FLASH TECHNOLOGY
FTM 190

**Monitoring System
Reference Manual
Part Number F7911900**

SERIAL NUMBER

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Front Matter

Abstract

This manual contains information and instructions for installing, operating and maintaining the FTM 190 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 Monitoring Unit provides Cellular Eagle 2.0 remote monitoring of Flash Technology FTB 3XX medium intensity strobe systems (29038XX PCB required) and all FLC series controllers via RS 485. The FTM 190 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 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.

Note: If the FTM 190 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 2-6.

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 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 2-6) 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 should be mounted.

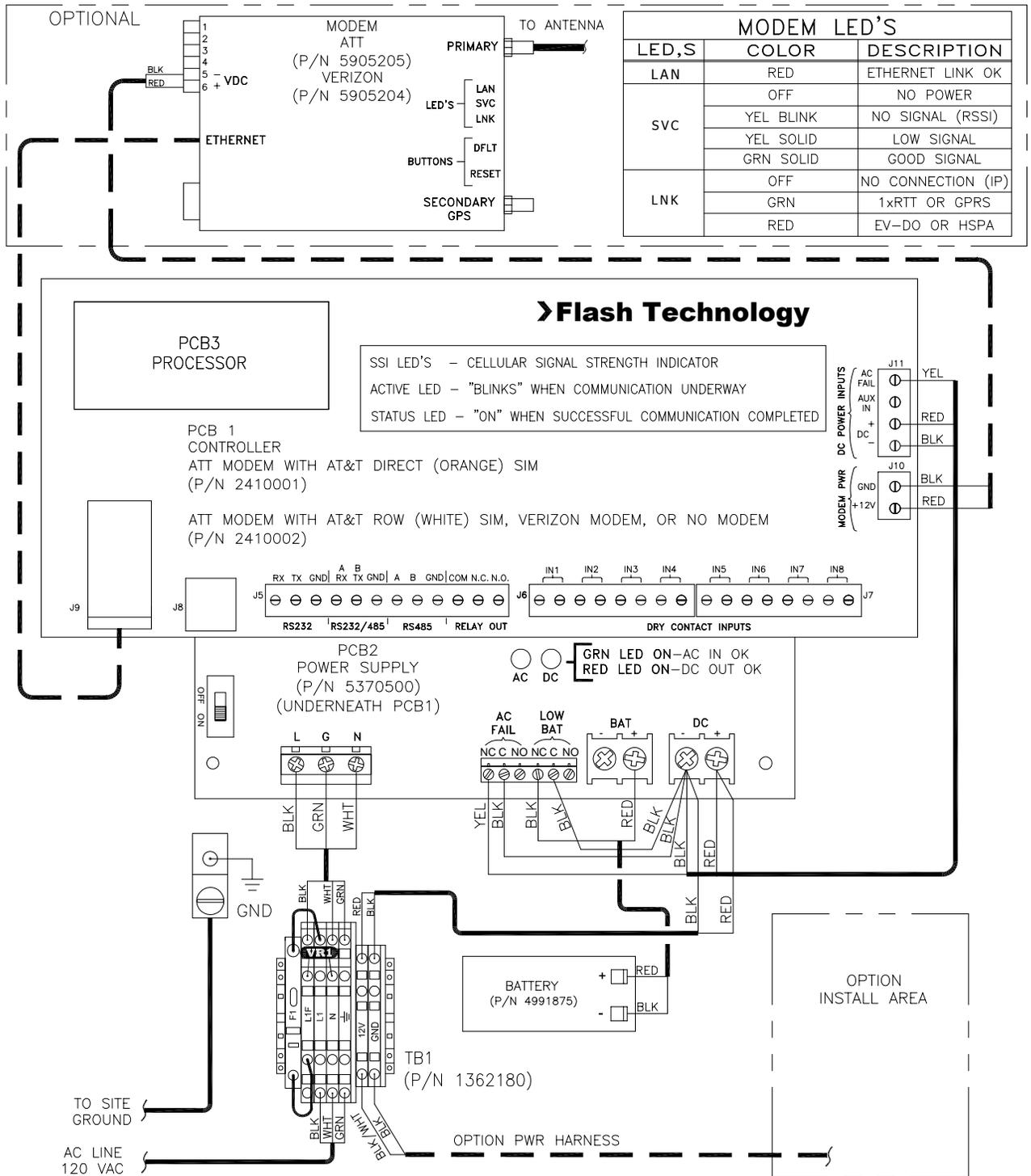Upon successful completion of these steps, shut off power to the unit and proceed with installation.

Figure 2-1 – FTM 190 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 Access

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

Mounting

The FTM 190 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.

FRONT VIEW

11.32 (287.5)

13.32
(338.3)

SIDE VIEW

3.17
(80.5)

3.94
(100.1)

12.75
(323.9)

BOTTOM VIEW

A   A   A   A

B   B   B   B   B

8.00 (203.2)

0.406 (10.31) DIA HOLE THRU
(TYP OF 4)

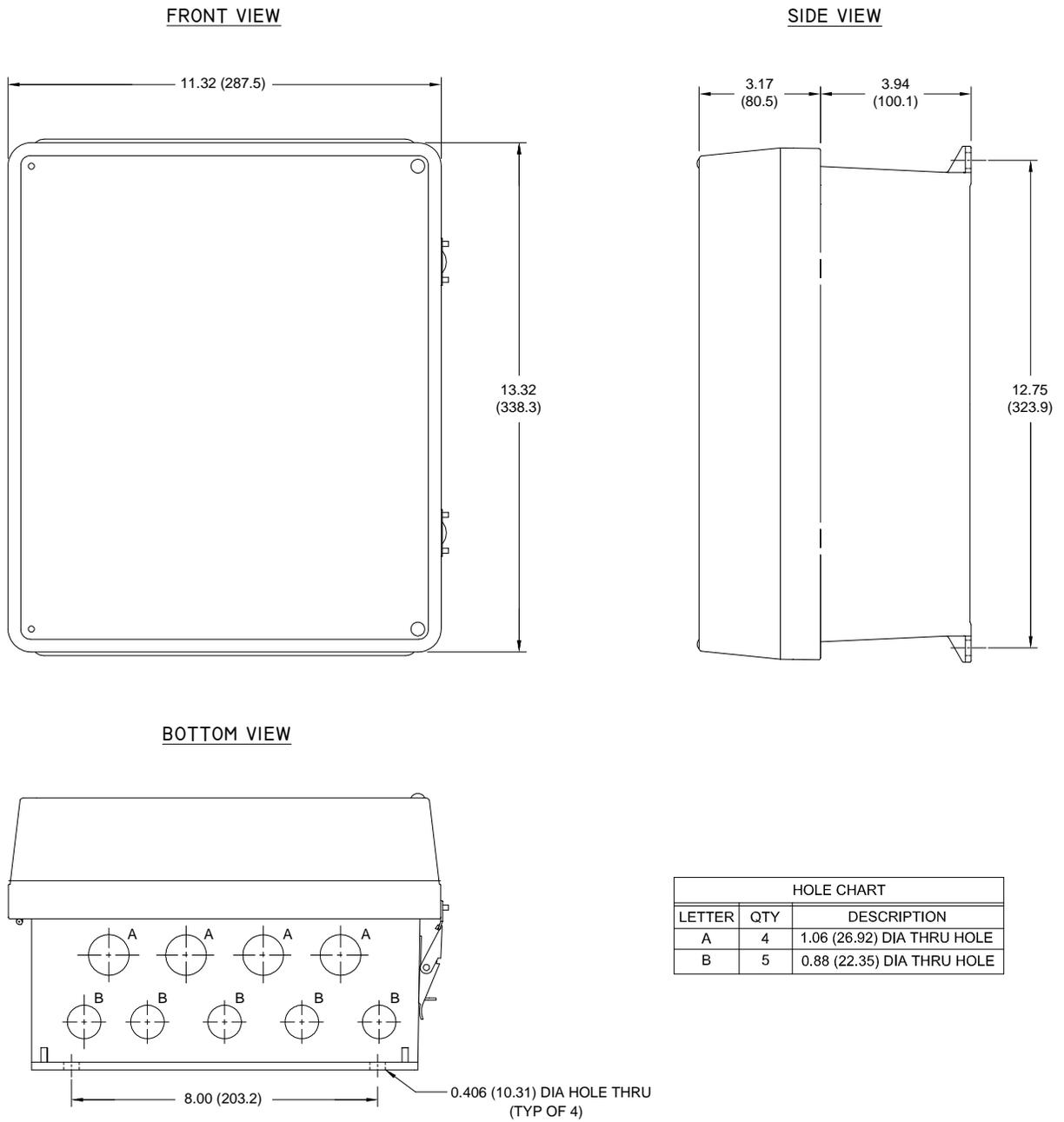| HOLE CHART		
LETTER	QTY	DESCRIPTION
A	4	1.06 (26.92) DIA THRU HOLE
B	5	0.88 (22.35) DIA THRU HOLE

Figure 2-2 – Enclosure Mounting Footprint

Dry Contact Input Wiring

Connect the equipment to be monitored via dry contact inputs as shown in Figure 2-6. 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 2-7 and 2-8. Figure 2-6 shows the layout of PCB1 located in the FTM 190.

Antenna Mounting Bracket

An Antenna Universal Mounting Bracket Kit (PN 1905355) is supplied with units equipped with a wireless modem. The bracket provides multiple mounting options for the antenna; permitting installation in the optimum location for signal strength and reliable communication. The bracket's design permits mounting on wall, Uni-strut, or pole (Figure 2-5). Regardless of the mounting method selected, the antenna bracket must be grounded directly to the site grounding system with a minimum 14 AWG ground wire. Observe proper grounding procedures.

The bracket is made from ferrous metal and galvanized for long life. The bracket's top plate accommodates either the magnetic mount or body mount style antenna as shown in Figure 2-4. The cellular antenna must be mounted in the center position of the bracket. The bracket also permits mounting of a photodiode (or photocell) in either of the two side holes on the top plate.

The FTM 190 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, 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

Magnetic Mount Antenna
Verizon Only
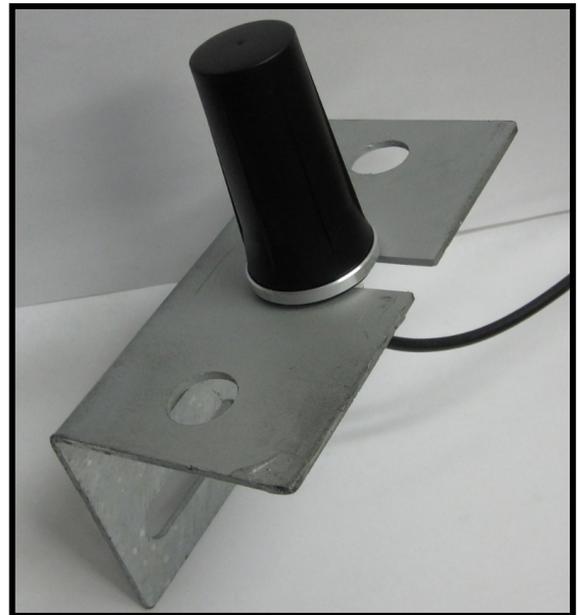
Body Mount Antenna
AT&T or Verizon

Figure 2-4 – Antenna Types

Wall Mount
Use screws to mount to the inside or outside wall of a shelter.
(Screws are not included in the kit.)

Horizontal Uni-strut Mount
Use spring-nuts to mount to Uni-strut.
(Spring-nuts are not included in the kit.)

Vertical Pole or H-frame post Mount
Use 3" U-bolt (*included*) to mount to pole or H-frame post.
The bracket permits use of larger U-bolts, up to 5".

Figure 2-5 – Antenna Universal Mounting Bracket

Note: Verizon dual band magnetic mount antenna shown.

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 2-6.

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. 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.
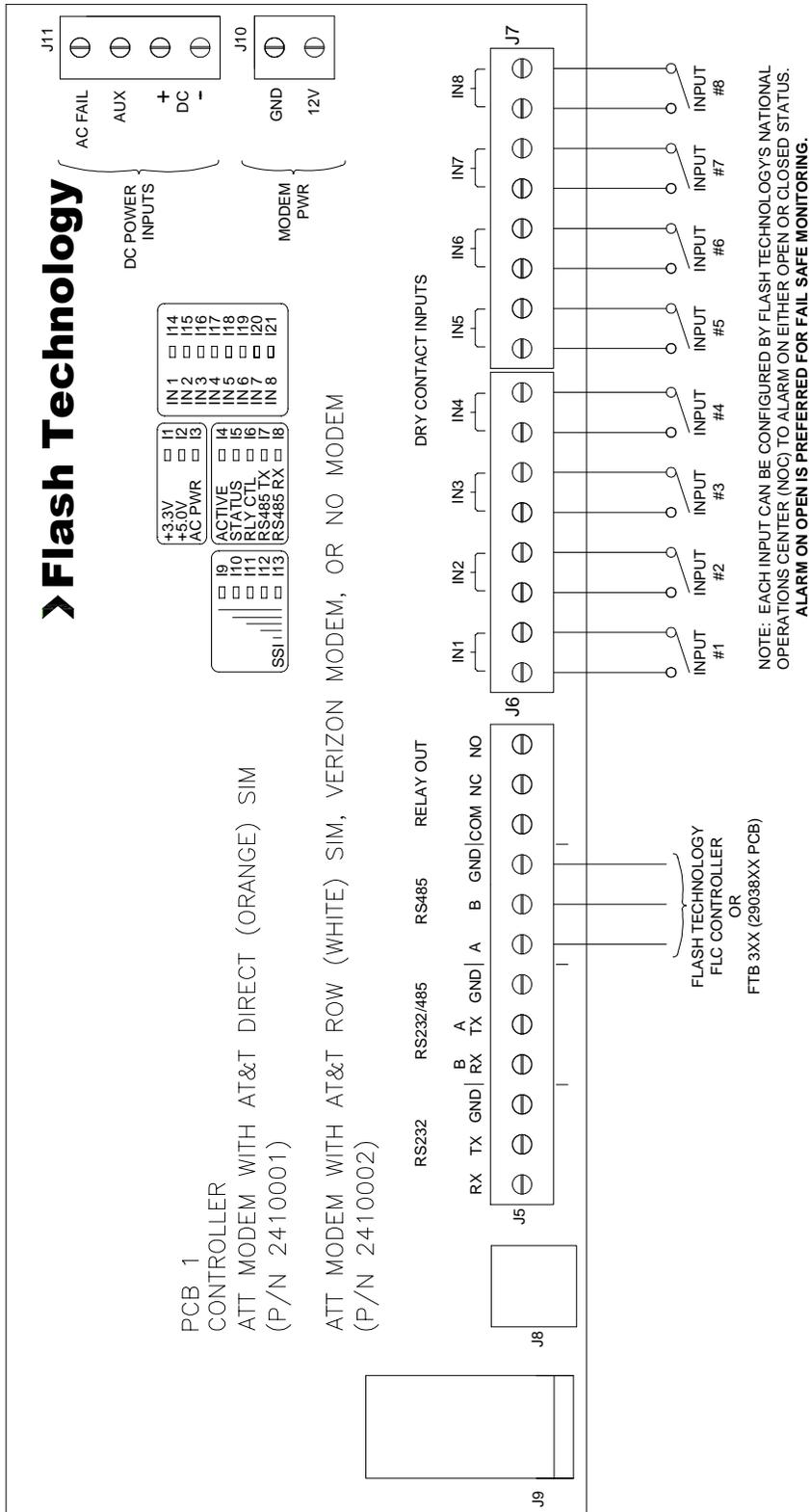
Figure 2-6 – PCB 1 Layout and External Wiring

FTM 190 MONITORING UNIT
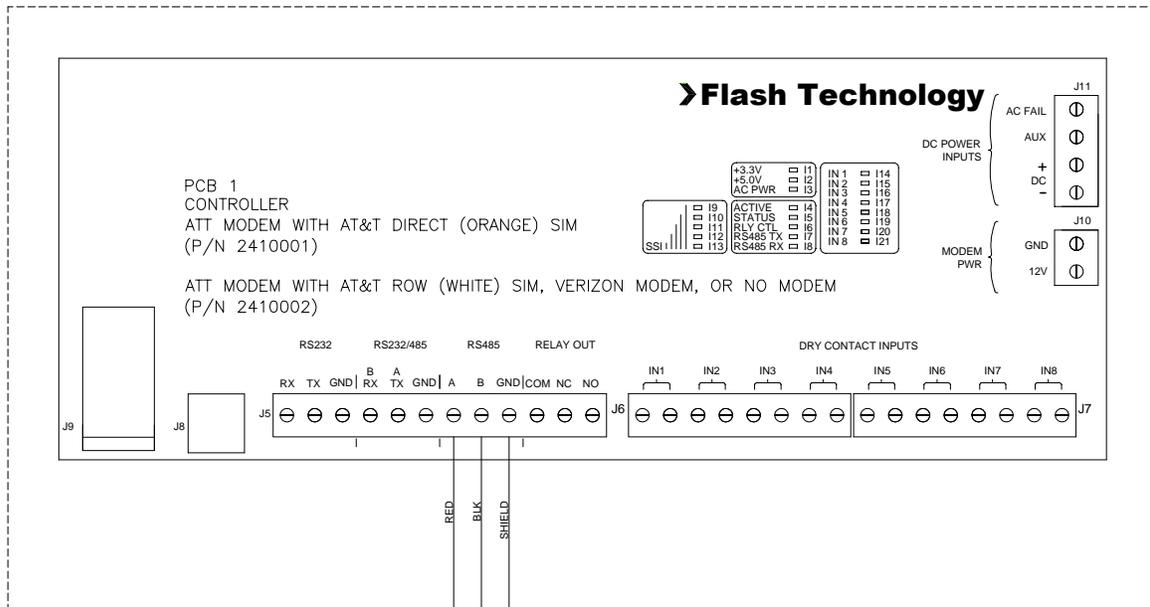
FTM 190   FLC 36XX
J5 PIN 7 TO J2 PIN 2
J5 PIN 8 TO J2 PIN 1
J5 PIN 9 TO J2 PIN 3

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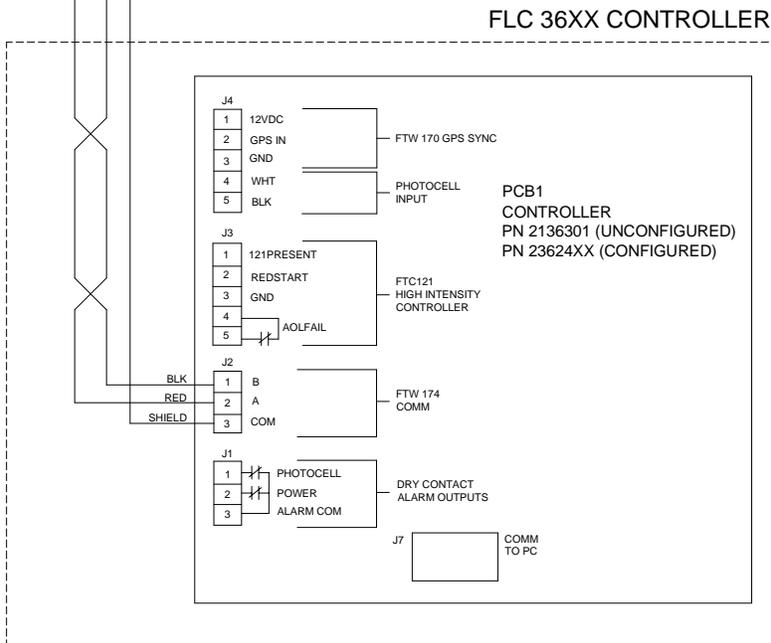
NOTES:
RS485 PORT J5 PINS 7, 8 AND 9 ON THE FTM 190 MUST BE
CONNECTED TO J2 PINS 1, 2 AND 3 ON THE 36XX CONTROLLER.

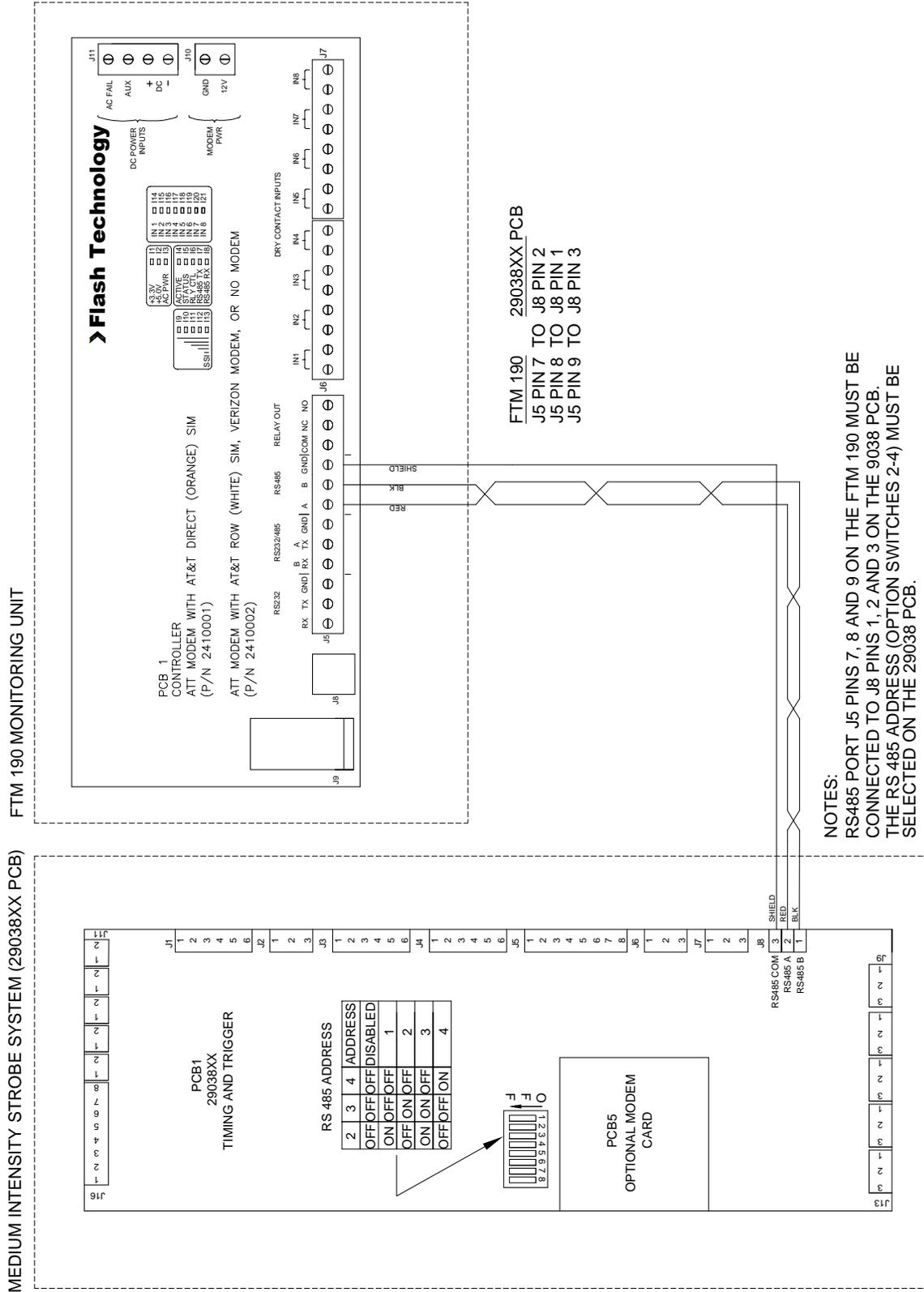Figure 2-7 – RS-485 Installation with FTS 36XX

Figure 2-8 – RS-485 Installation with FTB 3XX (29038XX PCB)

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. See Figure 3-1. 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 2-6 for LED locations and Table 2-1 to LED descriptions.

3. 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.

4. 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).

5. Connect the red wire to + (Positive) and the black wire to – (Negative) on the battery as shown in Figure 2-1.

6. 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'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 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. 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's Configuration Menu located at the bottom of the window.

> **Flash Technology**
>
> **Site Name: Not Set**
>
> **Site ID: Not Set**
>
> Product Manual
>
> For Support: 1-800-821-5825
>
> **Tower Lighting Status**
>
> | Description | Value |
> |---|---|
> | Controller | Not Detected |
> | Total Alarms | 🟢 0 |
>
> **FTM 190 v1.2**
>
> | 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 | 25.1 °C / 77.1 °F |
>
> **Modem Status**
>
> | Description | State |
> |---|---|
> | Cellular IP Address | XXX.XXX.XXX.XXX |
> | Modem Type | HSPA |
> | Signal Strength (Bars) | 5 |
> | Signal Strength (Decibels) | 66 dB |
> | Cellular Service Type | WCDMA |
> | IMEI Number | XXXXXXXXXXXXXX |
> | SIM Card Type | AT&T Direct |
> | Roaming Status | Not Roaming |
> | Cell Number | XXXXXXXXXX |
>
> **Event History**
>
> [Event Log]
>
> **Configuration**
>
> [Configuration]
>
> © 2014 SPX Corporation

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

Configuration Menu

The Configuration menu provides access to all of the FTM 190'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.

Note: "Cellular Modem" Configuration Menu option present only with AT&T modem installed.

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.

Relay Status

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

Relay Status	Inactive	○ Active ○ Inactive

> **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 two sections. The first section allows the alarm state of the contact to be selected.

Dry Contact 1(DC #1) Configuration	NC	○ NO ○ NC

> **Note:** To ensure proper alarm monitoring, Flash Technology recommends monitoring contacts that are open in an alarm condition.

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

Dry Contact 1(DC #1)	Enabled	○ Enable ○ Disable

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.

Tower RS485	Enabled	○ Enable ○ Disable

> **Note:** Currently, only Flash Technology FTB 3XX Medium Intensity Strobes (29038xx PCB) and FTS 36XX 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 FTM190. Enable the alarm if notification of AC power failure is desired.

Input AC Power	Enabled	○ Enable ○ Disable

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.

Commit Settings	Cancel	Home

Reboot

Pressing the "Reboot´ button initiates an automatic sequence that powers the FTM 190 off and then on again.

FTM 190 Reboot	Reboot

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.

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 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.

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.

Network

Local Network Configuration

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

Cellular Modem

The Cellular Modem menu allows selection of the SIM card as AT&T Direct or AT&T ROW. AT&T Direct should be selected for SIM cards bearing the AT&T Logo. AT&T ROW should be selected for all other SIM cards.

> **Note:** "Cellular Modem" Configuration Menu option present only with AT&T modem installed.

> **Important!** Changing SIM Card Type could interrupt wireless communication with the FTM 190. T**he 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.

> **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.

Web Interface

(36XX Lighting Controller)

When connected via RS 485, the FTM 190'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 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.

Lighting Inspection

Lighting Inspection Stage:
Completed 0 hour(s) ago

Home

Lighting Inspection Results

Tested	Result
BCN1 Red Night	🟢 Passed
MKRT1	🟢 Passed
PEC Alarm	🟢 Passed

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> **Flash Technology**

Site Name: Not Set

Site ID: Not Set

Product Manual

For Support: 1-800-821-5825

Tower Lighting Status

Description	Value
Controller	FTS 36xx LED
Tower Lighting Type	Red
Total Beacons	0
Total Marker Tiers	1
Markers In Tier	3
Total Alarms	🟢 0

Lighting Inspection

Lighting Inspection Stage: No Record

Automatic LI	1 Button inspection. BCNs/MKRs tested in singly & sequentially with no user interaction
Manual 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	Value
Current Override Mode	🟢 Auto
Select the 30 minute override mode:	

White Day	Night
Cancel	

Controller v3.07

Description	State
Tower Comm	🟢 Ok
Override	🟢 Off
QLI	🟢 Off
CTRL Communication change	🟢 Ok
AOL	🟢 Ok
Mode Change	🟢 Ok
GPS	🟢 Ok
Tower Configuration	🟢 Ok
AOL Comm	🟢 Ok
Firmware Version	🟢 Ok
Population overflow	🟢 Ok
AC Input Detection	🟢 Ok
Tower Light Operating Mode	Night
Markers in Tier	3
Marker Mode	Steady

Note: FTM 190 Dry Contact inputs not shown.

Manual 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.

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.
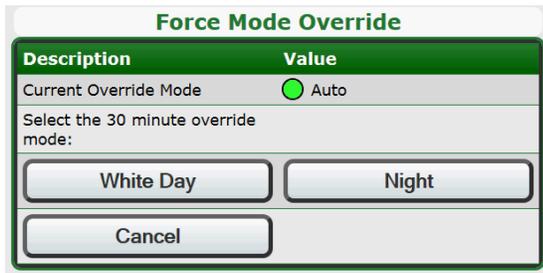
FTS 36XX Configuration

The FTS 36XX Configuration Menu is divided into two sections: 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.
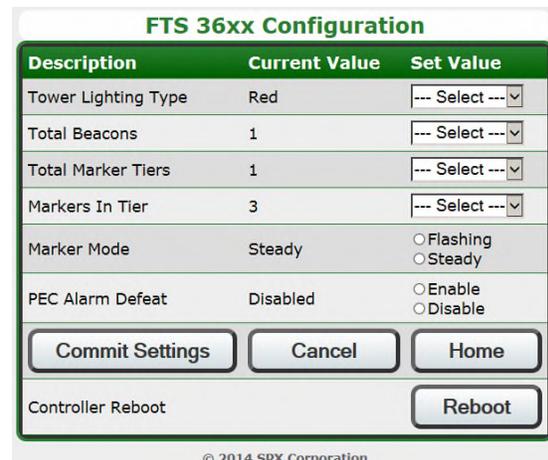
SNMP Labels (Configuration)

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

| Back | | Home |

FTS 36xx SNMP Labels Configuration

Description	Name	Severity
QLI	Lighting Inspection	Notice
Override	Mode Override	Notice
CTRL AOL	AOL Beacon Alarm	Critical
Firmware Version	Version Compatibile	Critical
CTRL AOL Comm	AOL Beacon Communic	Critical
GPS	GPS	warning
Mode Change	PEC Mode Change	Critical
Tower Communication	Controller Tower Comm	Critical
AC Input Detection	Controller AC Input Dete	Error
Tower Configuration	Controller Tower Config	Critical
PEC Mode	Controller PEC Day/Nig	Notice
CTRL Population Overflow	Controller Population O	Critical
PC Tower Comm	Beacon Communication	Critical
Day	Beacon Day Alarm	Critical
Night	Beacon Night Alarm	Critical
PC AOL	Beacon AOL Alarm	Critical
Filter Board Comm	Beacon Filter Board Co	Critical
Filter Board Control	Beacon Filter Board Co	Critical
Filter Board	Beacon Filter Board Ala	Critical
RLC Comm	RLC Communication Ala	Critical
Red Beacon	Red Beacon Alarm	Critical
Marker Tier	Marker Tier Alarm	Error

| Commit Settings | Cancel | Home |

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Web Interface

(Medium Intensity Strobe 29038XX PCB)

When connected via RS 485, the FTM 190'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
Total Alarms	🟢 0

Xenon PC # 1 - v2.3

Description	State
Model Number	
Num of Markers	3
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	Value
Current Override Mode	🟢 Auto
Select the 30 minute override mode:	

Day	Night

Cancel

FTM 190 v1.2

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	30.8 °C / 87.4 °F

Modem Status

Description	State
Modem Not Present	

Event History

Event Log

Configuration

Configuration

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Section 5 – Troubleshooting

Table 5-1 – Troubleshooting –Power

Step	Check/Test/Action		Action
1.a	Is PCB1's AC PWR LED lit?	Yes	Go to Step 1.g
		No	Go to Step 1.b
1.b	Is AC power applied to the FTM 190? Measure at TB1 terminals L1 & N.	Yes	Go to Step 1.c
		No	Check power source, circuit breaker or disconnect switch and wiring between source and FTM 190.
1.c	Is AC power present at the output of TB1? Measure at TB1 terminals L1F and N.	Yes	Go to Step 1.d
		No	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	Go to Step 1.e
		No	Check / repair wiring between TB1 and PCB2.
1.e	Is PCB2's Green "AC" LED lit? See Figure 2-1 for location.	Yes	Go to Step 1.f
		No	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	Replace PCB1.
		No	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	Go to Step 2.a
		No	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	Go to Step 1.i
		No	Go to Step 1.j
1.i	Is DC voltage present on PCB1 J11? Measure at J11 DC- and DC+.	Yes	Replace PCB1
		No	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	Go to Step 1.k
		No	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	Check / repair wiring between J10 and optional modem. Replace modem if necessary.
		No	Replace PCB1.

Table 5-2 – Troubleshooting – Cellular Connection

Step	Check/Test/Action		Action
2.a	Is PCB1's STATUS LED Lit?	Yes	Go to Step 2.h
		No	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 SVC LED on? SVC LED off indicates modem is not powered	Yes	Go to Step 2.d
		No	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	Go to Step 2.d
		No	Check connections between PCB 1 and the modem. Review Table 5-1.
2.d	Is the modem's LAN LED lit? The LAN LED is ON if the Ethernet link between Modem and PCB is OK	Yes	Go to Step 2.e
		No	Check CAT 5 cable connection between modem and J9 located on PCB1. Replace cable if necessary. Replace PCB1 and / or modem if necessary. LAN LED must be lit before proceeding to Step 2.e
2.e	Is the modem's SVC LED green? Blinking YELLOW indicates no signal Solid YELLOW indicates low signal Solid GREEN indicates good signal	Yes	Go to Step 2.f
		No	Yellow blinking or solid indicates a weak signal. Check the antenna and cable for damage; replace if necessary. Relocate the antenna if no damage is found. SVC LED must be solid yellow or green before proceeding to Step 2.f.
2.f	Are any of PCB1's Signal Strength Indicator (SSI) LED's lit? See Figure 2-6 for location. The SSI LED's will indicate the Signal Strength approximately 35 seconds after the antenna is moved.	Yes	Go to Step 2.g
		No	Go to Step 2.e
2.g	Is the modem's LNK LED lit? GREEN indicates 2G connection (1xRTT or GPRS) RED indicates 3G connection (EV-DO or HSPA)	Yes	Go to Step 2.h
		No	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.h	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.
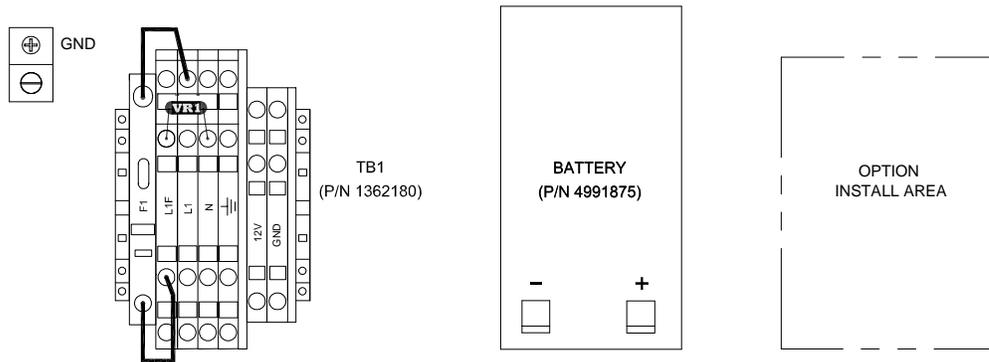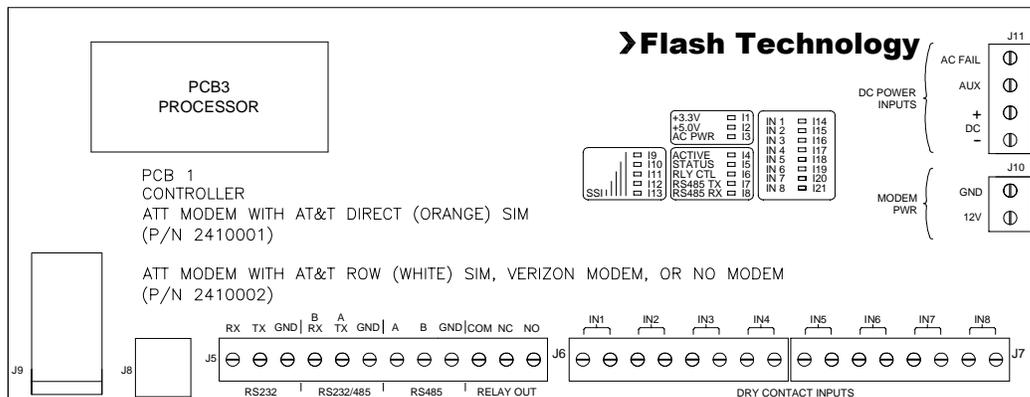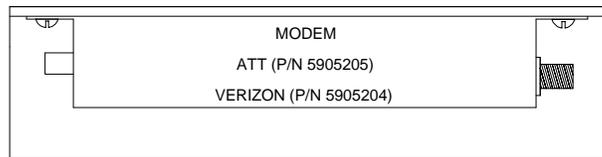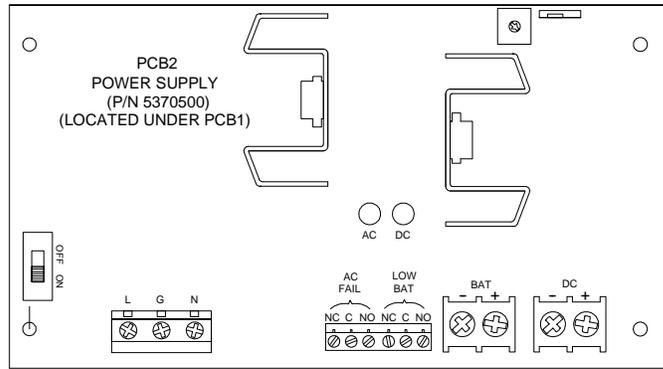
Figure 6-1 – Component Locations

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 (WHITE) SIM CARD	2410002
	CONTROLLER PCB - VERIZON MODEM	
	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)	5905205
	WIRELESS MODEM (VERIZON)	5905204
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

Return Material Authorization (RMA) Policy

IF A PRODUCT PURCHASED FROM FLASH TECHNOLOGY MUST BE RETURNED FOR ANY REASON (SUBJECT TO THE WARRANTY POLICY), PLEASE FOLLOW THE PROCEDURE BELOW:

Note: An RMA number must be requested from Flash Technology prior to shipment of any product. No returned product will be processed without an RMA number. This number will be the only reference necessary for returning and obtaining information on the product's progress.

1. **To initiate an RMA: Call Flash Technology's National Operations Center (NOC) at (800-821-5825) to receive technical assistance and a Service Notification number. The following information is required before a Service Notification number can be generated:**
   - Site Name/Number / FCC Registration number/ Call Letters or Airport Designator
   - Site Owner (provide all that apply – owner, agent or subcontractor)
   - Contractor Name
   - Contractor Company
   - Point of Contact Information: Name, Phone Number, Email Address, Fax Number and Cell Phone (or alternate phone number)
   - Product's Serial Number
   - Product's Model Number or part number
   - Service Notification Number (if previously given)
   - Reason for call, with a full description of the reported issue

2. **The Service Notification number will then serve as a precursor to receiving an RMA number if it is determined that the product or equipment should be returned. To expedite the RMA process please provide:**
   - Return shipping method
   - Shipping Address
   - Bill to Address
   - Any additional information to assist in resolving the issue or problem

3. **Product within the Warranty Time Period**
   a. If to be returned for repair;
      - RMA # is generated
      - Once product is received and diagnosed;
         - Covered under warranty – product is repaired or replaced
         - Not covered under warranty – quote is sent to the customer for a bench fee of **$350 plus parts** for repair
            - If the customer does not want the product repaired, a **$50 test fee** is charged before being returned
   b. If advance replacement;
      - Purchase order may be required before the advance replacement order is created
      - RMA # is generated and the advance replacement order is created
      - Once product is received and diagnosed;
         - Covered under warranty – credit given back if PO received
         - Not covered under warranty – credit **will not** be applied to PO
      - Flash Technology has sole discretion in determining warranty claims. Flash Technology reserves the right to invoice for parts advanced if the associated failed parts are not returned within 15 days of issue or if product received is diagnosed to be non-warranty.

- Advance replacements will be shipped ground unless the customer provides alternative shipping methods.

4. **Product outside the Warranty Time Period**
   a. For Xenon System board repair; a purchase order is required at time of request for a RMA # for a standard **$350 repair bench fee**
      - RMA # is generated with the PO attached
      - If the board is deemed non-repairable after diagnosis, the customer is notified. If the customer purchases a new board, the repair bench fee is waived. If the customer does not buy a new board, a **$50 test fee** is charged before being returned or scrapped.
   b. For all other products; no purchase order is required to return the product for diagnosis
      - RMA # is generated
      - Once product is diagnosed, quote is sent to the customer for a bench fee of **$350 plus parts** for repair
      - Once the purchase order is received, the product will be repaired and returned
         - If the customer does not want the product repaired, a **$50 test fee** is charged before being returned or scrapped.

5. **After receiving the Flash Technology RMA number, please adhere to the following packaging guidelines:**
   • All returned products should be packaged in a way to prevent damage in transit. Adequate packing should be provided taking into account the method of shipment.
   Note: Flash Technology will not be responsible for damaged items if product is not returned in appropriate packaging.

6. **All packages should clearly display the RMA number on the outside of all RMA shipping containers. RMA products (exact items and quantity) should be returned to:**
   Flash Technology
   Attn: RMA #XXX
   332 Nichol Mill Lane
   Franklin, TN 37067

7. **All RMA numbers:**
   • Are valid for 30 days. Products received after 30 days may result in extra screening and delays.
   • Must have all required information provided before an RMA number is assigned.