Notice

For outdoor installation this cabinet must be mounted with the conduit connectors coming up into the bottom of the box.

Mounting the box sideways or in any other orientation can allow water intrusion and will void the warrantee
IMPORTANT !!!

The TowerSentry monitoring unit controls the AC power to the tower light system. This allows the TowerSentry Operations Center (NOC) to remotely recycle the tower lights and check for proper alarm events.

Please affix this label inside the strobe system in plain view to notify tower personnel and technicians of this fact.

INSTALLATION

TowerSentry®

TSMS/ Tower Light Monitoring System
For Medium Intensity Strobe System

TowerSentry®
2720 Industrial Park Drive
Lakeland, FL 33801
(863) 667-1006

Ver 010110

Warning!!! Lethal voltages are present in the lighting system. Remove AC power from the light system at the circuit breaker panel before proceeding with installation. Death or Serious injury may result if the unit is not disconnected

Installers Notes:

Installation will require basic tools including an AC/DC Volt/Ohm meter and a telephone if a telephone line is used.

TowerSentry® technicians are on staff to assist in installation and final checkout **M-F 8am – 4:30pm Eastern Time**. ***TowerSentry*® technicians are not available any other hours.**

Each ***TSMS+*** unit is programmed for a specific tower light controller. Units cannot be swapped around from site to site without reprogramming.

The ***TSMS+*** is designed to provide wireless remote switching of the 120VAC supplying power to the strobe system. This allows the TowerSentry monitoring center to remotely fail and restore the strobe system to confirm proper reception of strobe alarm signals. In addition, the ***TSMS+*** provides Day/Night and AC Power status reports not provided by the strobe manufacturer.

Proper operation must be confirmed before installer leaves the site.

***TowerSentry*® will not commence monitoring until proper operation has been confirmed by one of our technicians.**

Failure to call and confirm proper operation will result in the installer having to revisit the site for final checkout.

Caution: Only qualified personnel should perform Installation. Death or permanent injury may result.

Installation of *TowerSentry*® *TSMS+*

The ***TSMS+*** will require 120VAC power (taken directly from the strobe system), access to a telephone line (if used), and will interface with the strobe system via the supplied flex and wiring.

1. Mount the ***TSMS+*** cabinet next to the strobe system controller.
NOTE: On outdoor installations, the cabinet must be mounted with the conduit connectors facing down to avoid water intrusion and to avoid voiding the warrantee.

2. Install the supplied flex between the ***TSMS+*** cabinet and the strobe system controller.

3. **Inside the TowerSentry *TSMS cabinet*…**
   - Connect the **#12g blue *flex* wire** to the **blue** terminal.
   - Connect the #**12g black flex wire** to the **black** terminal.
   - Connect the **#12g white *flex* wire** to the **white** terminal.
   - Connect the **#12g green *flex* wire** to the **green/yellow** terminal.
   - Connect the **#12g red *flex* wire** to the **red** terminal.
   - Connect the multi-conductor interconnect cable to the smaller black terminal strip as follows…

Terminal #1 – Black wire	(Common)
Terminal #2 – White wire	(White Strobe Fail)
Terminal #3 – Red wire	(Red Strobe Fail)
Terminal #4 – Green wire	(Sidelight/Marker Fail)
Terminal #5 – Brown wire	(Day Status)
Terminal #6 – Blue wire	(System Confirmed On)
Terminal #7 – Orange wire	(Aux A)
Terminal #8 – Yellow wire	(Aux B)

4. Inside the strobe system cabinet…
   - Locate the 'hot' wire coming from the circuit breaker that provides 120VAC power to the strobe system (this wire is normally black). Disconnect this wire from the input terminal of the strobe system. Connect the **#12 gauge blue flex wire** in its place. Using the supplied wire nut, connect the black wire (just removed) to the **#12g black *flex* wire.**

   - Locate the AC input terminal for the'neutral' wire coming from the circuit breaker cabinet (this wire is normally white). Connect the **#12g white *flex* wire** so that it **shares** this same input terminal on the strobe system.

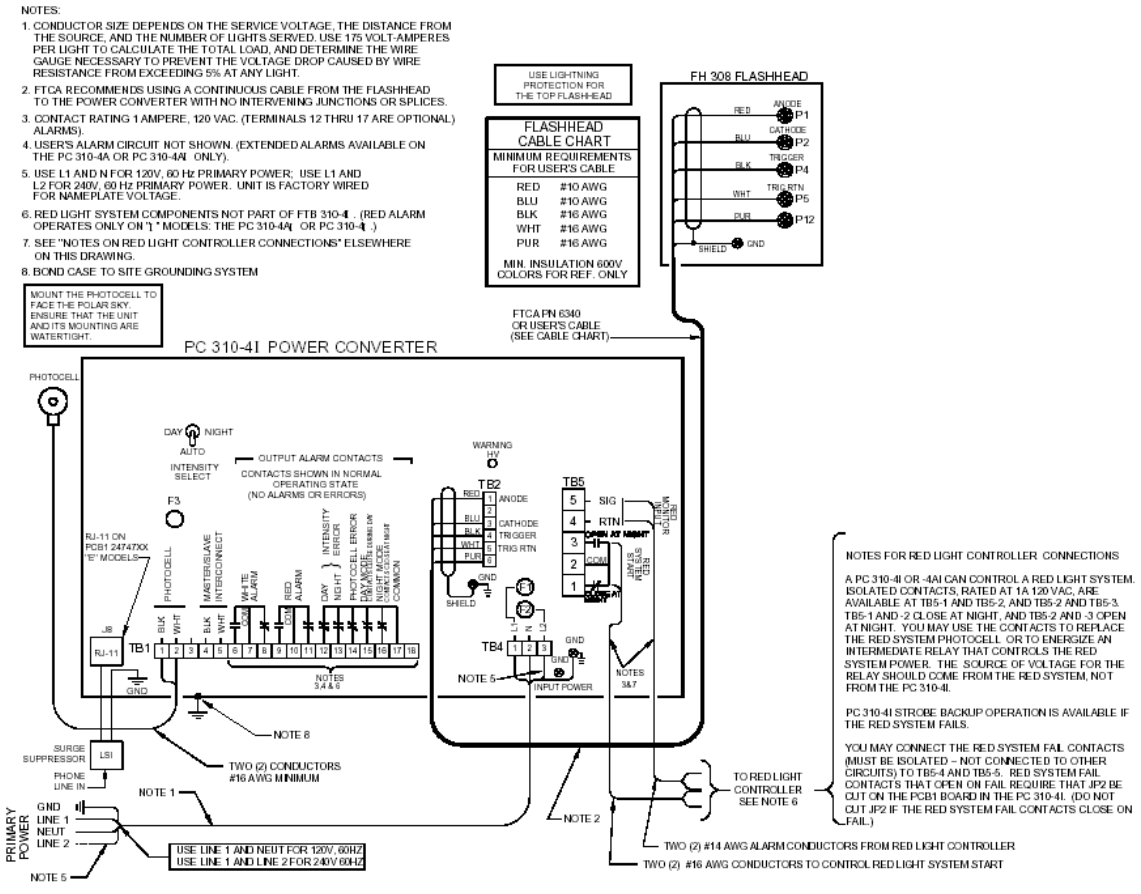
   - Locate the AC input terminal for the 'ground' wire coming from the circuit breaker cabinet (this wire is normally green). Connect the **#12g green *flex* wire** so that it **shares** this same input terminal on the strobe system.

5. Connect the multi-conductor interconnect cable inside your particular strobe system as follows:

FLASHTECH 310 STROBE SYSTEM

IMPORTANT: The heavy 12g Red Wire is not needed on this system.
Do NOT plug the ice-cube relay into the socket that connects to the red terminal block.

Black wire -	**TB-1 Terminal #7 & #10, &**	
	TB-5 Terminal #2 (loop commons)	Common
Brown wire -	**TB-5 Terminal #3**	Day/Night transition
Red wire -	**TB-1 Terminal #9**	Red Beacon Failure
White wire -	**TB-1 Terminal #6**	White Strobe Failure
Blue wire -	**TB-1 Terminal #8**	Strobe Confirmed ON

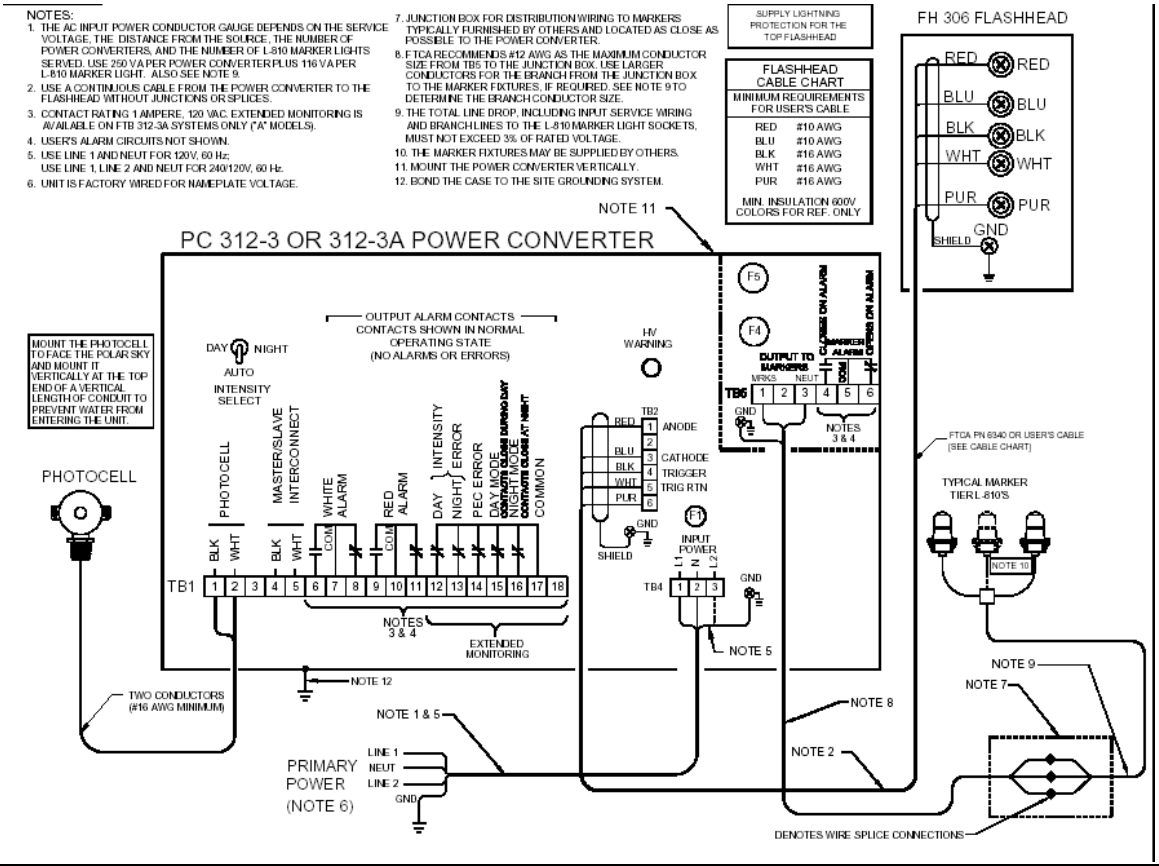


FLASHTECH 312 STROBE SYSTEM

Black wire -	**TB-1 Terminal #7 & #10, &**	
	TB-5 Terminal #5 (loop commons)	Common
Red wire -	**TB-1 Terminal #9**	Red Beacon Failure
Green wire -	**TB-5 Terminal #4**	Sidelight Failure
White wire -	**TB-1 Terminal #6**	White Strobe Failure
Blue wire -	**TB-1 Terminal #8**	Strobe Confirmed ON

Connect the #12 guage red *flex* wire to TB-5 Terminal #1 on the strobe system.
Plug the ice-cube relay into the relay socket that connects to the red terminal block.

Note: FCC rules require notification of Day/Night status. TowerSentry pulls this information off of the 120v terminal feeding AC power to the side marker lights.

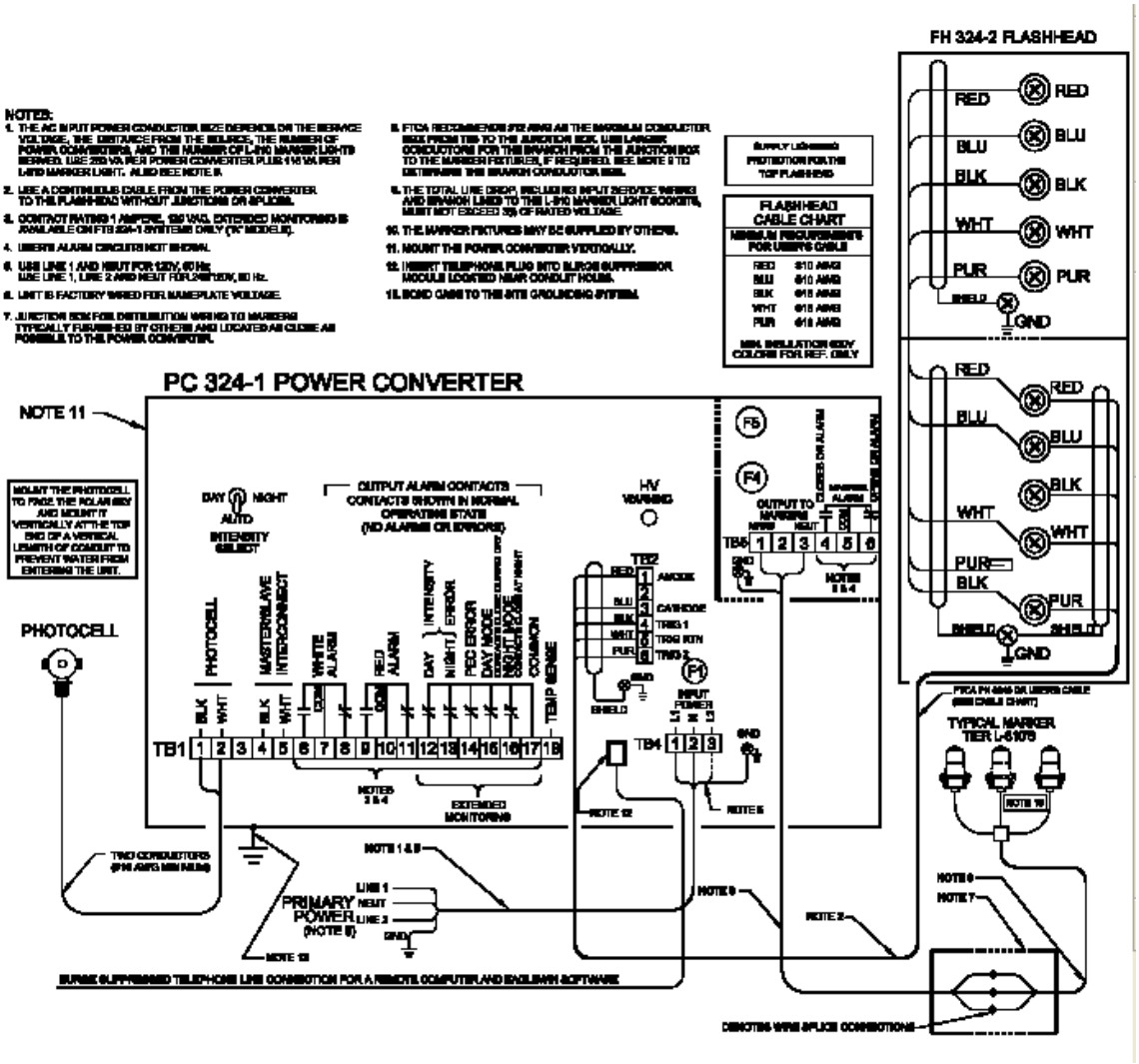


FLASHTECH 324 STROBE SYSTEM

Black wire -	**TB-5 Terminal #5 & TB-1 Terminal #7, & #10 (Loop commons)**	Common
Red wire -	**TB-1 Terminal #9**	Red Beacon Failure
Green wire -	**TB-5 Terminal #4**	Sidelight Failure
White wire -	**TB-1 Terminal #6**	White Strobe Failure
Blue wire -	**TB-1 Terminal #8**	System Confirmed ON

Connect the #12gauge red *flex* wire to "Output to Markers" TB-5 Terminal #1.

Plug the ice-cube relay into the relay socket that connects to the red terminal block. Note: FCC rules require notification of Day/Night status. TowerSentry pulls this information off of the 120v terminal feeding AC power to the side marker lights.



HONEYWELL /FLASHGUARD 2000 STROBE SYSTEM

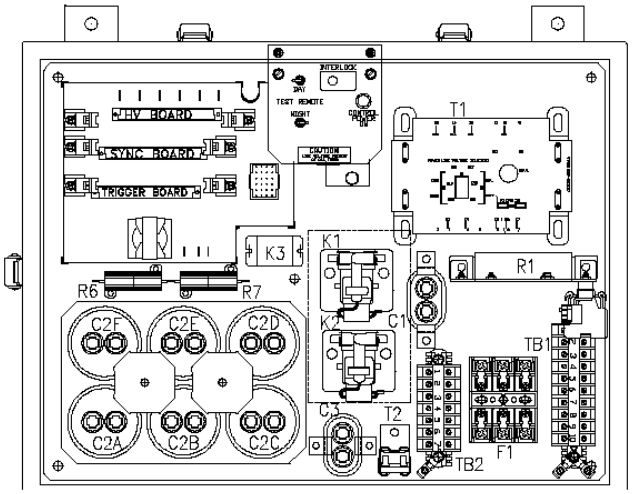
Black wire -	**TB1 Terminal #8**	Common
White wire -	**TB1 Terminal #6**	Strobe Failure
Blue wire -	**TB1 Terminal #7**	System Confirmed ON

Connect the #12guage red *flex* wire to the red terminal block inside the TowerSentry cabinet. Connect the other end to the load side of the photocell.

Plug the ice-cube relay into the relay socket that connects to the red terminal block. Note: FCC rules require notification of Day/Night status.

POWER SUPPLY
COMPONENT LAYOUT

FG 2000

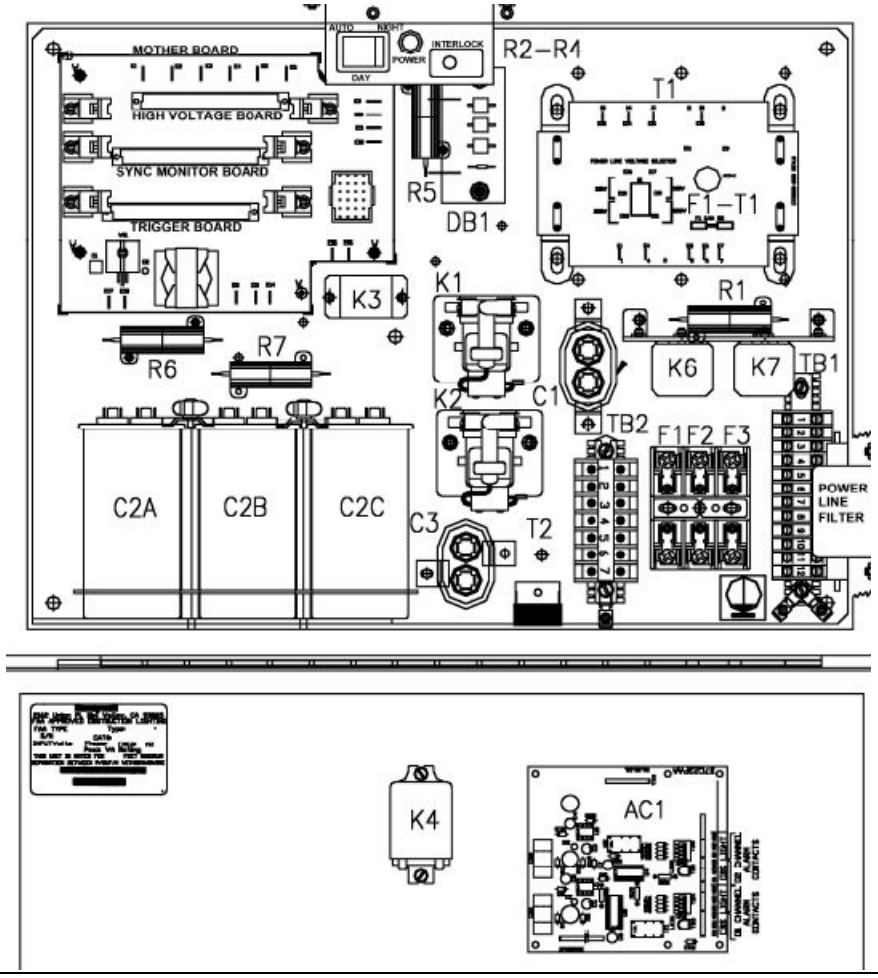


HONEYWELL / FLASHGUARD 3000 STROBE SYSTEM

Black wire -	**TB1 Terminal #8 & TB3 Terminal C1 (loop commons)**	
White wire -	**TB1 Terminal #6**	Strobe Failure
Blue wire -	**TB1 Terminal #7**	System Confirmed ON
Green wire -	**TB3 Terminal NO1**	Sidelight/Marker Fail

Connect the #12guage red *flex* wire to the red terminal block inside the TowerSentry unit. Connect the other end to **share the sidemarker circuit** inside the strobe system.

Plug the ice-cube relay into the relay socket that connects to the red terminal block. Note: FCC rules require notification of Day/Night status. TowerSentry pulls this information off of the 120v terminal feeding AC power to the side marker lights.



TWR E-1DB STROBE SYSTEM

IMPORTANT: The heavy 12g Red Wire is not needed on this system.
Do NOT plug the ice-cube relay into the socket that connects to the red terminal block.

Black wire -	**Plug J3… Terminals #2, #5, #8, #11, #14 (loop commons)**	Common
Red wire -	**J3 Terminal #10**	Red Beacon Failure
Green wire -	**J3 Terminal #1**	Sidelight Failure
White wire -	**J3 Terminal #4**	White Strobe Failure
Blue wire -	**J3 Terminal #6**	System Confirm ON
Brown wire -	**J3 Terminal #7**	Day Mode

TWR D/1LV(S) STROBE SYSTEM

IMPORTANT: The heavy 12g Red Wire is not needed on this system.
Do NOT plug the ice-cube relay into the socket that connects to the red terminal block.

Black wire -	**J2-2, K4-5, K6-2 (loop commons)**	Common
White wire -	**J2-3**	White Strobe Failure
Brown wire -	**K4-4**	Day Status
Blue wire -	**J2-1**	System Confirmed ON

Note: Alarm contacts on TWR systems may vary; confirm proper alarm contacts.

ALL OTHER STROBE/LIGHTING SYSTEMS
If the strobe system for your site is not one of those listed in this manual, please locate the manufacturer's installation manual to assist in proper wiring to the ***TSMS+*** and call TowerSentry for assistance.

6. If wireless transmission is used the ***TSMS+*** has a radio with an internal antenna. Due to the nature of cellular transmission, the cabinet should be mounted **outdoors**. In the event that cabinet is mounted indoors and the radio signal is not adequate, an external antenna should be ordered.

7. If a telephone line is used, connect the telephone line to the input terminals on the black Ditek surge protector.

8. Place the backup battery in the bottom of the cabinet. Hook up the black and red leads from the circuit board to the battery. Red to "+" (plus), black to "-" (neg).

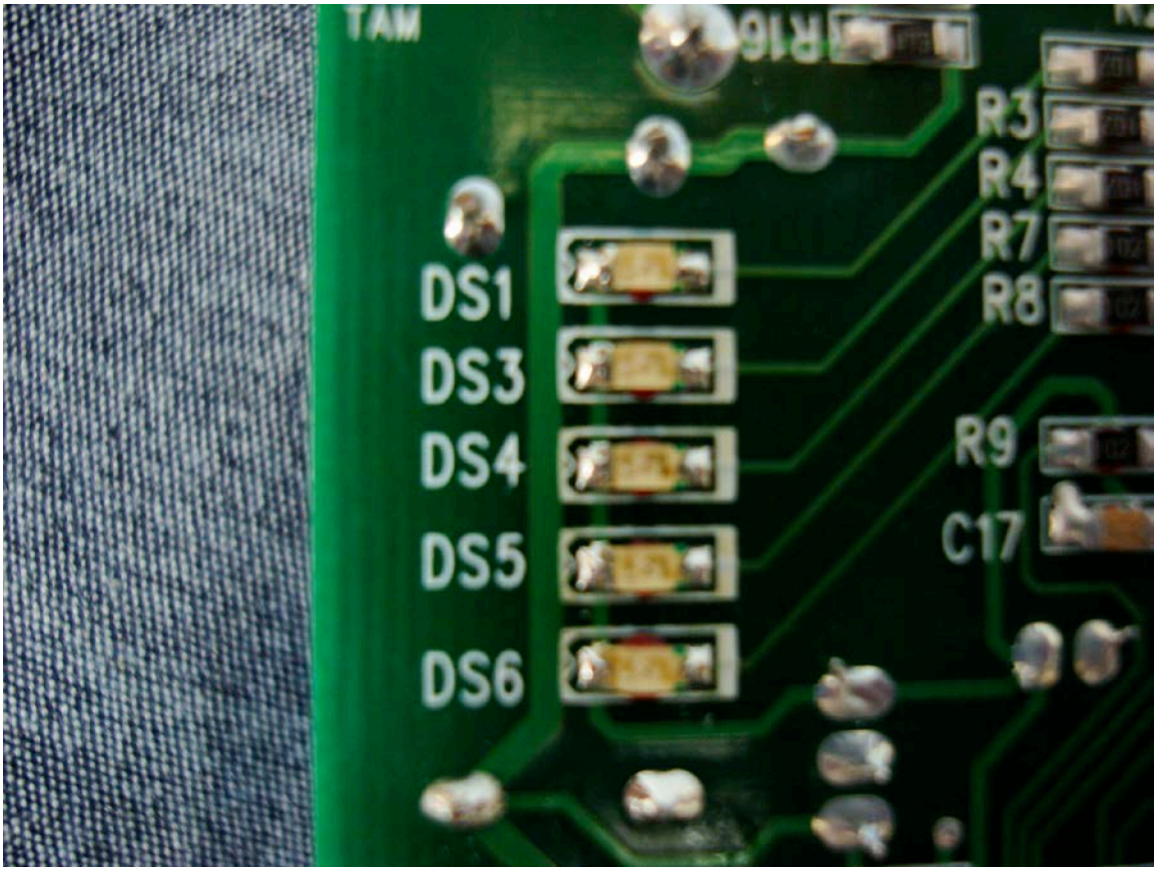
9. The installation is now complete. Close up all cabinets and turn on the circuit breaker to the tower lights and the ***TSMS+*.** **Please call our office at (863) 667-1006 so that we may confirm proper operation of the unit.**

Explanation of Radio Power Up / LED Lights and sequence.

DS1, when flashing, means that the transceiver is communicating properly with the control board. When the transceiver is first booted up, it transmits a brief signal, requesting an acknowledgement from an active cell tower in the area. The DS4 light is lit during this process. If NO service is found, all lights will flash in unison. After a 10-minute period, the radio will again try to find a site.

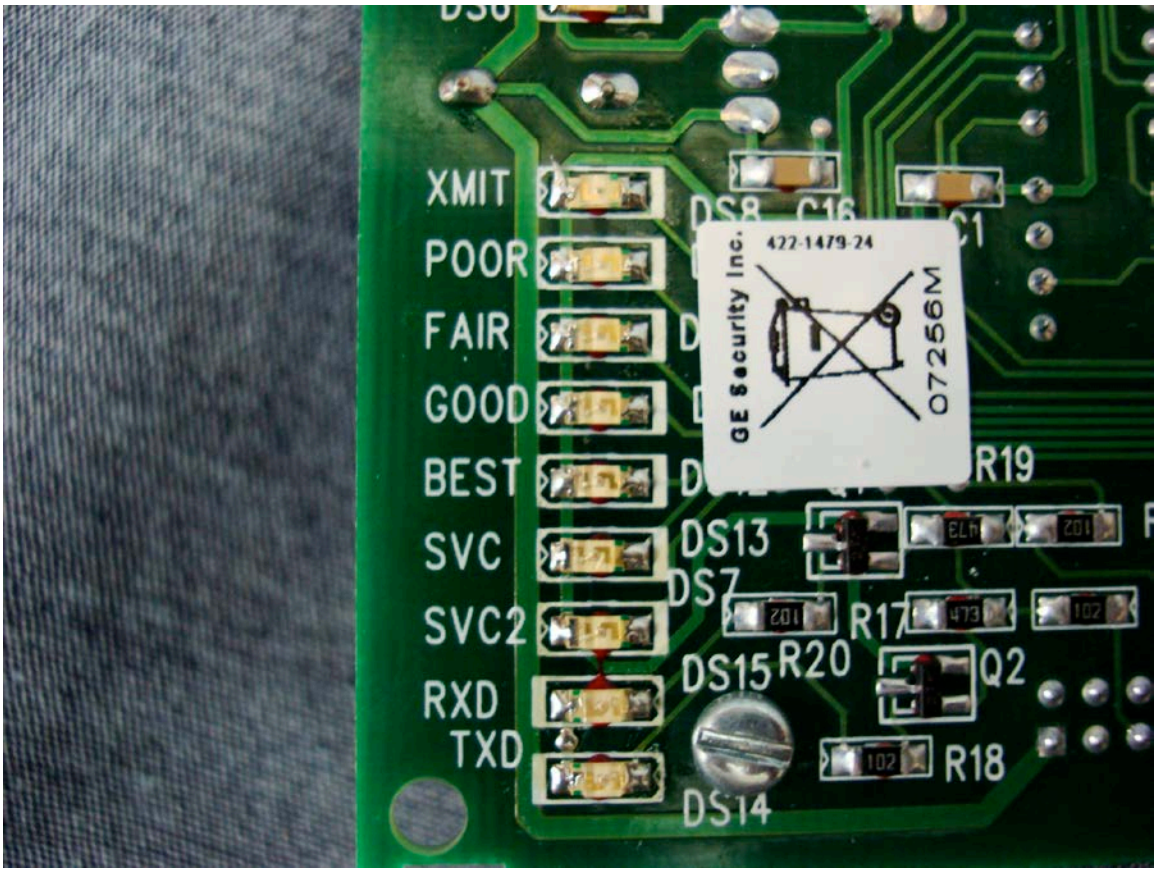
When the transceiver receives an acknowledgment back from a carrier the DS5 LED will light.

Once a carrier is found, the radio will transmit additional information then re-boot itself looking for a second carrier (possibly stronger in signal, possibly weaker), it then goes back to DS4 while it sends out a new search. If a second carrier is found, DS5 will again light. The transceiver then compares the two signals and will chose the stronger of the two. The radio then reboots again, DS4 is lit again, then DS5. Once locked on, DS6 will light very briefly (sometimes quicker than you can spot. Once on line, only DS1 will flash.



Additional information:
DS3 to DS6 LED's flashing = Network failure
DS3 to DS6 LED's off= Normal idle condition
(DS3 and DS4) and (DS5 and DS6) flashing alternately=Shutdown

The second set of LED's show the relative signal strength received, and you will also notice a XMIT LED that lights whenever a signal is transmitted. Each LED is tri-mode. Fast flashing, slow flashing and steady on. The Leeds are labeled as Poor, Fair, Good, Best. Each Led will light and flash relative to the signal received.



Description of relative signal strength for the LED's

Signal	Strength	Poor	Fair	Good	Best
-114	-197	Off	Off	Off	Off
-106	-104	Slow	Off	Off	Off
-103	-101	Fast	Off	Off	Off
-100	-98	On	Off	Off	Off
-97	-95	On	Slow	Off	Off
-94	-92	On	Fast	Off	Off
-91	-89	On	On	Off	Off
-88	-86	On	On	Slow	Off
-85	-83	On	On	Fast	Off
-82	-80	On	On	On	Off
-79	-77	On	On	On	Slow
-73	Higher	On	On	On	On