Field Service Spares Replacement Procedure – Interface Harness Kit, 6003A & 6004

Approval:

Approving Authority	Signature	Date
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Revision History

Rev.	ECO	Description of Change	Date
A	9048	Initial release	09-28-2011

1. Brief Summary:

Troubleshooting document for diagnosing a fault with and replacing the interface harness on the 6003A/6004 pedestals.

2. Checklist:

- Verify continuity on the harness connections
- Check for shorts in the harness

3. Theory of Operation:

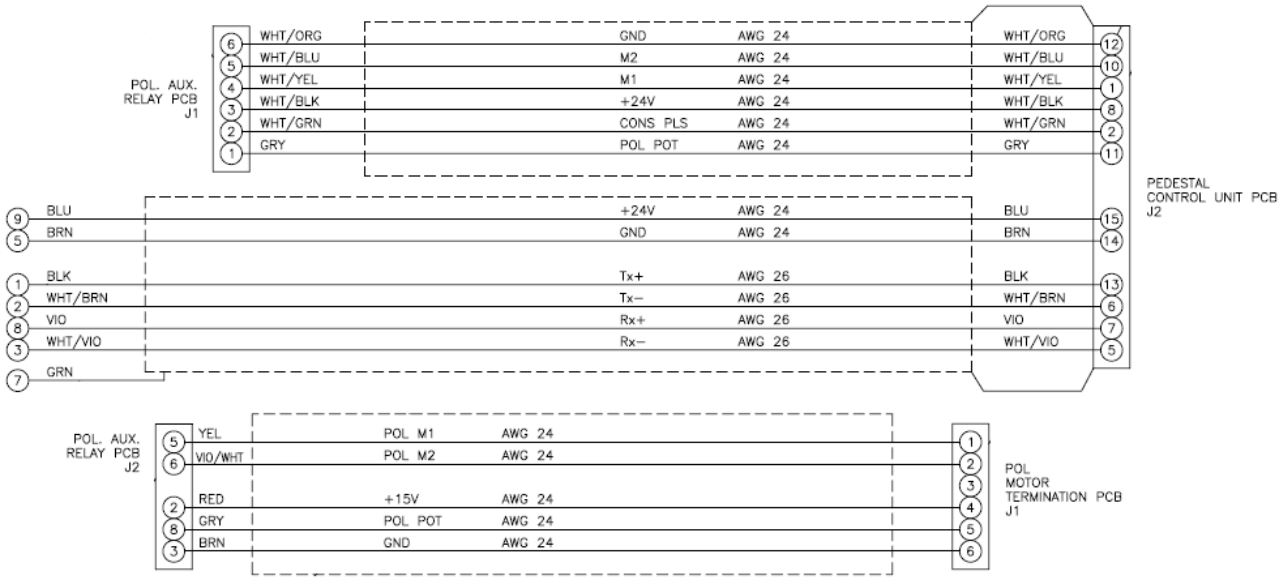
The interface harness is used to carry the 24VDC from the control unit to the PCU to power the pedestal, as well as the RS-422 data for pedestal communications between the PCU and control unit.

4. Troubleshooting:

Damage to the pedestal harness may cause communication issues between the control unit and PCU, the harness can be verified if it's operating correctly by checking the continuity from pin to pin on the four communications paths TX+, TX-, RX+ and RX- and also checking there is no short on the connections as per the below diagram.

If the pedestal is not initializing the 24VDC connections should be verified that they have continuity, and also that the 24VDC is being passed from the control unit via the coax cable on the 6004 antenna or from the control cable on the 6003A pedestal.

6003A/6004 Interface Harness



5. Procedure for Replacing the 6003A/6004 Interface Harness:

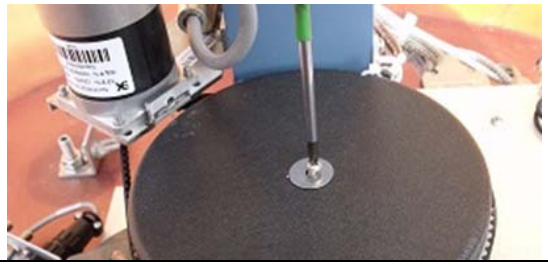
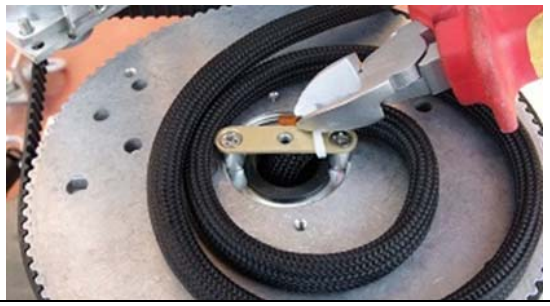
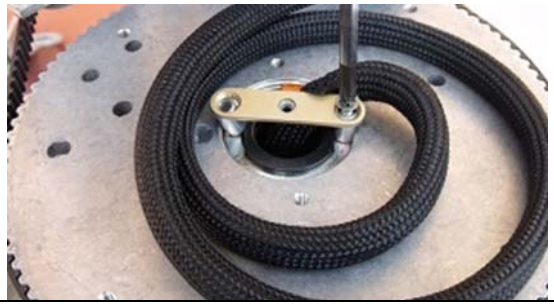
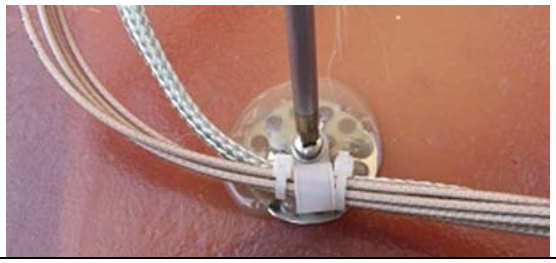
5.1. Tools.

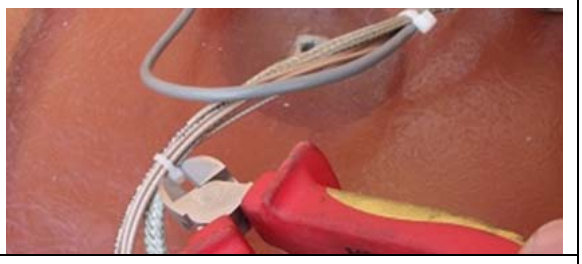
- 8mm Wrench/Spanner
- Snips/Cutters
- #1 Phillips Screwdriver
- #2 Phillips Screwdriver
- 7/16" Wrench/Spanner
- 1/4" Wrench Spanner
- 2mm Flat Blade (Terminal) Screwdriver
- Cable Ties/Tie Wraps
- Loctite 242

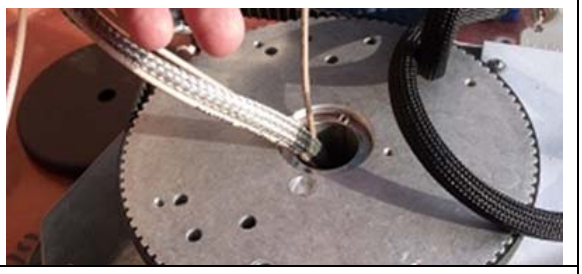
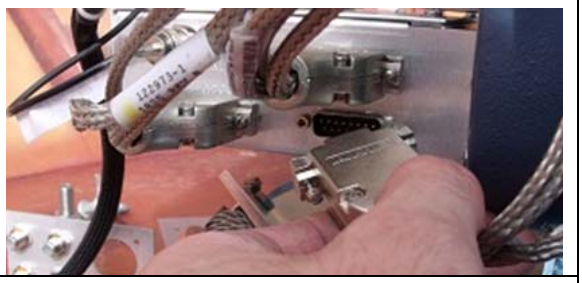
5.2. Procedure.

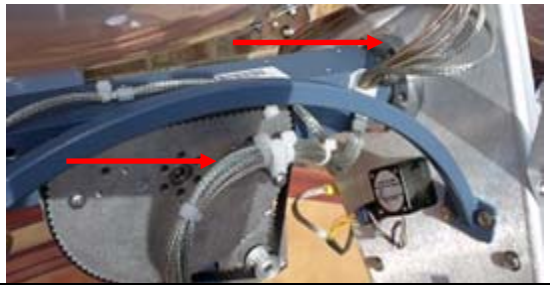
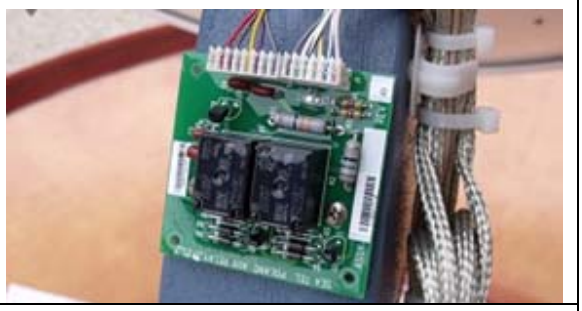
Procedure for replacing the interface harness on the 6003A/6004 pedestal, Sea Tel kit part number: 135379 (harness assembly part number: 123392).

***CAUTION:** Power down the pedestal before following this procedure. ***Note:** The harness comes without the connector attached to it. Do not attach the connector at this time. The harness needs to be fed through the pedestal without the connector attached to allow clearance; it will then be attached later in the procedure.	
1. Using an 8mm wrench remove the tensioning screw from the azimuth motor assembly (if applicable).	
2. Cut the cable tie securing the harness the cover.	

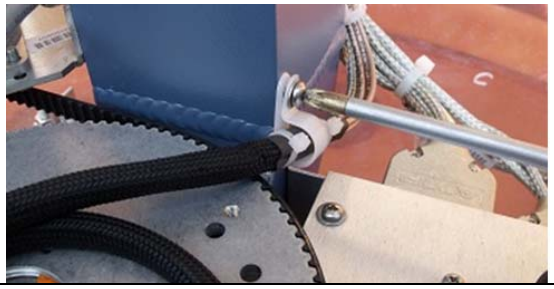
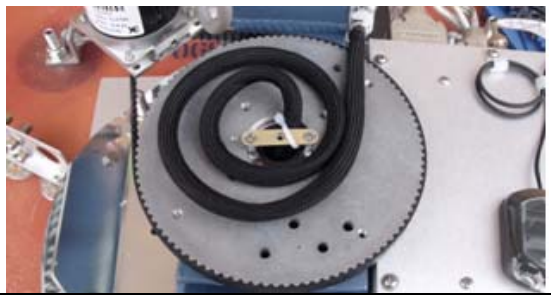
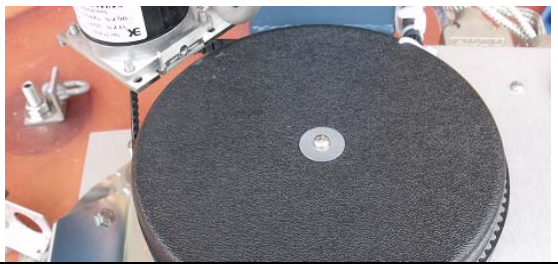
3. Using a #1 Phillips screwdriver remove the screw securing the harness cover. 4. Remove the cover taking care not to lose the installing hardware and save for future use.	
5. Cut the cable ties securing the interface harness to the bracket.	
6. Using a #1 Phillips screwdriver remove the bracket and standoffs, take care not to lose the installing hardware and save for future use.	
7. Cut the cable tie securing the harness to the base plate.	
8. Undo the screw securing the P-clip and harness to the radome base. Retain the hardware for future use.	

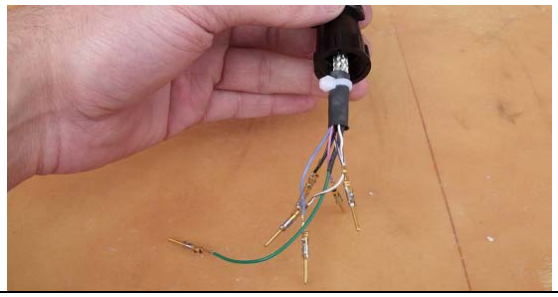
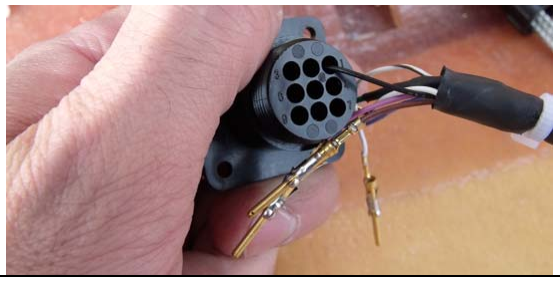
9. Cut the cable ties securing the harness assembly in the radome base.	
10. Using a 7/16" wrench disconnect the four coax cables from the bracket in the radome base.	
11. Disconnect the female side of the socket connector from the bracket in the radome base.	
12. Remove the male side of the socket connector from the bracket using a 1/4" wrench and #1 Phillips screwdriver.	
13. Remove the socket connector from the harness. (If the old harness is to be discarded this can be cut off to allow clearance through the center of the base spindle).	

14. Feed the defective harness up through the center of the base spindle, this is easiest to do by removing the harness and coax cables singularly.	
15. Using a #2 Phillips screwdriver remove the P-Clip securing the harness to the azimuth post. Retain the hardware for future use.	
16. Using a 2mm flat blade screwdriver disconnect the interface harness D-sub connector from the PCU (lower right connector).	
17. Snip the cable ties securing the interface harness and coax connections to allow the defective harness assembly to be completely removed from the pedestal. ***Note:** The harness runs up the pedestal with two IDC connectors terminating on the pol aux relay PCB, with the four coax connections running directly to the LNB and the pol harness IDC connector terminating on the feed assembly.	
18. Feed the coax connections through the hole in the reflector and connect them to the LNB in the following combination: Horizontal Low = White Horizontal High = Black Vertical High = Green Vertical Low = Blue	

19. Connect the pol motor IDC connector to the termination block on the feed assembly. 20. Secure the harness to the feed struts using cable ties, ensure there is enough free play to enable full rotation of the LNB. ***Note:*** It's advisable to loosely install the cable ties at this point so adjustments can be made later if necessary.	
21. Secure excess harness behind the reflector and secure it under the elevation pan with a p-clip, applying Loctite 242 to the screw (as shown on the right).	
22. Run the harness from the underside of the EL pan, over the cross level beam, securing it in the cable clamp installed. 23. Secure to the harness to the cross level pulley using the P-clip, apply Loctite 242 to the screw. 24. Verify the system can freely move in elevation without stressing the harness and secure with cable ties.	
25. Connect the two IDC connectors from the replacement harness to the pol aux relay PCB.	
26. Connect the interface harness D-sub connector to the PCU.	

27. Run the harness down the azimuth post loosely installing cable ties until the complete harness is secured. Once complete tighten and snip the cable ties and secure to the azimuth post using the cable clamp installed.	
28. Secure the lower of the harness with cable ties allowing free movement of the base section (as shown on the right).	
29. Align the azimuth post so it's facing in the same orientation as where the harness will exit the base. 30. Take the lower harness section and lay it across the azimuth sprocket. Coil the harness freely so not to stress any of the internal cabling (as shown on the right).	
31. Insert the harness through the center of the base spindle ensuring the plastic retainer is installed (as shown in the right).	
32. Gently work the harness through the base with the antenna facing parallel to the angle the harness exits the base to remove any twists (this centralizes the position of the harness in the center of the antennas range of movement). 33. Once the harness has been fed through the base secure the lower heat shrinked section of the harness to the base using a cable tie (shown on the right).	

34. Apply Loctite 242 to the screw and install the P-clip retaining the upper heat shrinked section of the harness to the azimuth post.	
35. Apply Loctite 242 to the two screws and install the standoffs and retainer plate the top of the azimuth spindle assembly.	
36. Keeping the harness coiled freely install a cable tie to secure the harness to the retaining plate.	
37. Place the azimuth cover over the harness and install a cable tie around the harness to secure it in place.	
38. Apply Loctite 242 to the thread and install the spacer, washer and screw securing the cover over the harness assembly	

39. Reinstall the belt tensioning screw to the azimuth motor assembly using Loctite 242 (if applicable).	
40. Slide the rear section of the harness socket connector over the harness.	
41. Insert the harness pins into the socket connector in the following order: 1 – Black 2 – White/Brown 3 – White/Violet 5 – Brown 7 - Green 9 - Blue	
42. Screw the rear part of the socket connector to main section and install the cable clamp and two securing screws using a #1 Phillips screwdriver.	
43. Install the socket connector and coax cables to the bracket in the radome base. 44. Connect the cable from the modem (if applicable). 45. Secure the harness with cable ties.