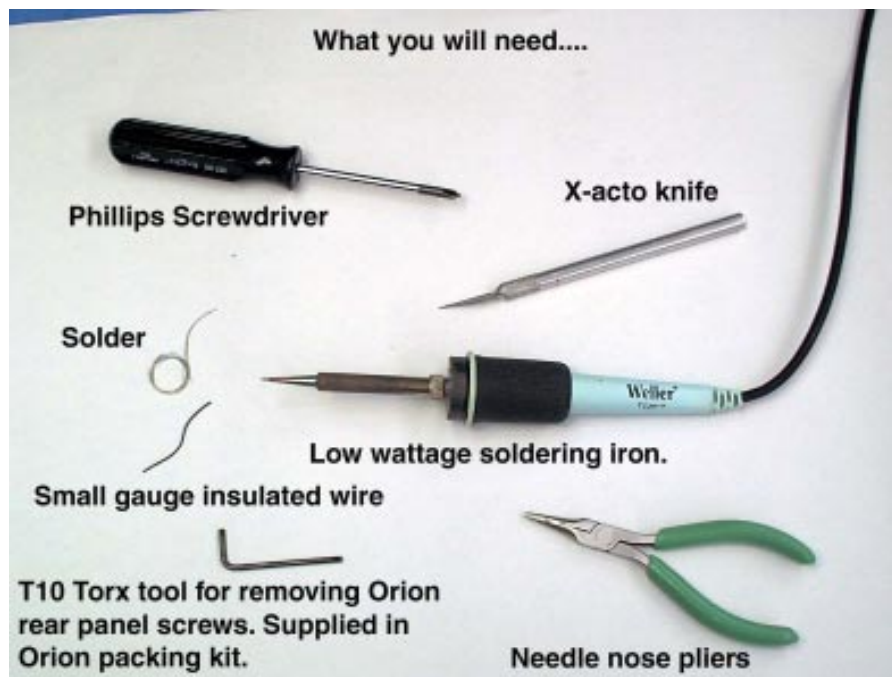
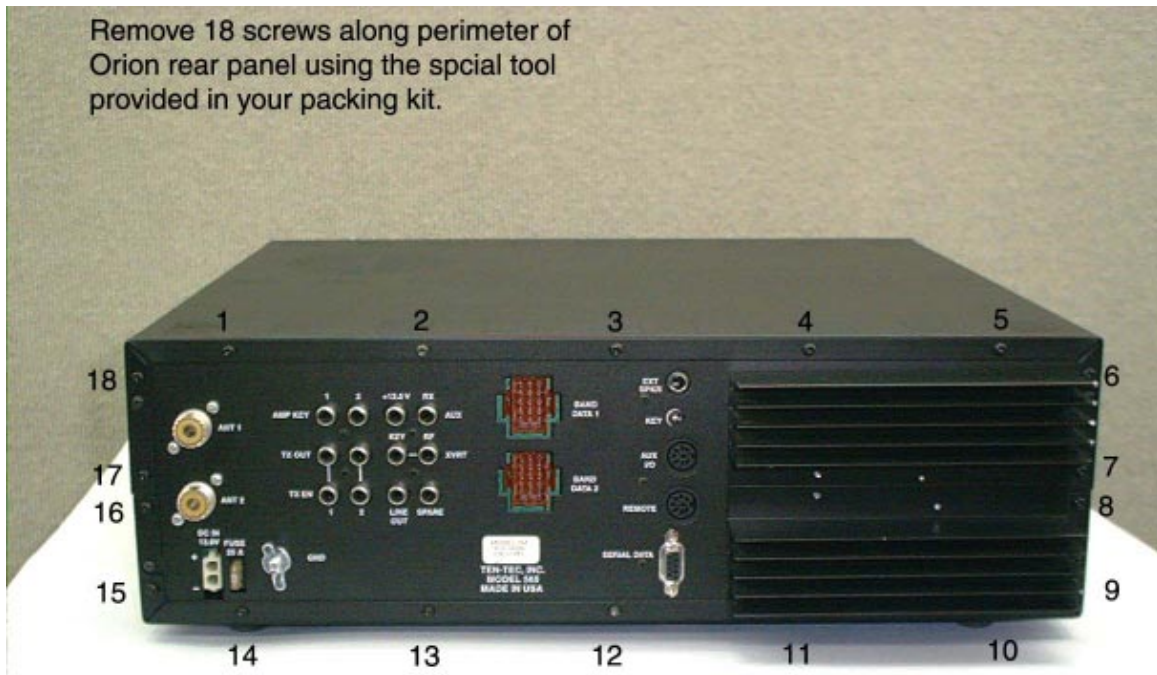


Orion Logic/DSP modification to support Version 2.x firmware

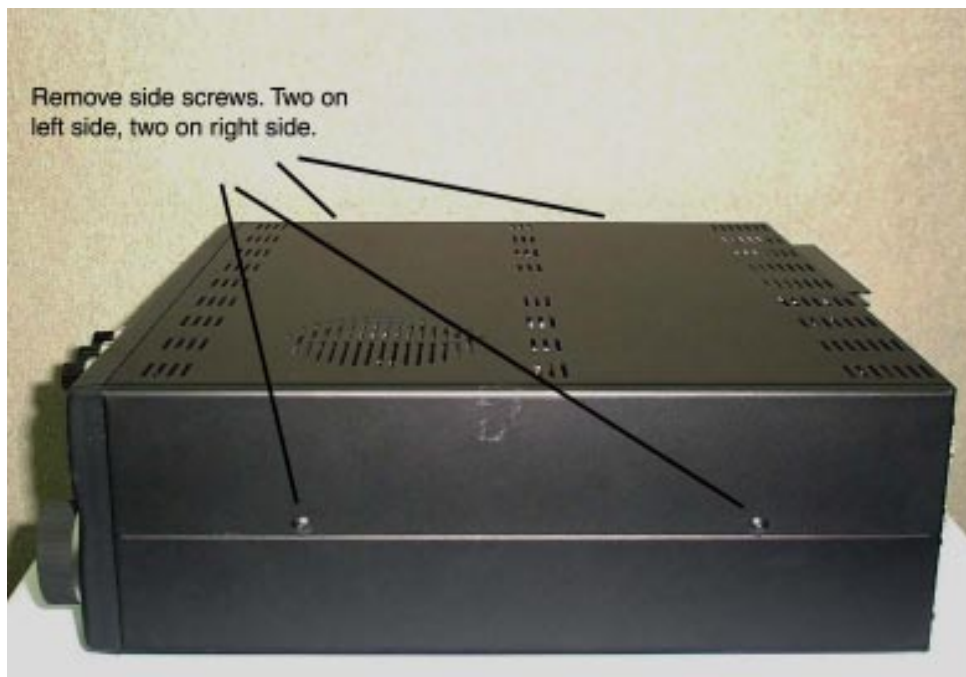
Orion firmware 2.0 and later implements an enhanced multiprocessor communications interface between the dual DSPs and the main CPU. A minor modification must be made to the hardware to support this new architecture. This document describes the modification step-by-step.



Tools required for the modification are shown above. In addition, wire stripper/cutters, work light and magnifier may also be helpful.



Step 1: Remove the 18 #10 Torx-type screws used to attach the back of the Orion's top and bottom covers to the chassis. The tool, a T10 Torx screwdriver was included in the package of accessories supplied with the transceiver. They are also available at your local hardware or home improvement outlet.



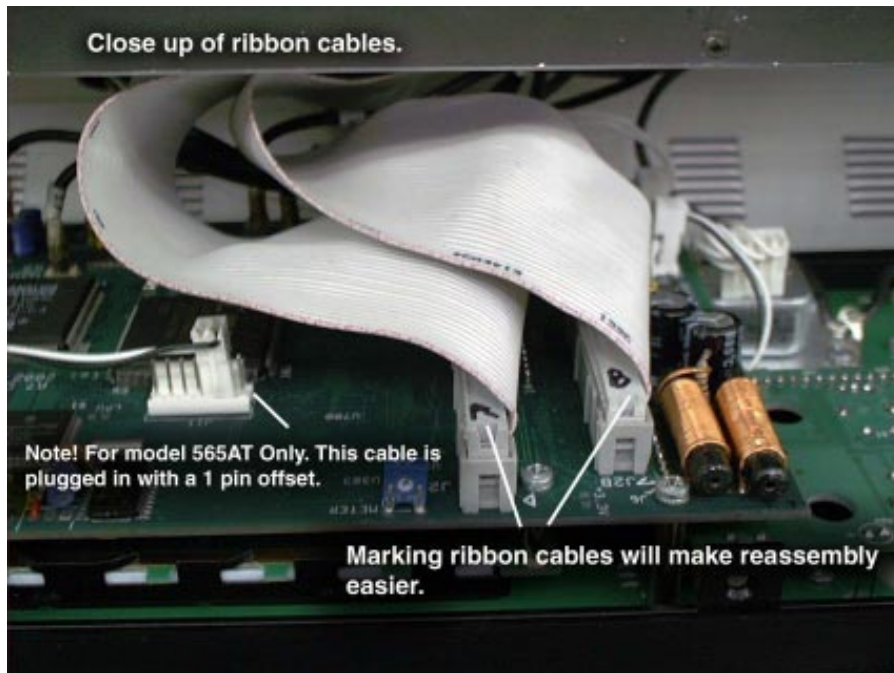
Step 2: Remove the 4 large black phillips screws attaching the covers to the sides of the chassis.



Step 3: Remove the 12 flat-head phillips screws used to attach the front panel molding to the chassis.



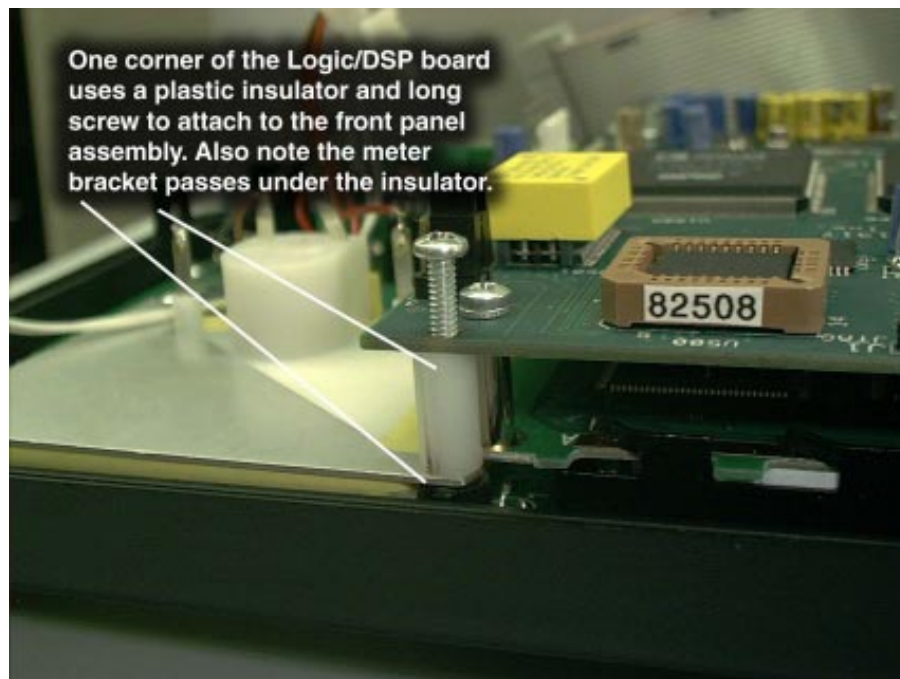
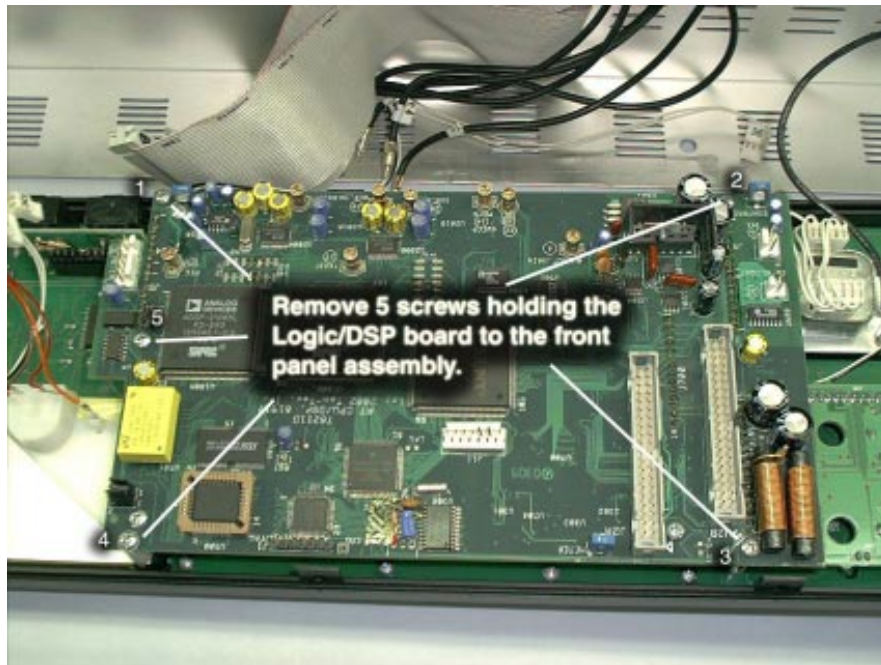
Step 4: Gently pull the front panel assembly forward to release it from the chassis. When the assembly is clear of the chassis the entire panel may be tilted forward as shown.



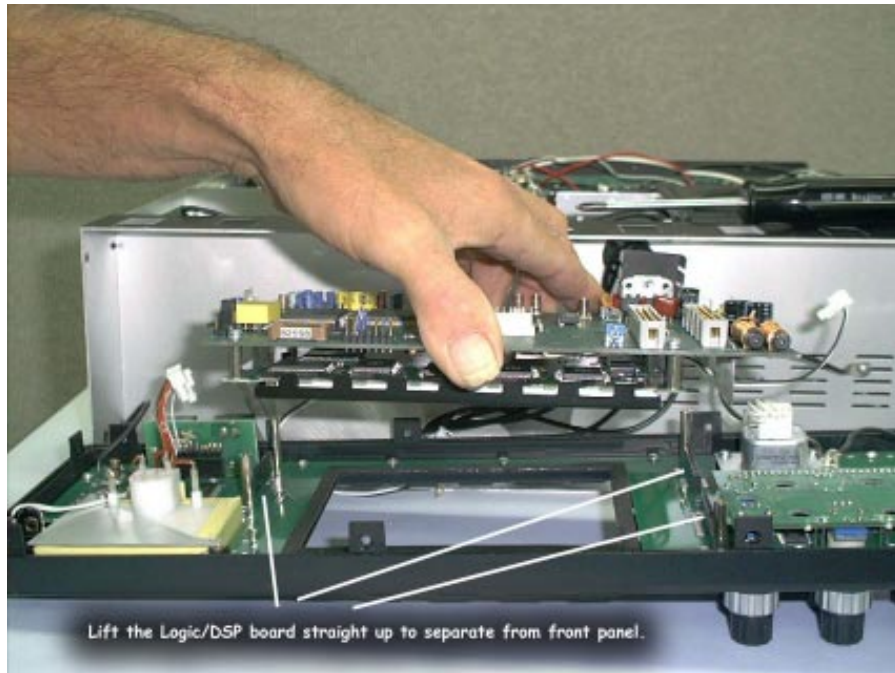
Step 5: Disconnect cables. Before removing cables, mark the ribbon cables A and B as shown. Other cables are marked to match cable IDs indicated on the circuit board. Coax and Mass-Term cables will pull off easily. The ribbon cables will be tight. When removing cables grip the connector. *DO NOT PULL ON THE CABLES.*



Step 6: When all cables have been detached from the Logic/DSP board the front panel will lay flat on the table. This provides access to the mounting screws for the Logic/DSP assembly.



Step 7: Remove the 5 screws attaching the Logic/LCD assembly to the front panel.



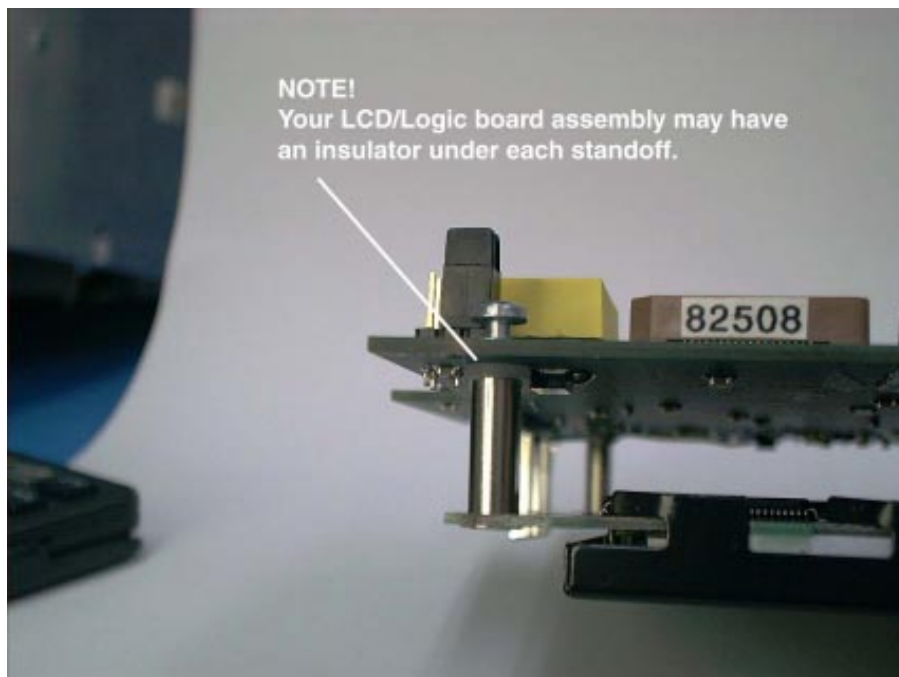
Step 8: Three header/pin connectors route signals between the Logic/DSP board and the front panel. Remove the Logic/LCD assembly from the front panel by lifting vertically as shown to reduce the potential for bent pins.



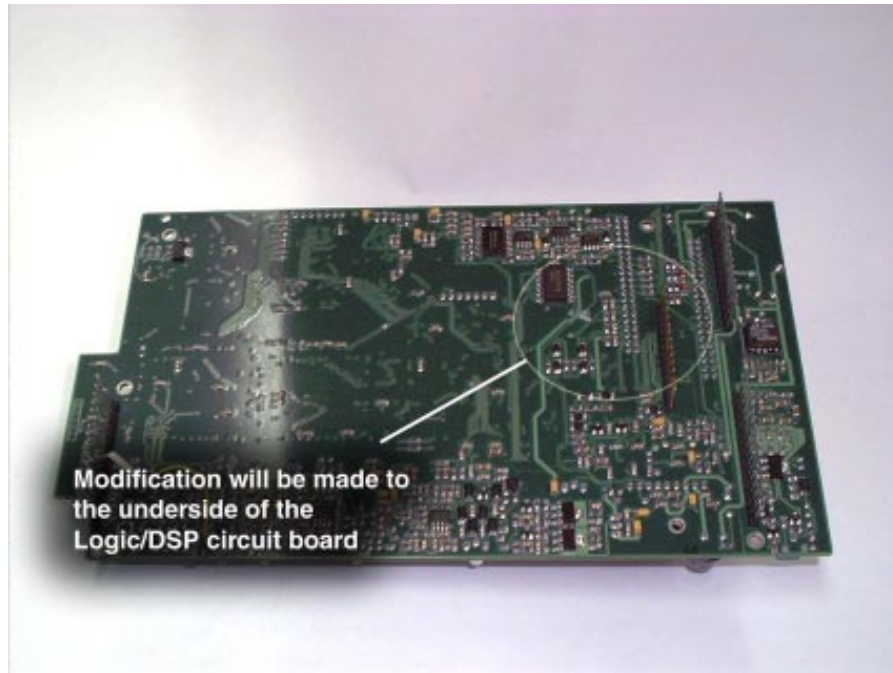
Logic/DSP/LCD assembly is removed as a unit.



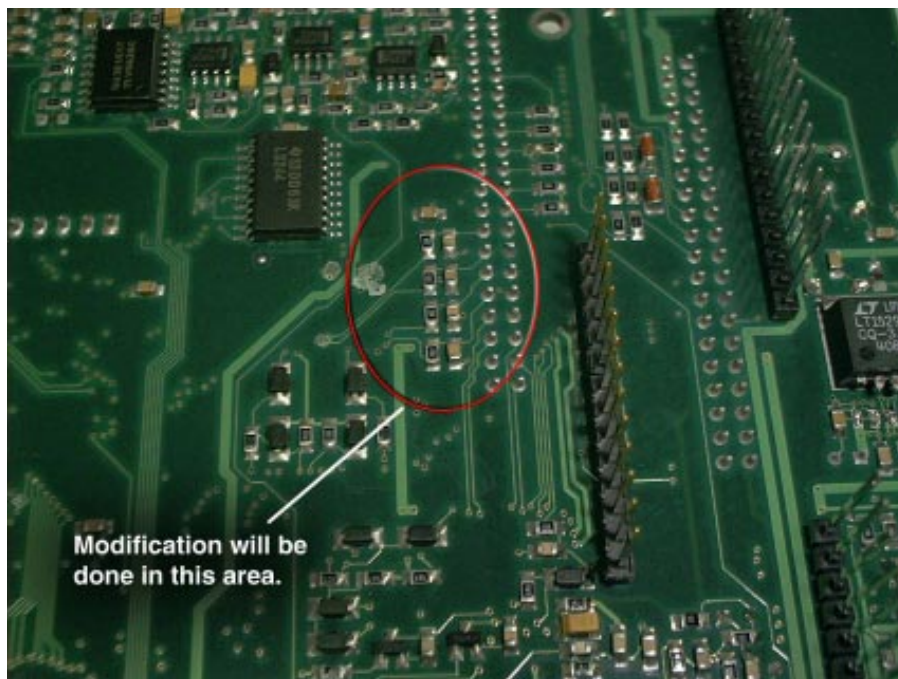
Step 9: Separate the LCD and Logic/DSP circuit board by removing the 4 attaching screws indicated above.

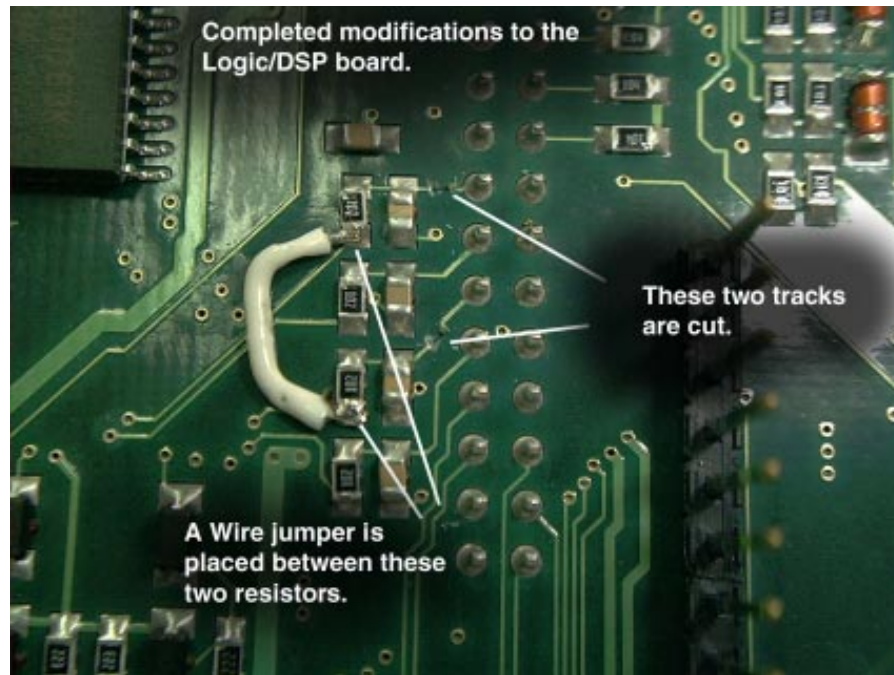


Be careful not to lose any insulators.

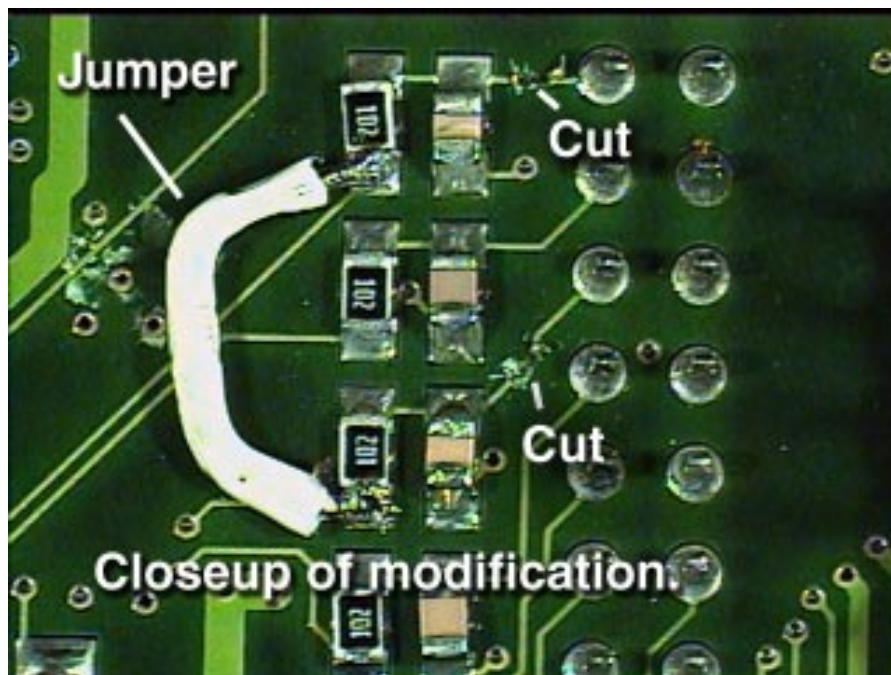


Step 10: Flip the logic board over so the major components are face down. Locate the general section of the board indicated above.





Step 11: The modification involves cutting two tracks and adding a short wire jumper between two resistors. This is shown in the diagram above.



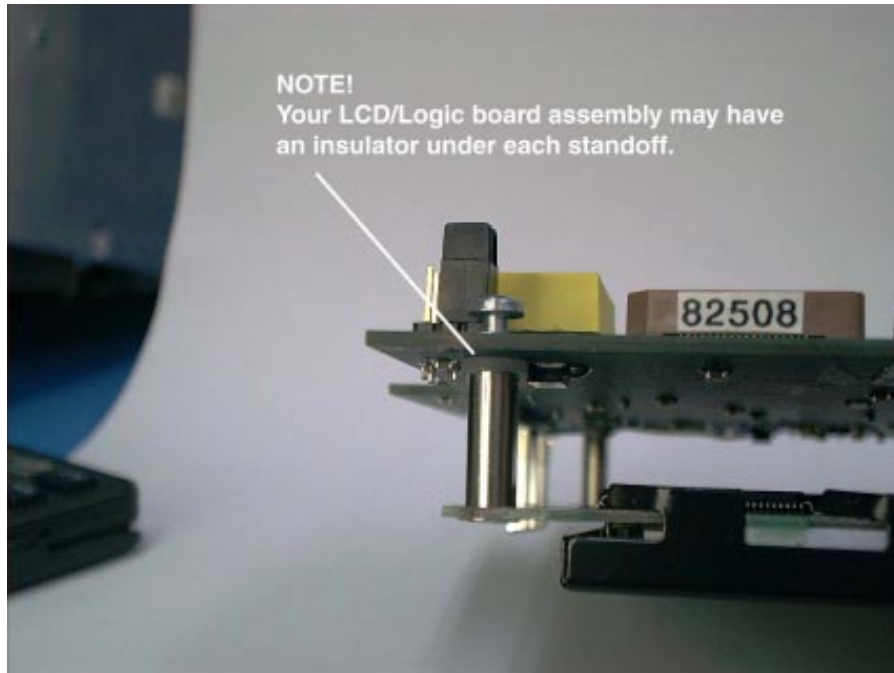
A magnified closeup of the modification.



Step 12: Reattach the LCD to the Logic/DSP circuit board. Be sure to reinstall any insulators removed during disassembly.

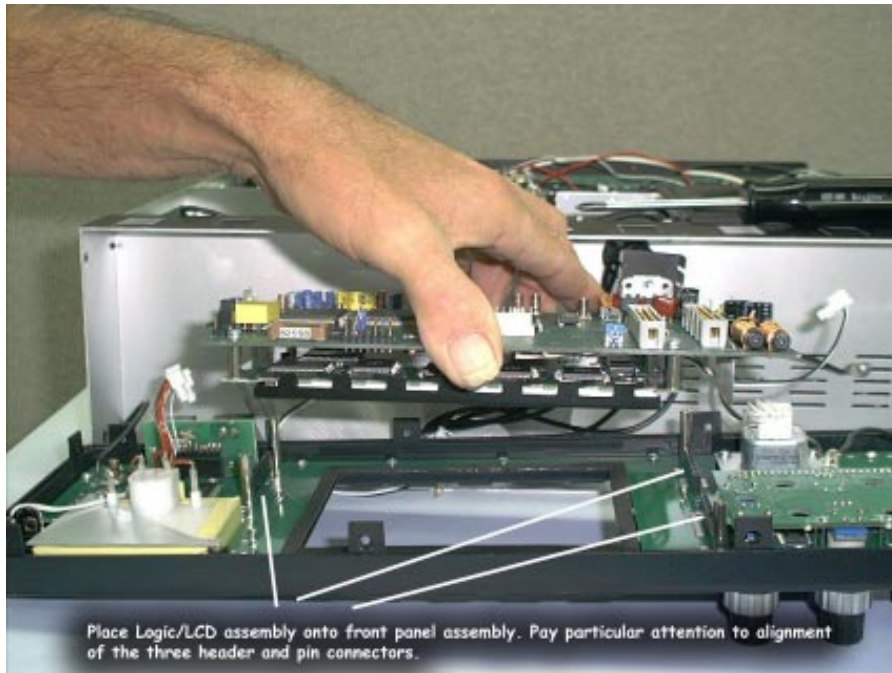


Note! The LCD panel is attached to the Logic/DSP board using 4 screws at locations shown.

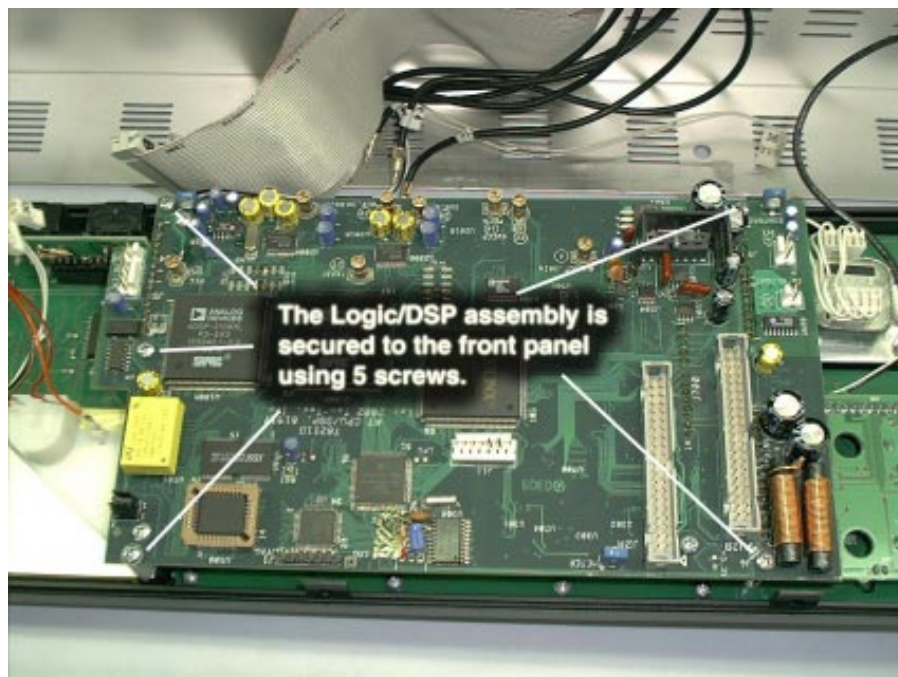


Pay particular attention to the placement of insulators that may have been used on the assembly.

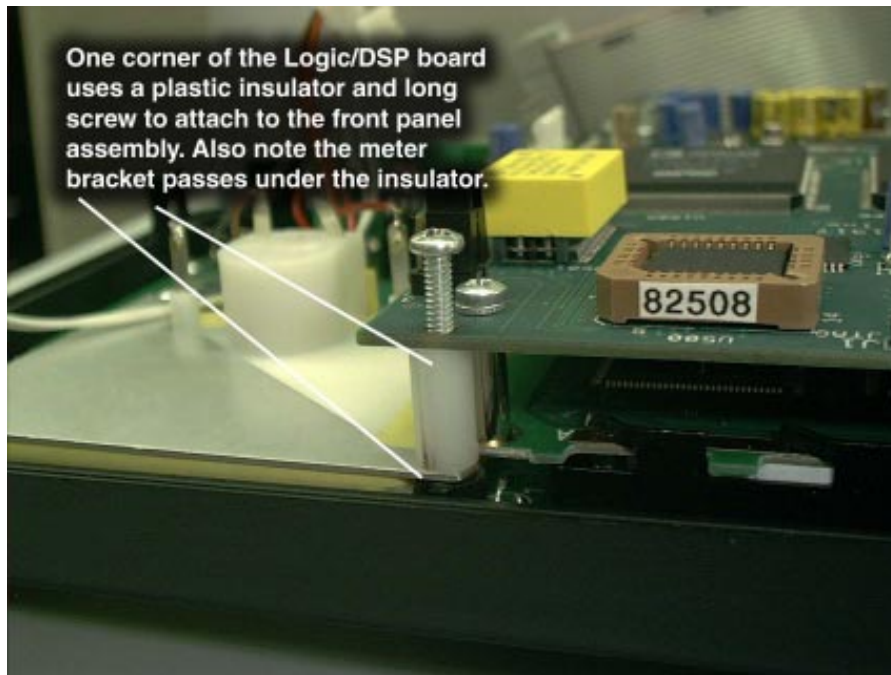




Step 13: Attach the Logic/DSP/LCD assembly to the front panel. There are 3 multi-pin connectors that must be mated during this step. After assembly, inspect the connectors closely to insure they are properly aligned and there are not bent pins.



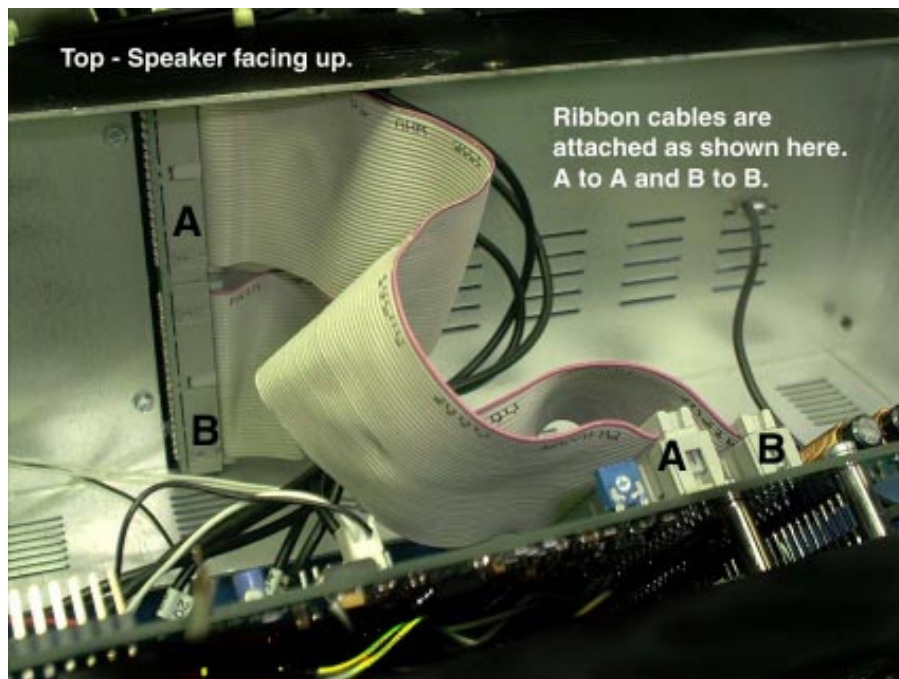
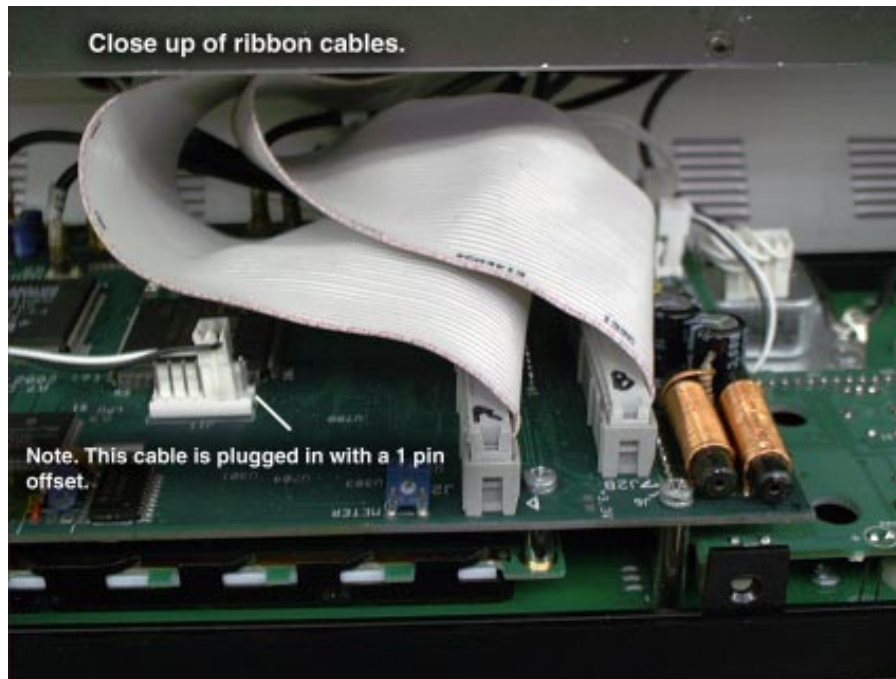
Step 14: Secure the Logic/LCD assembly to the front panel using 5 screws placed at locations shown.



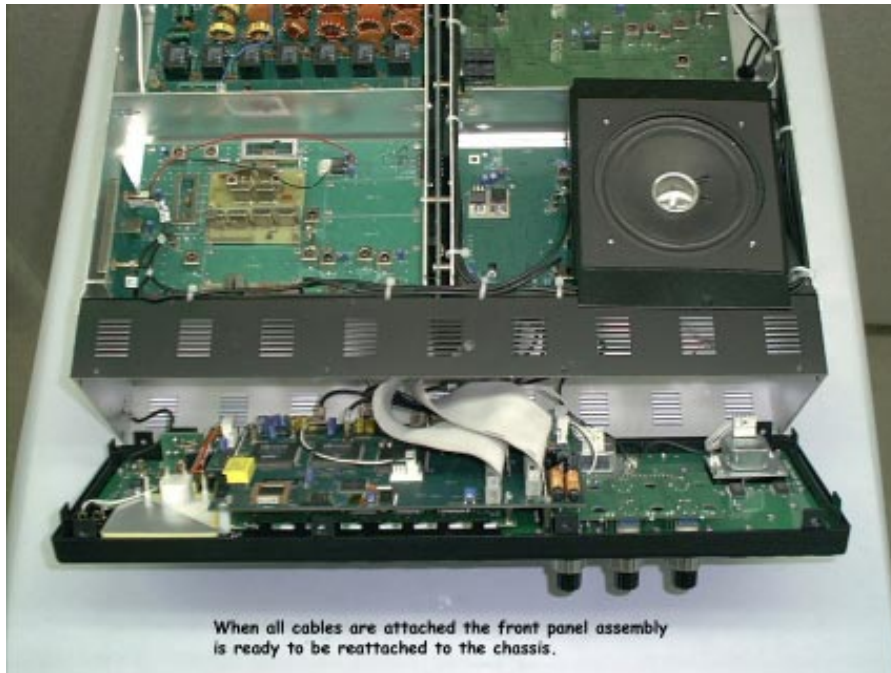
NOTE! One corner of the board is attached to the front molding by a long screw passed through a large plastic insulator and the meter mounting bracket. Confirm that the meter movement is properly seated in the front panel plastic before tightening the screw.



Step 15: Reattach all cables except the ribbon cables. Cables are marked with a number and there is a corresponding number on the circuit board. Coax cables must be centered before they seat. This takes some practice and often is easier with a pair of needle nose pliers. Mass term cables plug in easily.



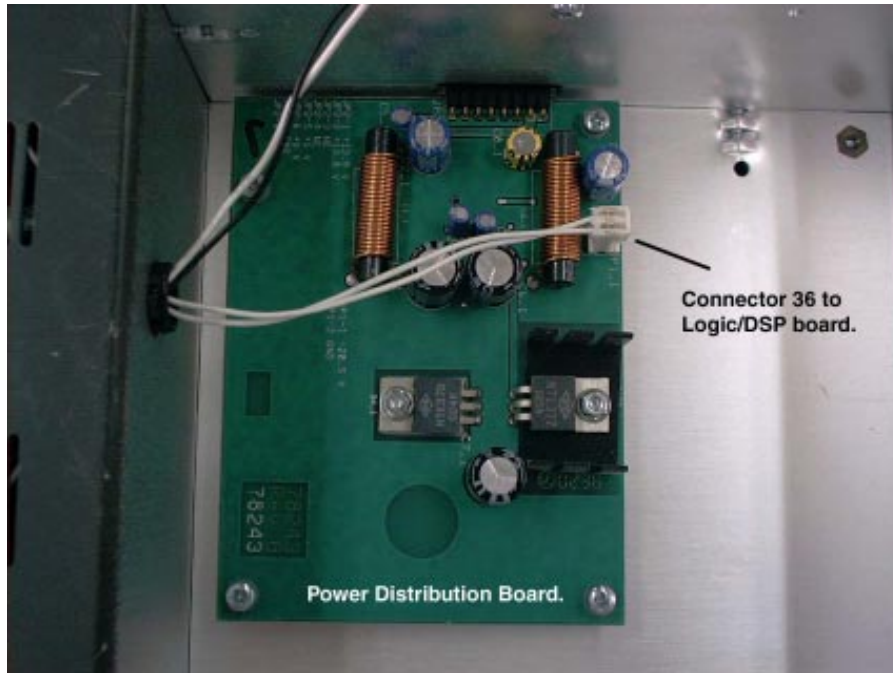
Step 16: Plug the ribbon cables in taking care to ensure that each cable is plugged in to the proper socket. Note earlier markings and connect A to A and B to B. Also note the cable/plug offset for Orion 565AT models. Standard Orion 565 does not have this cable.



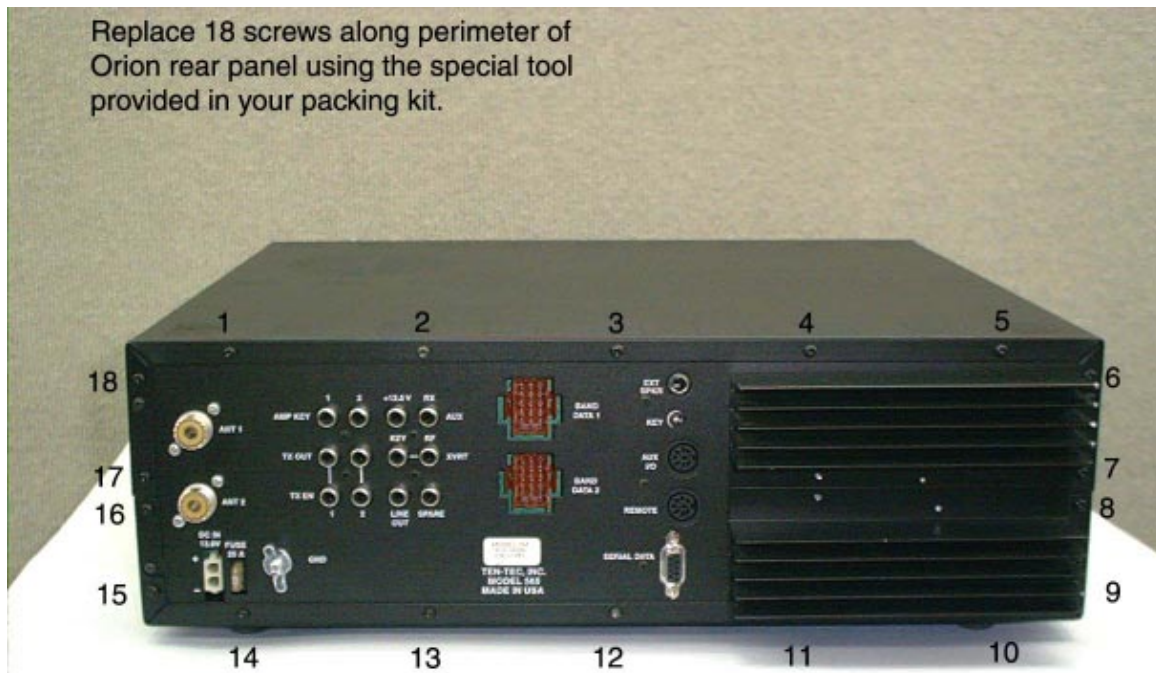
Step 17: Place the front panel assembly onto the chassis. There are connecting tabs on all four sides of the molding that must be aligned before the assembly can be completed.



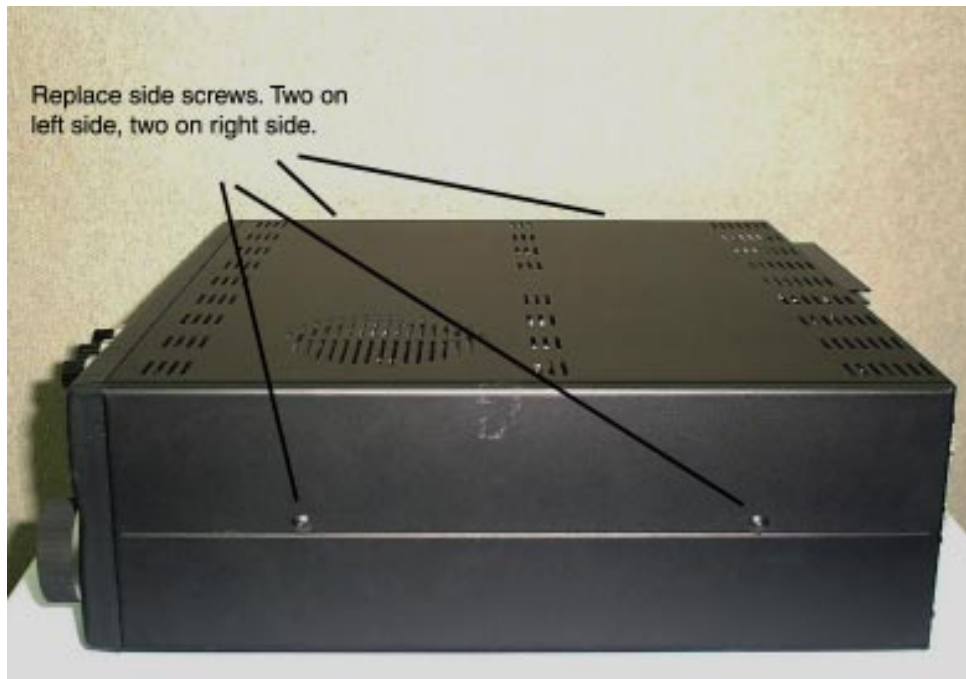
Step 18: Replace the flat-head phillips screws that secure the front panel assembly to the chassis.



Step 19: Before putting covers on, confirm that connector 36 on the power distribution board is properly seated. This may have come loose during handling of the front panel assembly. The Power Distribution Board is located on the underside of the chassis.



Step 20: Replace the 18 Torx-type rear cover screws.



Step 21: Replace the 4 side screws.