

Telecast Fiber Solutions

CopperHead 3000 Series Technical Note

M4004-9900-102

18 June 2014



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1

Introduction

This chapter presents what is covered in this Technical Note and lists what equipment you will need to complete the procedure.

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About the CopperHead 3000 Series

This Technical Note explains how relocate the CopperHead 3000 Series Base Station Fiber Connector from the Back Panel to the Front Panel. This Technical Note applies to all CopperHead 3000 Series Base Stations and to the JVC FS-790 System.

The CopperHead 3000 Series Base Station may be configured with the Fiber Connector mounted either on the rear or the front of the Base Station. By default, unless specified at time of ordering, all CopperHead Base Stations are shipped with the Fiber Connector on the rear of the unit. Either way, it is possible to relocate the Fiber Connector from one position to the other.

To relocate the CopperHead 3000 Series Base Station Fiber Connector, you will need the following:

- A clean well-lit work space such as a workshop bench. The area must be clean so that no contaminants can contaminate the Fiber Optic connections.
- A medium to small Phillips head screwdriver
- A medium to small shop forceps or a medium needle-nose pliers (to disconnect cable connectors within the Base Station chassis)
- A small diagonal cutters (to cut existing tie-wraps)
- 3-5 five-inch plastic tie-wraps
- Two ST Fiber Caps
- A container to temporarily hold the number of screws that will be removed from the Base Station chassis
- **Optional:** an anti-static wrist band

The CopperHead 3000 Series Base Station is not particularly susceptible to static electricity and so long as you are operating in a static-free environment, you will not have a problem. Use the anti-static wrist band if your location has a history of static electricity problems. Once you sit down in front of the Base Station to relocate the Fiber connector, ground yourself by touching some metal (not the Base Station) to discharge any possible static charge.

For information on how to use the Digital Status display on the Base Station, see the User's Guide provided with your CopperHead 3000 Series Base Station.

Complete each step in the procedure and make sure that all wires are properly dressed within the Base Station and placed away from components that may become hot.

Relocation Process

The Fiber Connector relocation process can be accomplished by a qualified Miranda Fiber technician in about 15 minutes or less. You should budget yourself an hour to complete the task.

Prior to beginning the relocation process, it is recommended that the System be set up and operated so that Fiber Link Power Signal Strength readings can be taken as reference. When the connector relocation is complete, set up the system and take note of a second set of reading. These before-and-after readings should be similar, but if they are very different, the relocation process may have degraded the Fiber Optic signal path, so you should investigate.

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Base Station Fiber Connector Relocation

This chapter explains how to relocate the Fiber connectors in a Base Station chassis.

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Relocating the Connectors

- 1 Remove the chassis cover to access the wiring (see [Opening the Base Station Chassis](#) on page 4).
- 2 Disconnect and remove the cables from the chassis (see [Removing the Cables](#) on page 6).
- 3 Install the Fiber Cable connector (see [Feeding the Fiber Cable Connector into the Chassis](#) on page 8).
- 4 Reconnect the cables (see [Reconnecting the Cables](#) on page 11).
- 5 Close the chassis and power up the system (see [Close the Chassis and Power the System](#) on page 12).

Opening the Base Station Chassis

To open the Base Station chassis:

- 1 Make sure the Base Station is powered off and disconnect the AC or DC Power cable from the Base Station and from the AC Mains.
- 2 Remove 22 screws from the lid of the Base Station and two screws on each side of Base Station(a total of 26 screws).

Note: The six extra screws ([Figure 2-1](#)) are only found on Base Stations with the internal "Power Wafer" power supply. If not so equipped, there will only be a total of 20 screws to be removed.

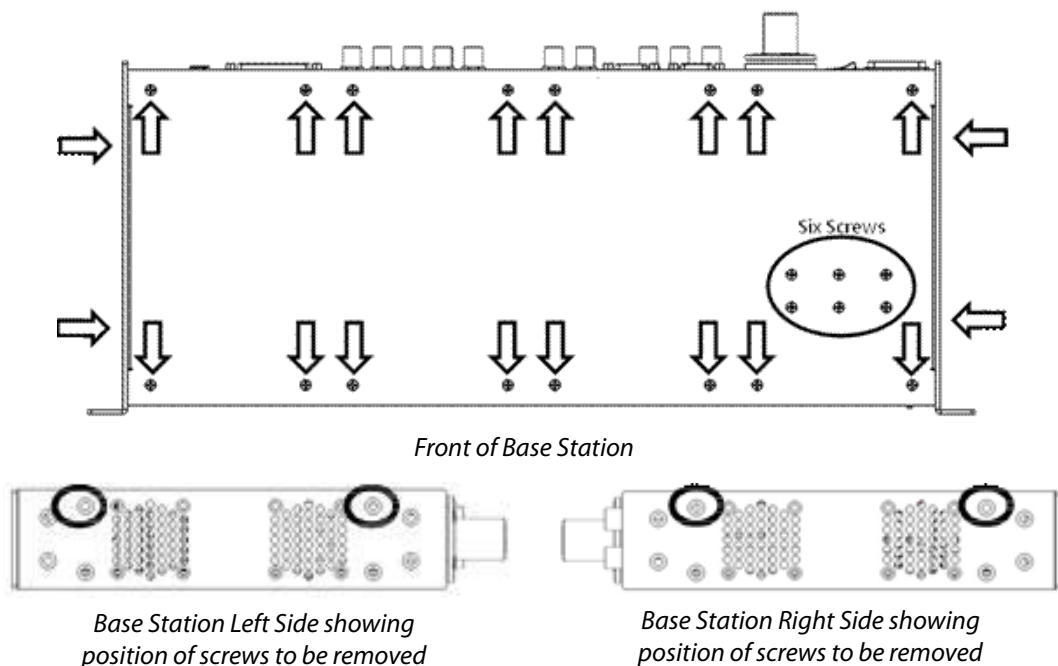


Fig. 2-1: Front of Base Station with Left and Right sides

- 3 The Base Station lid will come off cleanly. Place it to one side where it will not be damaged. Take a moment to note the location of all relevant components.

Note: The illustrations below show a Base Station equipped with a SMPTE 304M panel mounted Fiber Connector. Your Base Station may be equipped with any of the following Fiber Connectors.

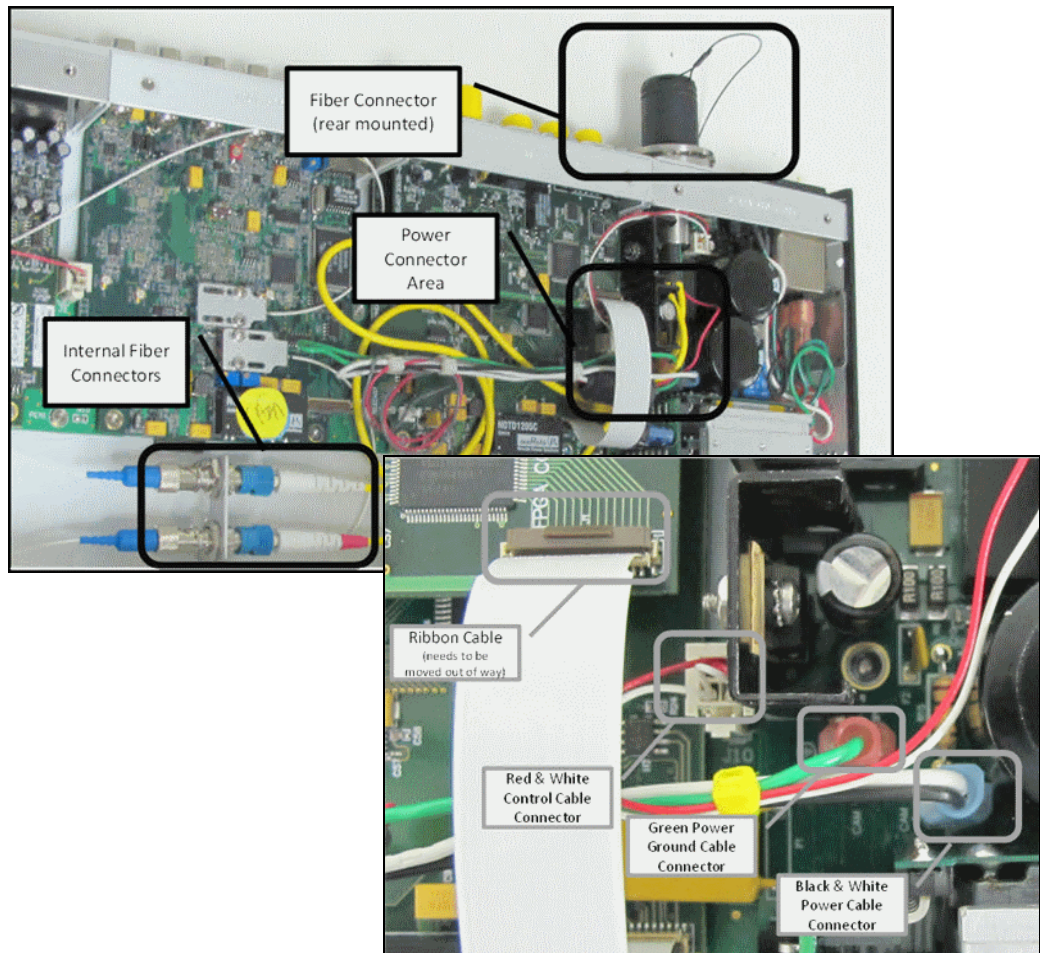
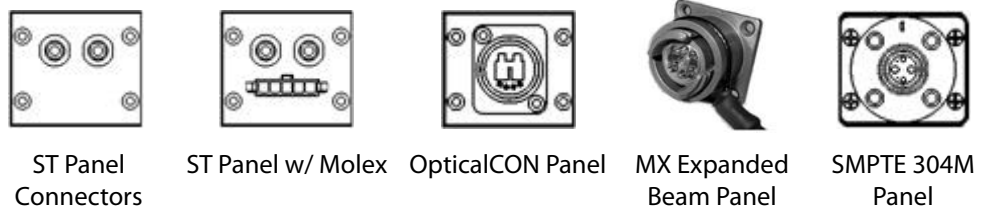


Fig. 2-2: Connector Areas and Base Station Internal Details

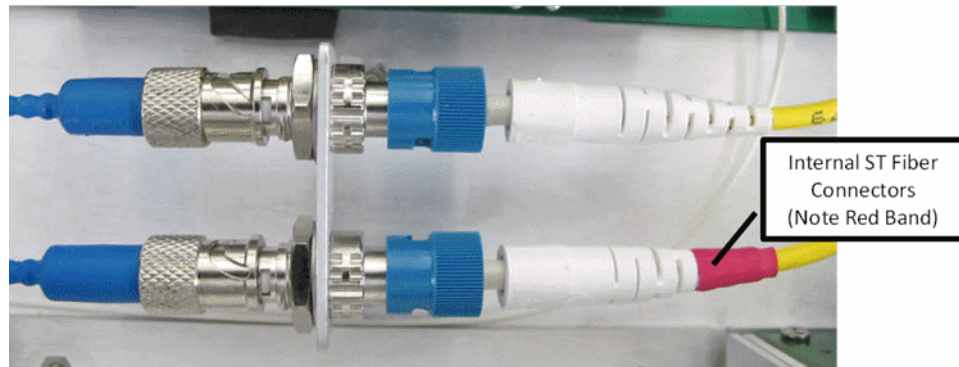


Fig. 2-3: Internal Fiber Connector Details

Removing the Cables

To remove the cables from the chassis:

- 1 Remove the two white-sleeved ST Fiber Connectors from the internal panel connection inside the Base Station.
- 2 Immediately cap the ST Fiber connector and place them in the bottom of the Base Station chassis. Note that the red banded connector is closest to the front of the Base Station.
- 3 Loosen and remove the four screws holding the Fiber Connector to the back panel. These are the four screws at the corners of the connector mounting plate and depending on the type of Fiber Connector on your bas station, NOT the screws holding the connector to mounting plate.

Note: The position of the Cap retaining wire is in the lower right. This screw is slightly longer than the other three and must be returned to the same position when the Connector is relocated.

In this example, the SMPTE 304M hybrid connectors are configured .

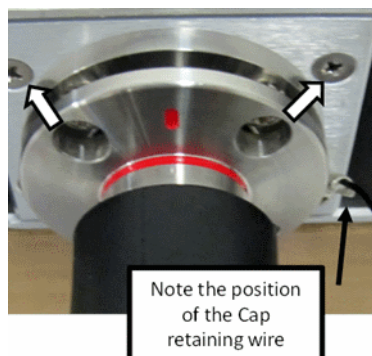


Fig. 2-4: The four screws holding the Fiber Connector to the back panel

- 4 Disconnect the two power connectors within the Base Station chassis.

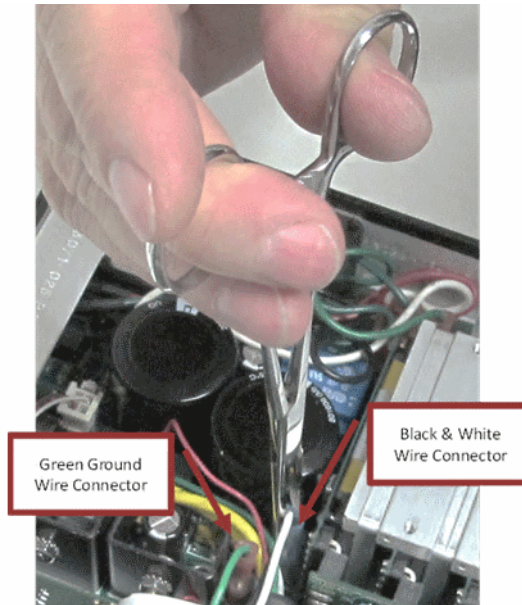


Fig. 2-5: Power wire connectors



The most efficient way to perform this task is with forceps. One connector has two wires (black & white), while the other connector has a single green wire. The Ground wire is flagged by the ground symbol similar to graphic on the left.

When you have disconnected the two power wire connectors, lift them up and ease them out of the way so that you can access the additional connectors in the chassis.

- 5 Unlatch the small tab retaining the connector and pull the thin white ribbon cable connector off.

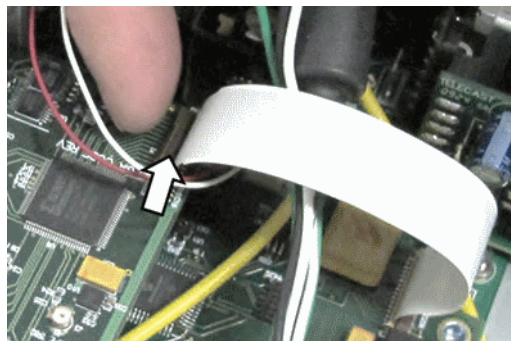


Fig. 2-6: White ribbon cable

This connector is being moved out of the way so that you can properly position the Fiber Connector wire harness.

Do not touch the metal portion of the ribbon connector. Perspiration and oil from the skin can cause corrosion.

- 6 Once you have moved the ribbon cable and you have folded the ribbon wire back out of the way, you can disconnect the Red & White 12V Power Cable connector.

- 7 Push the small lock release to free up the connector, pull the connector off and move the cable out of the way.

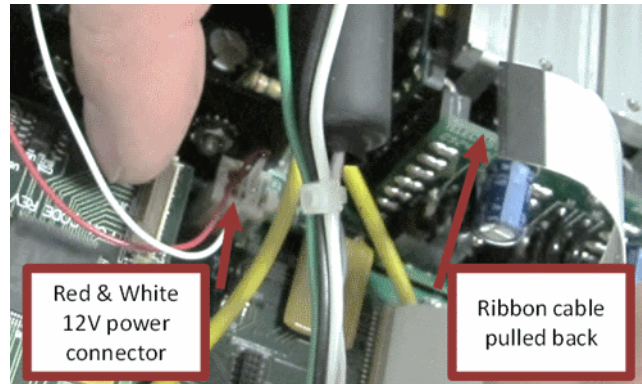


Fig. 2-7: Red & White 12V Power Cable connector

- 8 Ease all the cables that are part of the Fiber Cable Connector wire harness into an arrangement that will allow you to ease them out of the chassis.
Note that there are two unused cables (Red & Gray) that are part of the chassis. These are part of the SMPTE 311 standard but are not required in the Base Station. These are used in the Camera Unit.

Once the wire harness is out of the Base Station chassis, set it aside where it will be safe. Ensure that the ST Fiber Connector caps are securely in place.

Feeding the Fiber Cable Connector into the Chassis

To feed the fiber cable connector into the chassis:

- 1 Remove the Blank Fiber Connector Panel from the front left of the Base Station chassis. The screws for this panel are finished in black. You will use these to mount the Fiber Cable Connector to the front of the Base Station.
- 2 Set the Blank Fiber Connector Panel aside and carefully feed the wire harness cables through the open connector cutout on the front of the Base Station.



Fig. 2-8: Feeding the wire into the chassis

Temporarily arrange the harness so that it feeds out towards the back of the Base Station.

- 3 Position the Fiber Cable Connector to screw in the four Black front retaining screws. Make sure you replace the Cable Cap retaining wire in the lower right of the Connector and that the connector is properly positioned and capped.
- 4 Arrange the yellow Fiber Optic cables coming from the harness so they loop to the back and then around to the Fiber optic Connector panel in the Base Station.
- 5 Reconnect the ST Fiber Connectors with the red banded connector towards the front of the Base Station

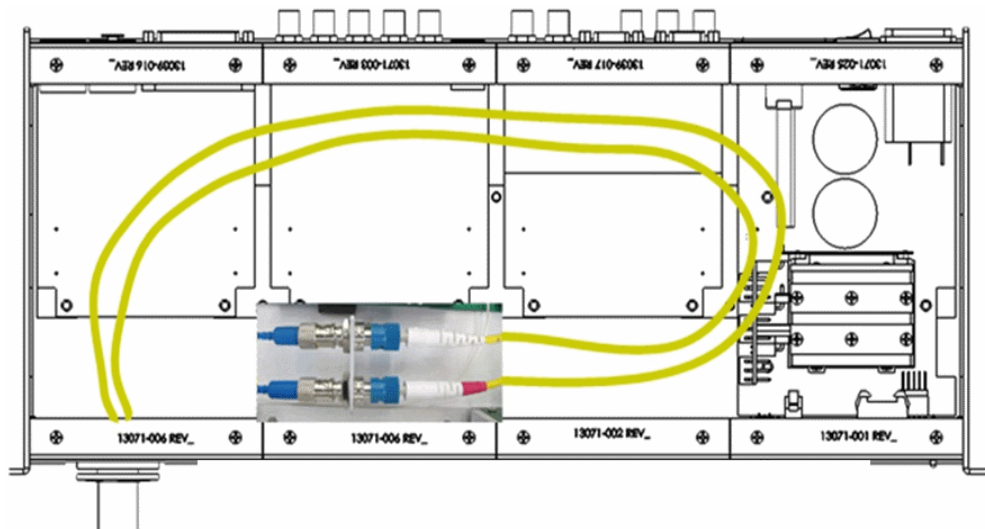


Fig. 2-9: Yellow Fiber Optic cables in the chassis

The Yellow Fiber Optic cables should loop around the chassis so that there are no sharp bends along the cable path. Arrange the cable so that it "floats" in the chassis and does not touch any component that might get hot.

- 6 Cut the existing cable ties on the Fiber Cable Connector cable harness to free up the required length of cable to reattach the connectors.

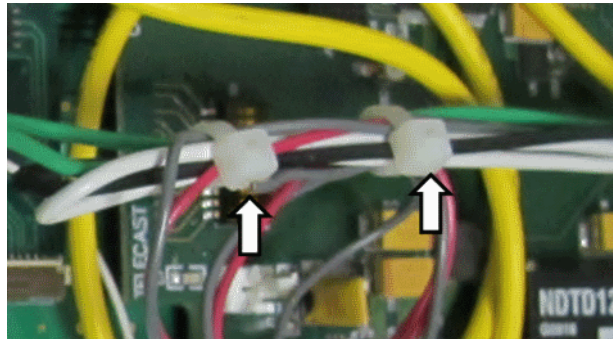


Fig. 2-10: Cable ties

- 7 Once the tie wraps have been removed, dress out the cables so that they run across the Base Station chassis back towards the area where the disconnected connectors will be reconnected.

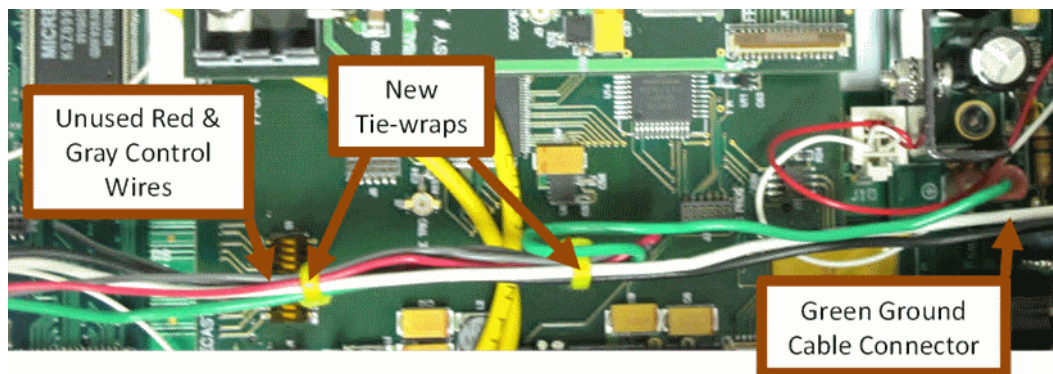


Fig. 2-11: Red, Gray, and Green Ground connectors

- 8 When you do this you will find the two unused Control wires (Red & Gray). Separate these out into a pair and then carefully run them aback along the central portion of the cable harness. You may need to double these wires back, but do not cut them off.

Reconnecting the Cables



To reconnect the cables in the chassis:

- 1 Reconnect the Green Power Ground wire connector (look for the ground symbol).
- 2 Reconnect the Black and White power wire connector (to the right of the Ground wire connector).
- 3 Dress the Green, Black, and White power cables so that they run straight across the chassis as shown in [Figure 2-11](#).
- 4 Reconnect the Red and White 12V power connector. It is just to the left and slightly back from the Ground wire.
- 5 Reconnect the ribbon cable across the cables you just reconnected.

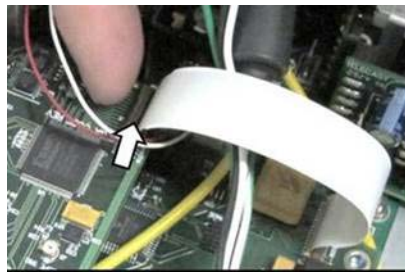


Fig. 2-12: Locking tab is in the Up position

- Make sure that the locking tab is in the Up position before you attempt to position and seat the ribbon cable connector.
 - When you push the connector down into the ribbon receptacle, it should lock into place.
 - Remember not to directly touch the metal connector portion of the ribbon cable.
 - At this point, all cables are reconnected. You must now arrange the cables and restore the chassis parts.
- 6 Arrange the cables so that they are flat and smooth and do not touch any components of the chassis. The important components to avoid are the Heat Sinks and the Fans.

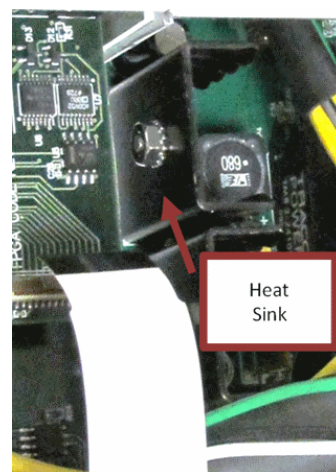


Fig. 2-13: Fans and Heat Sink

- 7 Attach the blank Fiber Cable Connector panel removed from the front panel of the Base Station. This will cover the cut-out left by the relocated connector.



Fig. 2-14: Relocated connector cover

Close the Chassis and Power the System

- 1 Reattach the Base Station chassis lid using 22 screw on the top, and two each on the left and right sides of the Base Station.
- 2 Set up your entire CopperHead 3000 Series Transceiver System and turn the system on.
- 3 Check the Signal Strength levels for both receive and send at both the Camera Unit and the Base Station. This should approximately the same as the readings taken before beginning the Fiber Cable connector relocation.
- 4 If you need to return the Fiber Cable connector to the rear panel, the process is the same except that you need to remove the connector from the front panel and when moving the Cable Harness you need to place the cable for the rear panel.
If you think you need to return the connector to the rear panel, take a few pictures of the configuration with the connector on the rear before beginning the relocation process. This will help you to replace the wires properly.



Technical Support

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