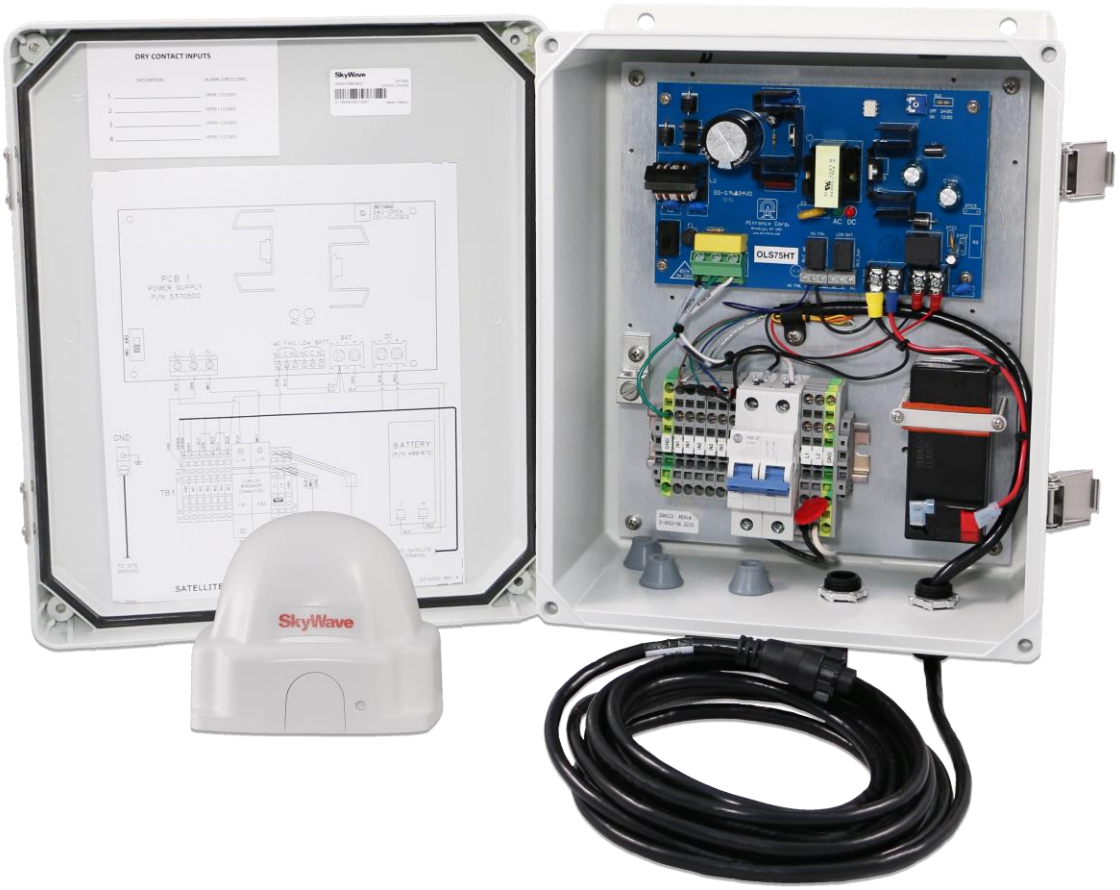
FLASH TECHNOLOGY



FTW 175-SAT Wireless Monitoring System

Reference Manual for Part Number F1905285

SERIAL NUMBER

Flash Technology, 332 Nichol Mill Lane, Franklin, TN 37067
www.flashtechnology.com
(615) 261-2000

Front Matter

Abstract

This manual contains information and instructions for installing, operating and maintaining the FTW 175-SAT Wireless Monitoring System.

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Warranty

With proper installation and with normal operating conditions, Flash Technology warrants all components, for 1 year.

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Section 1 – Introduction

Introduction

The FTW 175 SAT Wireless Monitoring System is a global short message satellite service using IsatData Pro from Inmarsat. Monitoring of site equipment is provided through three (3) dry contact inputs. The unit also monitors site power.

Dry contacts are typically alarm relays provided by equipment for external monitoring of alarm conditions. Each input of the FTW 175-SAT will generate an alert message when transitioning states. Flash Technology's National Operations Center (NOC) will configure each alert message to alarm on either open or closed status. **Alarm on open is preferred for fail safe monitoring.**

All alarm and communication monitoring is handled by the NOC.

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

Description

The component layout and internal wiring of the unit is shown in Figure 1-1. The dry contact inputs are located on TB1 as shown in Figure 3-3.

Specifications

Physical

- 13.33H x 11.30W x 7.11D inches (External)
- 10.6 lbs.

Electrical

AC Voltage	120 VAC, 60 Hz
Power	7VA
Battery Operation	4+ hrs

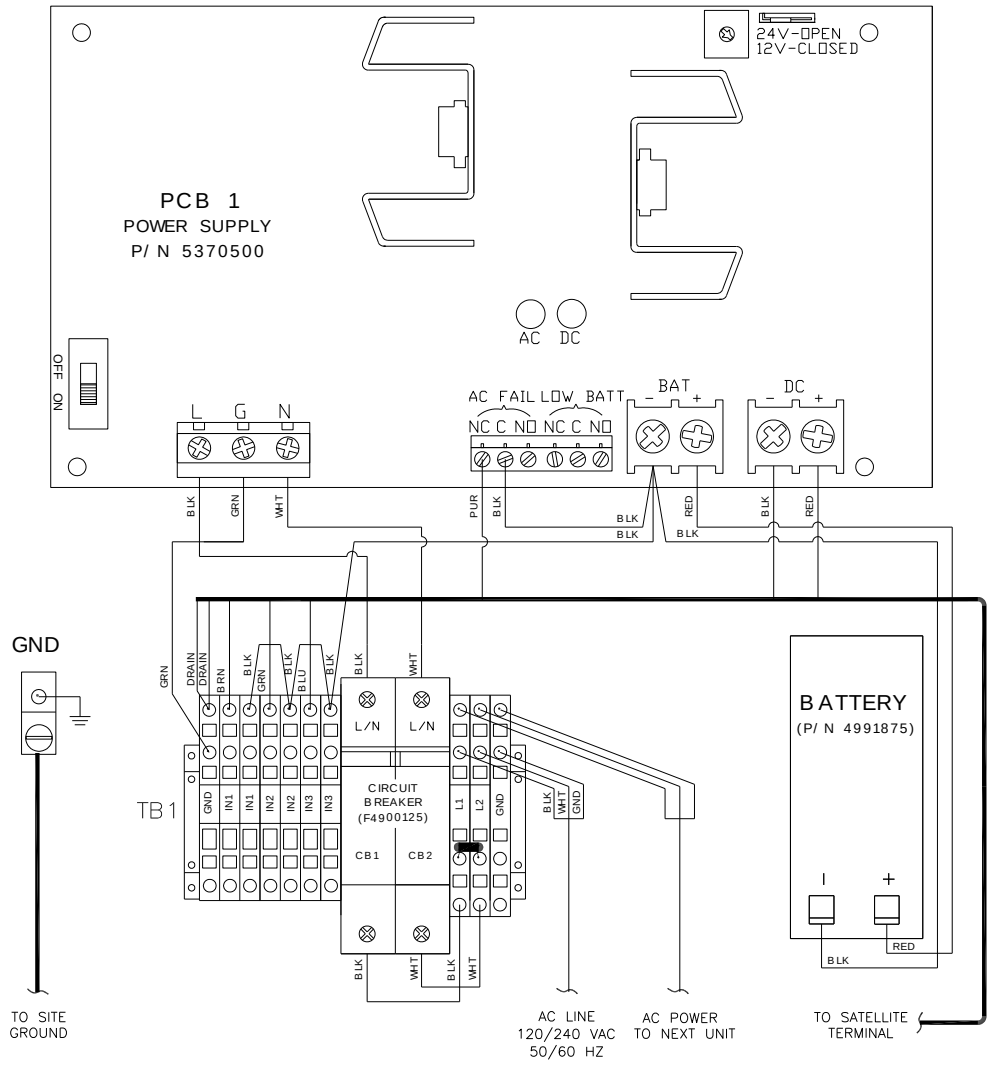

Figure 1-1 – FTW 175-SAT Internal Wiring & Component Layout

Section 2 – Initial On-Site Installation Checks

Before Installation

Since Flash Technology will be providing the monitoring service, the tower owner must submit a site detail form to FlashNOC@spx.com prior to dispatch in order to create the site profile in the database. Once on site and before beginning installation of the FTW 175-SAT device, contact the Flash Technology NOC at 800-821-5825, Option 7 and let them know that the installation is about to begin. The NOC will obtain equipment information and instruct you to call back when the installation is complete for activation, see section 5.

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.

The FTW 175-SAT contains two main components:

- The base unit, where the dry contact alarms and power will be wired. Installation of the base unit is described in section 3.
- The SkyWave terminal, which is the satellite antenna, and its mounting hardware. Installation of the terminal is described in section 4.

Finding the Best Install Location

The SkyWave terminal contains the transceiver that will be communicating with the satellite.
Although the terminal does not need to be pointed, it does need to be located with a permanent unobstructed view of the southern sky. The terminal's line of site to the sky should not be blocked by any structures or vegetation.

Mount the terminal so that the top surface is horizontal (flat). Failure to do so may compromise line of sight between the satellite and the terminal.

Do not mount the terminal close to other electrical equipment due to possible radiated and/or conducted electromagnetic interference.

Do not mount the terminal close to radar or other communications antennas. Use the following guidelines:

- 1 m from VHF/UHF antenna
- 3 m from loop antenna
- 4 m from MF/HF antenna
- 5 m from other satellite antennas
- Not within a radar beam.

Section 3 – Base Unit Mounting and Installation

Mounting

The base unit has four (4) mounting tabs as shown in Figure 3-4. Mounting hardware is not included. An adapter kit for uni-strut installations is available, contact Flash Technology sales for details.

Installation

AC Power Wiring

AC Power terminal block TB1 incorporates an MOV and circuit breaker (CB1 and CB2) for increased protection against AC Power transients. Also, the circuit breaker (CB1 and CB2) acts as a power disconnect to the unit. When you pull the circuit breaker down to disconnect power, you will see green in both indicators.

Connect 120 VAC power to terminal block TB1 (L, N, GND) as shown in Figure 3-1, but leave power turned off until you are ready for activation (see Section 5). 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.

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 flat-blade screwdriver into the rectangular slot and push down to create the opening for the wire termination.
3. Insert the conductor fully into the round terminal compartment and then remove the screwdriver. The conductor automatically makes contact.
4. Pull on the wire to ensure it is securely seated in the terminal block and check that contact is made to conductor metal and not the wire insulation.

Dry Contact Input Wiring

Each dry contact will have a pair of connections on the terminal block labeled IN1, IN2, and IN3. Connect the equipment to be monitored via dry contact inputs as shown in Figure 3-1. Each input will send a message on any state change (open-to-closed or closed-to-open). A label has been provided on the inside cover of the unit to record each input, up to three (3), that is connected. Figure 3-2 depicts the dry contact input label.

Grounding

To provide increased immunity from lightning damage to the FTW 175-SAT, it is essential that the Ground Lug located in the lower left corner of the FTW baseplate (Figure 1-1) be properly connected by a 6 AWG conductor to the site Grounding System. Observe proper Grounding procedures.

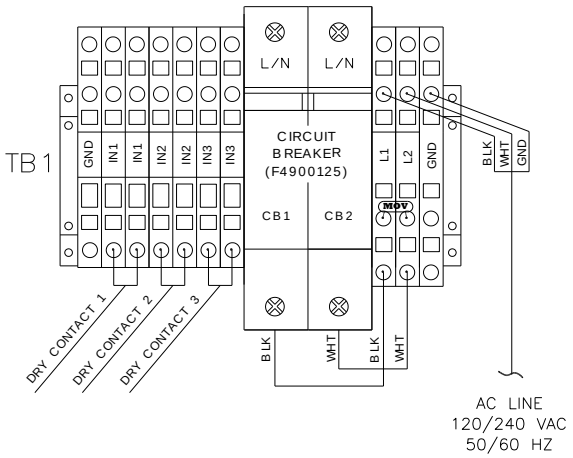

Figure 3-1 – Terminal Block TB1 Layout, Dry Contact Wiring and AC Termination

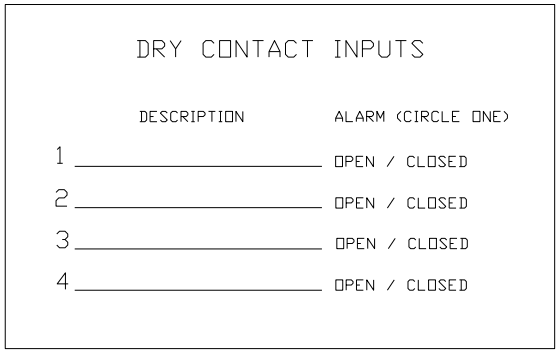

Figure 3-2 – Dry Contact Input Label

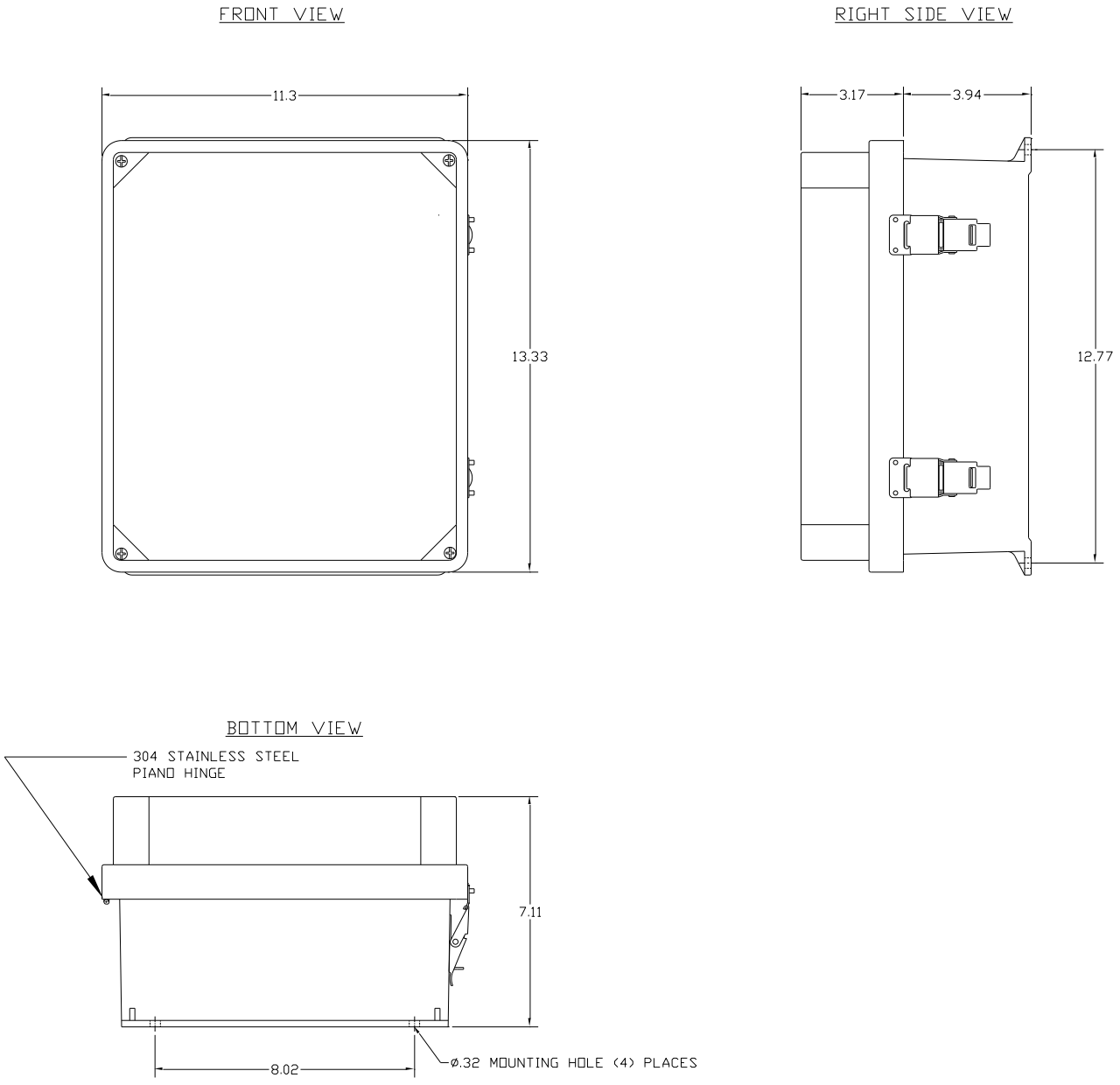

Figure 3-4 – Enclosure Mounting Footprint

Section 4 – Pole Mount Installation Guide for Satellite Terminal

1. Two (2) self-adhesive stickers are included with the terminal (Figure 4-1). Attach one self-adhesive sticker to the underside of the pole mount bracket and the other self-adhesive sticker inside the FTW 175-SAT enclosure cover.

Figure 4-1 – Terminal sticker

2. Cut off one end of silicone lubricant tube and apply generous amount of lubricant into the terminal's connector for a watertight seal (Figure 4-2).

Figure 4-2 – Silicone Lubricant and Connector

3. Insert pan head screws, lock washers, and flat washers from the top side of the terminal and secure screws to the bracket at four locations (Figure 4-3).

   NOTE: Torque screws to 12 in-lbs (1.4 N-m).

Figure 4-3 – Bracket and Screws

4. Secure the bracket with two adjustable clamps against the pole (Figure 4-4).

   NOTE: Tighten each clamp to 30 in-lbs (3.4 N-m). Do not cut clamp's excess length.

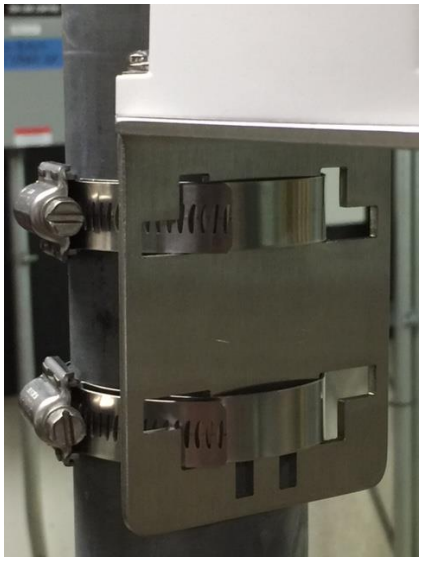

Figure 4-4 – Vertical Mount Orientation

5. Align and insert the cable connector to the terminal's connector key slot. Hand tighten the locking collar clockwise until a tactile click is felt (Figure 4-5).

   NOTE: Do not use a wrench to tighten the locking collar.

Figure 4-5 – Cable Connector

6. Route and secure cable with the provided cable tie as shown in Figure 4-6 for service loop to reduce cable strain. Cut off any excess cable tie.

Figure 4-6 – Service Loop

Figure 4-7 – Pole Mount Installation

Section 5 – Activation

Monitoring

Important: Before leaving the site, ensure that the battery is connected.

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

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

1. Before calling the NOC, please be prepared to provide the following information:
   - The wireless number for this unit. See Figure 5-1. The number is found on the self-adhesive sticker included with the terminal. This sticker should now be located inside the cover of the enclosure.
   - 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. Secure the Satellite Terminal on the Satellite Terminal Mounting Bracket in a location which provides an unobstructed view of the southern sky. Refer to section 4 for mounting instructions.
3. Apply power to the equipment. Once power is applied, The AC and DC LEDs on PCB 1 will illuminate. At this point, the terminal can establish communication with the NOC. There are no visual indicators on the terminal to indicate communication is established. This will need to be verified by the Flash Technology NOC. It typically takes less than 5 minutes to establish communication.
4. Connect the red wire to + (Positive) and the black wire to – (Negative) on the battery as shown in Figure 1-1.
5. 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.
6. Please note that 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.

Figure 5-1 – Wireless Number

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.

Table 6-1 – Major Replaceable Parts

Reference	Description	Part Number
SATELLITE TERMINAL	Satellite Terminal FTW 175 SAT	5905120
HARNESS	Harness FTW 175 SAT Cable	4372000
HARNESS	Harness FTW175 SAT AC Power	4372010
HARNESS	Harness FTW 175 SAT Battery	4372020
BATTERY	12V Battery 1.2AH	4991875
POWER	Power Supply	5370500
TERMINAL BLOCK	Terminal Block Assembly FTW 175 SAT	1362200
ANTENNA MOUNTING	Pole Mount Kit SAT	5905125
CIRCUIT BREAKER	Circuit Breaker FTW 175 SAT	4900125

Table 6-2 – Optional Items

Reference	Description	Part Number
CABLE	Dry Contacts; 4 Pair, 22 AWG, Red/Black	5993101

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. Failure to follow the below procedure may result in additional charges and delays. Avoid unnecessary screening and evaluation by contacting Technical Support prior to returning material.

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.