Telecast Fiber Systems, Inc.
A BELDEN BRAND

CopperHead™

Series 3000 Camera-Mountable ENG/EFP Fiber Optic Transceiver System

Technical Note:

Relocation Of The Copperhead Series 3000 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

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Relocation of the Copperhead 3000 Series Base Station Fiber Connector

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.

What You Will Need to Relocate the CopperHead 3000 Series Base Station Fiber Connector

1. A clean well-lit work space such as a workshop bench. The area must be clean so that no contaminants can get into the Fiber Optic connections.
2. A medium to small Phillips head screwdriver
3. A medium to small shop forceps or a medium needle-nose pliers (to disconnect cable connectors within the Base Station chassis)
4. A small diagonal cutters (to cut existing tie-wraps)
5. 3-5 five inch plastic tie-wraps
6. Two ST Fiber Caps
7. A container to temporarily hold the number of screws that will be removed from the Base Station chassis
8. Optionally, 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. In any event, 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.

The Fiber Connector relocation process can be accomplished by a qualified Telecast Fiber technician in about 15 minutes or less. You should give yourself an hour with the expectation that it will take less time.

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 the system should be set up and a second set of reading be noted. These before-and-after readings should be similar. If not, than the relocation process may have degraded the Fiber Optic signal path and you should investigate.

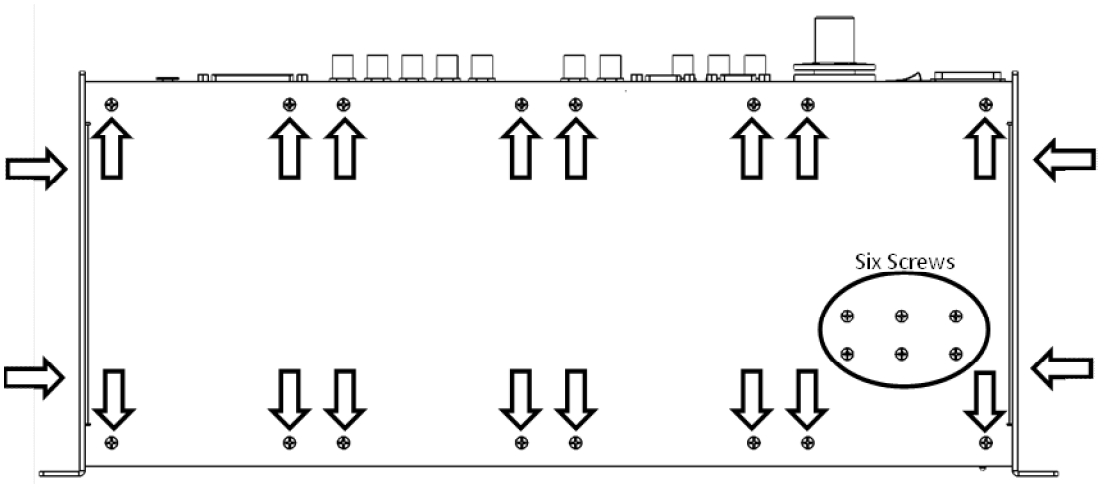
For information on how to use the Digital Status display on the Base Station please see the User's Manual provided with your CopperHead Series 3000 Base Station.

Accomplish each step in the following procedure and take the time to make sure that all wires are properly dressed within the Base Station and away from components that may become hot.

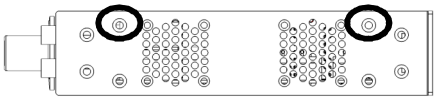
Base Station Fiber Connector Relocation Step-By-Step

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 for a total of 26 screws.

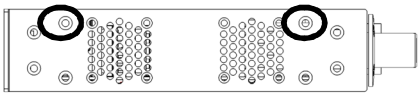
   Note: The six screws on the top of the screws shown in the oval labeled “six screws” are only found on Base Stations with the internal “Power Wafer” power supply. If not so equipped, there will only be a total od 20 screws to be removed.



Front of Base Station



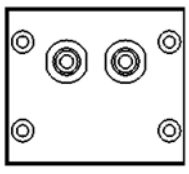
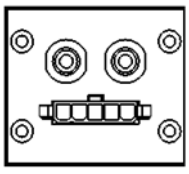
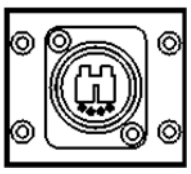
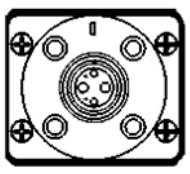
Base Station Left Side showing position of screws to be removed

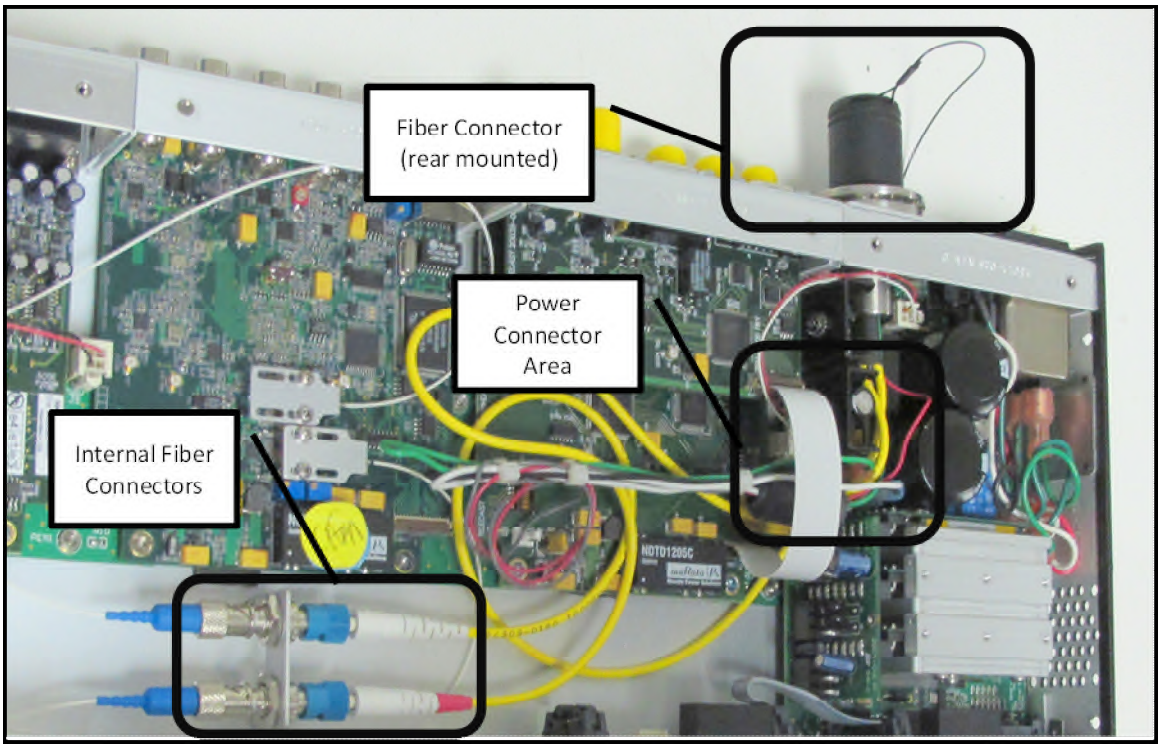


Base Station Right Side showing position of screws to be removed

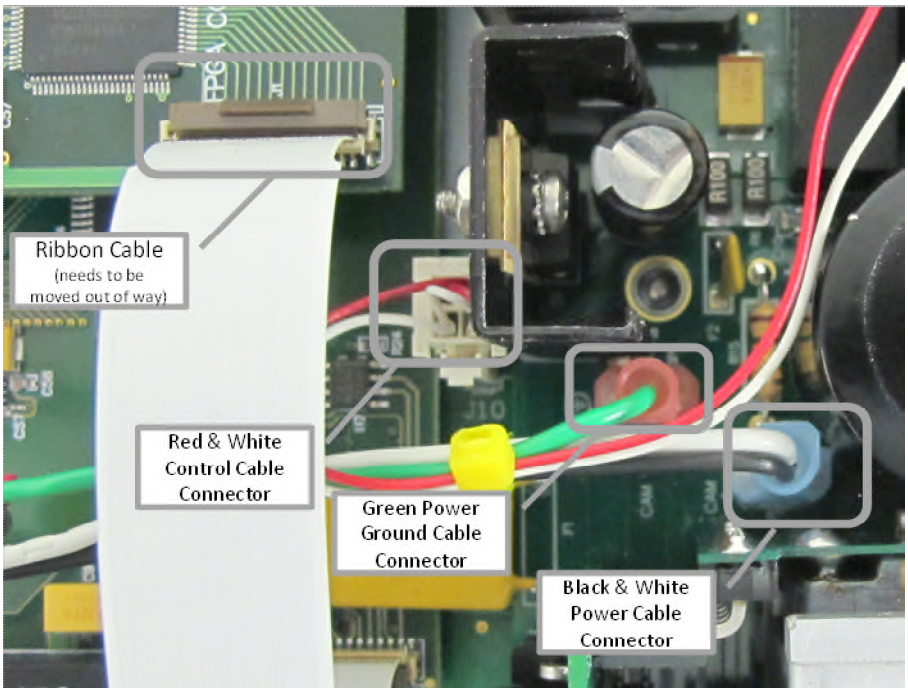
3. The Base Station lid will come off cleanly. Place it to one side where it will not be damaged. Take a moment to note the location of all relevant components.

   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:

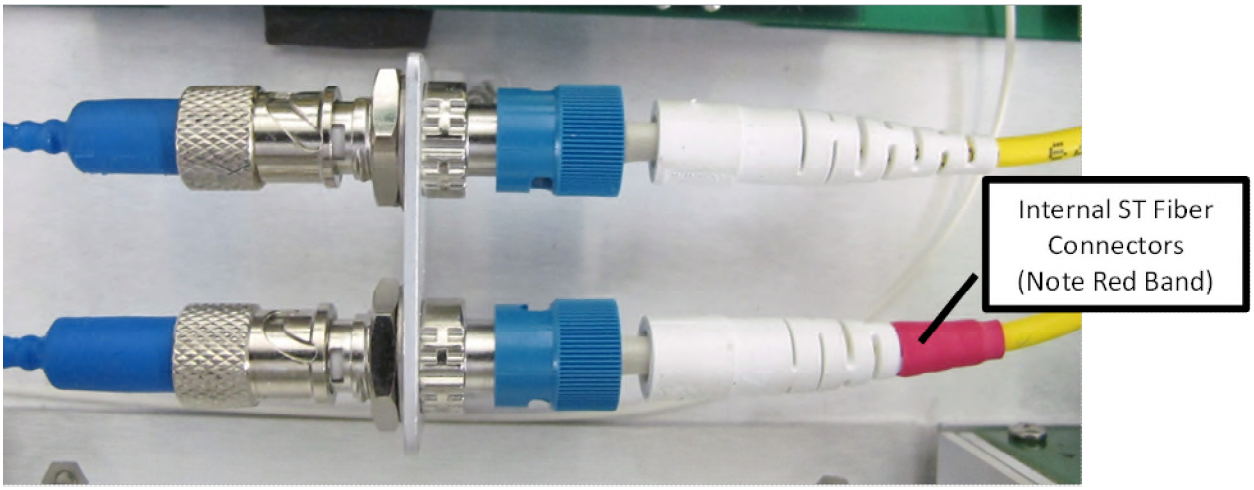
				
ST Panel Connectors	ST Panel w/ Molex	OpticalCON Panel	MX Expanded Beam Panel	SMPTE 304M Panel



Base Station Internal Details



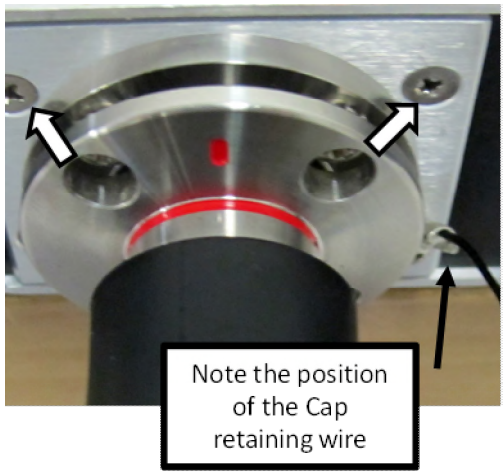
Internal Fiber Connector Details



4. Remove the two white sleeved ST Fiber Connectors from the internal panel connection inside the Base Station. Immediately cap the ST Fiber connector. 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.

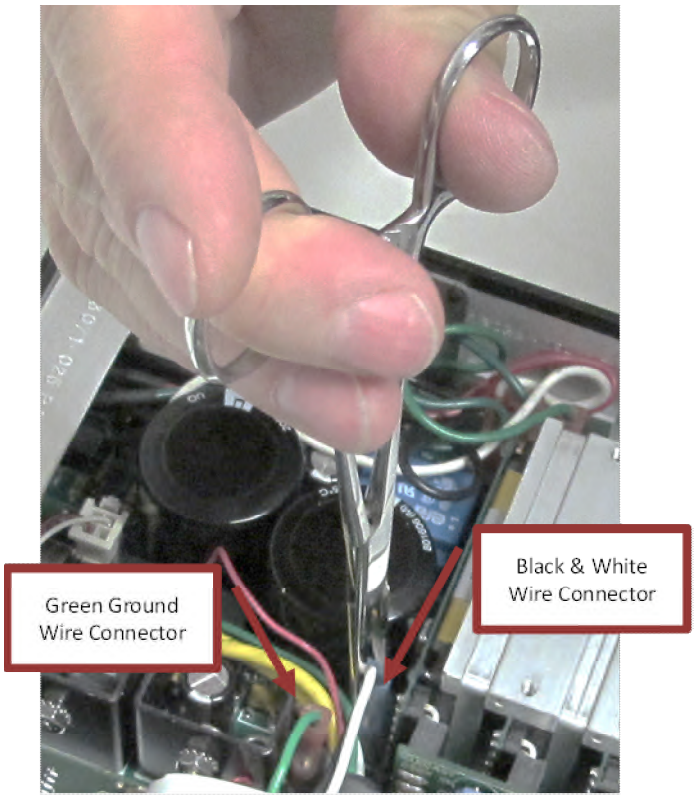
5. Loosen and remove the four screws holding the Fiber Connector to the back panel. These are the four screws at the corners of the connector mounting plate and depending on the type of Fiber Connector on your bas station, NOT the screws holding the connector to mounting plate.

   Note that the position of the Cap retaining wire 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. Also not, depending on the connector type, any indicator for positioning.



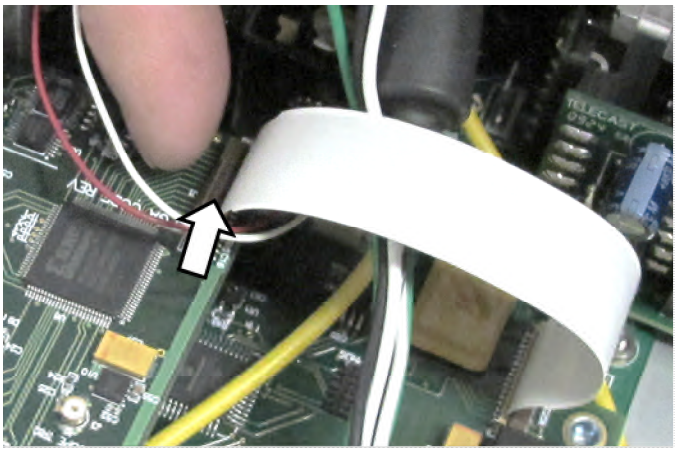
In this example the SMPTE 304M hybrid connector is configured. Your unit may be different.

6. Disconnect the two power connectors within the Base Station chassis. If you have a Forceps this will be the most efficient way to perform this task. Once connector has two wires – black & white while the other connector has a single green wire. The Ground wire is indicated by the ground symbol similar to this: 



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

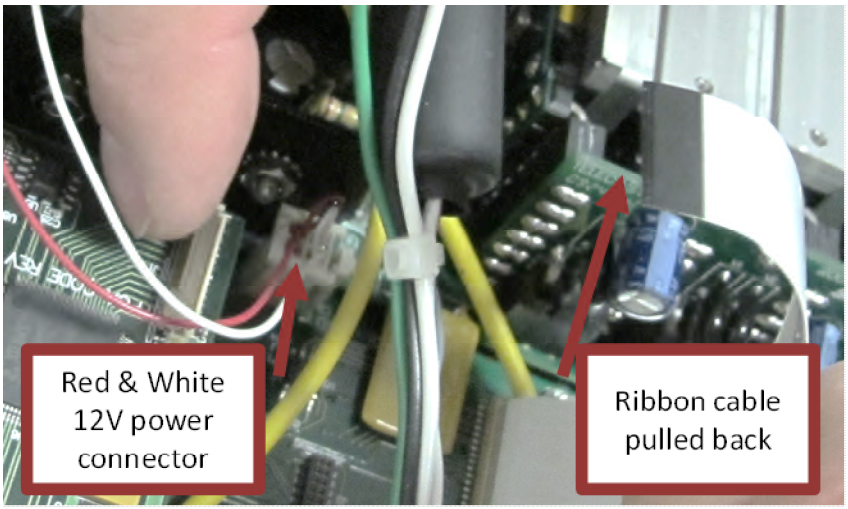
7. Next is the thin white ribbon cable. Unlatch the small tab retaining the connector and pull the connector off.



This connector is being disconnected to get it out of the way so the Fiber Connector wire harness can be properly positioned.

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

8. Once the ribbon cable is removed and the ribbon wire folded back out of the way, the Red & White 12V Power Cable connector can be disconnected. This connector has a small lock release that needs to be pushed in order to free up the connector. Pull the connector off and move the cable out of the way.



9. Ease all of 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. Insure that the ST Fiber Connector caps are securely in place.

10. Remove the Blank Fiber Connector Panel from the front left of the Base Station chassis. Note that the screws for this panel a finished in black. You will use these to mount the Fiber Cable Connector to the front of the Base Station. Set the Blank Fiber Connector Panel aside.

11. Carefully feed the wire harness cables through the open connector cutout on the front of the base station.

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

12. Position the Fiber Cable Connector in order to screw in the four Black front retaining screws. Make sure you have replaced the Cable Cap retaining wire in the lower right of the Connector. Also make sure that the connector is properly positioned. Cap the connector.

13. Arrange the yellow Fiber Optic cables coming from the harness so they make a loop to the back and then around to the Fiber optic Connector panel in the Base Station. Reconnect the ST Fiber Connectors with the red banded connector towards the front of the Base Station

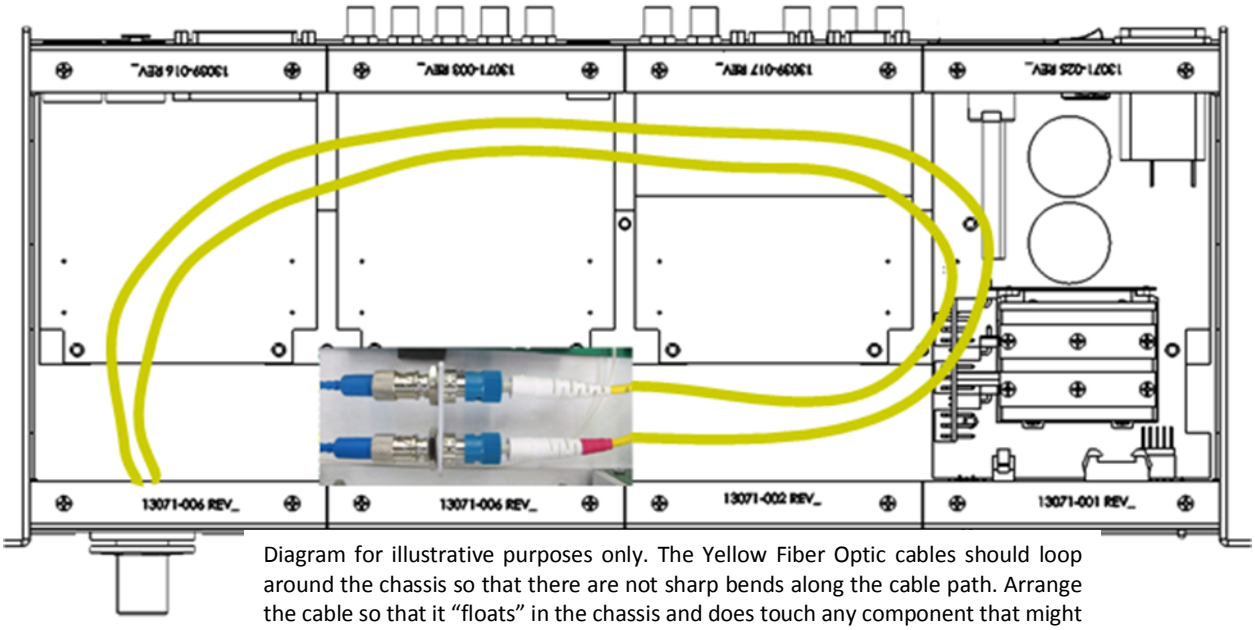
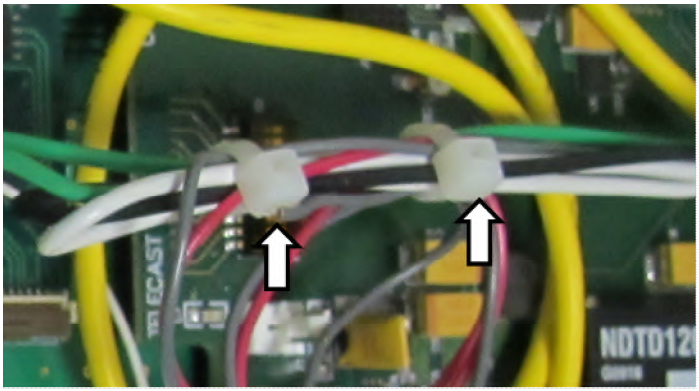
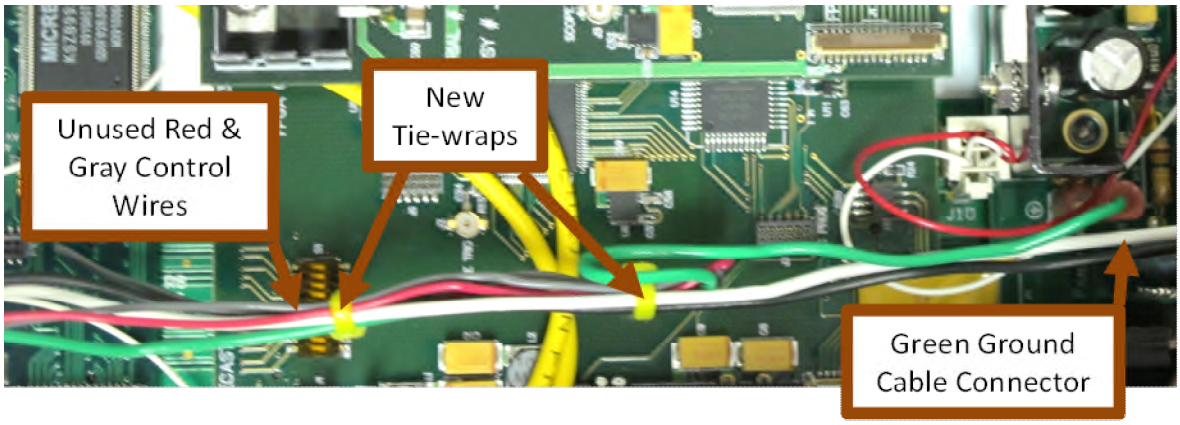


Diagram for illustrative purposes only. The Yellow Fiber Optic cables should loop around the chassis so that there are not sharp bends along the cable path. Arrange the cable so that it "floats" in the chassis and does touch any component that might get hot.



14. Cut the existing cable ties on the Fiber Cable Connector cable harness in order to free up the required length of cable to reattach the connectors.

15. 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. 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. Do not cut them off.



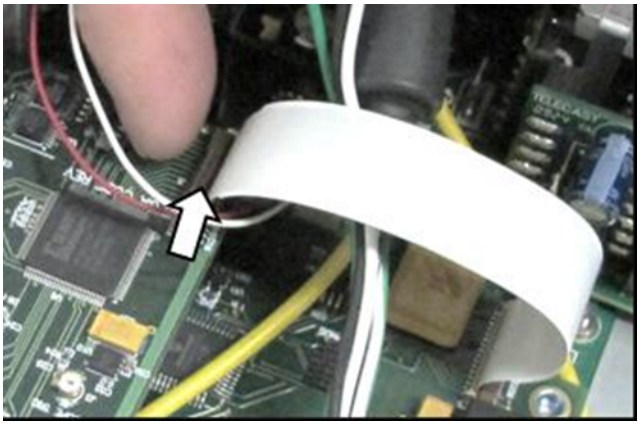
16. Reconnect the Green Power Ground wire connector

Look for the ground symbol

17. Reconnect the Black and White power wire connector. It is just to the right of the Ground wire connector.

18. Dress the Green and Black & White power cables so that they run straight across the chassis as shown in the illustration above

19. Reconnect the Red and White 12V power connector. It is just to the left and slightly back from the Ground wire.



20. Reconnect the ribbon cable across the cables you just reconnected.

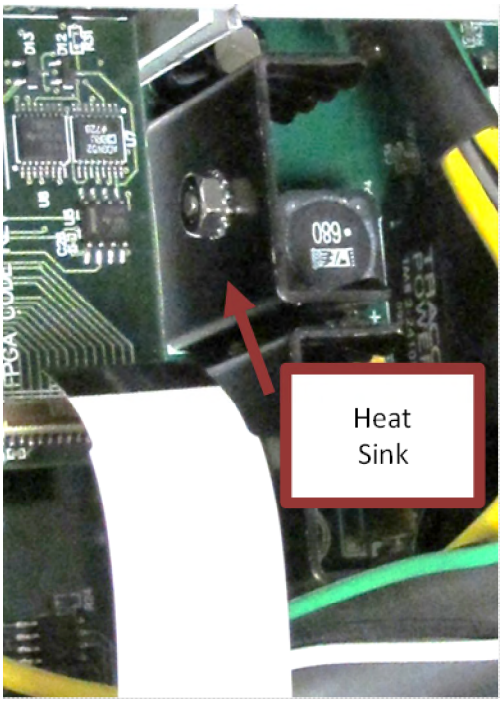
Make sure that the locking tab is in the up position before you attempt to position and seat the ribbon cable connector.

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 now have to arrange the cables and restore the chassis parts.

21. Arrange the cables to 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.



22. 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

23. 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.

24. Set up your entire CopperHead Series 3000 Transceiver System and turn the system on. 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.

25. If you need to return the Fiber Cable connector to the rear panel the process is the same with the obvious change 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 may 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 aid in placing he wires properly.