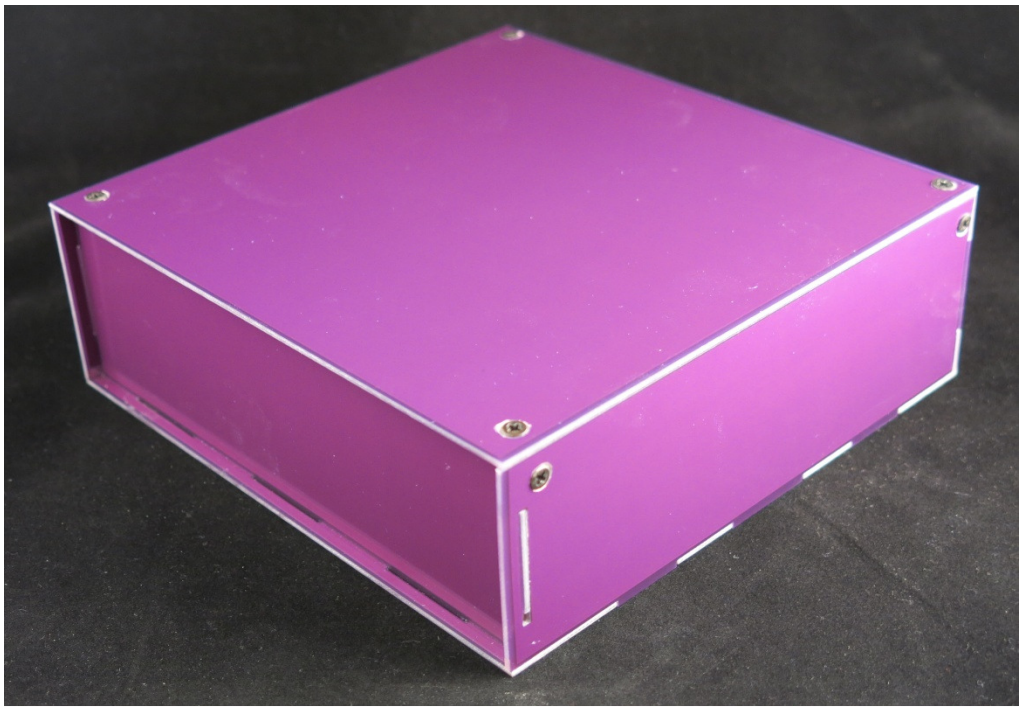
4SQRP Enclosure Kit

By Craig Johnson, AAØZZ



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1 Introduction

This is the instruction manual for the 4SQRP blank enclosures.

2 Building the Enclosure

There are different methods that can be used to build the case. Read through these suggested approaches and see what makes most sense to you. Details of each approach follow.

Approach 1: Fully assemble the case without soldering, holding in place with tape on the corners or with rubber bands or duct tape around it. Then solder all four edges and four corners.

Approach 2: Assemble and tack solder one edge at a time. After all four edges are tacked on and aligned, add additional solder tack points. Solder all four corners.

Here is what the case looks like at first.

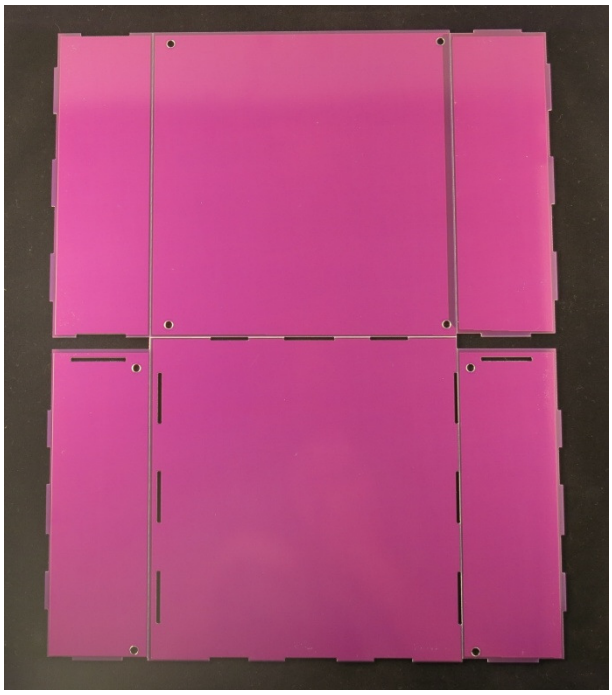

Figure 2.1 – Case Outside

Figure 2.2 – Case Inside

___ Break apart the 6 pieces. Figure 2.3

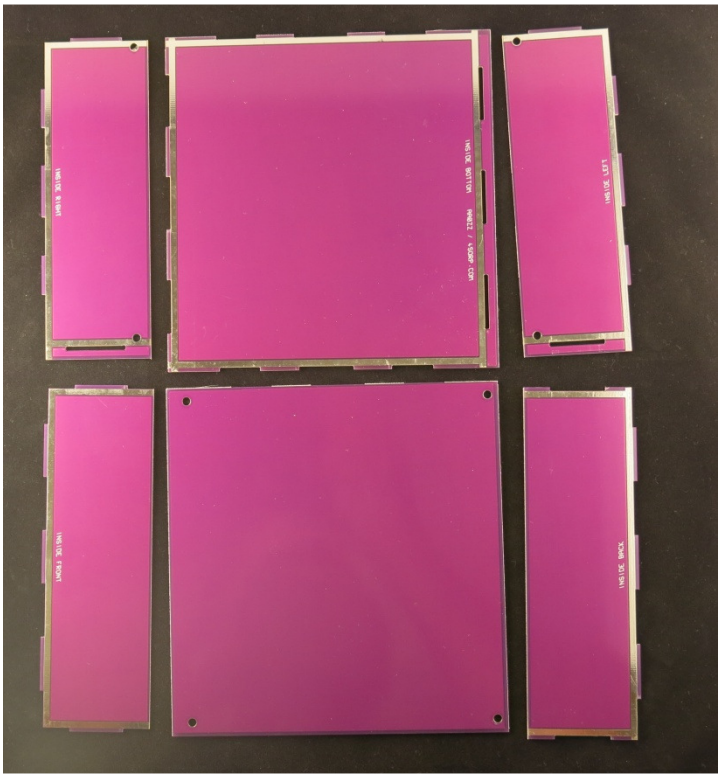

Figure 2.3 – Case Broken Apart

___ Sand or file all of the edges. You will be happy that you took the time to do this since it feels much better when in use. Use a fine-tooth mill file (Figure 2.4) or a sanding block. You could put a piece of sandpaper on the workbench and hold the piece vertically as you run it back and forth over the sandpaper. Be very careful not to sand any of the surfaces.

Figure 2.4 – Mill File

Method 1:

___ Assemble the case - four edge pieces and the bottom - and hold it together with tape on the four corners (Figure 2.5a) or, alternatively, you could secure it with several rubber bands (Figure 2.5b). As you solder, heat both boards of the edge simultaneously with a blunt-tipped soldering iron. Low wattage is sufficient.

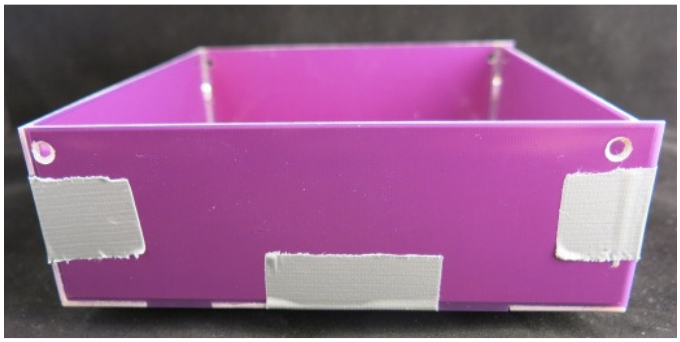

Figure 2.5a – Case Sides Taped in Position

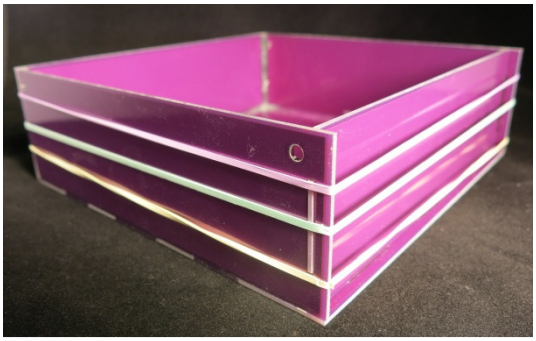

Figure 2.5a – Case Sides with Rubber Bands

___ Tack solder the edges to the bottom board in several places on each edge. You can solder along the entire edges but it is not necessary.

___ Tack solder the corners together in several places each. Again, you can solder along the entire edges but it is not necessary. You may find it easier to do this by standing the box upright on an edge with the corner to be soldered on the bottom.

Method 2:

___ Place a small solder “blob” in the both sides of the front-panel notch in bottom board. A low-wattage, blunt-tipped soldering iron is sufficient. See Figure 2.6.

Figure 2.6 – Solder “Blobs” on First Edge

___ Tack the edge of the front panel to the bottom board. As you solder, heat both edges simultaneously with the blunt-tipped soldering iron. See Figure 2.7.

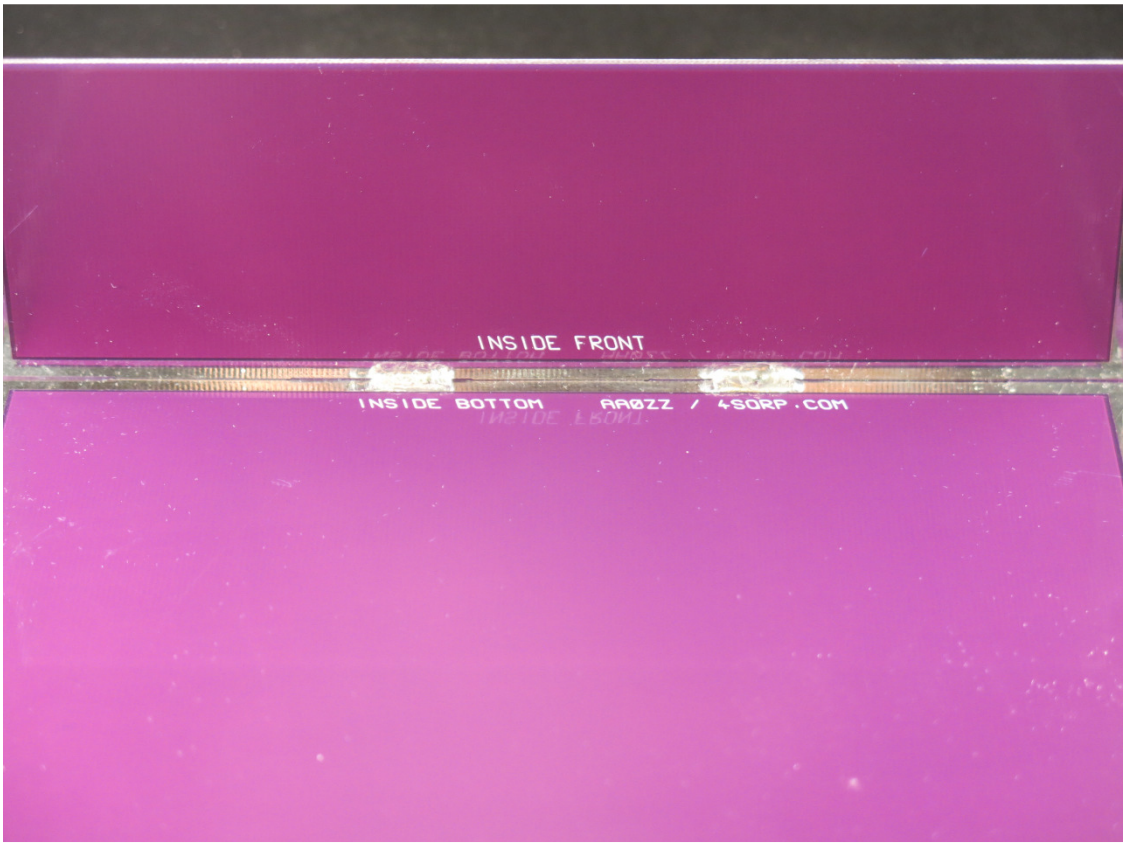

Figure 2.7 – First Side Soldered

___ In a similar manner, tack the right side to the bottom board. It will interlock with the left side of the front panel. See Figure 2.8.

Figure 2.8 – Second Side Attached

___ Now tack the right side piece to the bottom board. See Figure 2.9.

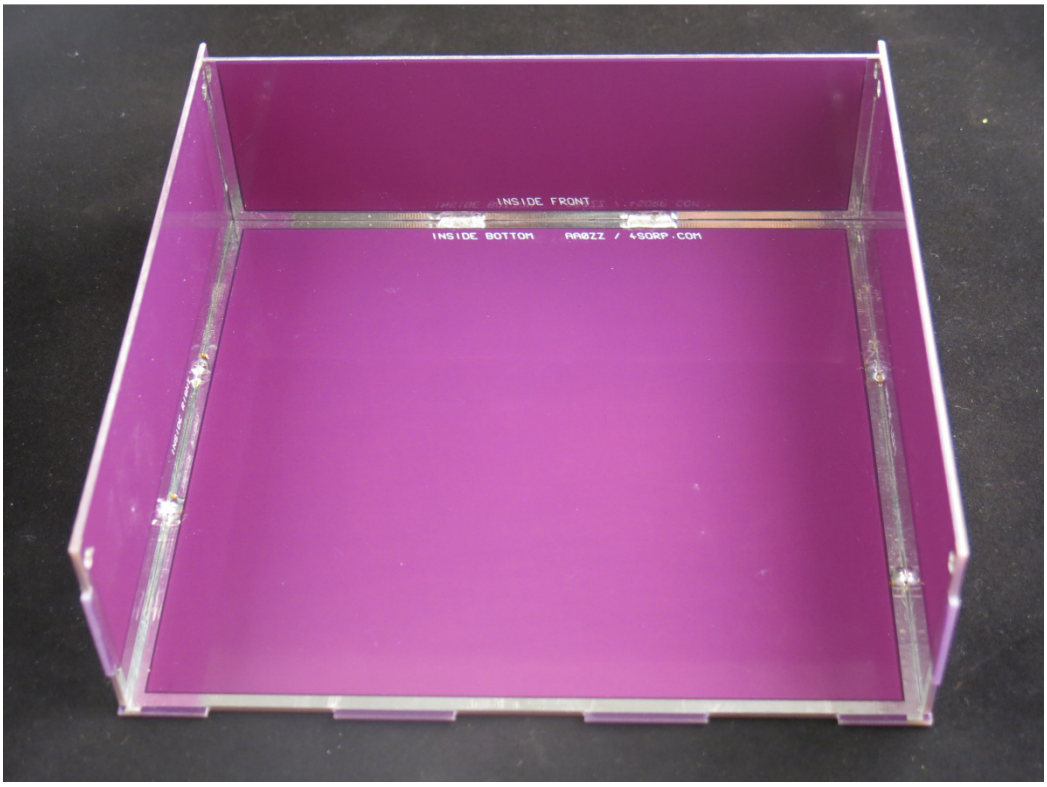

Figure 2.9 – Third side

___ Now tack the other back panel to the bottom board. See figure 2.10.

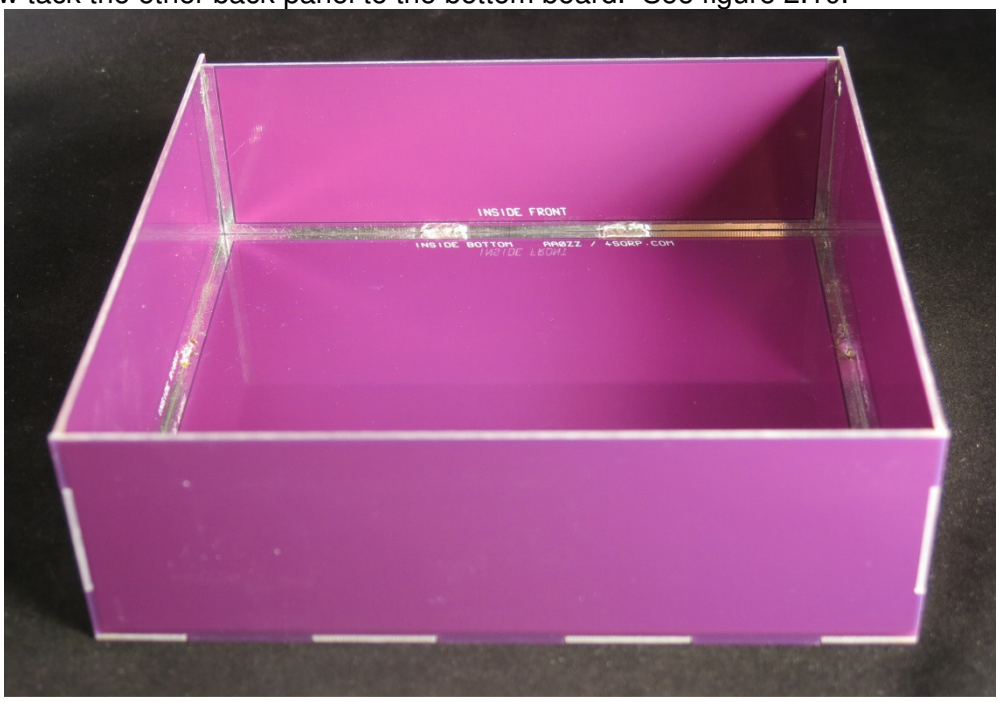

Figure 2.10 – All Sides

___ When all edges are tacked in place and all fit properly, add additional solder to various places along the edges (optional). You don't have to solder the entire edges but there is no harm if you want to.

___ In a similar manner, tack solder the vertical edges of the four corners (Figure 2.11).

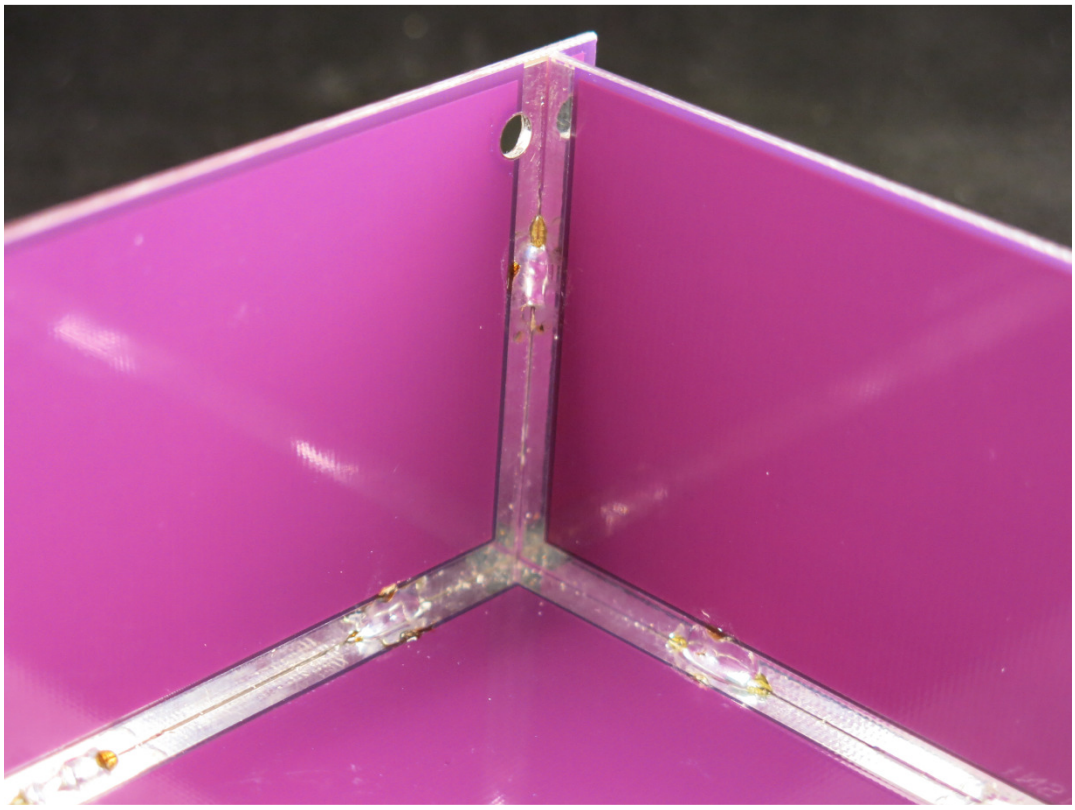

Figure 2.11 – Extra Solder On Vertical Edges

Now it's decision time. Try one of the flat-head screws on a hole in the cover or sides. Even with the holes slightly larger than they would have to be for 4-40 screws and the flat-head screws nestle into these holes, you will see how they do not end up completely flush with the surface. If you are not too picky you may decide to simply leave it like this. However, if you want to dress it up a little you can countersink the holes slightly. Use a 7/32" drill bit. (Figure 2.12) Assuming it is sharp (aren't they always sharp? Ah, not always…) you can simply hold it in your hand and twist it in the top of the hole opening to make a slightly concave countersink on the surface of each hole. (Figure 2.13) If you are brave and/or impatient you can use a drill press but be very careful not to go too far down. It doesn't take too much and now the flat head screws tops will go down to be flush with the surfaces. If you end up with a little very narrow white ring around the screw head and you are really persnickety you can touch up the holes with a little colored finger nail polish or paint before installing the screws. Give it a try and see what it looks like before you decide if you really need to do this.

Figure 2.12 – 13/65” or 7/32” Drill Bit

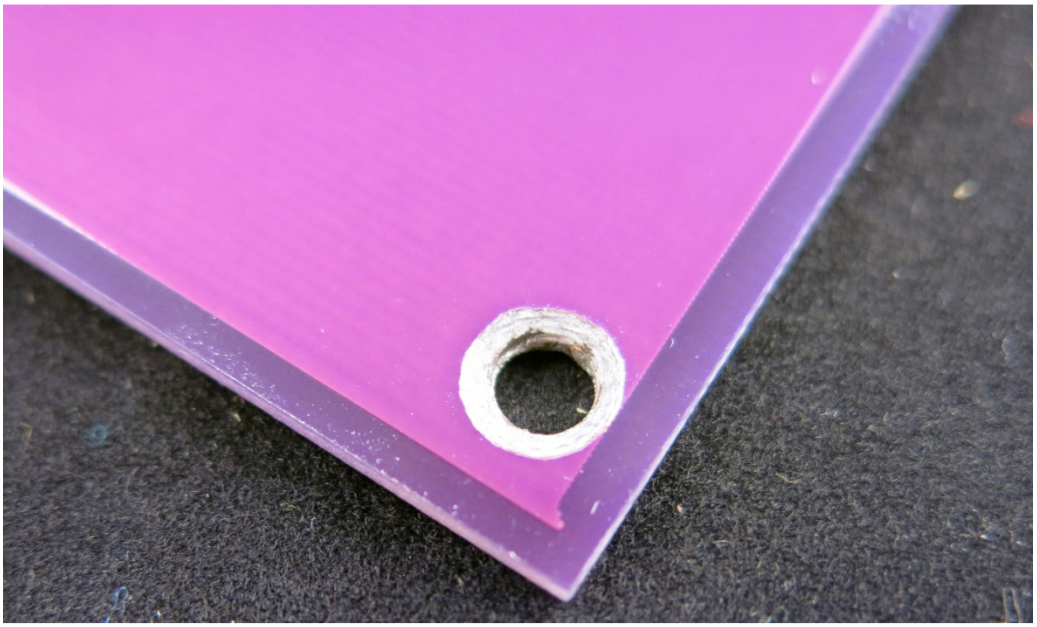

Figure 2.13 – Countersunk Holes (optional)

___ Install four L-brackets in the inside corners of the case. For each spacer use a 4-40 x 3/16” screw. Note that the L-Brackets are not quite symmetrical in that they have one leg that’s longer than the other. (At least that’s what they are supposed to be according to the spec. Because of the low-cost manufacturing of these parts some they have more-or-less equal length legs.) Install the L-bracket with the longest leg vertical and the shortest leg horizontal. See Figure 2.12.

___ Install four rubber feet on the bottom of the case.

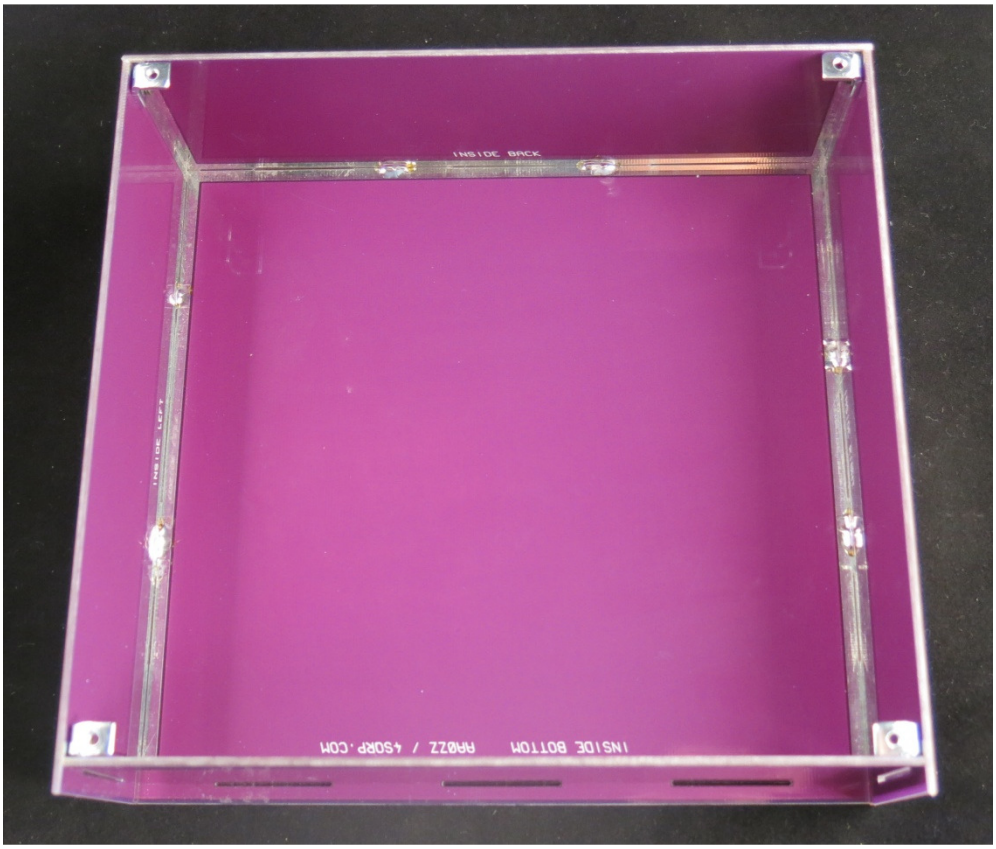

Figure 2.12 – L-Brackets

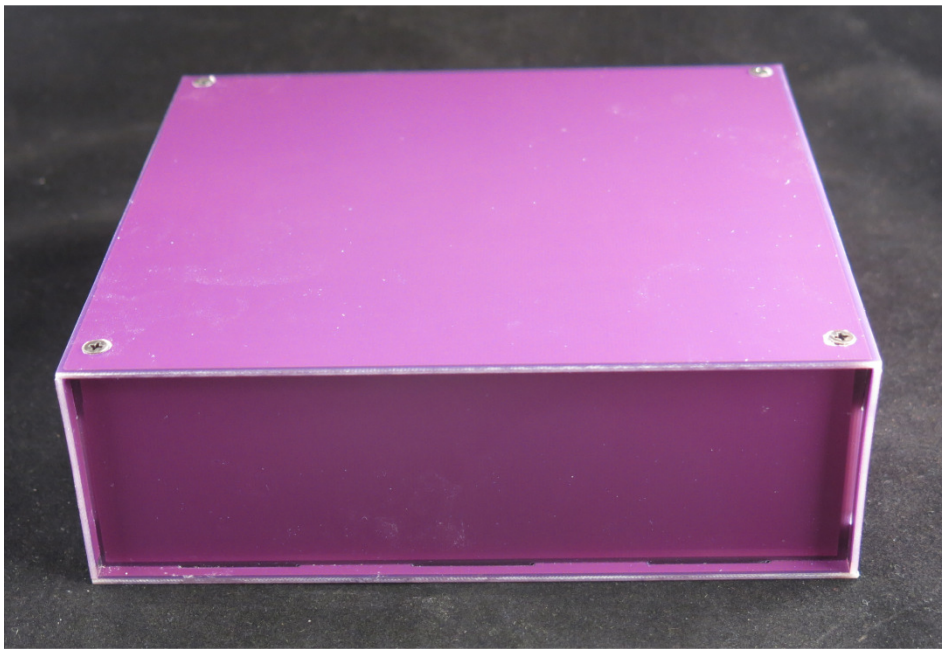
Figure 2.xx - Completed enclosure

Possibly use a “Sharpie” to color the board edges if you feel so inclined.

That’s it. Have fun with your new enclosure.

Appendix A – Enclosure Parts List

Quantity	Designator	Description	(D) DigiKey (M) Mouser Other
4		L-Bracket with threaded 4-40 holes	(D) 36-621-ND
8		Flat-head screw, 4-40,3/16", black	AlbanyCountyFasteners.com 1016-73000000-0036
4		Cylindrical Bumper, 0.5" Dia, Black	(D) SJ5012-0-ND
1		Enclosure PCB	AA0ZZ Supplied

