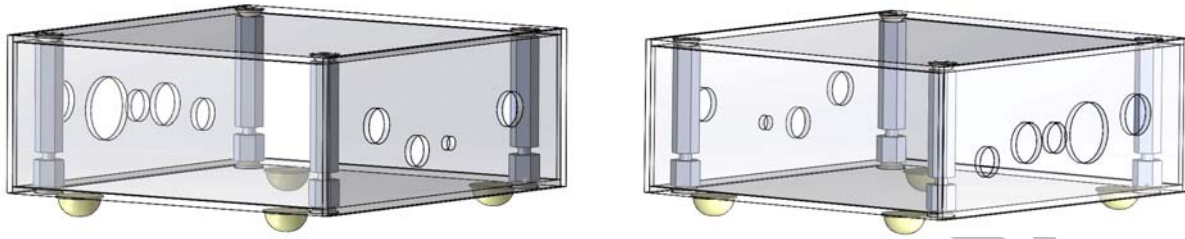




SST Transceiver Build 1.1 PCB Chassis Fabrication



This chassis compliments the CalQRP club version of the Norcal SST transceiver project.

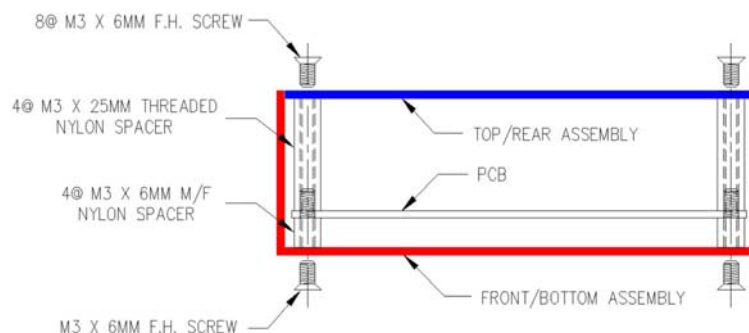
- 6 – rough cut oversize pieces of 1/16" thick, FR4, single side copper blank pcb
- 8 – M3 x 6mm SS flathead screw
- 4 – M3 x 6mm male/female nylon spacer
- 4 – M3 x 25mm threaded nylon spacer
- 4 – self-adhesive rubber feet

This chassis will test, perhaps improve your mechanical fabrication techniques, and enable you to try more complex cases to fit your projects, rather than trying to find a case that will make do. Double sided or single sided FR4 pcb copper clad board is readily available and a well made chassis fabricated in this way, after painting, is virtually indistinguishable from a custom made metal chassis. Before starting, read the detailed pcb chassis construction techniques contained in:

https://qrpbuilder.com/wp-content/uploads/2024/11/pcb_chassis_fab_111224.pdf

The assembly techniques will not be repeated, only the details specific to this project are here.

The chassis consists of a top soldered assembly, bottom soldered assembly secured with M3 hardware, and threaded nylon spacers sandwiching the pcb. The transceiver pcb is pre-assembled with four M3 x 6mm male/female nylon spacers secured to the bottom, and four M3 x 25mm threaded nylon spacers on top of the pcb, slid into the front/bottom sub-assembly, and secured with four M3 x 6 flathead screws from the bottom. The top assembly slides in from the rear and is secured with four more M3 x 6mm flathead screws on top side. Shown below is the side view. It was done this way to accommodate controls and components protruding simultaneously from the front and rear. Obviously, if using single side copper board stock, all copper is to the inside. The chassis is designed with a .060" clearance on each side and .025" front and back clearance with the pcb.



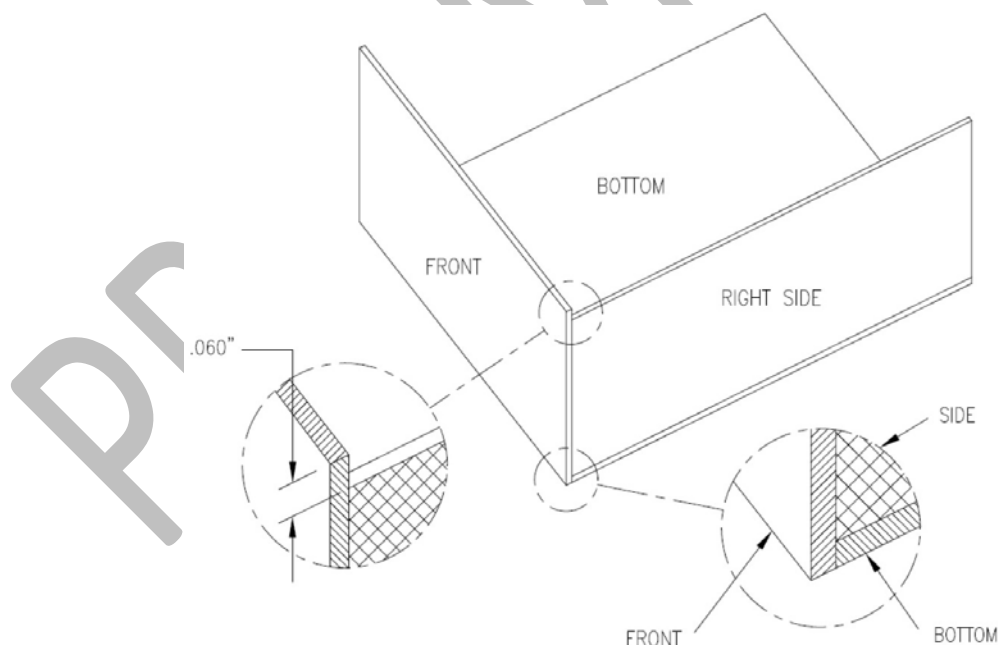
If you haven't started the SST pcb component assembly, be sure to solder the I/O connectors and protruding shafts with particular attention to the squareness alignment. The clearance for the solder pins can make miss-alignment possible. Keeping the soldered components square with the pcb edge will make for the best chassis fit. If you have already finished installing the components, go back, check the component alignment, and correct if necessary.

You will receive six oversize, precut pcb pieces. *All pieces must be sanded square, to the dimension shown, and all edges sanded for a proper fit.* The closer you sand the pieces to the final board dimensions, the better fit you will have in the final chassis. *Using the technique in the construction document, it is not difficult to achieve the less than ± 0.005 " tolerance required on each board piece.* A dial or digital caliper is necessary. *You can put the holes in first, but not advised. If you do, you then must be sure to have the holes in the proper orientation when soldering.* Unsoldering for errors is not easy. When you solder the individual stitches as shown in the technique document, avoid having a stitch near the $\varnothing.125$ mounting the hole positions, where you may have interference with the nylon hardware.

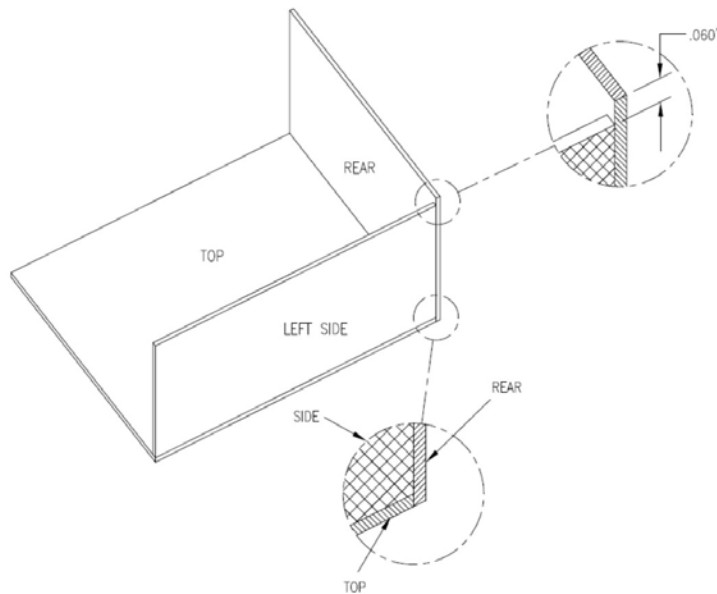
Prepare the six pieces to the finished dimensions below. All corners must be square when finished.

2pcs. 3.587" x 3.397" for the top and bottom
2pcs. 3.587" x 1.408" for the front and rear
2pcs. 3.397" x 1.290" for the two sides

Shown below are how the corner details must be positioned for the top and bottom of the chassis to fit together when soldered. Each side piece should be flush on the outside of the front and bottom pieces.



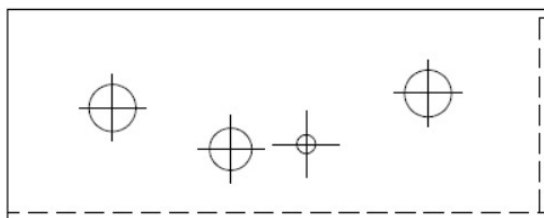
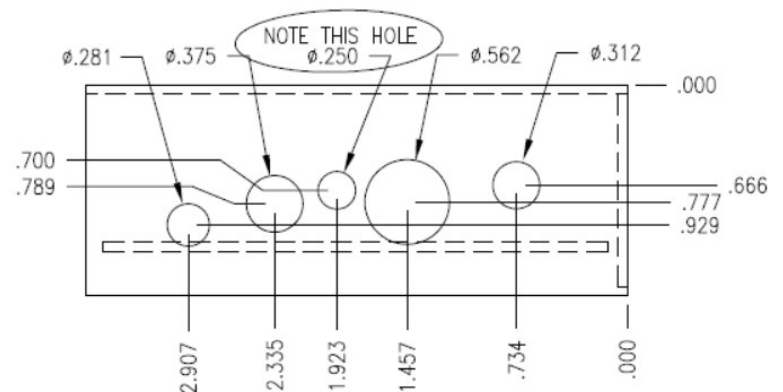
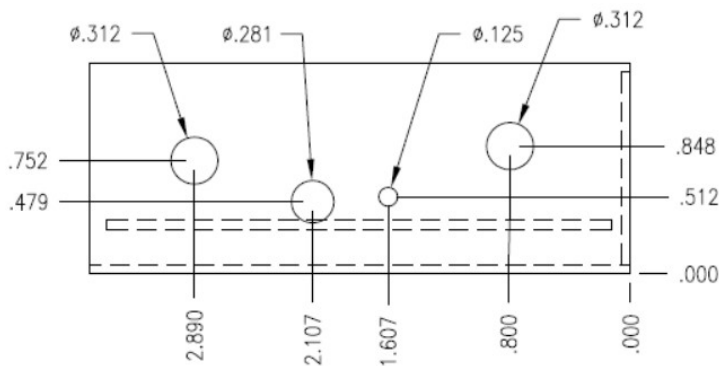
Front, bottom, and right side all flush on the outside.



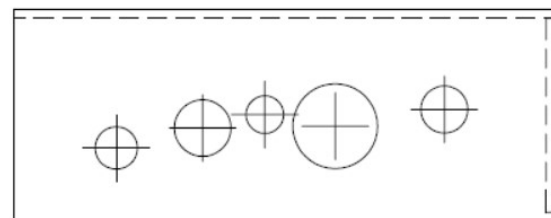
Top, rear, and left side all flush on the outside.

Front and rear panel drilling:

Below are the hole dimensions and locations. For best accuracy use the dimensions shown. For a less accurate alternative, scale this page and print 1:1 to the 3.000" dimension shown, tape to the pcb, center punch, and drill accordingly. Using this method, you may need to adjust the holes with a round file to achieve a good fit. *The $\varnothing.250$ hole is an optional hole for a SPST toggle switch wired to the available normally jumpered pcb pads for a power switch.*



VIEW FROM FRONT

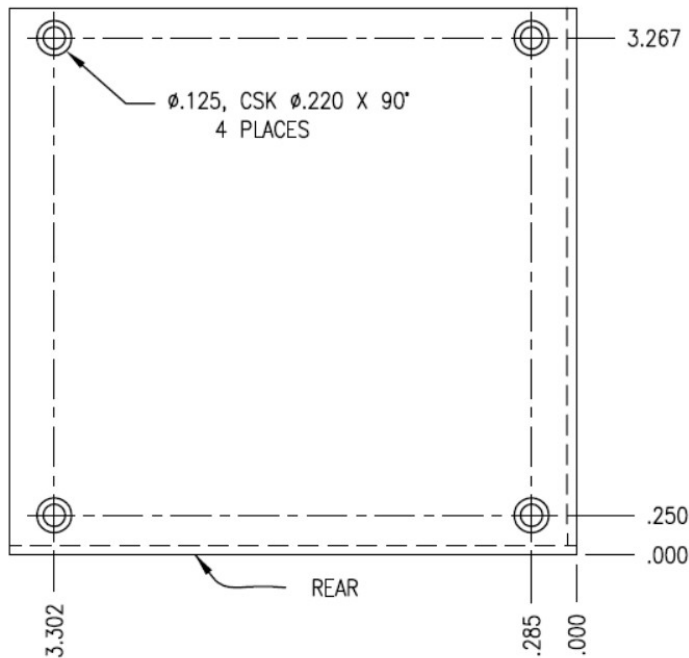


VIEW FROM REAR

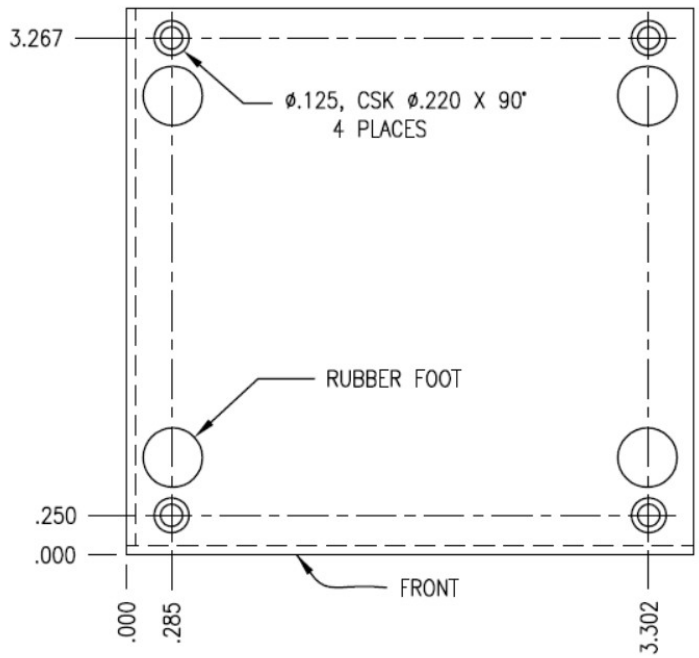
3.000
SCALE AND PRINT THIS EXACTLY 3.000"

Holes for the pcb mounting:

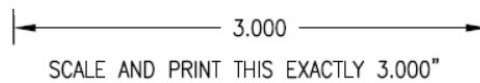
For the 3mm hardware, all holes are drilled $\varnothing.125$ " and countersunk $\varnothing.220 \times 90^\circ$, on the outside. Again, for best results use the dimensions below as opposed to printing 1:1 and center punching. Be sure you understand how the chassis halves fit together before you drill.



OUTSIDE SURFACE OF THE REAR ASSEMBLY
VIEWED FROM THE TOP

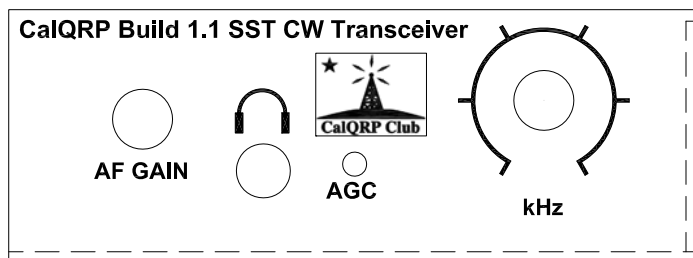
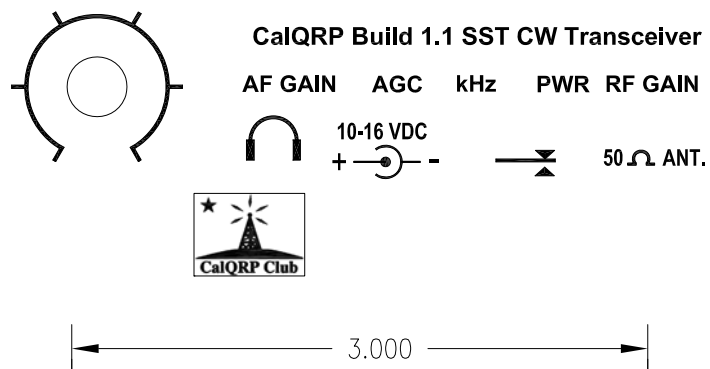


OUTSIDE SURFACE OF THE FRONT ASSEMBLY
VIEWED FROM THE BOTTOM

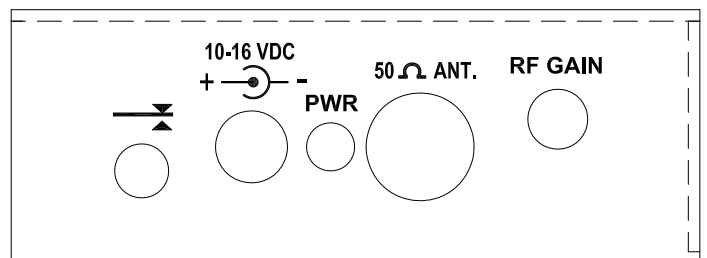


When finished, attach the four rubber feet to the front assembly.

For anyone that wants to apply artwork to a painted chassis, here are the water slide decals to cut up and individually apply. *Be sure to scale your printer to the dimension shown.*



FRONT



REAR