

Installing the X-Lock-3 in the Drake TR-7

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I have had excellent success in the use of the Cumbria Designs X-Lock products. The first installation was in a Ten Tec Corsair I which employed the X-Lock-2 and that was done in late 2011. I have since sold the Corsair and the next candidate was a Drake TR-7 where I simply moved the X-Lock-2 from the Corsair to the TR-7. That second install too was successful. The Cumbria Designs website featured an X-Lock-2 installation in TR-7, which was done by Ron, WD8SBB. In addition I also found an Internet reference to a similar X-Lock-2 installation by Mario SV9RDU. So between the two articles much of the ground had been plowed. I used the SV9RDU interface design from the X-Lock to the TR-7, which differs slightly from that of WD8SBB.

I was so pleased with the TR-7/X-Lock-2 combination that I purchased another TR-7 and the newest version the X-Lock-3. The purpose of this short paper is to describe what is needed to install the X-Lock-3 in the TR-7. There is a physical difference in the size of the PC Boards which requires adapting the X-Lock-3 boards so that two convenient mounting holes on the underside of the TR-7 chassis can be used to anchor the PC-Board.

As luck would have it, the mounting holes in the X-Lock-2 board have the same exact spacing as the two screws which anchor the TR-7 Motherboard to the daughter board cage assembly. In the first TR-7 install I simply found longer 4-40 screws and used a 6-32 nut as a spacer and called it installed. Mario used a similar approach and modified some ring type crimp on connectors, which were bent at a right angle. The ring part is screwed down on the board using the original 4-40 screws and the vertical portions are fitted into two of the four mounting hole and soldered in place. Ron mounted his board in another location.

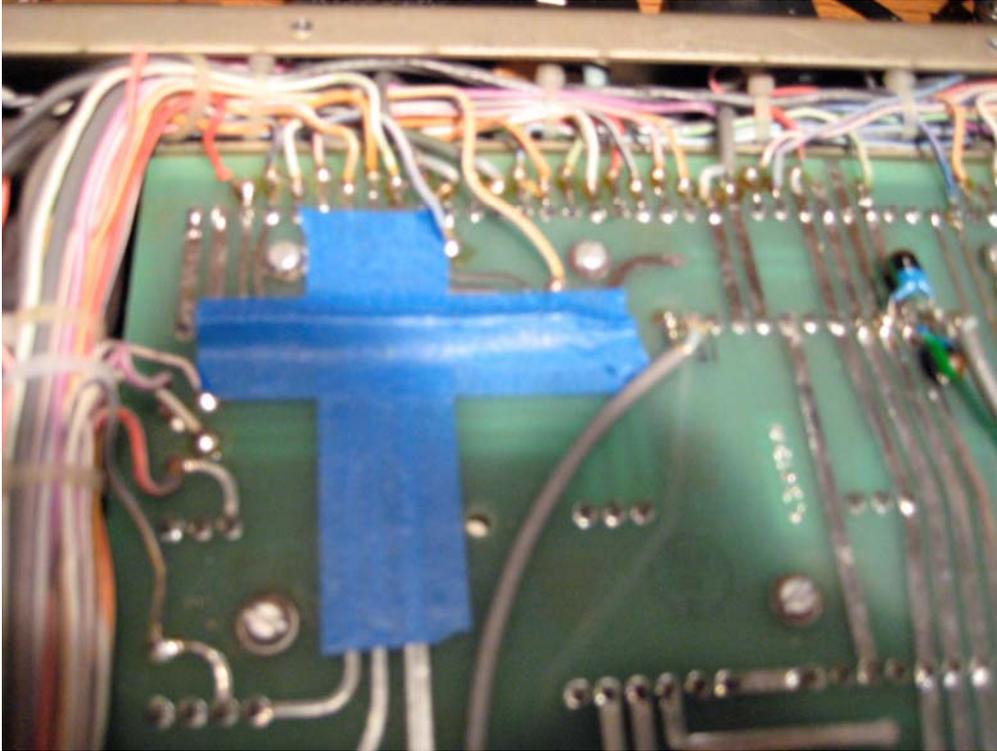
But alas the holes in the X-Lock-3 do not align with the mounting holes in the Motherboard. So at first I thought I would need to use the SV9RDU approach. However in my approach I used #4 solder lugs, which were bent in a "Z" shape so that the large hole is fastened to the chassis. By using ¼ inch long 2-56 bolts and nuts passed through the smaller hole this arrangement now attaches the PC Board to the TR-7. I was very pleased that it resulted in a very solid mechanical installation. For the tri-color LED I

reversed the color so that RED is lock and installed the LED in the holder where it normally would have the “Fixed light”. I installed a 3-pin header on the end of the cable that connects with the LED and installed a 3-pin plug on the LED. This was if I have to make any adjustments to the X-Lock-3 I can simply unplug it from the end of the cable and plug it into the circuit board.

Shown below are the details of the installation.



The #4 solder lug is bent into a “Z” shape using a pair of needle nose pliers. For attachment to the PC board, ¼ inch long 2-56 screws are used. This forms a very stout mechanical connection.



I used 3M masking tape to provide a barrier so the PC Board would not short to the Motherboard traces.

