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The following procedures provide the list of tools, materials, and procedures for replacing the P/N 20924 Foundation Fieldbus Electronics Board assembly.

Procedure A on the following pages should be used if the transmitter is installed in a location that is not suitable for electronics rework.

Procedure B on the following pages can be used if the transmitter is installed in an environment that is suitable for rework of electronic assemblies.


In all cases, carefully read the entire document prior to starting replacement.

If there are any questions or comments please contact CiDRA Customer Support.

Document Change History

Date	Revision	Changed By	ECO #	Description of Change
25Jul08	01	Griffin / Markoja	08-0066	Initial Release
3Nov08	02	Markoja	08-0066A	Change standoff length from 3" to 2"

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Procedure A

The following procedure should be used if the transmitter is installed in a location that is not suitable for electronics rework.

Tools Required:

Qty	P/N	Description	Recommended Tools		
			Qty	P/N	Description
1		Phillips Head Screw Driver, #2			
1		Flat Head Screw Driver, 2mm	1		5 in-lb _f torque driver with 3/32-inch hex bit
1		3/32-inch Allen Hex Wrench	1		12 in-lb _f torque driver with #2 Phillips bit
1		ESD Wrist Strap	1		18 in-lb _f torque driver with #2 Phillips bit
			1		25 in-lb _f torque driver with #2 Phillips bit

Materials:

Item No.	Qty	Part No.	Description
1	1		Kit, Foundation Fieldbus Board Assembly

Procedure:

1. Remove power from transmitter in accordance with site specific lockout / tagout procedures.
2. Open transmitter door.
3. Either:
 - 3.1 Remove power cables and all input / output and ground cables from Connector Terminal Board Assembly (CTBA).
 - 3.2 Move transmitter to work shop.
 - 3.3 Install personnel ESD Wrist Strap.
 - 3.4 Remove 4ea chassis screws. **Note:** screws are captive.
 - 3.5 Remove ground wire from CTBA.
 - 3.6 Remove transmitter chassis from transmitter enclosure.

OR,

- 3.7 Remove power cables from terminal board.
- 3.8 Remove input / output cable connector removable terminal blocks from CTBA connectors.
- 3.9 Remove ground wire from removable terminal block.
- 3.10 Install personnel ESD Wrist Strap.
- 3.11 Remove 4ea chassis screws. **Note:** screws are captive.
- 3.12 Remove transmitter chassis from transmitter enclosure.
- 3.13 Place chassis in ESD safe bag.
- 3.14 Move chassis to work shop.

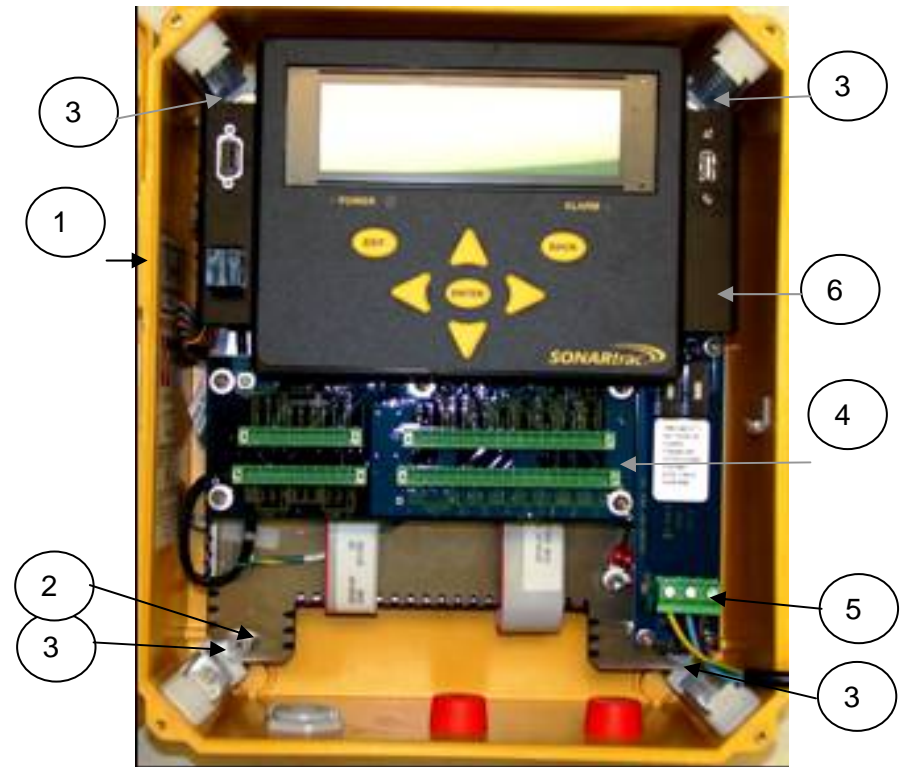


Figure 1 Transmitter

- | | |
|----|--|
| 1. | Transmitter enclosure |
| 2. | Transmitter chassis |
| 3. | Chassis screws (4 places) |
| 4. | Connector Terminal Board Assembly (CTBA) with pluggable connectors (not shown) |
| 5. | Power input |
| 6. | Display chassis |

Note: While performing the following steps operator needs to use appropriate ESD personal grounding protection. Be sure to retain all hardware for reassembly.

4. Attach 4ea 2 inch standoffs to chassis screws.
5. Stand chassis on the standoffs.
6. Remove the lower display chassis screw on each side of the display chassis.
7. Loosen upper display chassis screw 1/2 – turn on each side of the display chassis.

8. Tilt the chassis forward half way.
9. Remove the ethernet cable from the ethernet coupler on the display chassis.
10. Fully tilt the display forward.
11. Remove the 5ea #6-32x5/16” screws from the CTBA.

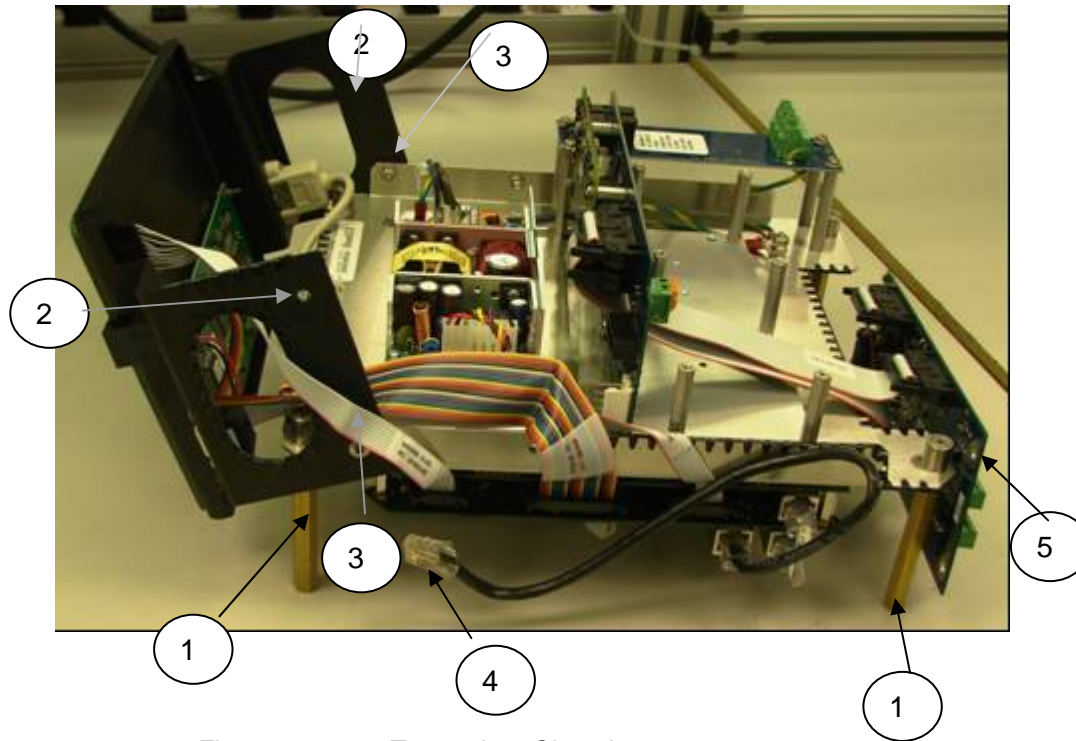


Figure 2 Transmitter Chassis

1. Standoffs (4 places)
2. Lower display chassis screw (removed)
3. Upper display chassis screw loosened 1/2 turn
4. Ethernet cable removed from coupler
5. CTBA (5 ea screws removed)

12. Disconnect ribbon cable jumpers J-3 and J-4 from the Fieldbus Interface Board Assembly (FIBA) and slide the connectors through the slot on the FIBA.
13. Lay the CTBA on the work bench.
14. Disconnect cable jumpers J-2 and J-1 from the FIBA.

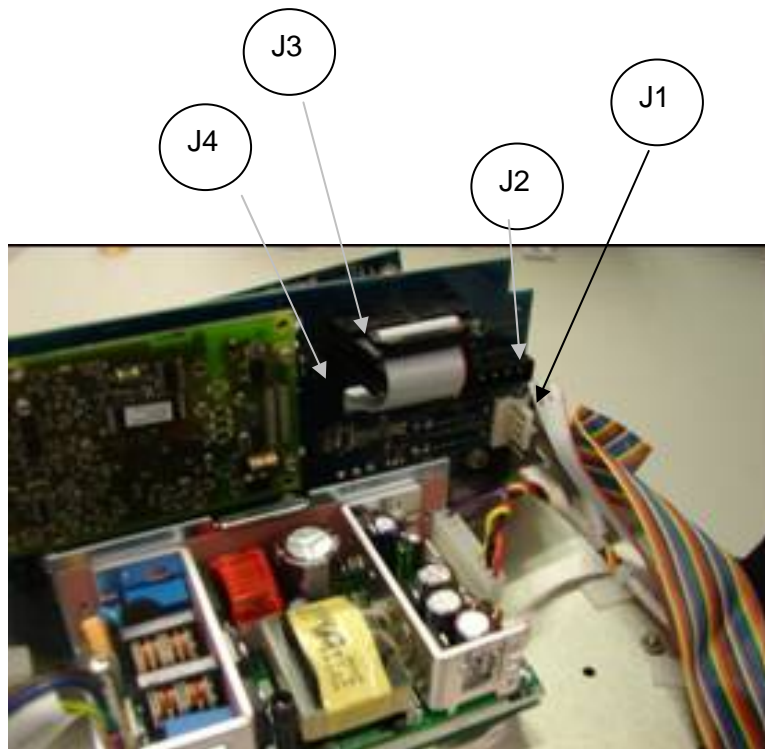


Figure 3 J1 – J4 Cable Connections

15. Remove 6ea #6-32x5/8" screws from FIBA heat sink plate.
16. Remove FIBA Assembly from the chassis.

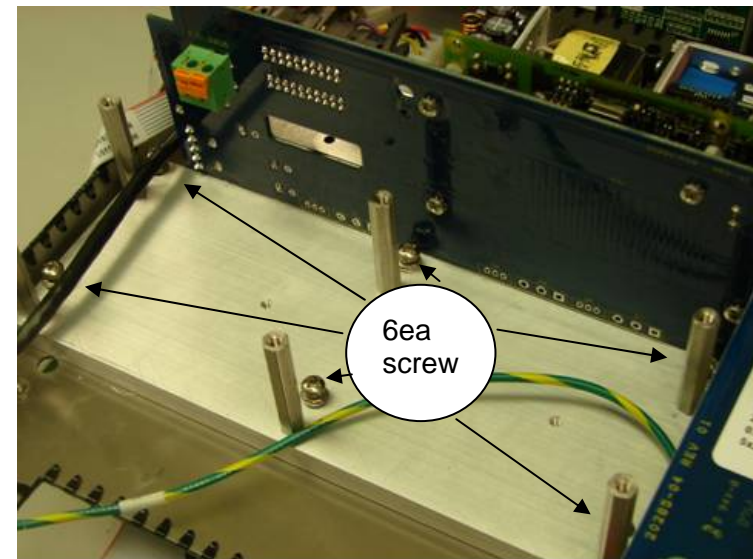


Figure 4 FIBA Heat Sink

17. Remove 4ea #4-40x1/4" socket head cap screws from Fieldbus Board.
18. Carefully remove the Fieldbus Board from connector J5 (30 pin connector) and J5-B (2 pin connector).

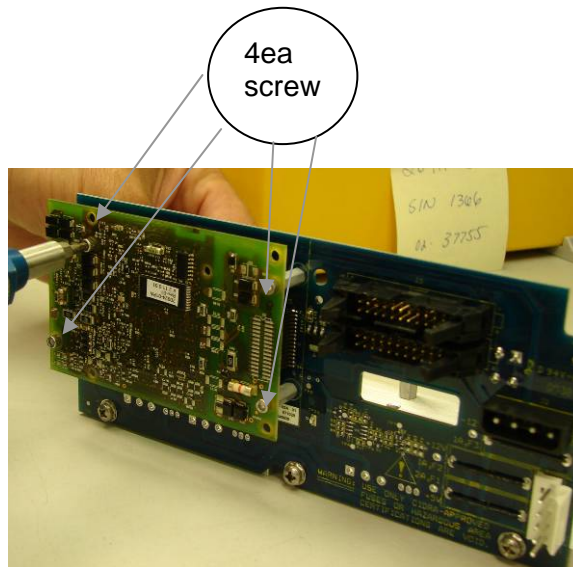


Figure 5 FBIA Screw Removal

19. Carefully install the new Fieldbus Board as follows:
20. Align the J5 and J5-B connectors with their mating holes.
21. Press the pins into the connectors.
22. Inspect the pins to ensure all are properly installed.
23. Put Loctite 242 on the threads of the 4ea #4-40x1/4" socket head cap screw threads.
24. Install the 4ea screws and tighten to recommended torque of 5in-lb_r.

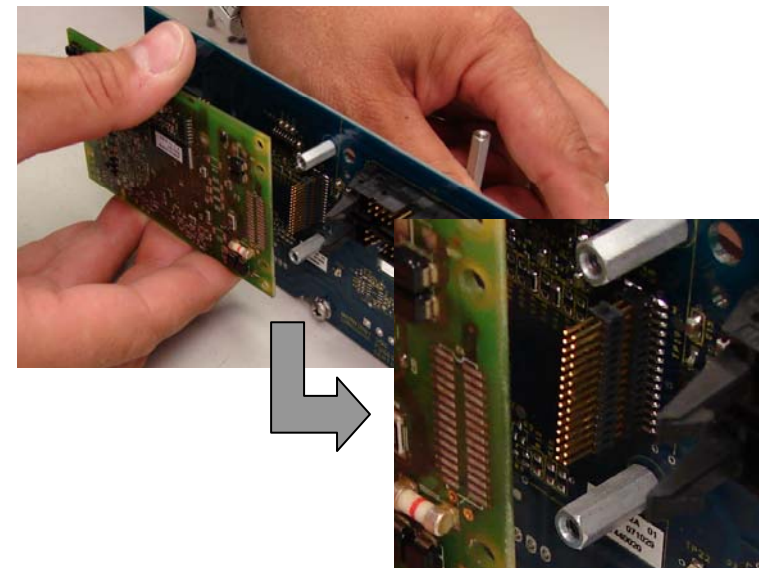


Figure 6 Fieldbus Board Reinstallation



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25. Reinstall the FIBA using the 6ea #6-32x5/8" screws. Prior to tightening 6 screws be sure that no wires are pinched beneath the heat-sink plate. Tighten screws to recommended torque 12in-lb_f.
26. Reinstall Ribbon Cables to J3 and J4.
27. Install Cable P/N 20932 to J4 first.
28. Install Cable P/N 20931 to J3 second.
29. Install J1 and J2 cables.
30. Reinstall the CTBA using 5ea #6-32x5/16" screws. Tighten screws to recommended torque of 12in-lb_f.
31. Tilt display chassis forward.
32. Reconnect ethernet cable to ethernet coupler.
33. Carefully title the display chassis into place. **Note:** Ensure ribbon cable is not pinched.
34. Reinstall 2ea 8-32x5/16" screws.
35. Tighten all 4ea 8-32x5/16" screws to recommended torque of 18in-lb_f.
36. Remove 4ea 2" standoff from the chassis mounting screws.
37. Reinstall transmitter chassis assembly into transmitter enclosure. Tighten 4 screws to recommended torque of 25in-lb_f.
38. Reinstall ground wire to terminal board.
39. Reinstall all wires or removable terminal board connectors



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Procedure B

The following procedure can be used if the transmitter is installed in an environment that is suitable for rework of electronic assemblies.

Tools Required:

Qty	P/N	Description	Recommended Tools		
			Qty	P/N	Description
1		Phillips Head Screw Driver, #2			
1		Flat Head Screw Driver, 2mm	1		5 in-lb _f torque driver with 3/32-inch hex bit
1		3/32-inch Allen Hex Wrench	1		12 in-lb _f torque driver with #2 Phillips bit
1		ESD Wrist Strap	1		18 in-lb _f torque driver with #2 Phillips bit
			1		25 in-lb _f torque driver with #2 Phillips bit

Materials:

Item No.	Qty	Part No.	Description
1	1		Kit, Foundation Fieldbus Board Assembly

Note: While performing the following steps operator needs to use appropriate ESD personal grounding protection. Be sure to retain all hardware for reassembly.

1. Remove power from the transmitter using onsite specific lockout / tagout safety procedures.
2. Open the transmitter door.
3. Remove the 5ea #6-32x5/16" screws from the Connector Terminal Board Assembly (CTBA).



Figure 1 CTBA mounting screws

4. Fold the CTBA forward so it is supported by the cables.
5. Remove the ribbon cables from J12 and J13 on the underside of the CTBA.



Figure 2 Removing jumpers J12 and J13

- Remove the 6ea #6-32x5/8" screws from the Fieldbus Interface Board Assembly (FIBA).

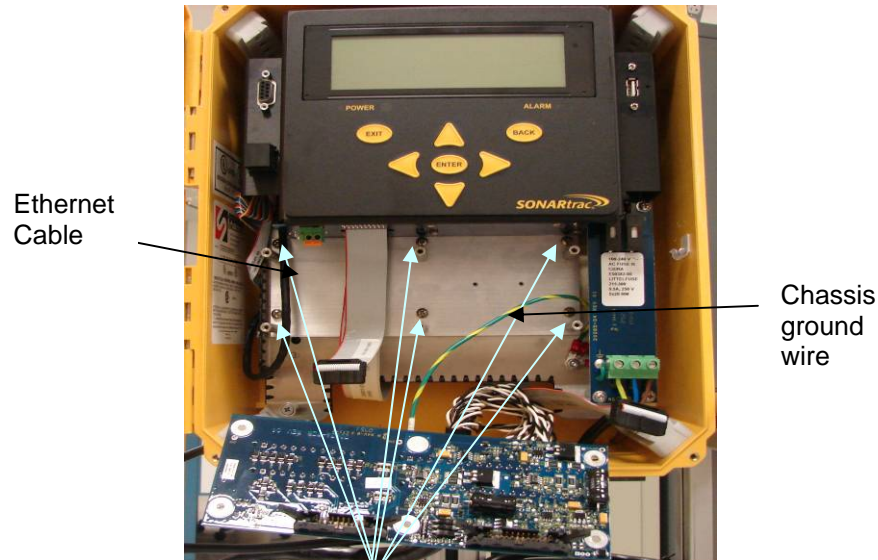


Figure 3 Removing FIBA mounting screws

- Carefully lower the FIBA down and free from beneath the display assembly rotating 90° to the left to be able to access the Fieldbus board assembly.
Note: It may be necessary to temporarily reposition the Ethernet cable and the chassis ground wire.



Figure 4 Removing FIBA

8. Remove the 4ea #4-40x1/4" socket head cap screws from the Fieldbus board.

9. Carefully lift the Fieldbus board off of the J5 (30 pin connector) and J5-B (2 pin connector) connector pins on the mating circuit card.

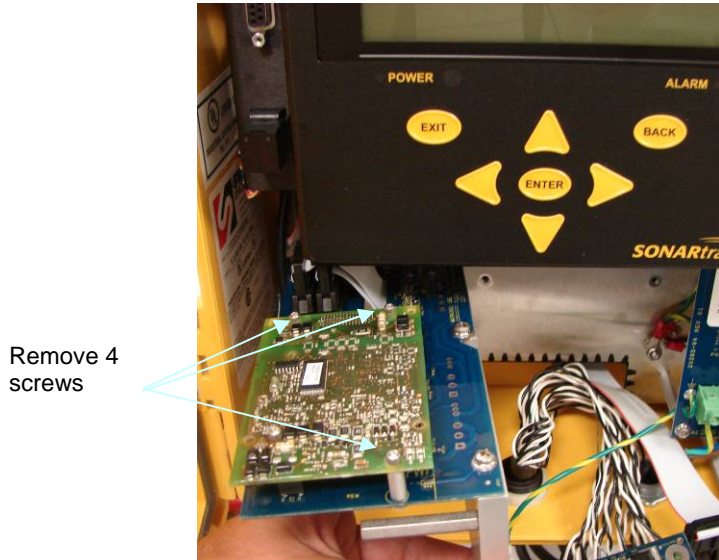


Figure 5 Removing Fieldbus board mounting screws



Figure 6 Fieldbus board removed

10. Carefully install the new Fieldbus board as follows:
 - 10.1 Align the J5 and J5-B connector pins with their mating holes.
 - 10.2 Press the pins into the connectors.
 - 10.3 Inspect the pins to ensure all are properly installed.



Figure 7 Installing new Fieldbus board

11. Put Loctite 242 on the threads of the 4ea #4-40x1/4" socket head cap screw threads.
12. Install the 4ea screws and tighten to recommended torque of 5in-lb_f.
13. Carefully reinstall the FIBA in to location using the 6ea #6-32x5/8" screws. Prior to tightening 6 screws be sure that no wires are pinched beneath the heatsink plate. Tighten screws to recommended torque 12in-lb_f.
14. Relocate the Ethernet cable and Chassis ground wire moved in earlier step 7
15. Reconnect the ribbon cables to J12 and J13 of the CTBA previously removed in step 5.
16. Reinstall the CTBA using 5ea #6-32x5/16" screws. Tighten screws to recommended torque of 12in-lb_f.
17. Close the enclosure cover.
18. Reapply power to the transmitter.