



**MODEL RT2XXX & FT5XXX
HIGH BRIGHT DISPLAY
CCFL TO LED BACKLIGHT
FIELD REPLACEMENT PROCEDURE**

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CORPORATE HEADQUARTERS:

21405 B Street
Long Beach, MS 39560
Phone: (228) 575-3100
Fax: (228) 575-3101

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HIGH BRIGHT DISPLAY CCFL TO LED BACKLIGHT REPLACEMENT

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INTRODUCTION

This guide covers the steps for converting the high bright display CCFL backlights to the long life LED backlights. The following procedures include a list of tools and hardware required for the replacement.

SCOPE

The following procedures apply to all Triton certified service personnel involved in the process of maintaining or converting Triton ATMs.

OVERVIEW

The RT2/FT5 High Bright Display CCFL to LED Backlight Replacement document will require the replacement of the display backlight bulbs and inverter board. The kit does NOT include replacement hardware. Please use the existing hardware.

Document Updates

August 28, 2013 Original

FIELD REPLACEMENT PROCEDURE

TOOLS REQUIRED	#1 and #2 Phillips screwdriver (Magnetic recommended) Small needle nose pliers Small wire cutters Electrical Tape ESD wrist strap with grounding cord Safety Glasses	
KIT P/N: 06200-00185	FT HIGH BRIGHT LED STRIP w/ DRIVER KIT	
PARTS SUPPLIED		
PART NUMBERS	DESCRIPTION	QUANTITY
09100-00445	High Bright LED Strip	2
09100-00444	LED Drive	1

This process will take approximately 45 minutes.

REMOVING THE DISPLAY ASSEMBLY FROM THE UNIT

The Display Assembly is located on the control panel.

Tools:

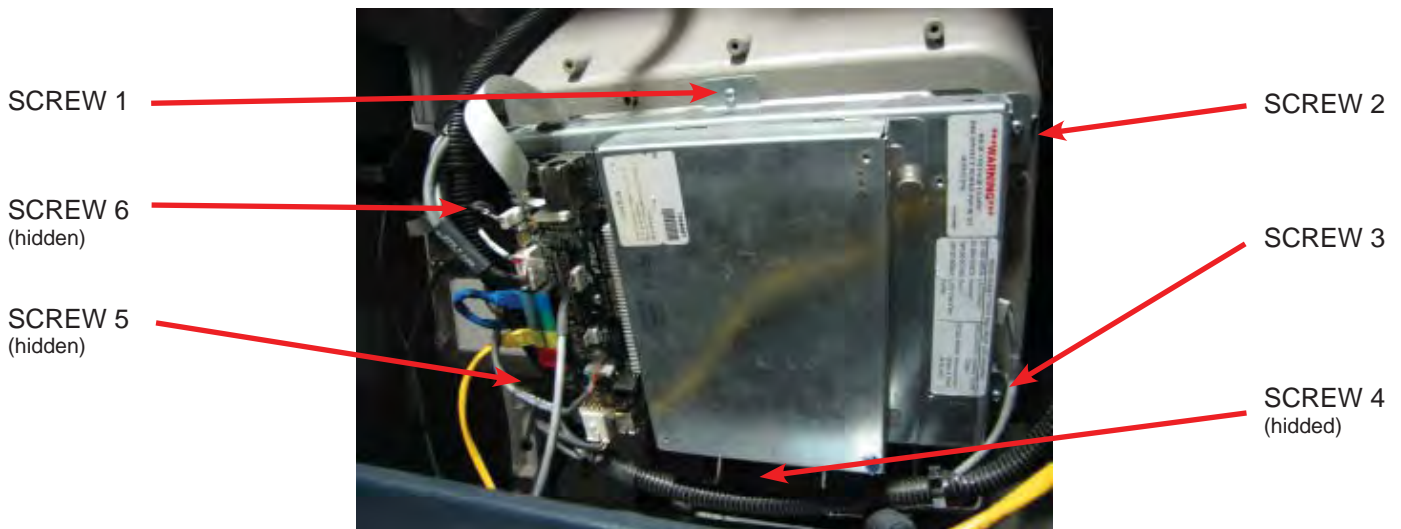
- 1 - #2 Phillips screwdriver
- 1 - ESD wrist strap with grounding cord.

To remove the display assembly complete the following procedure:

1. Put the ESD wrist strap on and attach the cord to ground.
2. Perform a proper shutdown on the unit. Unlock and open the upper portion of the cabinet.
3. Push the AC power ON/OFF switch on the power supply to the OFF (0) position.
4. Unplug all connectors from the docking board assembly including the display data cable, inverter cable and fan cable.

NOTE: If your unit has the modem bracket mounted on screw #1, unplug the modem cable from the main board before removing the screws. Remove screw 1 and set the modem assembly aside before removing the remaining 5 screws.

5. Refer to the following image. Remove the six screws that secure the display assembly to the control panel.



7. Remove the display assembly from the control panel.

When replacement has been completed, reinstall the display in the reverse order.

REMOVING THE DISPLAY FROM THE ASSEMBLY

Tools:

- 1 - #2 Phillips screwdriver
- 1 - ESD wrist strap with grounding cord.

To remove the display from the assembly, complete the following procedure:

1. Put the ESD wrist strap on and attach the cord to ground.
2. Remove the display assembly from the unit control panel per the previous instructions.
3. Carefully remove the glass cover from the display assembly, set aside.
4. Remove the gasket from the assembly and set it aside with the glass cover.
5. Using the #2 Phillips screwdriver, remove the four screws securing the display to the bracket. Set aside.



6. Disconnect the two bulb cables from the inverter board.



7. Route the display data cable back through the grommet. Set the display aside.

REPLACING THE CCFL INVERTER TO AN LED DRIVER BOARD

Tools:

- 1 - ESD wrist strap with grounding cord.
- 1 - #1 Phillips screwdriver

To replace the CCFL inverter to an LED driver board, complete the following procedure:

1. Put the ESD wrist strap on and attach the cord to ground.
2. Disconnect the inverter cable from the inverter.



3. Using the #1 Phillips screwdriver, remove the two screws securing the inverter to the bracket. Set aside.



4. Remove the inverter board. Set the LED driver board in place in the bracket. Using the #1 Phillips screwdriver and the two previously removed screws, secure the LED driver board in place.



5. Reconnect the inverter cable to the driver board.

REPLACING THE CCFL BACKLIGHTS WITH THE LED BACKLIGHTS IN AN APOLLO DISPLAY

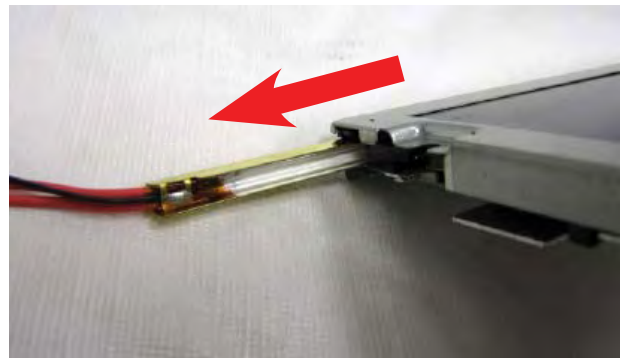
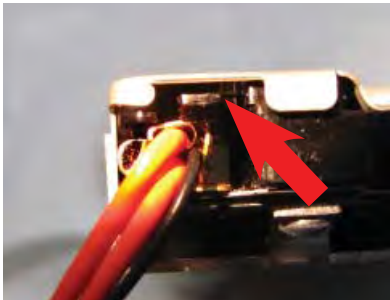
Tools:

- 1 - ESD wrist strap with grounding cord
- 1 - Safety glasses
- 1 - Small wire cutters
- 1 - Small needle nose pliers

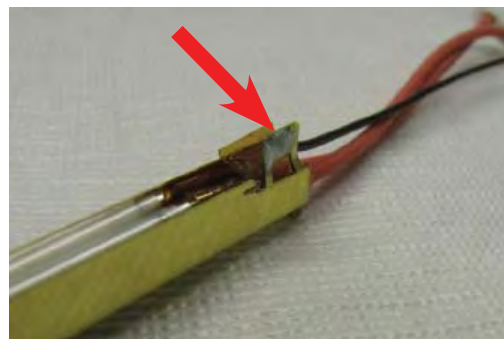
Apollo Display Triton Part Numbers
01160-00023 Display only
09200-00010 Assembly
09200-00091 Assembly
09200-00208 Assembly

To replace the CCFL backlight with the LED backlight, complete the following procedure:

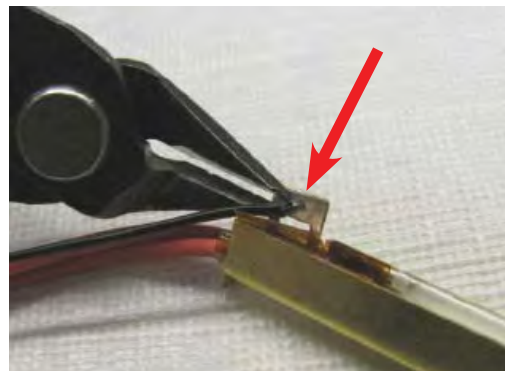
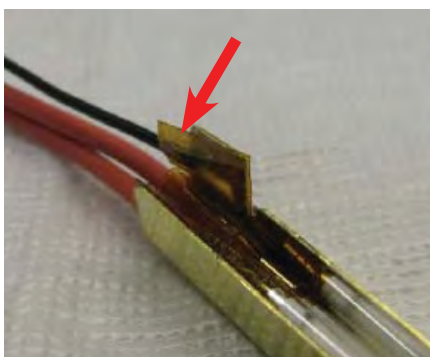
1. Put the ESD wrist strap on and attach the cord to ground. Wear the safety glasses during the replacement process.
2. Obtain the display previously set aside.
3. Locate where the backlight rails enter the display (on the right side of the display). BEFORE pulling the backlight rail out, locate the locking latch shown below. While holding the locking latch up, gently pull the CCFL backlight rail out.



4. Repeat step 3 for the second CCFL backlight rail.
5. Using the small pliers, bend up the rail tab covering the bulbs.

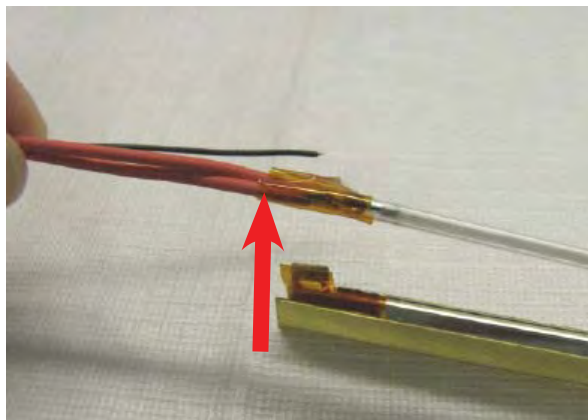


6. Peel the tape covering the rail tab off. Cut the black wire as close to the rail tab as possible.

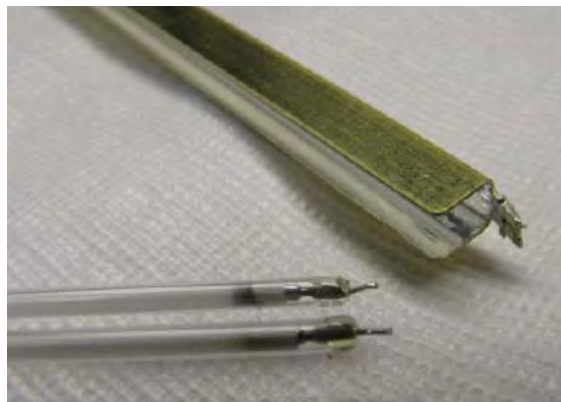
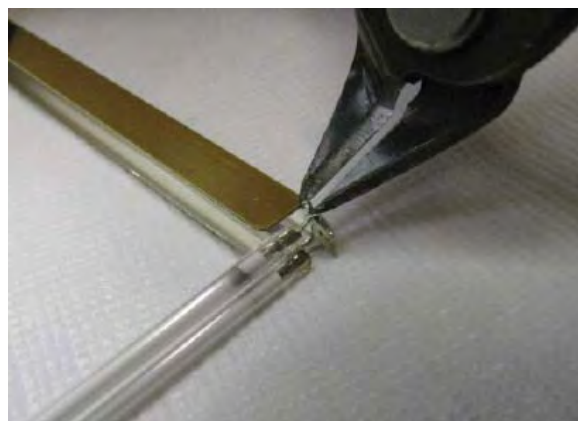


REPLACING THE CCFL BACKLIGHTS WITH THE LED BACKLIGHTS APOLLO DISPLAY cont...

7. Gently lift the two tubes out of the end of the rail using the pink wires. BE CAREFUL not to break the tubes as there is a small amount of mercury inside.



8. Using the small pliers, bend the end tab of the rail 90° to make it flush with the rail. Cut the wires as close to the tab as possible. Set the bulbs aside.



9. Bend the end tab of the rail back up to a 90° angle.



REPLACING THE CCFL BACKLIGHTS WITH THE LED BACKLIGHTS APOLLO DISPLAY cont...

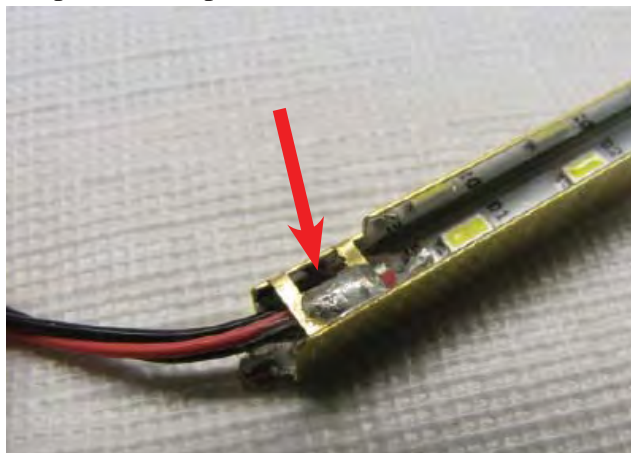
10. Remove any tape debris from the rail.



11. Obtain one LED strip. Peel the protective backing off the strip. Line up the end of the strip with the end tab of the rail. Slowly lower the strip into the rail putting light pressure on it to ensure the adhesive sticks to the rail.



12. Bend the tab covering the strip back into place.



13. Repeat steps 5 - 12 for the second rail.

14. Slowly insert one LED rail into the backlight track until the locking latch clicks down into place. Repeat for the second LED rail.

REPLACING THE CCFL BACKLIGHTS WITH THE LED BACKLIGHTS IN A OPTREX DISPLAY

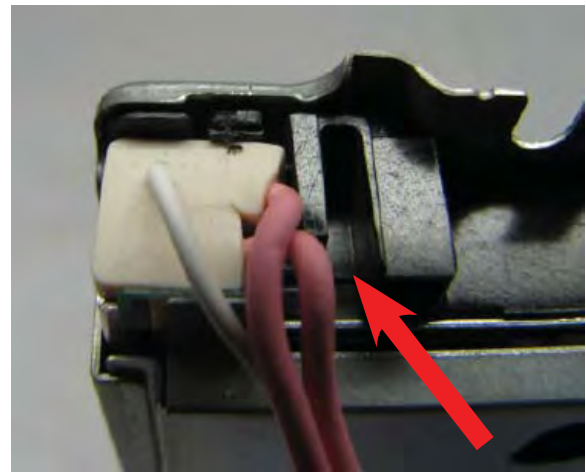
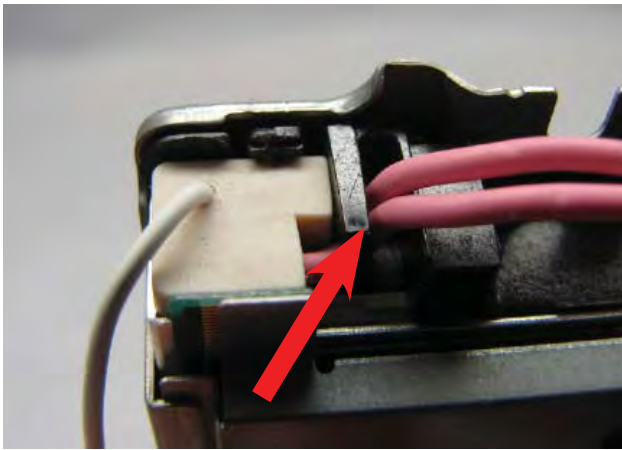
Tools:

- 1 - ESD wrist strap with grounding cord
- 1 - Safety glasses
- 1 - Small needle nose pliers
- Electrical tape

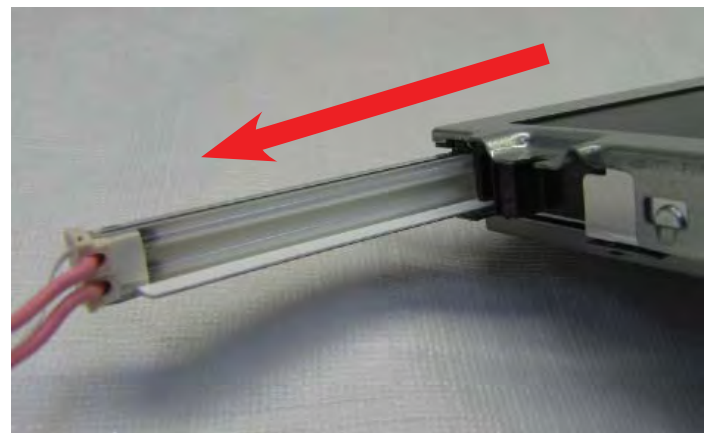
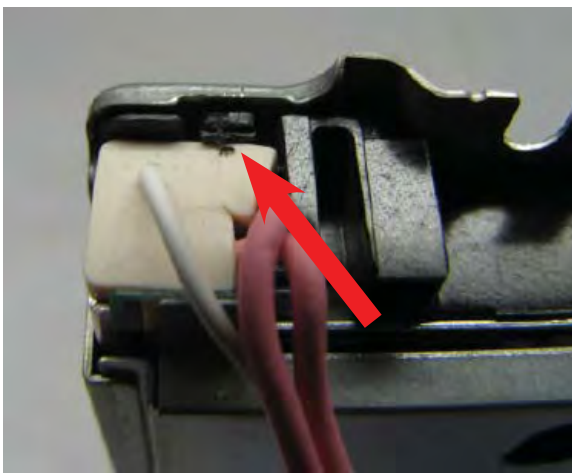
Optrex Display Triton Part Numbers
01160-00054 Display only
09200-10010 Assembly
09200-00326 Assembly

To replace the CCFL backlights with the LED backlights, complete the following procedure:

1. Put the ESD wrist strap on and attach the cord to ground. Wear the safety glasses during the replacement process.
2. Obtain the display previously set aside.
3. Locate where the backlight rails enter the display (on the right side of the display). Move the backlight cables from under the notch in the bracket.



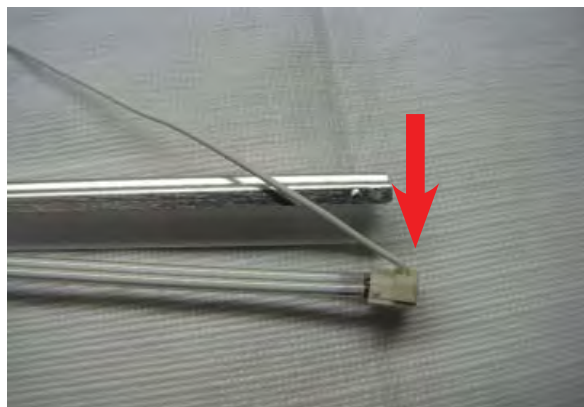
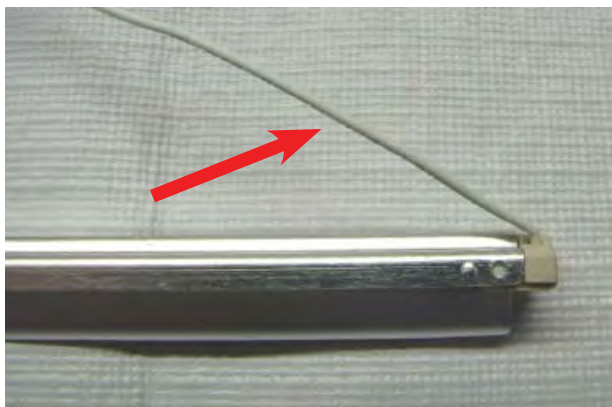
4. BEFORE pulling the backlight rail out, locate the locking latch shown below. While holding the locking latch up, pull the CCFL backlight rail out.



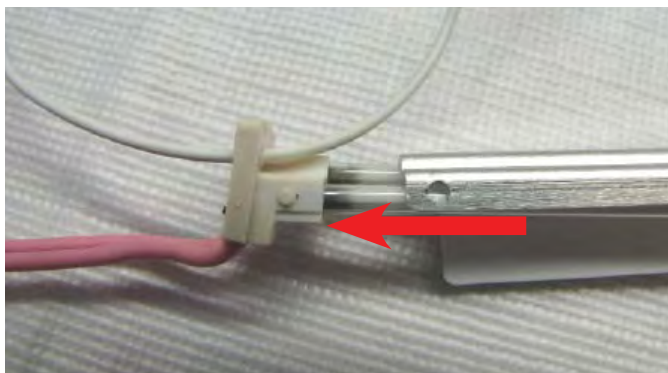
5. Repeat step 3 & 4 for the second CCFL backlight rail.

REPLACING THE CCFL BACKLIGHTS WITH THE LED BACKLIGHTS OPTREX DISPLAY cont...

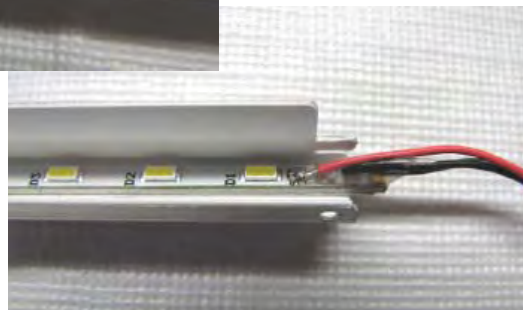
6. Pull the white wire towards the end of the bulb. Carefully lift the rubber stopper and bulbs out of the rail. BE CAREFUL not to break the tubes as there is a small amount of mercury inside.



7. On the other end, carefully pull the rubber stopper and bulbs out of the rail. Again, be careful not to break the tubes. Set the bulbs aside.



8. Obtain one LED strip. Peel the protective backing off the strip. Line up the end of the strip with the end of the rail. Slowly lower the strip into the rail putting light pressure on it to ensure the adhesive sticks to the rail. The LED strip will slightly surpass the edge of the rail.

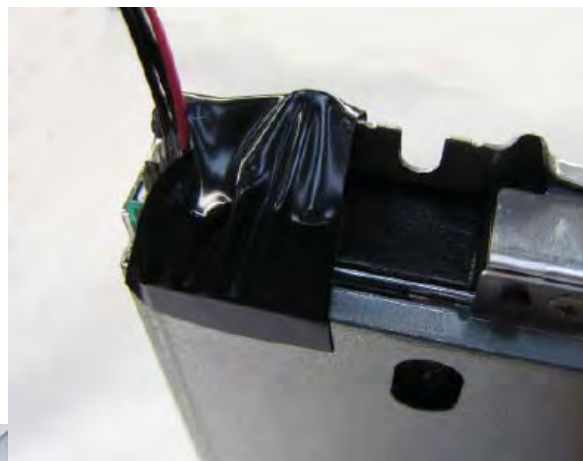
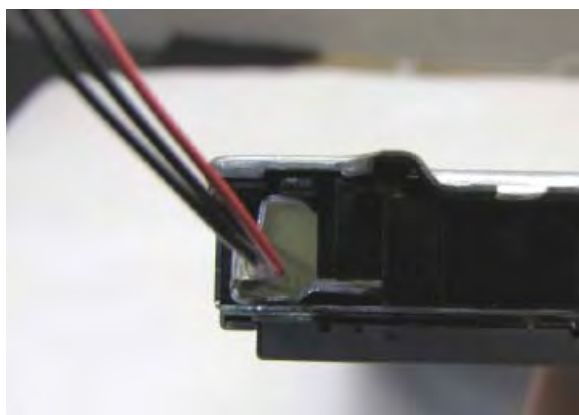


REPLACING THE CCFL BACKLIGHTS WITH THE LED BACKLIGHTS OPTREX DISPLAY cont...

9. Repeat steps 6 - 8 for the second rail.
10. Slowly insert one LED rail into the backlight track until the locking latch clicks down into place. Repeat for the second LED rail.



10. Cut a 1 1/2 inch square piece of electrical tape. Without covering the display, install the tape on the front of the display and over the end of the rail to prevent light leakage. Repeat for the second rail.



REINSTALLING THE DISPLAY INTO THE ASSEMBLY

Tools:

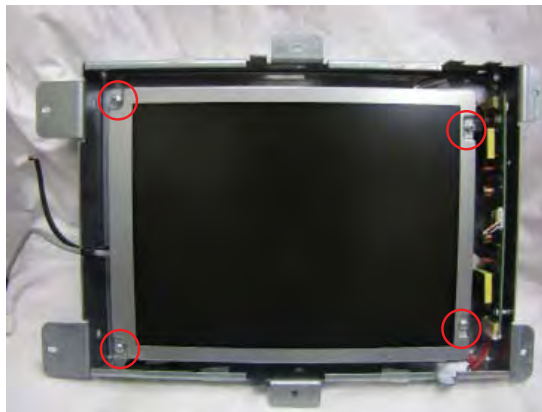
- 1 - #2 Phillips screwdriver
- 1 - ESD wrist strap with grounding cord.

To reinstall the display into the assembly, complete the following procedure:

1. Put the ESD wrist strap on and attach the cord to ground.
2. Connect the backlight cables to the driver board.



3. Ensure the display data cable is connected properly to the rear of the display. Route the cable out of the bracket through the grommet if previously removed. Set the display into place on the standoffs in the bracket. Ensure the cables are not pinched anywhere.
4. Using a #2 Phillips screwdriver, secure the display in place using the four screws previously removed.



5. Obtain the previously removed gasket. Reinstall the gasket onto the display. Ensure the thicker side of the gasket is on the side away from the driver board.



REINSTALLING THE DISPLAY INTO THE ASSEMBLY cont...

6. Obtain the previously removed display glass. Using a soft cloth and non-abrasive glass cleaner, carefully clean all smudges and debris off the glass.
7. Using the tabs on the bracket as guides, secure the glass in place with slight pressure. Ensure the glass is not covering the driver board as indicated below with the red box.



NOTE: Triton suggests testing the display prior to reinstalling it into the unit. To test, plug the display into the docking board and turn the power supply ON. Once testing is complete, power down the unit and continue to step 8.

8. Reinstall the assembly into the unit. (Refer to page 4: Removing the Display Assembly from the Unit)