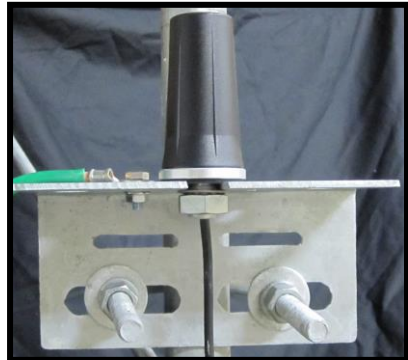
<p><u>Wall Mount</u> Use screws to mount to the inside or outside wall of a shelter. <i>(Screws are not included in the kit.)</i></p>	<p><u>Horizontal Uni-strut Mount</u> Use spring-nuts to mount to Uni-strut. <i>(Spring-nuts are not included in the kit.)</i></p>	<p><u>Vertical Pole or H-frame post Mount</u> Use 3" U-bolt (<i>included</i>) to mount to pole or H-frame post. The bracket permits use of larger U-bolts, up to 5".</p>
		

Figure 2-4 – Antenna Mounting Options

Status Indicator LED's

Table 2-1 describes the LED's that are present on PCB 1. The location of each LED is shown in Figure 2-5.

Table 2-1 – PCB 1 LED's

LED #	Label	Description
I1	+3.3V	3.3V DC supply is being generated by PCB 1.
I2	+5.0V	5.0V DC supply is being generated by PCB 1.
I3	AC PWR	AC input power is present.
I4	ACTIVE	Blinks to indicate cellular communication is underway.
I5	STATUS	On to indicate all information has been communicated successfully.
I6	RLY CTL	The control relay output is energized.
I7	RS 485 TX	Data is being transmitted to the connected Flash Technology equipment (FLC Controller or 29038XX PCB).
I8	RS 485 RX	Data is being received from the connected Flash Technology equipment (FLC Controller or 29038XX PCB).
I9 – I13	SSI	Signal Strength Indicator. Upon boot up, these LEDs will show an upward blinking sequence to indicate the unit is beginning normal operation. During firmware upgrade these LEDs will show a downward blinking pattern. During normal operation, the current signal strength is represented by the total number of LEDs lit (I13 – I9).
I14 – I21	IN 1 – IN 8	Dry contact input # (1 – 8) is closed or shorted.

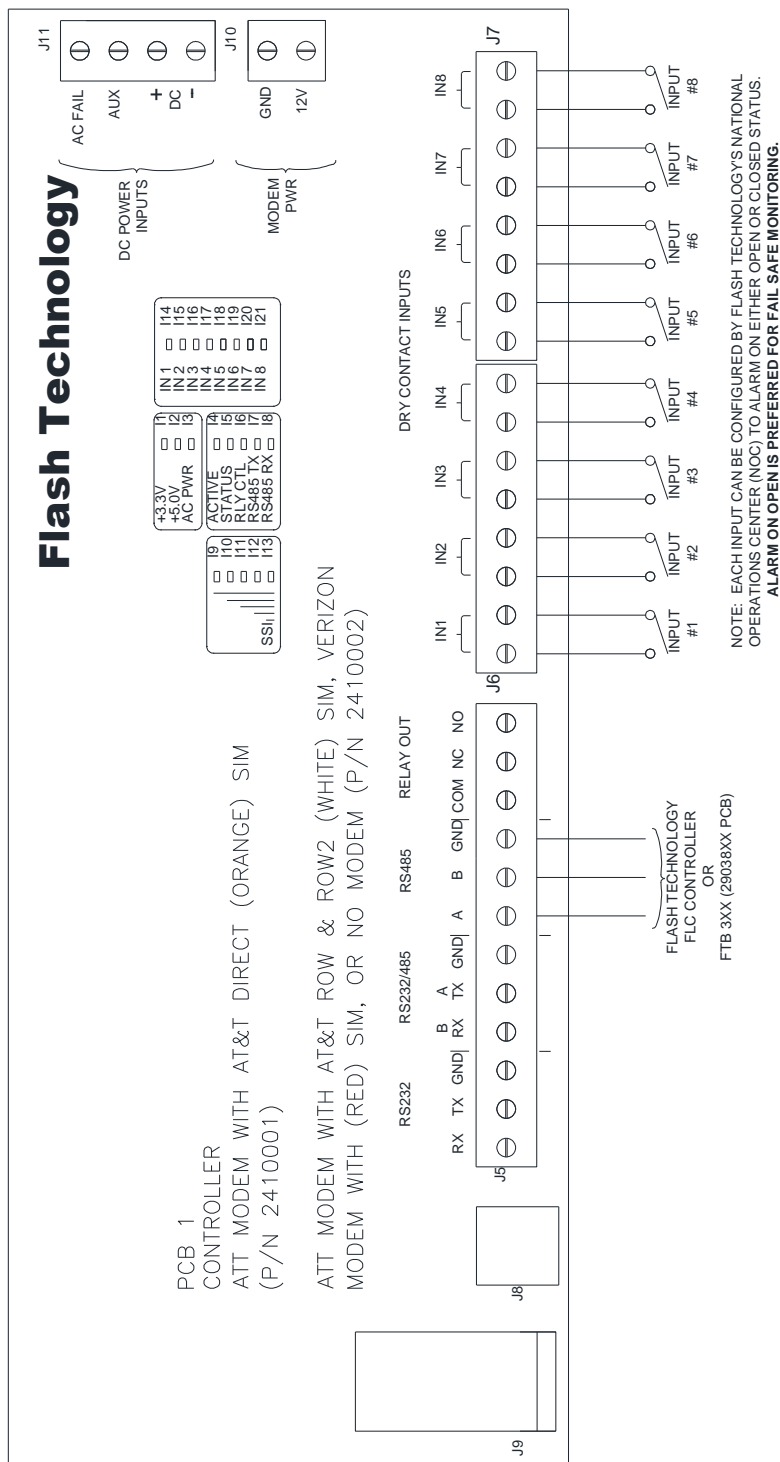
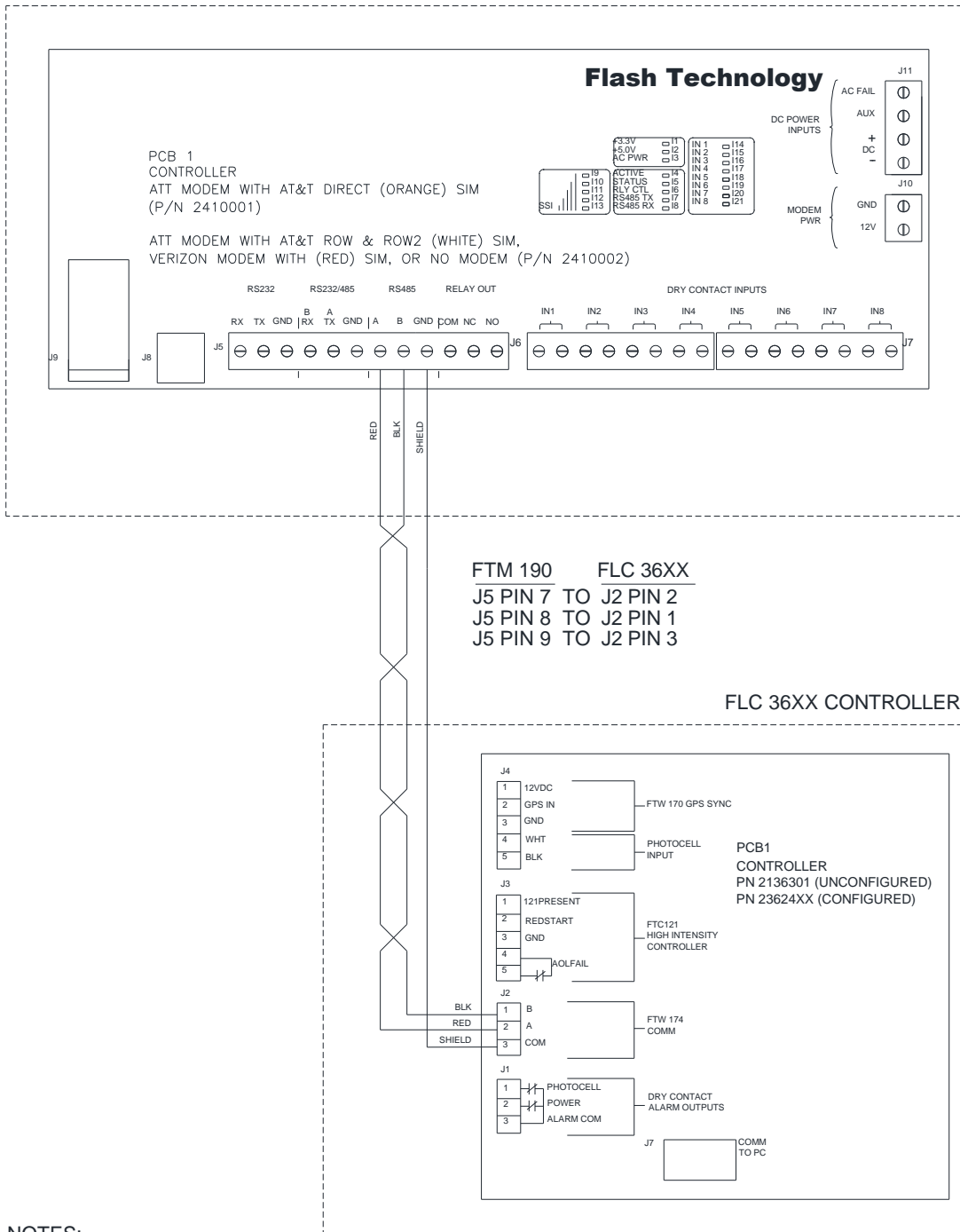


Figure 2-5 – PCB 1 Layout and External Wiring

FTM 190 MONITORING UNIT



NOTES:

RS485 PORT J5 PINS 7, 8 AND 9 ON THE FTM 190 MUST BE CONNECTED TO J2 PINS 1, 2 AND 3 ON THE 36XX CONTROLLER.

Figure 2-6 – RS-485 Installation with FTS 36XX

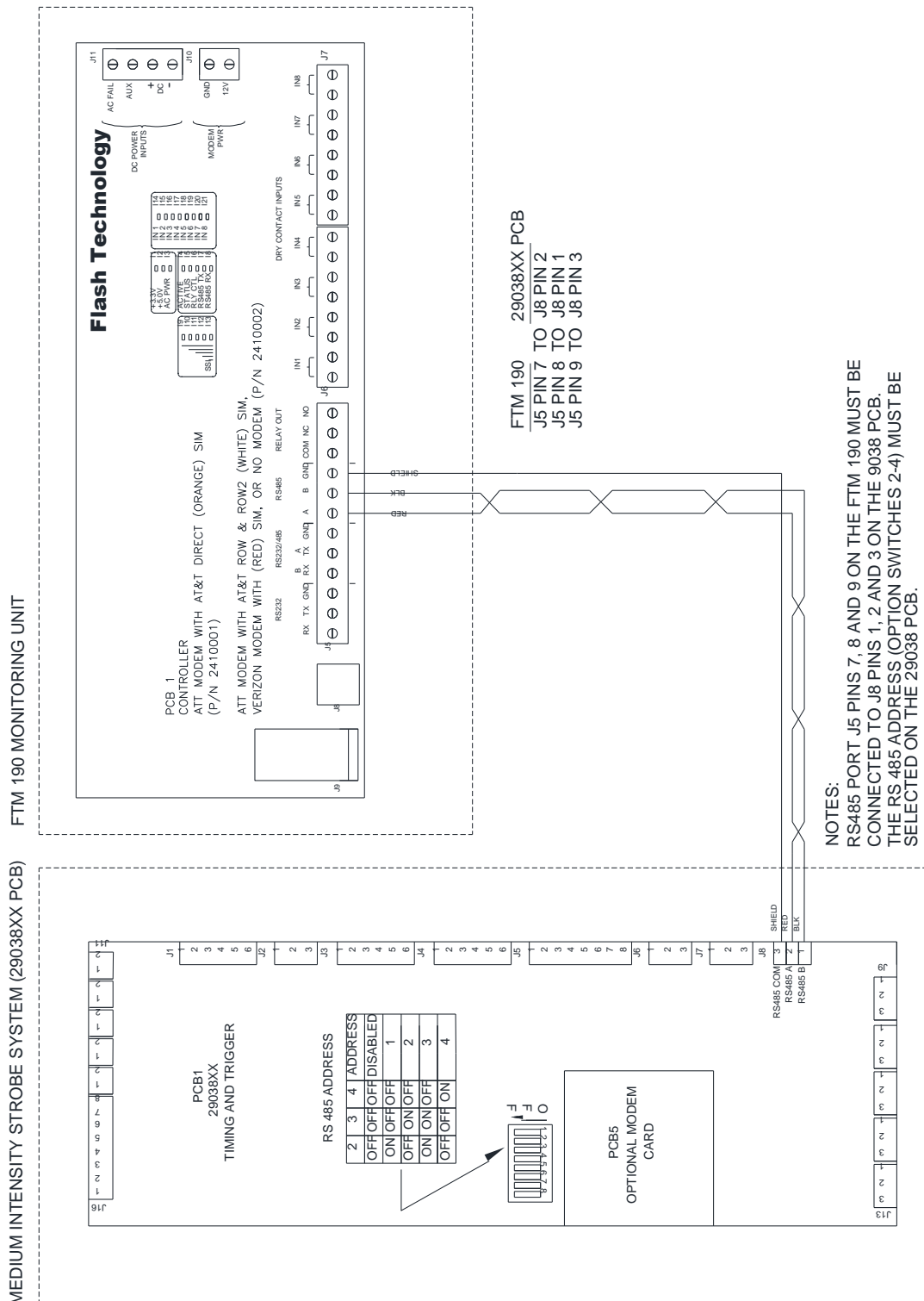
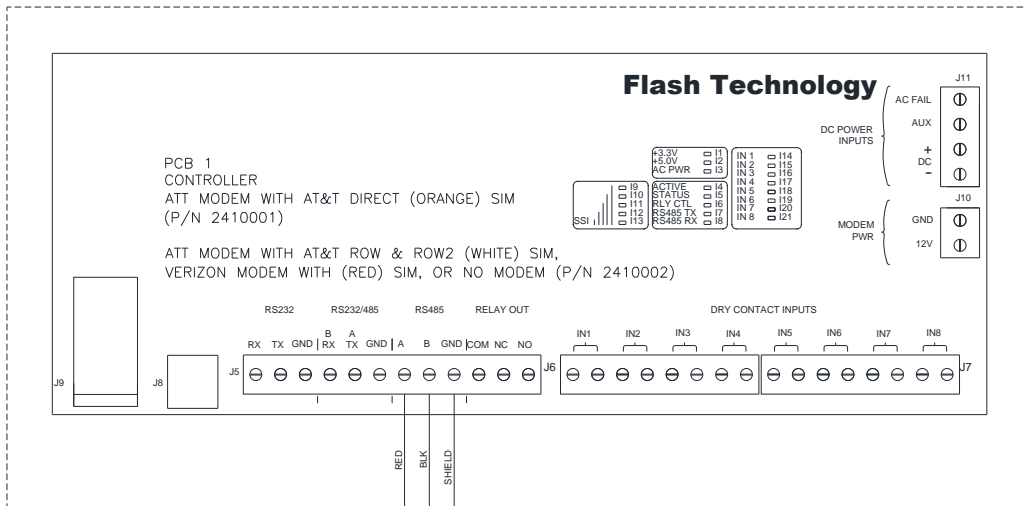
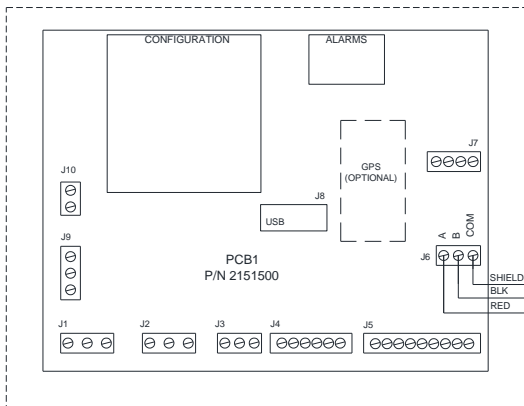


Figure 2-7 – RS-485 Installation with FTM 3XX (29038XX PCB)

FTM 190 MONITORING UNIT



FTS 371 SMART AC FTC (2151500 PCB)



FTM 190 2151500 PCB

J5 PIN 7 TO J6 PIN 1
J5 PIN 8 TO J6 PIN 2
J5 PIN 9 TO J6 PIN 3

NOTES:

RS485 PORT J5 PINS 7, 8 AND 9 ON THE FTM 190 MUST BE CONNECTED TO J6 PINS 1, 2 AND 3 ON THE 371 SMART AC PCB. INSURE THE RS-485 ROTARY SWITCH IS IN POSITION 0 ON THE 371 SMART AC PCB.

Figure 2-8 – RS-485 Installation with FTS 371

Section 3 – Activation

Monitoring

Once installation is completed, follow the procedure below to activate service and begin monitoring:

1. Please be prepared to provide the following information:

The wireless number for this unit. The label is located on the inside front cover.

Your name, contact number and company.

If monitoring an FCC registered tower site, the site number and FCC number.

Descriptions of the items being monitored by each input.

2. Re-apply power to the equipment and observe the “SSI”, “Active” and “Status” LED’s.

Note: Refer to Figure 2-5 for LED locations and Table 2-1 to LED descriptions.

3. When power up initialization is complete, the SSI LED’s will blink one at a time in an upward pattern followed by all the SSI LED’s blinking once together. This indicates normal firmware operation is starting.
4. Up to two minutes may be required after power-up for signal strength indication to occur on PCB1. The Signal Strength Indicator LEDs

labeled “SSI” on PCB1 will light up to indicate the strength of the available signal. While communication is underway, the “Active” LED will blink and the “Status” LED will be off. When communication is successfully completed, the “ACTIVE” LED will be off and the “STATUS” LED will be on to indicate that all information has been communicated successfully.

5. Secure the external antenna on the Antenna Mounting Bracket in a location which provides maximum signal strength as indicated by the number of “SSI” LEDs lit (I13 – I9).
6. Connect the red wire to + (Positive) and the black wire to – (Negative) on the battery as shown in Figure 2-1.
7. Call 1-800-821-5825 to initiate monitoring while on-site. The NOC technician will request several tests to be performed to verify correct installation and operation of the system.

Note: Once the unit is powered and communication is established, it will automatically send a message to the NOC to initiate service and billing will begin.

Section 4 – Web Interface

Web Interface

The FTM 190-3's Web Interface provides a convenient way to program the system and temporarily control mode without physically accessing the unit. The ability to perform Lighting Inspections remotely on select Flash Technology lighting equipment connected via the RS 485 interface is also provided. Additional useful information such as event history, cumulative runtime and the FTM 190-3 product manual (current at firmware release) can be viewed via the web interface.

Initial Setup

The following items are required for initial access and setup of the system:

- Laptop computer
 - Ethernet crossover cable
1. Set the computer's IP address to 192.168.1.15
 2. Connect the crossover cable between the laptop's Ethernet port and the Ethernet port (J9) located on the FTM 190-3.
 3. Open a web browser on the laptop and enter the following address on the browser's address line:
http://192.168.1.11
 4. The web browser will display a screen similar to the one shown to the right.
 5. Locate and select the FTM 190-3's Configuration Menu located at the bottom of the window.

The screenshot displays the FTM 190-3 Web Interface. At the top is the 'FLASH TECHNOLOGY' logo. Below it are links for 'Product Manual', 'Site Name: Not Set', and 'Site ID: Not Set'. A support number '1-800-821-5825' is also present. The 'Tower Lighting Status' section shows a table with 'Controller' (Not Detected) and 'Total Alarms' (0). The 'FTM 190 V1.5.1' section shows a table of system components and their states, all marked as 'Ok'. The 'Modem Status' section shows a table of cellular network details. The 'Event History' section has an 'Event Log' button. The 'Configuration' section has a 'Configuration' button. The footer indicates '© 2017 SPX Corporation'.

Description	Value
Controller	Not Detected
Total Alarms	0

Description	State
Relay Status	Inactive
Dry Contact 1 (DC #1)	Ok
Dry Contact 2 (DC #2)	Ok
Dry Contact 3 (DC #3)	Ok
Dry Contact 4 (DC #4)	Ok
Dry Contact 5 (DC #5)	Ok
Dry Contact 6 (DC #6)	Ok
Dry Contact 7 (DC #7)	Ok
Dry Contact 8 (DC #8)	Ok
Input AC Power	Ok
Tower RS485 Communication Status	Ok
Temperature	31.1 °C / 88.0 °F

Description	State
Cellular IP Address	0.0.0.0
Modem Type	LTE
Signal Strength (Bars)	5
Signal Strength (Decibels)	69 dB
Cellular Service Type	LTE
IMEI Number	XXXXXXXXXXXX
SIM Card Type	Customized
Roaming Status	Not Roaming
Cell Number	000000000

Note: Shown with Verizon modem installed. AT&T Modem Status similar.

Configuration Menu

The Configuration menu provides access to all of the FTM 190-3's programmable settings. The menu is divided into the following four subsections: Device, Monitoring, Network and SNMP Labels. Each menu section is discussed in the following subheadings.

FLASH TECHNOLOGY

Site Name: FTM-190

Site ID: SPX #1

For Support: 1-800-821-5825

Menu

[Home](#)

FTM 190 Configuration

- [Device](#)
- [Monitoring](#)
- [Network](#)
- [SNMP Labels](#)
- [Cellular Modem](#)
- [SNMP Settings](#)
- [Login Settings](#)
- [System Settings](#)

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Device

The Device Configuration menu, shown to the right, provides access to configure the dry contact inputs and the relay output. It also allows RS 485 communication and input power monitoring to be enabled or disabled. The following subheadings provide detailed information regarding configuration of each option in the Device Configuration Menu.

Note: Once configuration is completed, any changes must be saved by pressing the "Commit Settings" button.

Description	Current State	Set State
Relay Status	Inactive	<input type="radio"/> Active <input checked="" type="radio"/> Inactive
Dry Contact 1(DC #1) Configuration	NO	<input checked="" type="radio"/> NO <input type="radio"/> NC
Dry Contact 2(DC #2) Configuration	NO	<input checked="" type="radio"/> NO <input type="radio"/> NC
Dry Contact 3(DC #3) Configuration	NO	<input checked="" type="radio"/> NO <input type="radio"/> NC
Dry Contact 4(DC #4) Configuration	NC	<input type="radio"/> NO <input checked="" type="radio"/> NC
Dry Contact 5(DC #5) Configuration	NO	<input checked="" type="radio"/> NO <input type="radio"/> NC
Dry Contact 6(DC #6) Configuration	NO	<input checked="" type="radio"/> NO <input type="radio"/> NC
Dry Contact 7(DC #7) Configuration	NC	<input type="radio"/> NO <input checked="" type="radio"/> NC
Dry Contact 8(DC #8) Configuration	NO	<input checked="" type="radio"/> NO <input type="radio"/> NC
Tower RS485	Enabled	<input checked="" type="checkbox"/>
Input AC Power	Enabled	<input checked="" type="checkbox"/>
Dry Contact 1(DC #1)	Enabled	<input checked="" type="checkbox"/>
Dry Contact 2(DC #2)	Enabled	<input checked="" type="checkbox"/>
Dry Contact 3(DC #3)	Enabled	<input checked="" type="checkbox"/>
Dry Contact 4(DC #4)	Enabled	<input checked="" type="checkbox"/>
Dry Contact 5(DC #5)	Enabled	<input checked="" type="checkbox"/>
Dry Contact 6(DC #6)	Enabled	<input checked="" type="checkbox"/>
Dry Contact 7(DC #7)	Enabled	<input checked="" type="checkbox"/>
Dry Contact 8(DC #8)	Enabled	<input checked="" type="checkbox"/>
Dry Contact 1(DC #1) Noise Filter	Disabled	<input type="checkbox"/>
Dry Contact 2(DC #2) Noise Filter	Disabled	<input type="checkbox"/>
Dry Contact 3(DC #3) Noise Filter	Disabled	<input type="checkbox"/>
Dry Contact 4(DC #4) Noise Filter	Enabled	<input checked="" type="checkbox"/>
Dry Contact 5(DC #5) Noise Filter	Disabled	<input type="checkbox"/>
Dry Contact 6(DC #6) Noise Filter	Disabled	<input type="checkbox"/>
Dry Contact 7(DC #7) Noise Filter	Enabled	<input checked="" type="checkbox"/>
Dry Contact 8(DC #8) Noise Filter	Disabled	<input type="checkbox"/>
Temporary Disarm Drycontact Noise Filter	No	<input type="checkbox"/>

[Commit Settings](#) [Cancel](#) [Home](#)

Relay Status

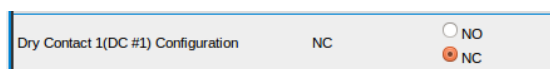
The FTM 190-3 provides one relay output for control of an external device. The state of the relay output is controlled by the configuration menu.



Note: Relay contacts rated at 5A 250V AC. The connected load must not exceed this limit.

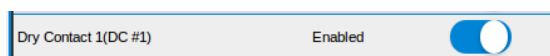
Dry Contact Input Configuration

The dry contact configuration menu is divided into three sections. The first section allows the alarm state of the contact to be selected.

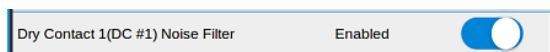


Note: To ensure proper alarm monitoring, Flash Technology recommends monitoring contacts that are open in an alarm condition (NC).

The second section allows each dry contact input to be enabled or disabled.

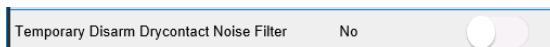


The third section allows an optional noise filter to be applied to the contact monitoring firmware to prevent chattering alarms. A time delay is added to the restore logic to prevent alarms from toggling too frequently on sensitive inputs.



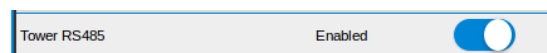
Note: Noise filtering only works with dry contacts configured as "NC".

The noise filters can be temporarily disabled when conducting lighting inspections or repairs.



RS 485 Alarm Configuration

If connected, RS 485 communication is automatically detected and configured. The RS 485 communication alarm is not automatically enabled. Enable the alarm if a device utilizing RS 485 communications is connected at J5 terminals 7-9. Typically, the RS 485 alarm is disabled if dry contact only monitoring is utilized.



Note: Currently, only Flash Technology FTB 3XX Medium Intensity Strobes (29038xx PCB), FTS 36XX systems and FTS 371 Smart systems may be connected via RS 485. See "Tower Menu" for additional information.

Input Power Alarm Configuration

The Input AC Power alarm monitors the AC power input to the FTM 190-3. Enable the alarm if notification of AC power failure is desired.



Commit Settings

Once programming is complete, any changes must be saved by pressing the "Commit Settings" button. Press "Cancel" to discard changes. Press the "Home" button to return to the main menu.



Monitoring

The Monitoring Configuration menu, shown to the right, provides access to configure the Primary and Alternate monitoring methods. Configuration for each method is discussed in the following subheadings.

Primary Monitoring Configuration

The Primary Monitoring Configuration menu provides setup of Eagle monitoring by Cellular or Ethernet connection. The Monitoring Method should be set to “Disable” if the system is not monitored by Flash Technology.

Monitoring Method	Cellular Eagle	--- Select ---
Primary IP Addr		--- Select ---
Primary Port		Disable Cellular Eagle Ethernet Eagle

The “Automatic Update Interval” is selectable from 1 to 24 hours. Use the drop down menu to select the desired interval. Press the “Commit Settings” button to apply changes.

Note: The default Monitoring Method is “Cellular Eagle” when the FTM 190-3 is supplied with a cellular modem.

Alternate Monitoring Configuration

The Alternate Monitoring Configuration menu provides setup of SNMP monitoring by Ethernet connection. The default for the Alternate Monitoring Method is Disabled.

Monitoring Method	Ethernet SNMP	--- Select ---
Primary IP Addr		--- Select ---
		Disable Ethernet SNMP

The “Automatic Update Interval” is selectable from 1 to 24 hours. Use the drop down menu to select the desired interval. Press the “Commit Settings” button to apply changes.

FLASH TECHNOLOGY

Site Name: Not Set

Site ID: Not Set

For Support: 1-800-821-5825

Menu

BackHome

FTM 190 Primary Monitoring Configuration

Description	Current State	Set State
Monitoring Method	Cellular Eagle	--- Select ---
Primary IP Addr		10.49.11.3
Primary Port		54630
Alternate IP Addr		68.216.75.166
Alternate Port		54630
Listen Port		54631
Automatic Update Interval	5 Minutes	--- Select ---

FTM 190 Alternate Monitoring Configuration

Description	Current State	Set State
Monitoring Method	Ethernet SNMP	--- Select ---
Primary IP Addr		192.168.1.123
Primary Port		162
Alternate IP Addr		192.168.1.123
Alternate Port		162
Listen Port		161
Automatic Update Interval	23 Hour(s)	--- Select ---

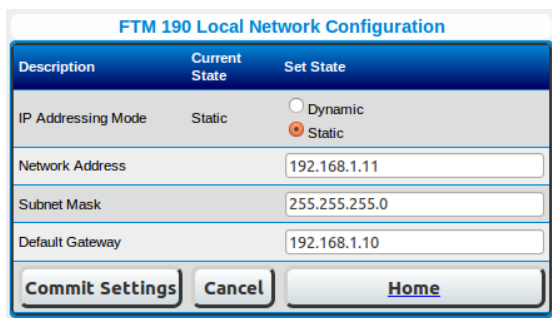
Commit SettingsCancelHome

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Network

Local Network Configuration

The Local Network Configuration menu allows the FTM 190-3's IP address to be set as Static or Dynamic. Configure as required for user's network.



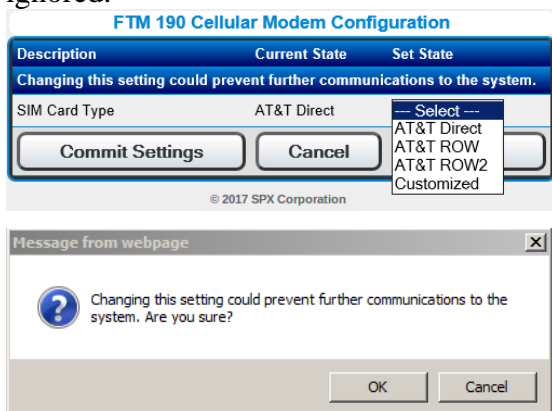
The screenshot shows the 'FTM 190 Local Network Configuration' window. It has a table with three columns: 'Description', 'Current State', and 'Set State'. The 'IP Addressing Mode' is set to 'Static' (with 'Dynamic' as an option). The 'Network Address' is '192.168.1.11', 'Subnet Mask' is '255.255.255.0', and 'Default Gateway' is '192.168.1.10'. At the bottom are buttons for 'Commit Settings', 'Cancel', and 'Home'.

Description	Current State	Set State
IP Addressing Mode	Static	<input type="radio"/> Dynamic <input checked="" type="radio"/> Static
Network Address		192.168.1.11
Subnet Mask		255.255.255.0
Default Gateway		192.168.1.10

Commit Settings Cancel Home

Cellular Modem

The Cellular Modem menu allows selection of the SIM card as AT&T Direct, AT&T ROW, AT&T ROW2 or Customized. The Customized selection should only be used for those customers who know their APN value and are connecting to a third party NOC. If using a Verizon modem and connecting to Flash Technology's NOC, this setting can be ignored.



The screenshot shows the 'FTM 190 Cellular Modem Configuration' window. It has a table with three columns: 'Description', 'Current State', and 'Set State'. The 'SIM Card Type' is set to 'AT&T Direct'. A dropdown menu is open showing options: '--- Select ---', 'AT&T Direct', 'AT&T ROW', 'AT&T ROW2', and 'Customized'. Below the table are buttons for 'Commit Settings' and 'Cancel'. A warning message is displayed: 'Changing this setting could prevent further communications to the system. Are you sure?'. At the bottom are buttons for 'OK' and 'Cancel'.

Description	Current State	Set State
SIM Card Type	AT&T Direct	--- Select --- AT&T Direct AT&T ROW AT&T ROW2 Customized

Commit Settings Cancel

Message from webpage

Changing this setting could prevent further communications to the system. Are you sure?

OK Cancel

Important! Changing SIM Card Type could interrupt wireless communication with the FTM 190-3. **The SIM Card Type should not be changed remotely.**

SNMP Labels

The SNMP Configuration menu provides an alternative method to configure labels for SNMP traps associated with the FTM 190-3.



The screenshot shows the 'FTM 190 SNMP Labels Configuration' window. It has a table with three columns: 'Description', 'Name', and 'Severity'. The table lists various SNMP traps and their corresponding names and severities. At the bottom are buttons for 'Commit Setting', 'Cancel', and 'Home'.

Description	Name	Severity
Custom Site ID	Not Set	
Custom Site Name	Not Set	
Dry Contact 1(DC #1)	Dry Contact 1	Info
Dry Contact 2(DC #2)	Dry Contact 2	Info
Dry Contact 3(DC #3)	Dry Contact 3	Info
Dry Contact 4(DC #4)	Dry Contact 4	Info
Dry Contact 5(DC #5)	Dry Contact 5	Info
Dry Contact 6(DC #6)	Dry Contact 6	Info
Dry Contact 7(DC #7)	Dry Contact 7	Info
Dry Contact 8(DC #8)	Dry Contact 8	Info
FTM Input AC Power	RTU AC Power	Critical
FTM TWR RS 485 Status	RTU Tower Communication	Warning
Automatic Update	Automatic Update	Info
Population Overflow	FTM Population Overflow	Warning
Population Change	RTU Population Change	Warning
Communication Change	RTU Communication Change	Info

Commit Setting Cancel Home

Note: The screenshot shown above is divided into three sections. Any changes to the labels for Customer Site ID – Dry Contact 8 will be shown on the Web Interface. Any changes to the labels for FTM Input AC Power – Communication Change will be shown on the SNMP Trap only. The label change will not be reflected on the Web Interface. The severity column is shown on the SNMP Trap only.

SNMP Settings

This menu allows for configuration of various settings related to SNMP. In the System Settings menu, the option to choose SNMP version V2C or V3 exists. The settings available on this page will vary based on that selection.

Access List Status

When enabled, the system will enforce the configured SNMP access control list. This setting is disabled by default.

Authentication Traps

When enabled, a trap will be sent for every unauthorized access attempt. This setting is disabled by default.

Communities (V2C only)

Up to four access communities may be configured. For each community a name, IP address and access type may be configured. The access type options are “Disabled”, “Read-Only” and “Read-Write”.

Users (V3 only)

Up to four users may be configured. Each user will have the following settings:

User Name

Maximum 20 characters, no spaces

User Security Level

Security level adopted for access.

- Noauthnopriv (No authentication and encryption. Not recommended.)
- Authnopriv (authentication but no encryption)
- Authpriv (authentication and encryption)

User Access Level

The options are “Disabled”, “Read-Only” and “Read-Write”.

User Authentication Key

Passcode for authentication. Valid range is 8 – 20 characters and may not contain blank spaces or the following special characters: < > " ' \ / (mandatory if Auth is selected as part of security level)

User Privacy Key

Passcode for encryption. Valid range is 8 – 20 characters.

Mandatory if Authpriv security level is selected.

Trap Destination Configuration

This section allows for setting up to four trap destination endpoints. The first two endpoints are the same as those configured from the Monitoring Configuration section. Endpoints three and four may only be viewed and configured from the SNMP Settings page.

Each endpoint requires an IP address and port. For V3 only, a User Name will associate a SNMP V3 user to this particular trap destination. More than one user can be associated to same destination

By default a trap requires a confirmation of receipt before the system stops trying to send it. The settings related to this may also be configured in this section. The default is to send a trap up to 72 times every 20 minutes (24 hours total duration) until an acknowledgement has been received. To disable trap retries, simply change the retry count to 0.

For SNMP V2C only, the trap community string may also be modified. The default value is “public”.

System Information

This section allows for configuring the System Name, System Location and System Contact fields.

Menu

Back

Home

SNMP Settings

Monitoring Configuration is not set to Ethernet SNMP. Please select the option inside Monitoring Configuration menu.

Monitoring

Menu

Back

Home

SNMP Settings

Description	Current Value	Set Value
Access List Status	Disabled	<input type="checkbox"/>
Authentication Traps	Disabled	<input type="checkbox"/>
Community 1 Name		<input type="text"/>
Community 1 Server IP Address		<input type="text"/>
Community 1 Access Type	Disabled	--- Select ---
Community 2 Name		<input type="text"/>
Community 2 Server IP Address		<input type="text"/>
Community 2 Access Type	Disabled	--- Select ---
Community 3 Name		<input type="text"/>
Community 3 Server IP Address		<input type="text"/>
Community 3 Access Type	Disabled	--- Select ---
Community 4 Name		<input type="text"/>
Community 4 Server IP Address		<input type="text"/>
Community 4 Access Type	Disabled	--- Select ---

Trap Destination Configuration

Description	Note	Set Value
Trap Endpoint 1 IP	NMS 1 IP	192.168.1.123
Trap Endpoint 1 Port	NMS 1 Port	162
Trap Endpoint 2 IP	NMS 2 IP	192.168.1.124
Trap Endpoint 2 Port	NMS 2 Port	162
Trap Endpoint 3 IP	NMS 3 IP	<input type="text"/>
Trap Endpoint 3 Port	NMS 3 Port	<input type="text"/>
Trap Endpoint 4 IP	NMS 4 IP	<input type="text"/>
Trap Endpoint 4 Port	NMS 4 Port	<input type="text"/>
Inform Retry Count	(Valid Range is 0 - 72)	72
Inform Retry Interval	(Valid Range is 60 - 3600 Seconds)	1200
Trap Community		public

System Information

Description	Current Value	Set Value
System Name		<input type="text"/>
System Location		<input type="text"/>
System Contact		<input type="text"/>

Commit Settings

Cancel

Home

The authentication algorithm used is SHA and the encryption cipher used is AES128.

SNMP Settings

Description	Current Value	Set Value
Authentication Traps	Disabled	<input type="checkbox"/>
User 1 Name		<input type="text"/>
User 1 Security Level	Noauthnopriv	--- Select ---
User 1 Authentication Key	Must be between 8 and 20 characters in length and may not contain blank spaces or the following special characters: < > " \ /	<input type="text"/>
User 1 Privacy Key	Must be between 8 and 20 characters in length and may not contain blank spaces or the following special characters: < > " \ /	<input type="text"/>
User 1 Access Level	Disabled	--- Select ---
User 2 Name		<input type="text"/>
User 2 Security Level	Noauthnopriv	--- Select ---
User 2 Authentication Key	Must be between 8 and 20 characters in length and may not contain blank spaces or the following special characters: < > " \ /	<input type="text"/>
User 2 Privacy Key	Must be between 8 and 20 characters in length and may not contain blank spaces or the following special characters: < > " \ /	<input type="text"/>
User 2 Access Level	Disabled	--- Select ---
User 3 Name		<input type="text"/>
User 3 Security Level	Noauthnopriv	--- Select ---
User 3 Authentication Key	Must be between 8 and 20 characters in length and may not contain blank spaces or the following special characters: < > " \ /	<input type="text"/>
User 3 Privacy Key	Must be between 8 and 20 characters in length and may not contain blank spaces or the following special characters: < > " \ /	<input type="text"/>
User 3 Access Level	Disabled	--- Select ---
User 4 Name		<input type="text"/>
User 4 Security Level	Noauthnopriv	--- Select ---
User 4 Authentication Key	Must be between 8 and 20 characters in length and may not contain blank spaces or the following special characters: < > " \ /	<input type="text"/>
User 4 Privacy Key	Must be between 8 and 20 characters in length and may not contain blank spaces or the following special characters: < > " \ /	<input type="text"/>
User 4 Access Level	Disabled	--- Select ---

Trap Destination Configuration

Description	Note	Set Value
Inform Endpoint IP	NMS 1 IP	192.168.1.121
Inform Endpoint Port	NMS 1 Port	162
Inform Endpoint User	None	--- Select ---
Inform Retry Count	(Valid Range is 0 - 72)	72
Inform Retry Interval	(Valid Range is 60 - 3600 Seconds)	1200
Trap Endpoint 2 IP	NMS 2 IP	192.168.1.121
Trap Endpoint 2 Port	NMS 2 Port	162
Trap Endpoint 2 User	None	--- Select ---
Trap Endpoint 3 IP	NMS 3 IP	<input type="text"/>
Trap Endpoint 3 Port	NMS 3 Port	<input type="text"/>
Trap Endpoint 3 User	None	--- Select ---
Trap Endpoint 4 IP	NMS 4 IP	<input type="text"/>
Trap Endpoint 4 Port	NMS 4 Port	<input type="text"/>
Trap Endpoint 4 User	None	--- Select ---

System Information

Description	Current Value	Set Value
System Name		<input type="text"/>
System Location		<input type="text"/>
System Contact		<input type="text"/>

Commit Settings

Cancel

Home

Login Settings

The login settings page contains two main functions.

The screenshot shows the 'Login Settings' page. At the top is a 'Menu' bar with 'Back' and 'Home' buttons. Below it is the 'Change Password' section with fields for 'User Name' (FlashAdmin), 'Current Password', 'New Password', and 'Confirm Password'. A note specifies the password must be between 6 and 20 characters and cannot contain '<', '>', '"', or backslash. At the bottom are 'Commit Settings', 'Cancel', and 'Home' buttons. Below that is the 'Webpage Settings' section with a table showing 'Webpage Access Restrictions' set to 'None'. It also has 'Commit Settings', 'Cancel', and 'Home' buttons.

Description	Current State	Set State
Webpage Access Restrictions	None	--- Select ---

Change Password

The first is the ability to change the password used to login to the configuration pages.

The user name is always “FlashAdmin” and the default password is “FlashAdmin”. The password may be changed to any other password of 6 to 20 characters in length (with the exception of a few special characters).

Webpage Settings

By default the ability to initiate and cancel a lighting inspection, as well as the ability to initiate or cancel a mode override operation from the main page is allowed without the need to login to the web interface.

To control access to the web page, change the “Webpage Access Restrictions” to “None”, “Configuration Pages Only”, or “All”.

System Settings

The FTM 190-3 is capable of accepting firmware upgrade packages via an FTP transfer, but FTP may be disabled from the “System Settings” page.

SSH access may also be disabled on this page. As well as restricting access to these web pages to HTTPS only.

This page also allows the SNMP version to be selected.

The screenshot shows the 'System Settings' page. It has a 'Menu' bar with 'Back' and 'Home' buttons. Below is a table with settings for FTP Access, SSH Access, Webpage Communications Protocol, and SNMP Version. At the bottom are 'Commit Settings', 'Cancel', and 'Home' buttons, followed by an 'FTM 190 Reboot' section with a 'Reboot' button.

Description	Current State	Set State
FTP Access	Enabled	<input checked="" type="checkbox"/> Enabled
SSH Access	Enabled	<input checked="" type="checkbox"/> Enabled
Webpage Communications Protocol	HTTP & HTTPS	<input checked="" type="radio"/> HTTP & HTTPS <input type="radio"/> HTTPS Only
SNMP Version	V2C	<input checked="" type="radio"/> V2C <input type="radio"/> V3

Reboot

Pressing the “Reboot” button initiates an automatic sequence that powers the FTM 190-3 off and then on again.

The screenshot shows a close-up of the 'FTM 190 Reboot' section with a 'Reboot' button.

36xx Web Interface

(36XX Lighting Controller)

When connected via RS 485, the FTM 190-3's Web Interface provides access to program, test and monitor virtually all functions of the connected FTS 36XX system. An example of the Home Menu with the lighting system connected is shown to the right.

Tower Lighting Status

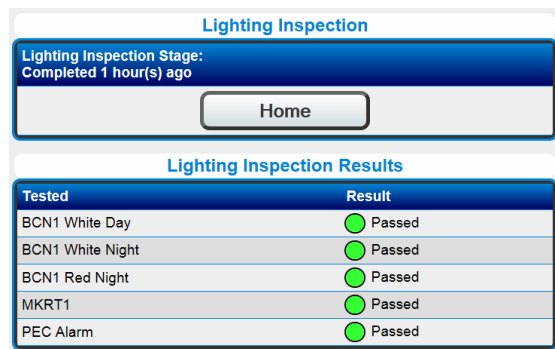
The Tower Lighting Status menu, shown to the right, provides an overview of the current status and configuration of the FTS 36XX system. This menu is informational only.

Lighting Inspection Menu

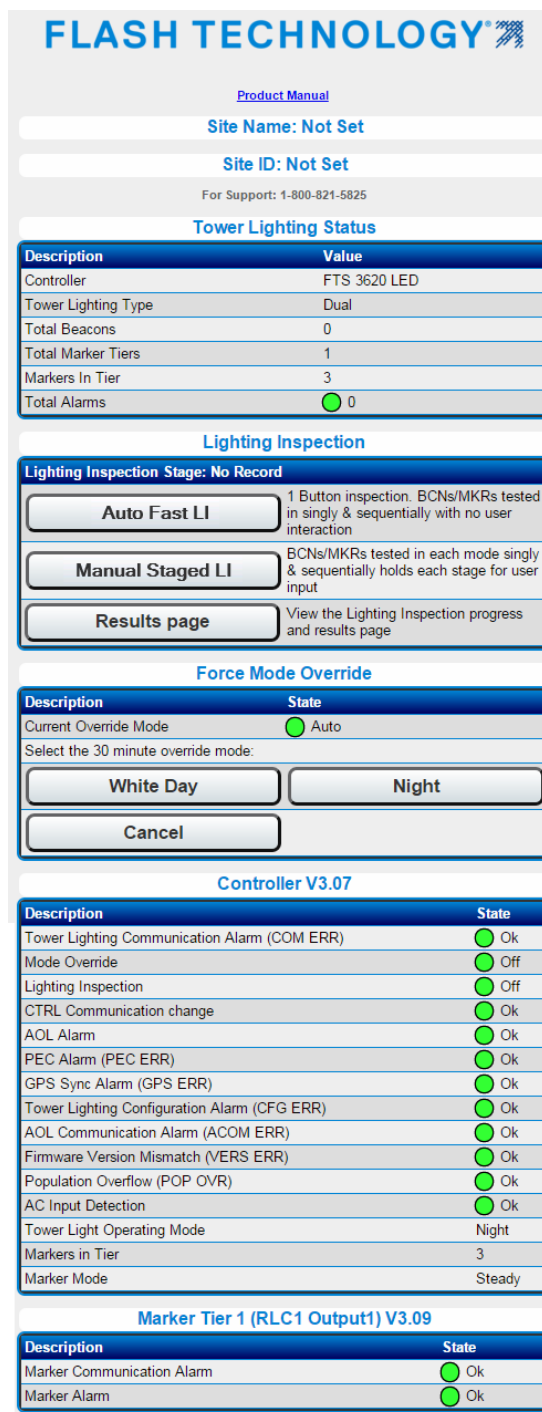
Two options are available via the Web Interface to perform Lighting Inspections (LI): Auto Fast LI and Manual Staged LI. A brief description of each LI type is provided on-screen beside the selection. The Results page button displays LI progress and previous LI results.

Auto Fast LI

Once initiated, the Auto Fast LI requires no additional input from the user. The results are displayed automatically upon completion of the Lighting Inspection.



Tested	Result
BCN1 White Day	Passed
BCN1 White Night	Passed
BCN1 Red Night	Passed
MKRT1	Passed
PEC Alarm	Passed



FLASH TECHNOLOGY

[Product Manual](#)

Site Name: Not Set

Site ID: Not Set

For Support: 1-800-821-5825

Tower Lighting Status

Description	Value
Controller	FTS 3620 LED
Tower Lighting Type	Dual
Total Beacons	0
Total Marker Tiers	1
Markers In Tier	3
Total Alarms	0

Lighting Inspection

Lighting Inspection Stage: No Record

Auto Fast LI 1 Button inspection. BCNs/MKRs tested in singly & sequentially with no user interaction

Manual Staged LI BCNs/MKRs tested in each mode singly & sequentially holds each stage for user input

Results page View the Lighting Inspection progress and results page

Force Mode Override

Description	State
Current Override Mode	Auto

Select the 30 minute override mode:

White Day **Night**

Cancel

Controller V3.07

Description	State
Tower Lighting Communication Alarm (COM ERR)	Ok
Mode Override	Off
Lighting Inspection	Off
CTRL Communication change	Ok
AOL Alarm	Ok
PEC Alarm (PEC ERR)	Ok
GPS Sync Alarm (GPS ERR)	Ok
Tower Lighting Configuration Alarm (CFG ERR)	Ok
AOL Communication Alarm (ACOM ERR)	Ok
Firmware Version Mismatch (VERS ERR)	Ok
Population Overflow (POP OVR)	Ok
AC Input Detection	Ok
Tower Light Operating Mode	Night
Markers in Tier	3
Marker Mode	Steady

Marker Tier 1 (RLC1 Output1) V3.09

Description	State
Marker Communication Alarm	Ok
Marker Alarm	Ok

Note: FTM 190-3 Dry Contact inputs not shown.

Manual Staged LI

The Manual LI tests each lighting component individually in sequence. The restore stage for each component is held awaiting user input before advancing to test the next component. In this mode, the user must press “Cont.” (Continue) before the system will restore the alarm and advance to the next test. The results are displayed once all tests are completed.

Note: The 36xx LED display will show this LI mode as “Manual LI”.

The screenshot shows the 'Lighting Inspection' screen. At the top, it says 'Lighting Inspection' in blue. Below that, a status bar reads 'Lighting Inspection Stage: Waiting for next stage. Press Continue to proceed'. There are three buttons: 'Cancel', 'Cont.', and 'Home'. Below the buttons, it says 'Lighting Inspection Results' in blue, and at the bottom, a blue bar indicates 'Running...'.

Mode Override

The Force Mode Override Menu, located below the Lighting Inspection menu allows manual selection of the system's mode. System control will return to automatic after 30 minutes.

The screenshot shows the 'Force Mode Override' screen. It has a title bar 'Force Mode Override'. Below it is a table with two columns: 'Description' and 'State'. The first row is 'Current Override Mode' with a green circle and the text 'Auto'. Below the table, it says 'Select the 30 minute override mode:'. There are two buttons: 'White Day' and 'Night'. At the bottom, there is a 'Cancel' button.

FTS 36XX Configuration

The FTS 36XX Configuration Menu is divided into two sections: Tower Lighting and SNMP Labels.

The screenshot shows the 'FTS 36xx Configuration' screen. It has a title bar 'FTS 36xx Configuration'. Below it are two buttons: 'Tower Lighting' and 'SNMP Labels'.

Tower Lighting (Configuration)

The Tower Lighting menu allows programming of system type, number of beacons and marker tiers. A drop down menu is provided for each option. Marker mode (flashing or steady) is selected by clicking on the desired setting.

Important! The Tower Configuration must be programmed to match the FAA designated lighting system type for the structure.

The Tower Configuration menu also allows the photocell alarm (PEC Defeat) to be enabled or disabled. When enabled, the system's 19 hour mode timer is prevented from generating a photocell alarm. This feature is particularly useful in areas that are prone to periods of light or darkness that would exceed the 19 hour mode timer. Press the “Commit Settings” button to apply changes.

Note: The photocell alarm is intended to provide notification of a possible failure in the system. The disarm feature should only be activated if the system is installed in a location prone to conditions previously described. Verify that the photocell is installed and functioning correctly before enabling this option.

The screenshot shows the 'FTS 36xx Configuration' screen. It has a title bar 'FTS 36xx Configuration'. Below it is a table with three columns: 'Description', 'Current State', and 'Set State'. The rows are: 'Tower Lighting Type' (Red, --- Select ---), 'Total Beacons' (0, --- Select ---), 'Total Marker Tiers' (1, --- Select ---), 'Markers In Tier' (1, --- Select ---), 'Marker Mode' (Steady, with radio buttons for Flashing and Steady), 'PEC Alarm Defeat' (Enabled, with a toggle switch). Below the table are three buttons: 'Commit Settings', 'Cancel', and 'Home'. At the bottom, there is a 'Controller Reboot' section with a 'Reboot' button.

SNMP Labels (Configuration)

The SNMP Labels Configuration menu allows an alternative method to configure the labels for SNMP traps associated with the FTS 36XX.

Note: Any changes to the FTS 36XX labels will be shown on the SNMP Trap only. The label change will not be reflected on the Web Interface.

FLASH TECHNOLOGY

Site Name: Not Set

Site ID: Not Set

For Support: 1-800-821-5825

Menu

BackHome

FTS 36xx SNMP Labels Configuration

Description	Name	Severity
Lighting Inspection	Lighting Inspection	Info
Mode Override	Mode Override	Info
CTRL AOL	AOL Beacon Alarm	Critical
Firmware Version Mismatch	Firmware Version Mismatch	Critical
CTRL AOL Comm	AOL Beacon Communicatio	Critical
GPS Sync	GPS Sync Alarm	warning
PEC Alarm	PEC Alarm	Critical
Tower Lighting Communication	Controller Tower Comm	Critical
AC Input Detection	Controller AC Input Detectio	Critical
Tower Configuration	Controller Tower Config	Critical
PEC Mode	Controller PEC Day/Night	Info
CTRL Population Overflow	Controller Population Overf	Critical
PC Tower Comm	Beacon Communication	Critical
White Day	Beacon White Day Alarm	Critical
Night	Beacon Night Alarm	Critical
PC AOL	Beacon AOL Alarm	Critical
PC PCB2 Comm	PC PCB2 Comm	Warning
PC PCB2 Control	PC PCB2 Control	Critical
PC PCB2 Board	PC PCB2	Critical
RLC Comm	RLC Communication Alarm	Critical
Beacon Red Night	Beacon Night Alarm	Critical
Marker Tier	Marker Alarm	Warning

Commit SettingsCancelHome

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PC Web Interface

(Medium Intensity Strobe 29038XX PCB)

When connected via RS 485, the FTM 190-3's Web Interface, shown to the right, provides access to review the configuration and current status of the Flash Technology Medium Intensity Strobe system (29038XX PCB).

Mode Override

The Force Mode Override Menu allows manual selection of the system's mode. System control will return to automatic after 30 minutes.

Tower Lighting Status

Description	Value
Controller	FTB 324-2
Total Alarms	0

Xenon PC # 1 - 324-2 v2.0

Description	State
Model Number	324-2
Num of Markers	0
Tower Light Operating Mode	Red Night
Board Type	9038
White Day	Ok
White Night	Ok
Red Night	Ok
Marker	Ok
Filter / Transfer Relay	Ok
PC Comm	Ok
Mode Override	Off
Photocell	Ok
PEC Mode	Night
Switch State	Automatic
PEC Alarm Enabled	No
White Night Backup	No
Bank Voltage Day	OK
Bank Voltage Night	OK
Trigger Voltage	OK
Line Voltage	OK

Xenon PC 1 Force Mode Override

Description	State
Current Override Mode	Auto

Select the 30 minute override mode:

Day

Night

Cancel

FTM 190 V1.5.1

Description	State
Relay Status	Inactive
Dry Contact 1 (DC #1)	Ok
Dry Contact 2 (DC #2)	Ok
Dry Contact 3 (DC #3)	Ok
Dry Contact 4 (DC #4)	Ok
Dry Contact 5 (DC #5)	Ok
Dry Contact 6 (DC #6)	Ok
Dry Contact 7 (DC #7)	Ok
Dry Contact 8 (DC #8)	Ok
Input AC Power	Ok
Tower RS485 Status	Ok
Temperature	32.7 °C / 90.9 °F

Modem Status

Description	State
Cellular IP Address	0.0.0.0
Modem Type	HSPA
Signal Strength (Bars)	5
Signal Strength (Decibels)	72 dB
Cellular Service Type	HSDPA
IMEI Number	xxxxxxxxxxxxxx
SIM Card Type	AT&T ROW
Roaming Status	Not Roaming
Cell Number	

Event History

Event Log

Configuration

Configuration

371 Web Interface

(FTS 371 Smart Red Light Controller)

When connected via RS 485, the FTM 190-3's Web Interface provides access to program, test and monitor virtually all functions of the connected Flash Technology FTS371 Smart system (29038XX PCB). An example of the Home Menu with the lighting system connected is shown to the right.

Tower Lighting Status

The Tower Lighting Status menu, shown to the right, provides an overview of the current status and configuration of the FTS 371 system. This menu is informational only.

Lighting Inspection Menu

Two options are available via the Web Interface to perform Lighting Inspections (LI): Auto Fast LI and Manual Staged LI. A brief description of each LI type is provided on-screen beside the selection. The Results page button displays LI progress and previous LI results.

Auto Fast LI

Once initiated, the Auto Fast LI requires no additional input from the user. The results are displayed automatically upon completion of the Lighting Inspection.

Tested	Result
BCN1 Red Night	Passed
MKRT1	Passed
PEC Alarm	Passed

Description	State
Controller	FTS 371 LED AC SMART
Total Beacons	1
Markers In Tier	1
Total Alarms	0

Lighting Inspection

Lighting Inspection Stage: Completed 0 hour(s) ago

Auto Fast LI 1 Button inspection. BCNs/MKRs tested in parallel with no user interaction

Manual Staged LI BCNs/MKRs tested in each mode singly & sequentially holds each stage for user input

Results page View the Lighting Inspection progress and results page

Force Mode Override

Description	State
Current Override Mode	Auto

Select the 30 minute override mode:

Day **Night**

Cancel

FTS 371 Controller V1.1

Description	State
Tower Lighting Communication Alarm (COM ERR)	Ok
Mode Override	Off
Lighting Inspection	Off
CTRL Communication change	Ok
Photodiode Alarm	Disarmed
GPS Sync Alarm (GPS ERR)	Ok
Tower Lighting Configuration Alarm (CFG ERR)	Ok
Firmware Status (VERS ERR)	Ok
Population Overflow (POP OVR)	Ok
Input Power Detection	Ok
Tower Light Operating Mode	Night
Markers in Tier	1
Marker Mode	Flashing
Beacon Mode	Flashing

Beacon

Description	State
Beacon Communication Alarm	Ok
Red Night Alarm	Ok

Marker Tier

Description	State
Marker Communication Alarm	Ok
Marker Alarm	Ok

FTM 190 V1.5.1

Description	State
Relay Status	Inactive
Dry Contact 1 (DC #1)	Ok
Dry Contact 2 (DC #2)	Ok
Dry Contact 3 (DC #3)	Ok
Dry Contact 4 (DC #4)	Ok
Dry Contact 5 (DC #5)	Ok
Dry Contact 6 (DC #6)	Ok
Dry Contact 7 (DC #7)	Ok
Dry Contact 8 (DC #8)	Ok
Input AC Power	Ok
Tower RS485 Communication Status	Ok
Temperature	30.6 °C / 87.1 °F

Modem Status

Description	State
Modem Not Present	

Event History

Event Log

FTS 371 Diagnostics

Diagnostics

Configuration

Configuration

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Manual Staged LI

The Manual Staged LI tests each lighting component individually in sequence. The restore stage for each component is held awaiting user input before advancing to test the next component. In this mode, the user must press “Cont.” (Continue) before the system will restore the alarm and advance to the next test. The results are displayed once all tests are completed.

Lighting Inspection

Lighting Inspection Stage: Waiting for next stage. Press Continue to proceed

Cancel Cont. Home

Lighting Inspection Results

Running...

Mode Override

The Force Mode Override Menu, located below the Lighting Inspection menu allows manual selection of the system’s mode. System control will return to automatic after 30 minutes.

Force Mode Override

Description	State
Current Override Mode	Auto

Select the 30 minute override mode:

Day Night

Cancel

FTS 371 Configuration

The FTS 371 Configuration Menu is divided into two sections: Tower Lighting and SNMP Labels.

FTS 371 LED AC SMART Configuration

Tower Lighting

SNMP Labels

Tower Lighting (Configuration)

The Tower Lighting menu allows programming of GPS delay and Lighting Inspection Auto Stage Time. The GPS delay is the time in milliseconds to wait after receiving the GPS sync pulse to flash the beacon. The Lighting Inspection Auto Stage Time is the number of seconds to hold each alarm during the auto lighting inspection. Some NOCs require extra time to process alarms and this feature allows a hold time from 30 seconds up to 7200 seconds (2 hours).

The Tower Configuration menu also allows rebooting the FTS 371 controller from this web interface.

FTS 371 LED AC SMART Configuration

Description	Current State	Set State
GPS Delay	Valid Range 0 - 3000 ms	0
Lighting Inspection Auto Stage Time	Valid Range 30 - 7200 Seconds	30

Load Default

Commit Settings Cancel Home

FTS371 Reboot Reboot

SNMP Labels (Configuration)

The SNMP Labels Configuration menu allows an alternative method to configure the labels for SNMP traps associated with the FTS 371.

Note: Any changes to the FTS 371 labels will be shown on the SNMP Trap only. The label change will not be reflected on the Web Interface.

The screenshot shows the 'FTS 371 SNMP Labels Configuration' page. At the top, it displays 'Site Name: FTS 371 test unit' and 'Site ID: FTS 371'. Below this is a 'Menu' section with 'Back' and 'Home' buttons. The main content area is a table with three columns: 'Description', 'Name', and 'Severity'. The table lists various system events and their current severity levels. At the bottom, there are 'Commit Settings', 'Cancel', and 'Home' buttons.

Description	Name	Severity
LightingInspection	Lighting Inspection	Info
ModeOverride	Site Mode Override	Info
PrimaryFWVersionAlarm	Primary Firmware Versi	Critical
GPSSyncAlarm	GPS Sync Alarm	Critical
PhotodiodeAlarm	Photodiode Alarm	Critical
InputPowerDetection	Input Power Detection	Critical
TowerConfiguration	Tower Configuration	Critical
PhotodiodeMode	Photodiode Mode	Info
MasterSyncAlarm	Master Sync Alarm	Critical
BeaconAlarm	Beacon Alarm	Critical
MarkerAlarm	Marker Alarm	Critical

FTS 371 Diagnostics

When connected to a FTS 371 Red Light Controller, the main menu page will show an FTS 371 diagnostics button. Clicking this will show a screen similar to the one below showing diagnostic status of the controller to assist in troubleshooting.

The screenshot shows the 'FTS 371 LED AC SMART Controller' diagnostics page. It features a 'Menu' section with a 'Home' button. The main content is divided into two sections: 'Controller' and 'Beacon'. Each section contains a table with 'Description' and 'Current State' columns.

Controller

Description	Current State
Tower Flashing Type	Efficiency
Tower Flash Specification	FAA
Tower Flash Rate	20 (Beacon)
Tower Lighting Operating Mode	Day
Tower Photodiode Mode	Day
Light Measured by Photodiode	740 Lux
Input AC Power Voltage	123 Volts
DC Power Voltage	24.3 Volts
Tower Override Mode	Off
Controller Firmware Version	V1.0
Radar Interface	Disabled
GPS Present	No
Catenary Level	Middle
Disarm Photodiode Alarm	Yes
Life Run Time (Days)	266
Lighting Inspection status	Off
Lighting Inspection Auto Stage Time	30
System Up Time	1d:20h:28m:48s
Last Photodiode Mode Change Time	1d:0h:34m:19s

Beacon

Description	Current State
# Beacons Configured	1
# Beacons Sensed	1
Beacon Status	Ok
Beacon Voltage	123 Volts
Beacon Current Draw	783 mA
Beacon Power Draw	6 Watts
Beacon Flash Mode	Flashing
Beacon Power Alarm Threshold	1 Watts

Section 5 – Troubleshooting

Table 5-1 – Troubleshooting – Power

Step	Check/Test/Action		Action
1.a	Is PCB1's AC PWR LED lit?	Yes No	Go to Step 1.g Go to Step 1.b
1.b	Is AC power applied to the FTM 190-3? Measure at TB1 terminals L1 & N.	Yes No	Go to Step 1.c Check power source, circuit breaker or disconnect switch and wiring between source and FTM 190-3.
1.c	Is AC power present at the output of TB1? Measure at TB1 terminals L1F and N.	Yes No	Go to Step 1.d Remove input power at the source. Replace fuse F1 and VR1.
1.d	Is AC input power present on input of PCB2? Measure at L and N on PCB2. See Figure 2-1 for location.	Yes No	Go to Step 1.e Check / repair wiring between TB1 and PCB2.
1.e	Is PCB2's Green "AC" LED lit? See Figure 2-1 for location.	Yes No	Go to Step 1.f Replace PCB2.
1.f	Is the AC Fail Input grounded at PCB1? Measure DC Voltage between PCB1 J11 Yellow and Orange wires. Is the voltage zero volts DC?	Yes No	Replace PCB1. Check/repair wiring between PCB2 and PCB1. Replace PCB2
1.g	Are both of PCB1's DC Power LED's (+3.3V, +5.0V) lit?	Yes No	Go to Step 2.a Go to Step 1.h
1.h	Is PCB2's Red "DC" LED lit? Note: Verify that the input power switch, located on PCB2, is in the "On" position. See Figure 2-1 for LED and switch locations.	Yes No	Go to Step 1.i Go to Step 1.j
1.i	Is DC voltage present on PCB1 J11? Measure at J11 DC- and DC+.	Yes No	Replace PCB1 Go to Step 1.j
1.j	Is PCB2's Red "DC" LED lit when output power to PCB1 is disconnected? With the system power off, unplug connector J10 (if installed) and J11 on PCB1. Apply power to the system.	Yes No	Go to Step 1.k Replace PCB2.
1.k	Is PCB2's Red "DC" LED lit when output power to PCB1 reconnected but J10 is not connected? Power the system down and reconnect J11. Connector J10 (if present) should remain disconnected. Power the system on and check the status of the DC LED.	Yes No	Check / repair wiring between J10 and optional modem. Replace modem if necessary. Replace PCB1.

Table 5-2 – Troubleshooting – Cellular Connection

Step	Check/Test/Action		Action
2.a	Is PCB1's STATUS LED Lit?	Yes No	Go to Step 2.h To test communication, first confirm that the battery is connected and then disconnect AC Power. PCB1's Active LED should blink to indicate cellular communications is underway. PCB1's Status LED should turn on when communication is complete to indicate all information has been communicated successfully. If the ACTIVE or STATUS LED's do not light, proceed to Step 2.b.
2.b	Is the modem's POWER LED on? SVC LED off indicates modem is not powered	Yes No	Go to Step 2.d Go to Step 2.c
2.c	Is input power present to the modem? See Figure 2-1. Check 12 VDC at modem terminals 5 & 6.	Yes No	Go to Step 2.d Check connections between PCB 1 and the modem. Review Table 5-1.
2.d	Is the modem's STATUS LED blinking? The STATUS LED flashes ON if the Modem is active and communicating.	Yes No	Go to Step 2.e Check CAT 5 cable connection between modem and J9 located on PCB1. Replace cable if necessary. Verify a SIM card is inserted in the modem (AT&T only). Replace modem if necessary.
2.e	Are any of PCB1's Signal Strength Indicator (SSI) LED's lit? See Figure 2-5 for location. The SSI LED's will indicate the Signal Strength approximately 35 seconds after the antenna is moved.	Yes No	Go to Step 2.f Go to Step 2.d
2.f	Is the modem's CD LED lit? GREEN indicates a connection to the carrier (Verizon or AT&T)	Yes No	Go to Step 2.g Network, SIM or modem issue. Power the unit down. Wait five (5) minutes and power the unit on. Contact Technical Support for RMA problem persists.
2.g	Contact the Flash Technology NOC to check if the system reported in correctly.		

Section 6 – Recommended Spare & Replaceable Parts

Customer Service

Customer Service: (800) 821-5825

Telephone: (615) 261-2000

Facsimile: (615) 261-2600

Shipping Address:

Flash Technology
332 Nichol Mill Lane
Franklin, TN 37067

Ordering Parts

To order spare or replacement parts, contact customer service at 1-800-821-5825.

Important! When removing power from the equipment, ensure that the red wire to the battery is disconnected first. Reconnect battery after work is completed.

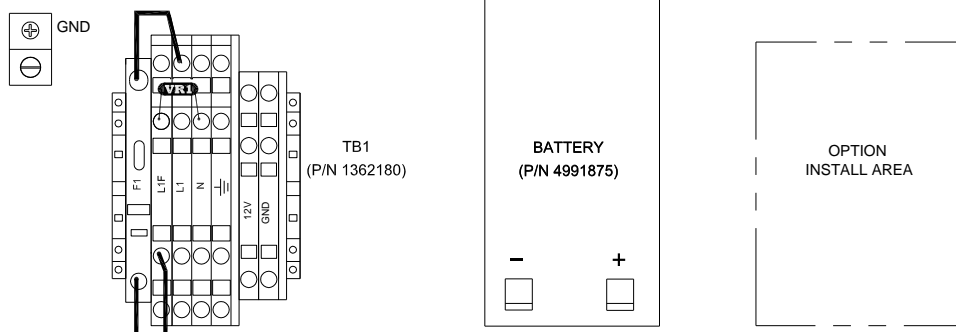
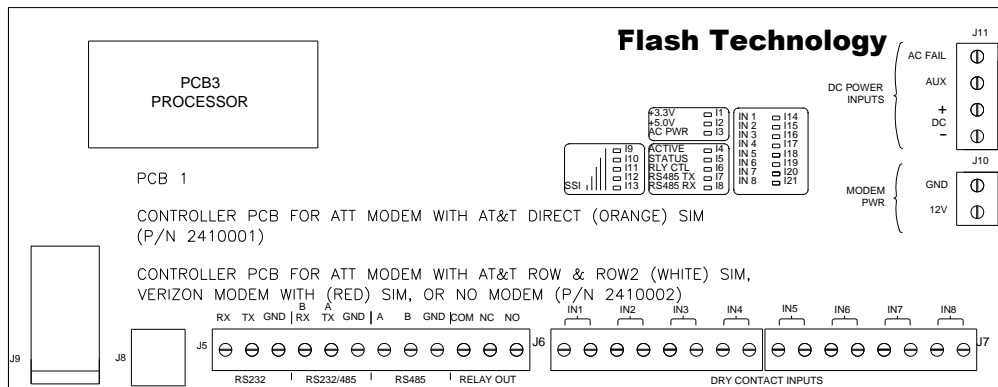
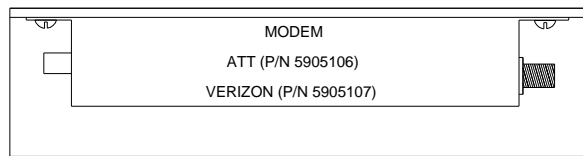
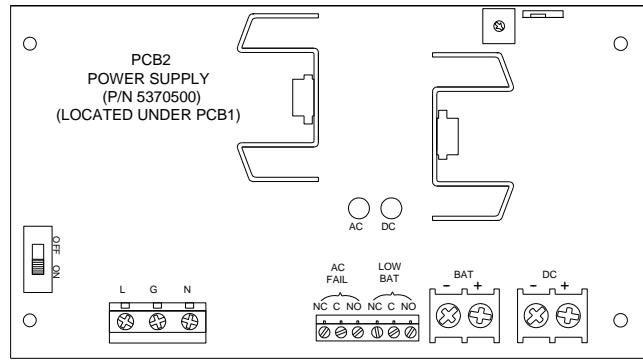


Figure 6-1 – Component Locations

Table 6-1 – Major Replaceable Parts

Reference	Description	Part Number
PCB1	CONTROLLER PCB - ATT MODEM WITH AT&T DIRECT (ORANGE) SIM CARD	2410001
	CONTROLLER PCB - ATT MODEM WITH AT&T ROW or ROW2 (WHITE) SIM CARD	2410002
	CONTROLLER PCB - VERIZON MODEM WITH (RED) SIM CARD	
	CONTROLLER PCB - NO MODEM	
PCB2	POWER SUPPLY (LOCATED UNDER PCB1)	5370500
BATTERY	12V BATTERY	4991875
TB1	TERMINAL BLOCK	1362180
F1	FUSE 3 AMP 3AB (LOCATED ON TB1)	4150218
VR1	VARISTOR 130V (LOCATED ON TB1)	6901079
	HARNESS, AC POWER	4370761

Table 6-2 – Optional Items

Reference	Description	Part Number
MODEM	WIRELESS MODEM (ATT)	5905106T
	WIRELESS MODEM (VERIZON)	5905107T
ANTENNA BRACKET	KIT ANTENNA MOUNTING BRACKET (INCLUDED WITH OPTIONAL MODEM)	1905355
ANTENNA	WIDE BAND BODY MOUNT FOR ATT OR VERIZON (INCLUDED WITH OPTIONAL MODEM)	4905230
	HARNESS, MODEM POWER	4370751
CABLE	RS-485; SINGLE PAIR, 22 AWG, RED/BLACK	5905302
CABLE	DRY CONTACTS; 4 PAIR, 22 AWG, RED/BLACK	5993101
CABLE	CAT5 3' (FT)	4370970

Appendix A: FTM 190-3 (v1.5) SNMP V2c INFORM TRAPs

The FTM-190-3 supports SNMP V2c INFORM TRAPs to notify SNMP managers of field events. Any INFORM that is not acknowledged within 20 minutes will be resent every 20 minutes until it is acknowledged; up to 24 hours. SNMP TRAPs do not require acknowledgement. This document describes the default severities for INFORMs. The severity setting and name for all INFORMs is configurable via the FTM 190 web interface or SNMP sets.

FTM-190-3 SNMP INFORM TRAPs Default Severities

Critical

INFORMs, whose default severity setting is set to Critical, are those which indicate a NOTAM worthy event. The set of Critical INFORMs would be the minimum set required to handle to ensure proper monitoring.

See Table A-1 for a list of Critical INFORMs and their descriptions.

Warning

INFORMs, whose default severity setting is set to Warning, are those which indicate maintenance is needed on a component of the lighting system, but would not necessarily require a NOTAM. In some situations these INFORMs may be as important as the Critical events and in others they may not.

See Table A-2 for a list of Warning INFORMs and their descriptions.

Info

INFORMs, whose default severity setting is set to 'Info', do not indicate NOTAM worthy events; although some of them may accompany the Critical INFORMs as additional diagnostic information.

See Table A-3 for a list of Informational INFORMs and their descriptions.

Table A-1 – FTM 190-3 Critical INFORMs

Name	Default Severity	Description	OID
ftmInputACPowerStatus	Critical	System Power Failure Alarm (POWER FAIL): FTM 190 power failure alarm. FTM 190 need to operate on battery backup to provide alarm INFORM.	.1.3.6.1.4.1.9882.3.2.1.1.9

Table A-2 – FTM 190-3 Warning INFORMs

Name	Default Severity	Description	OID
ftmTowerRS485Status	Warning	FTM 190 tower RS 485 Communication alarm.	.1.3.6.1.4.1.9882.3.2.1.1.10
populationOverflow	Warning	Population Overflow Alarm: The FTM 190 has detected more devices on its tower RS485 port than it can support	.1.3.6.1.4.1.9882.3.2.1.1.12
populationChange	Warning	Population Change:FTM 190 has detected a change in the number of units connected to it via RS485.	.1.3.6.1.4.1.9882.3.2.1.1.13

Table A-3 – FTM 190-3 Informational INFORMs

Name	Default Severity	Description	OID
automaticUpdate	Info	Automatic Update: A notification which is sent based on a configured time interval.	.1.3.6.1.4.1.9882.3.2.1.1.11
communicationChange	Info	Communication Change: FTM 190 has lost or regained communication with the connected devices.	.1.3.6.1.4.1.9882.3.2.1.1.14
dryContactStatusx	Info	Dry Contacts: Dry contact status OK/ALARM. 8 total	.1.3.6.1.4.1.9882.3.2.1.1.1 (to) .1.3.6.1.4.1.9882.3.2.1.1.8
Cold Start	Info	Cold Start: Sent when the SNMP agent starts up.	.1.3.6.1.6.3.1.1.5.1
flashTechnologyRoot.0.2	Info	flashTechnologyRoot.0.2: Sent just before the SNMP agent is shutdown or restarted.	.1.3.6.1.4.1.9882.0.2

36xx SNMP INFORM TRAPs Default Severities

Similar to the FTM 190-3 severities, Tables A-4, A-5 and A-6 show the 36xx traps and their descriptions.

Table A-4 – 36xx Critical INFORMs

Name	Default Severity	Description	OID
aolAlarmNotify	Critical	The controller interface board is having problems communicating to a beacon that is declared as AOL	.1.3.6.1.4.1.9882.3.2.1.2.3
fwVersionMismatchAlarmNotify	Critical	The controller interface board has detected an earlier firmware PC interface board that doesn't know what catenary is or an earlier RLC output board that doesn't know what flashing markers is	.1.3.6.1.4.1.9882.3.2.1.2.4
aolCommAlarmNotify	Critical	The display board has detected a comm failure to a beacon that is configured as a top AOL beacon	.1.3.6.1.4.1.9882.3.2.1.2.5
photocellAlarmNotify	Critical	The system has not changed modes for 19+ hours. This indicates the resistive photocell or the associated circuitry in the controller interface board is not operating properly	.1.3.6.1.4.1.9882.3.2.1.2.7
towerLightingCommunicationAlarmNotify	Critical	The display board has a general communication alarm - it cannot talk to 1 or more devices	.1.3.6.1.4.1.9882.3.2.1.2.8
populationOverflowcontrollerNotify	Critical	The display board has detected more devices on its tower RS485 port than it can support	.1.3.6.1.4.1.9882.3.2.1.2.12
towerConfigAlarmNotify	Critical	The display board has detected more devices on its tower RS485 port than it is currently configured for (example: it finds 3 PCs but is only configured for 2 bcns)	.1.3.6.1.4.1.9882.3.2.1.2.10
whiteDayAlarmNotify	Critical	There is a white day alarm in the specified power converter	.1.3.6.1.4.1.9882.3.2.1.3.2
NightAlarmNotify	Critical	There is a red or white night alarm in the specified power converter	.1.3.6.1.4.1.9882.3.2.1.3.4
pcAOLAlarmNotify	Critical	The specified power converter in alarm is a top AOL beacon (irrelevant on white only towers)	.1.3.6.1.4.1.9882.3.2.1.3.5
pcPCB22ControlAlarmNotify	Critical	The PC PCB2 board is reporting a flashing error. Or the PC PCB2 filter board is operating in a mode that is not what the PCB1 interface board is commanding. Likely J04 interface issue.	.1.3.6.1.4.1.9882.3.2.1.3.7
pcTowerCommunicationAlarmNotify	Critical	The controller is unable to communicate with the beacon.	.1.3.6.1.4.1.9882.3.2.1.3.1
beaconRedNightAlarmNotify	Critical	The RLC output board is not detecting enough current draw for a beacon in good operation. Problem with beacon hardware or RLC current detection hardware	.1.3.6.1.4.1.9882.3.2.1.5.1
rlcCommunicationAlarm	Critical	Communications have been lost with sensing the RLC output board responsible for sensing the beacon's current draw.	.1.3.6.1.4.1.9882.3.2.1.4.1
acInputDetectionAlarmNotify	Critical	The display board cannot detect the input AC line voltage or frequency (and therefore assumes that 120V AC power is present). This can possibly affect accurate red light alarms (red beacons and markers) as LEDs draw different currents for 120/230/240 Volts.	.1.3.6.1.4.1.9882.3.2.1.2.9
pcPCB2AlarmNotify	Critical	PC Filter board Alarm.	.1.3.6.1.4.1.9882.3.2.1.3.8

Table A-5 – 36xx Warning INFORMs

Name	Default Severity	Description	OID
systemGPSSyncAlarmNotify	Warning	The display board has not received a GPS pulse from a FTW170 for more than 1 hour	.1.3.6.1.4.1.9882.3.2.1.2.6
PCPCB2CommunicationAlarmNotify	Warning	The PCB1 interface board of the specified power converter cannot communicate with the PCB2 filter board. Likely J06 interface issue. Only impedes QLI operation. Beacon operation is still in FAA spec	.1.3.6.1.4.1.9882.3.2.1.3.6
markerAlarmNotify	Warning	The RLC output board is not detecting enough markers on this tier for its configuration. Problem with marker hardware or RLC current detection hardware	.1.3.6.1.4.1.9882.3.2.1.6.1
rlcCommunicationAlarmNotify	Warning	Communications have been lost with sensing the RLC ouput board responsible for sensing the marker current draw.	.1.3.6.1.4.1.9882.3.2.1.4.1

Table A-6 – 36xx Informational INFORMs

Name	Default Severity	Description	OID
LightingInspectionTestModeNotify	Info	The display board is currently running a lighting inspection	.1.3.6.1.4.1.9882.3.2.1.2.1
siteModeOverrideNotify	Info	The display board is in day or night override mode	.1.3.6.1.4.1.9882.3.2.1.2.2
photocellModeChangeNotify	Info	Current photocell mode	.1.3.6.1.4.1.9882.3.2.1.2.11

FTS 371 SNMP INFORM TRAPs Default Severities

Similar to the FTM 190-3 severities, Tables A-7 and A-8 show the FTS 371 traps and their descriptions.

Table A-7 – FTS 371 Critical INFORMs

Name	Default Severity	Description	OID
fts371PrimaryFirmwareStatusNotify	Critical	Alarm indicates the primary tower lighting controller Firmware has failed and the unit is running the failsafe firmware.	.1.3.6.1.4.1.9882.3.2.1.7.3
fts371GPSSyncAlarmNotify	Critical	Indicates GPS sync failure. No GPS signal has been present for 1 hour or the GPS Antenna Status has faulted	.1.3.6.1.4.1.9882.3.2.1.7.4
fts371PhotodiodeAlarmNotify	Critical	The system has not changed modes for 19+ hours. This indicates the photodiode or the associated circuitry in the controller interface board is not operating properly	.1.3.6.1.4.1.9882.3.2.1.7.5
fts371InputPowerDetectionAlarmNotify	Critical	Indicates a site voltage error. Voltage is either out of supported range or not detected.	.1.3.6.1.4.1.9882.3.2.1.7.6
fts371TowerConfigAlarmNotify	Critical	Indicates a conflicting configuration in the dipswitch banks. For example – more than 1 flash per minute switch is set.	.1.3.6.1.4.1.9882.3.2.1.7.7
fts371masterSyncAlarmNotify	Critical	(Slave controllers only) Indicates this slave has not received a master flash mode / sync signal for 10 minutes	.1.3.6.1.4.1.9882.3.2.1.7.9
fts371BeaconAlarmNotify	Critical	One or more beacons are in alarm. Beacons sensed vs configured indicates number of failed beacons	.1.3.6.1.4.1.9882.3.2.1.7.10
fts371MarkerAlarmNotify	Critical	One or more markers are in alarm. Markers sensed vs configured indicates number of failed markers	.1.3.6.1.4.1.9882.3.2.1.7.11

Table A-8 – FTS 371 Informational INFORMs

Name	Default Severity	Description	OID
fts371LightingInspectionTestModeNotify	Info	Indicates system is currently running a lighting inspection	.1.3.6.1.4.1.9882.3.2.1.7.1
fts371SiteModeOverrideNotify	Info	Indicates system is in day or night override mode	.1.3.6.1.4.1.9882.3.2.1.7.2
fts371PhotodiodeModeChangeNotify	Info	Indicates a Photodiode mode transition (0: Day, 1: Night)	.1.3.6.1.4.1.9882.3.2.1.7.8

RMA Policy

If any system or part(s) purchased from Flash Technology need to be returned for any reason (subject to the warranty policy), please see the current RMA policy available online at: flashtechnology.com/rma.

To initiate an RMA, call the Flash Technology NOC to receive technical assistance (800-821-5825 Option 9, M-F, 7 a.m. to 7 p.m. CT).

Emailing a completed RMA request form to FlashSupport@spx.com can also start the process on sites not requiring detailed troubleshooting. The form can be filled out online at: <http://flashtechnology.com/rma-request-form/>.

NOTE: An RMA number must be requested from Flash Technology prior to return of any product. No returned product will be processed without an RMA number. Failure to follow the below procedure may result in additional charges and delays. Any product received without an RMA number is subject to return back to the sender. All RMA numbers are valid for 30 days.