DSAT-300 Battery Replacement Instructions

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Applies to: 108-300-01, 108-300-02

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SkyTrac Systems Ltd.
200-170 Rutland Road
Kelowna, BC Canada
Tel. +1 250 765-2393
Fax +1 250 765-3767
Web: www.skytrac.ca
Email: support@skytrac.ca

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1 BATTERY REPLACEMENT PROCEDURES

The battery replacement procedure is given as a number of steps below. The actual appearance of parts may differ from those shown. Pictures are for reference only.

2 DSAT-300E

Note: To avoid damage to the unit due to Electro Static Discharge (ESD) the battery replacement should be performed in an ESD controlled environment, i.e. on an electrically conductive mat with the person performing the replacement using an ESD strap connected to the mat/ground at all times. Avoid touching the circuit board and its' components.

1. Unfasten and remove the screws from the DSAT-300 at 6 locations using a #1 Phillips head screw driver (screw: Phillips #4-40). Retain the screws for later use.

Figure 1 – Screw Locations

2. Turn the DSAT-300 over and lift the top enclosure from the right side as shown in **Figure 2**, creating a hinge on the left end of the enclosure.

Figure 2 – Unhinging the Enclosures

3. Hold the top enclosure perpendicular to the bottom enclosure as shown in **Figure 3**.

Figure 3 – Perpendicular Position

Note: It is recommended to ensure that the Top Enclosure is held (or rested against a wall) on top of the bottom enclosure similar to the Figure below in order to avoid the connectors otherwise the connectors can short components on the microprocessor.

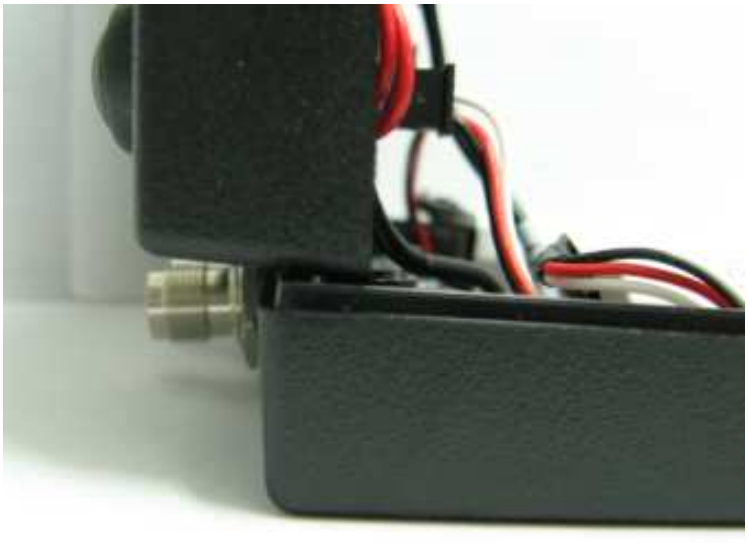

Figure 4 – Recommended Enclosure "Resting" Position

4. Disconnect the Batteries from the PCB.

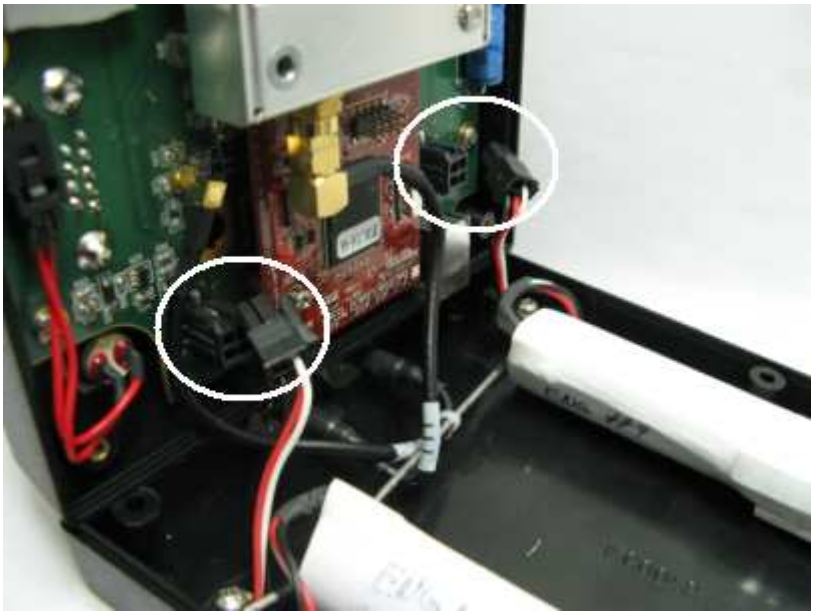

Figure 5 – Disconnecting the Batteries

5. Release the batteries from between the battery cross bar and battery mounting foam.

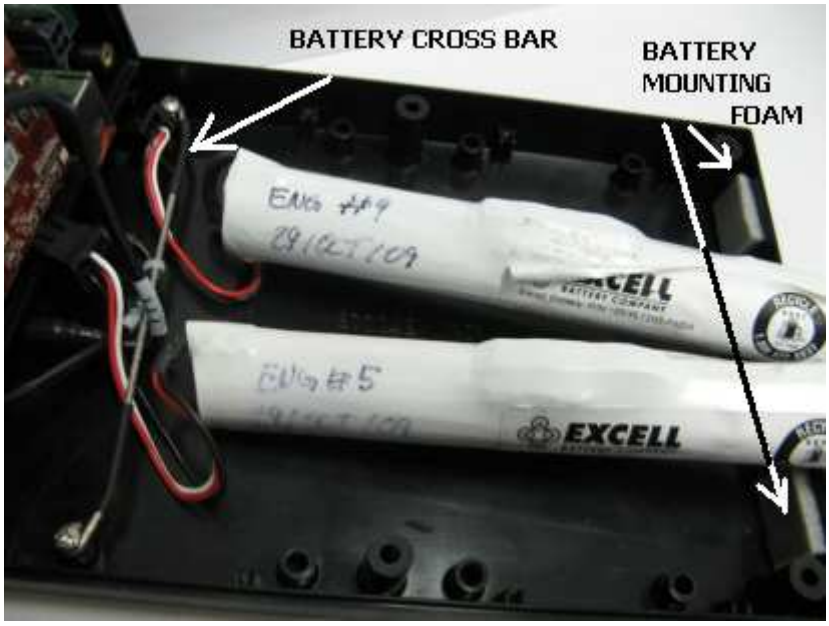

Figure 6 – Battery Release

6. Slip the battery connectors under the battery cross bar where there is no heat shrink (mid region) and remove the batteries as shown in **Figure 7**.

Figure 7 – Battery Removal

7. Take one of the replacement batteries and bend the cable around the front face to the right as shown in **Figure 8**.

Figure 8 – Battery Cable Bend

8. Bend the cables to the side with a loop as shown in **Figure 9**.

Figure 9 – Bottom Battery Cable Bends

9. Repeat steps 7 and 0 for the second battery but to the left this time to get a battery with cables bent to the left as shown in **Figure 10**.

Figure 10 – Top Battery Cable Bends

10. Take the battery with its cables bent to the right and slide its connector underneath the battery cross bar as shown in **Figure 11**.

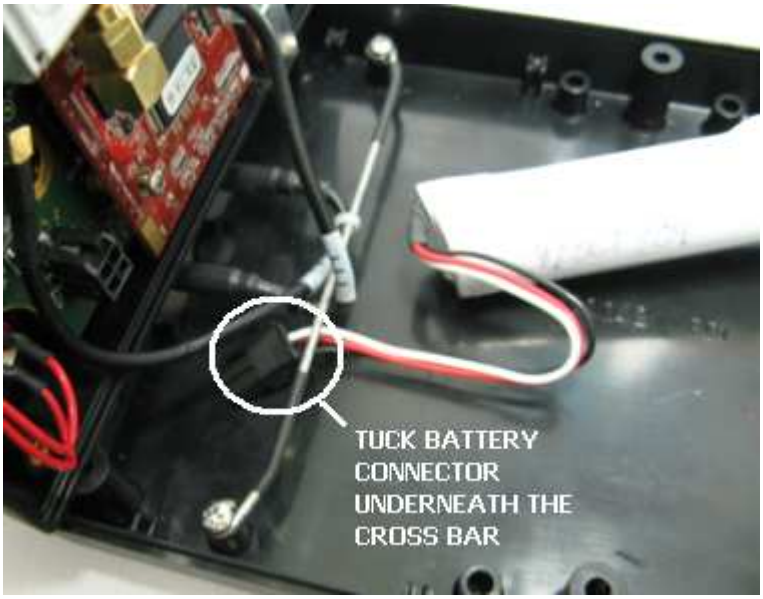

Figure 11 – Battery Connector Tuck

11. Position the battery between the battery mounting foam and the battery cross bar ensuring that the body is tangent to the mounting standoffs of the enclosure as shown in the Figure below.

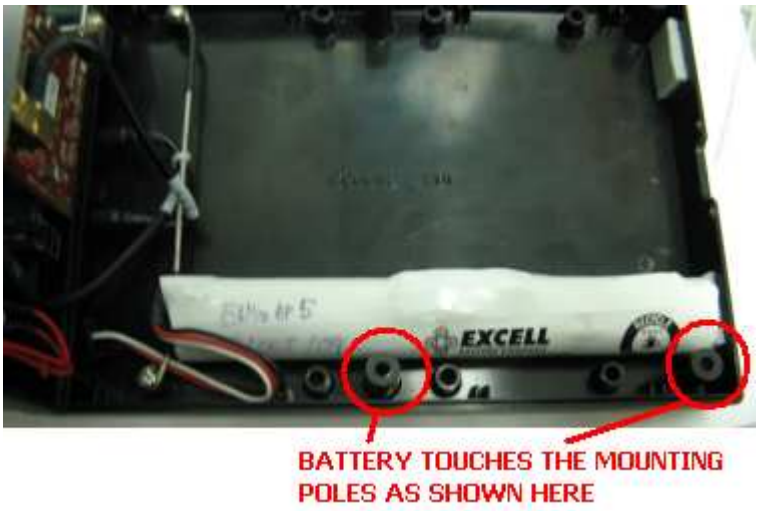

Figure 12 – Battery Position

12. Orient the battery so that the battery cable and its circuit are upwards as shown in **Figure 13**. This will eliminate assembly collisions.

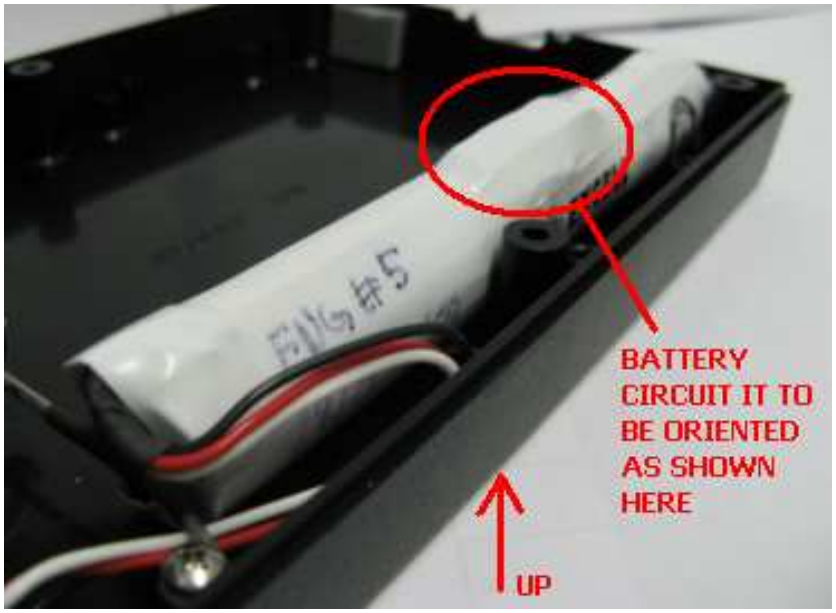

Figure 13 – Battery Orientation

13. Connect the battery connectors to their nearest receptacle. Ensure that the Bottom battery cable is over top the GPS cable as shown in **Figure 14**.

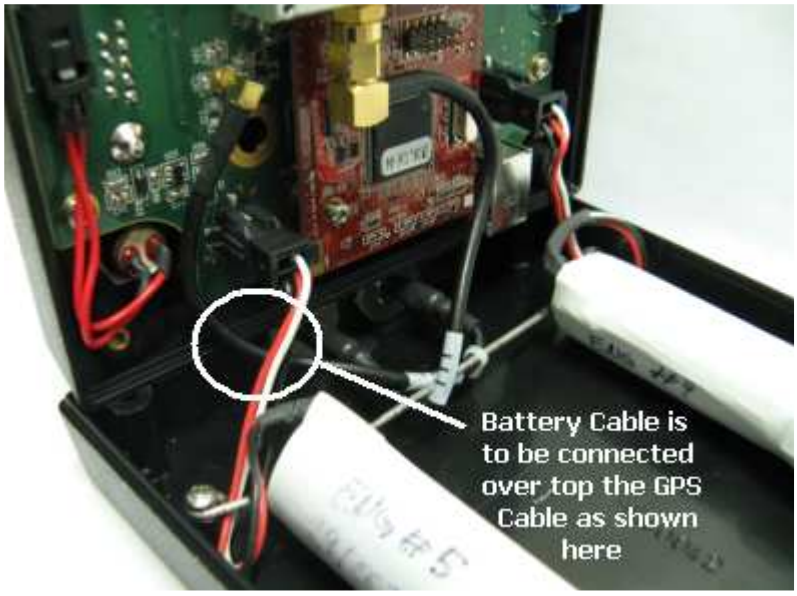

Figure 14 – Battery Connection

14. Repeat the above steps for the second battery, the battery installation should now look like **Figure 15**.

Figure 15 – Battery Installation Complete

15. Lower the top enclosure onto the bottom enclosure creating a pivot at the right end as shown in the **Figure 17**.

Figure 16 – Lowering the Enclosures

Note: The IRIDIUM® modem is to be sandwiched between the batteries.

Figure 17 – Enclosure Pivoting at Right Side

16. Before mating the top and bottom enclosure together ensure that the Iridium Cable is tucked beneath the battery cross bar. Refer to **Figure 18**.

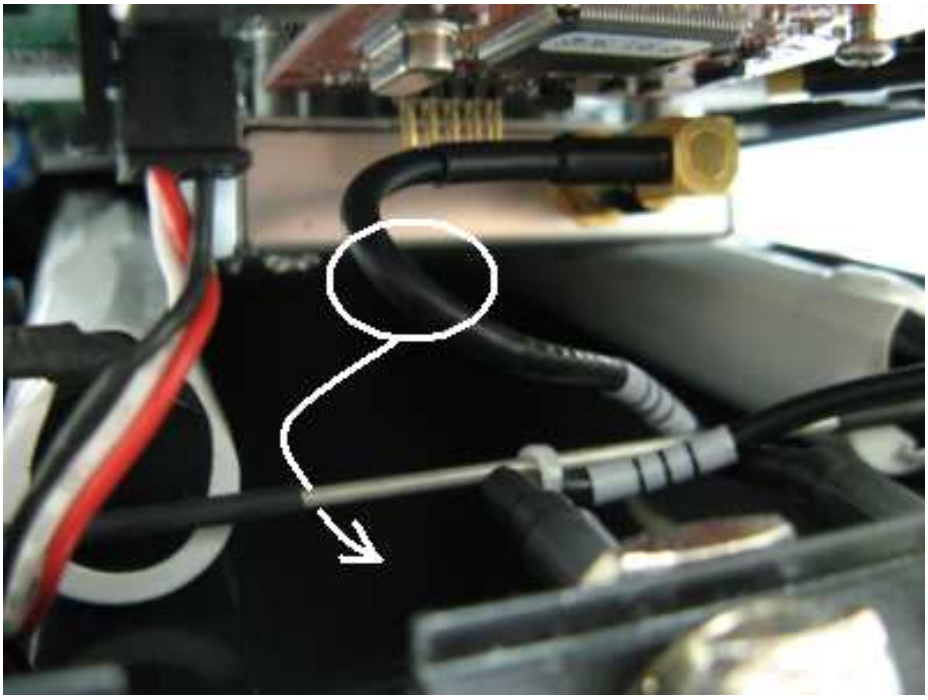

Figure 18 – Iridium Cable Tuck

17. Slowly clamp the top and bottom enclosures together until they are slightly ajar or fully shut, similar to similar to **Figure 19**.

Figure 19 – Enclosure Assembly Gap

18. Turn the assembly over and fasten the top and bottom enclosures together at 6 places using #4-40 screws from step one.

Warning: Do not exceed a torque of 3.2 in-lbs when fastening the enclosure together.

3 DSAT-300I

1. Unfasten and remove the screws from the DSAT-300 at 6 locations using a #1 Phillips head screw driver (screw: Phillips #4-40). Retain the screws for later use.

Figure 20 – Screw Locations

2. Turn the DSAT over and lift the top enclosure from the right side as shown in **Figure 21**, creating a hinge on the left end of the enclosure.

Figure 21 – Unhinging the Enclosures

3. Hold the top enclosure perpendicular to the bottom enclosure as shown in

4. **Figure 22**

Figure 22 – Perpendicular Position

5. Disconnect the Batteries from the PCB and remove the top enclosure assembly.

Figure 23 – Disconnecting the Batteries

6. Release the batteries from between the battery cross bar and battery mounting foam.

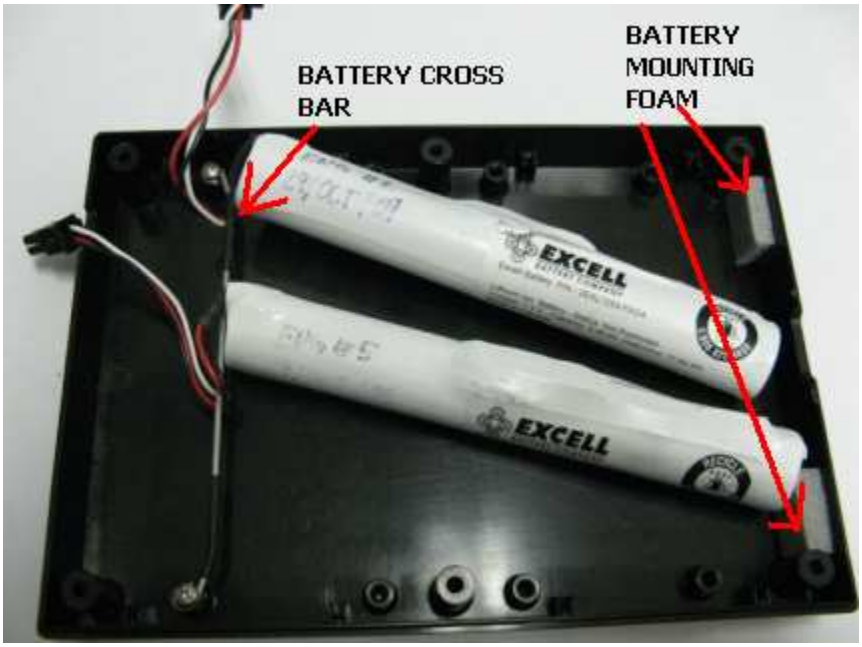

Figure 24 – Battery Release

7. Slip the battery connectors under the battery cross bar where there is no heat shrink (mid region) and remove the batteries as shown in **Figure 25**.

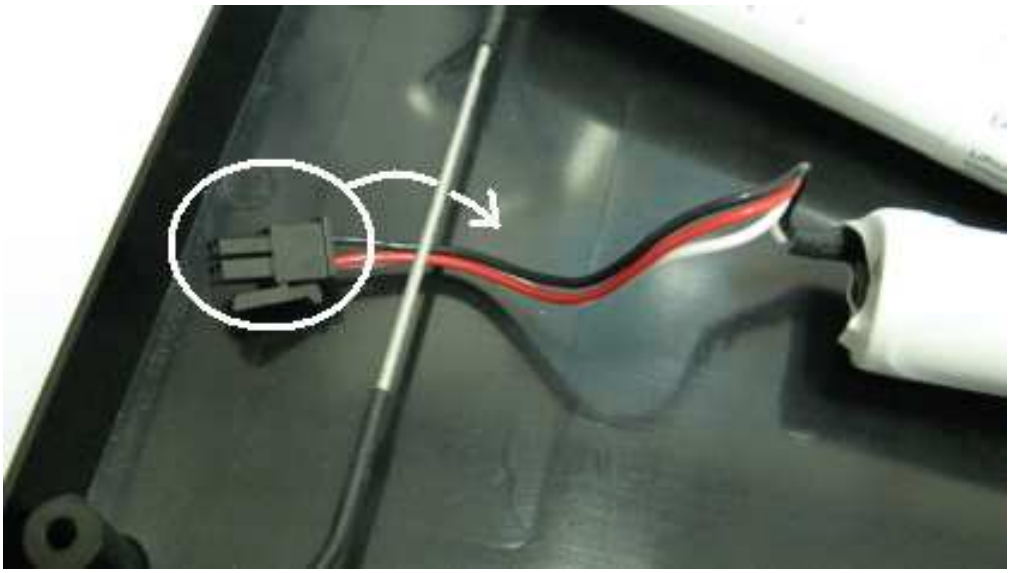

Figure 25 – Battery Removal

8. Take the new battery and tuck its connector underneath the Battery Cross Bar.

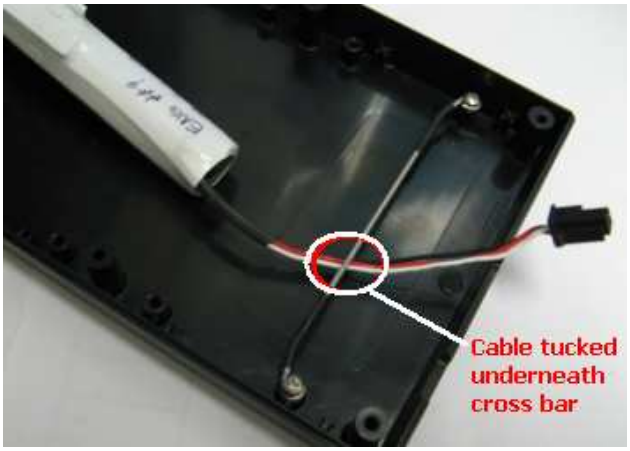

Figure 26 – Battery Connector Tuck

9. Bend the Battery Cable around the front face of the Battery as shown in **Figure** 27.

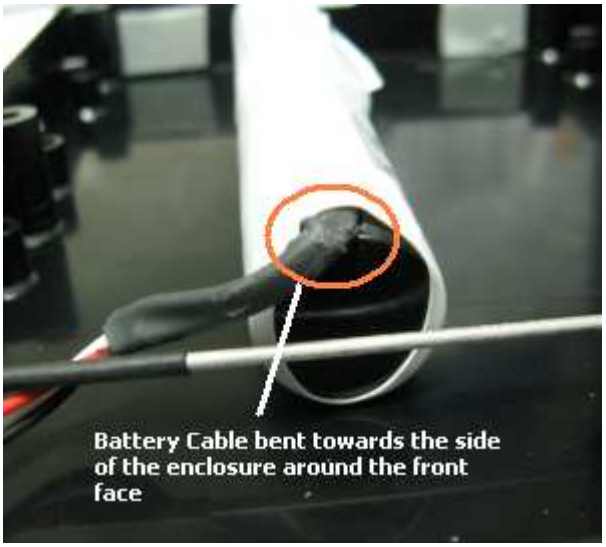

Figure 27 – Battery Cable Position

10. Position the Battery between the cross bar and mounting foam and ensure that the battery is tangent to the mounting standoffs of the enclosure.

Figure 28 – Battery Tangent to Mounting Bosses

11. Orient the battery cable and battery's circuit board upwards in order to avoid collisions with the modem during assembly.

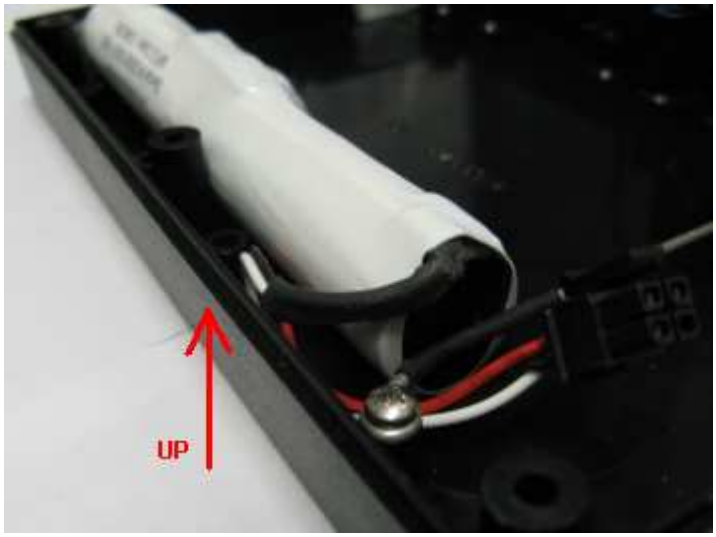

Figure 29– Battery Cable Orientation

12. Bend the battery cable roughly 180 degrees and push the cable down towards the enclosure as shown in **Figure 30**. This will ensure that the cable will not collide with the PCB during installation.

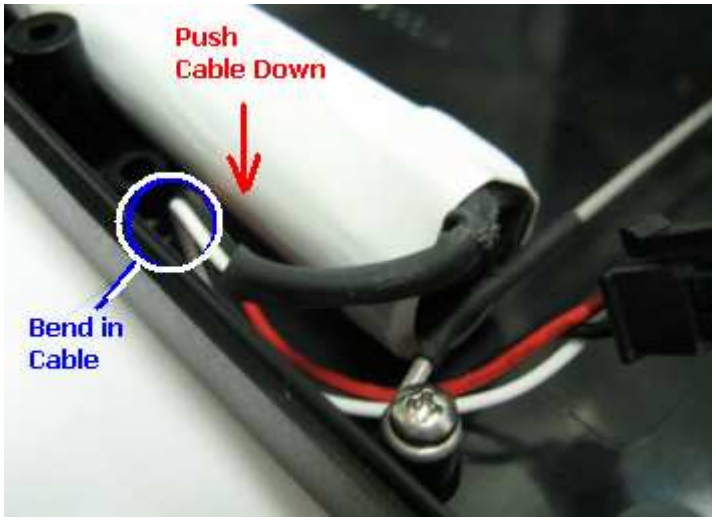

Figure 30 – Battery Cable Deformation

Warning: It is extremely important that the positions of the battery cables are clear of collisions with the push button connector, battery connectors, and any contact with the PCB.

13. Repeat steps 9 to 12 for the second battery.

Figure 31 – Battery Installation Complete

14. Connect the battery connectors to their nearest receptacle as shown in **Figure 32**. During battery connections, ensure that the Iridium cable is looped around the battery connectors as highlighted in the circled area of the Figure below.

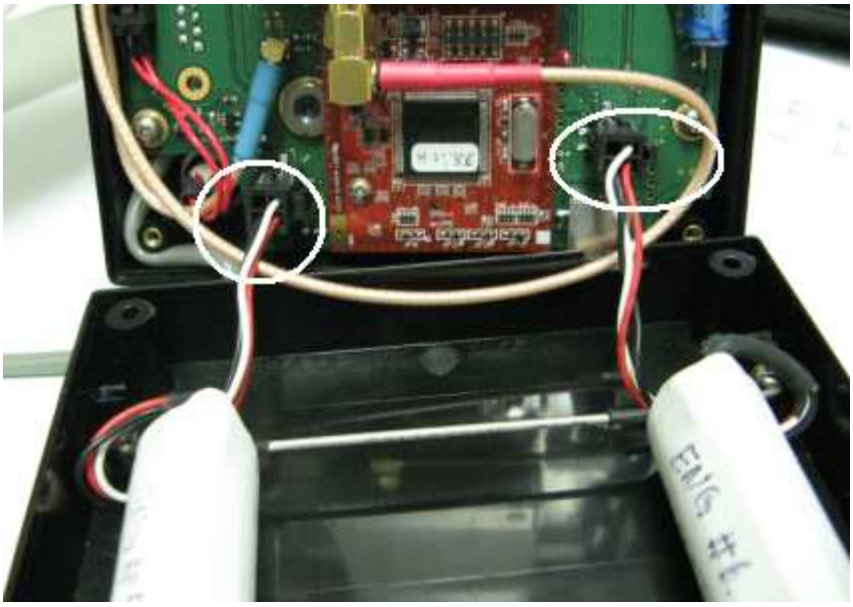

Figure 32 – Battery Connections with Iridium Cable Detour

15. Lower the top enclosure assembly onto the bottom enclosure assembly. Ensure the power connector and USB receptacle are aligned properly.

16. Pivot the two enclosures at the power connector end as shown in **Figure 33**.

Figure 33 – Imaginary Enclosure Hinge

Warning: Forcing the enclosures together at this point would induce stresses in the PCB resulting in undesirable deflection.

17. Slowly clamp the top and bottom enclosures together until they are slightly ajar or fully shut, similar to **Figure 34**.

Figure 34 – Enclosure Assembly Gap

18. Turn the assembly over and fasten the top and bottom enclosures together at 6 places using #4-40 screws from step one.

Warning: Do not exceed a torque of 3.2 in-lbs when fastening the enclosure together.