

## Assembling the Pacificon TXCVR PCB Chassis



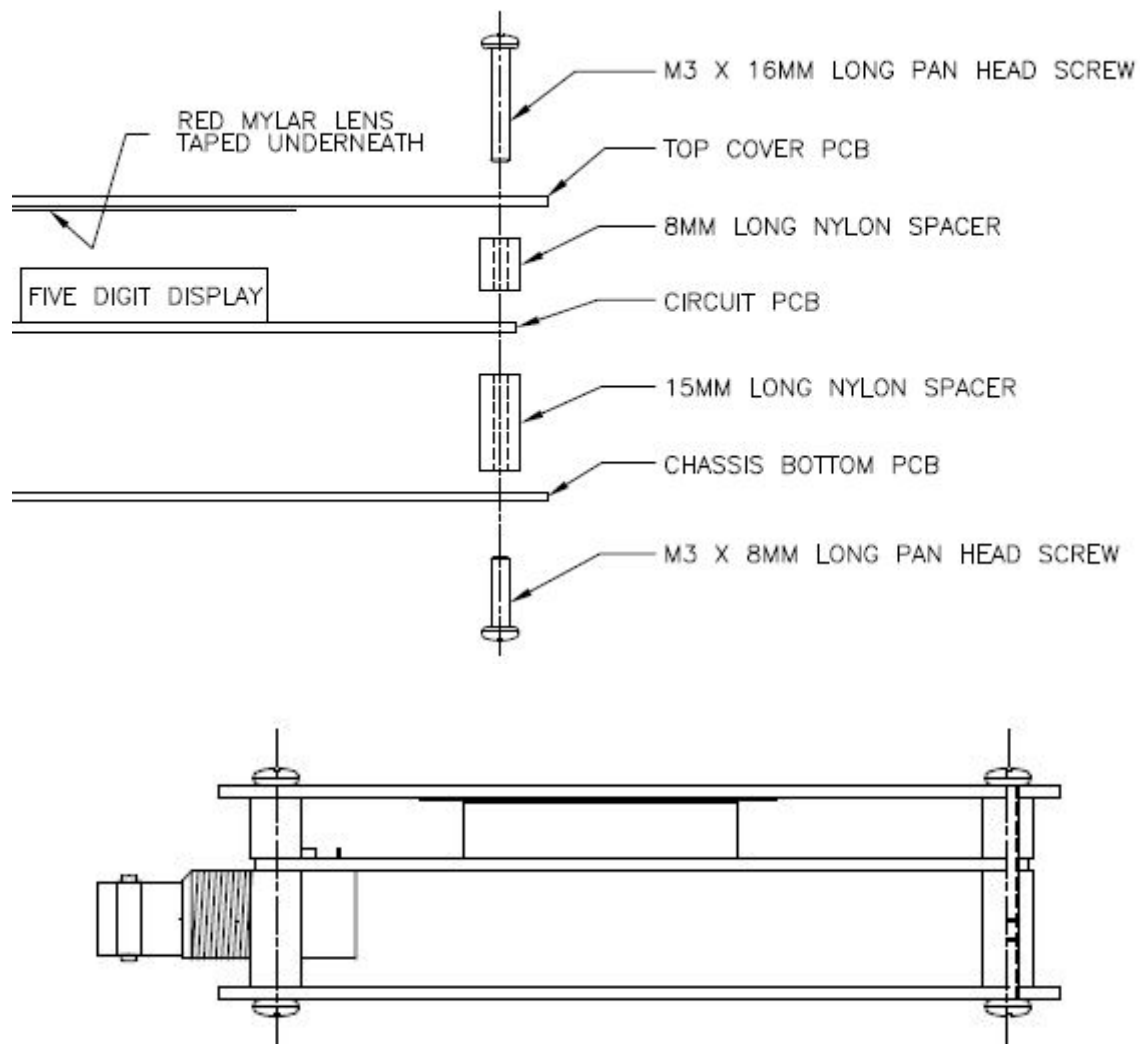
First, familiarize yourself with the parts and check for all the components. If a part is missing, please contact us and we will send one. You must use [qrpguys.parts@gmail.com](mailto:qrpguys.parts@gmail.com) to request a part.

- 1 – Pacificon chassis top
- 1 – Pacificon chassis bottom
- 1 – Pacificon chassis left side
- 1 – Pacificon chassis right side
- 2 – Pacificon chassis front/back
- 4 – Nylon spacer, 8mm long, threaded for M3 screws
- 4 – Nylon spacer, 15mm long, threaded for M3 screws
- 4 – M3 x 16mm long Phillips pan head S.S. screws
- 4 – M3 x 8mm long Phillips pan head S.S. screws
- 4 – Self adhesive rubber feet
- 2 – 4" plastic cable tie



While you are in the testing/debugging phase of the project you can pre-assemble as shown below to keep the pcb out of the component trimmings and provide a stable platform while testing.

- [ ] Secure the piece of red mylar lens to the back side of the top cover covering the cutout for the 5 digit display.
- [ ] Secure the circuit pcb and hardware as shown. Start from the top. Install the knobs, do not attach the rubber feet yet.



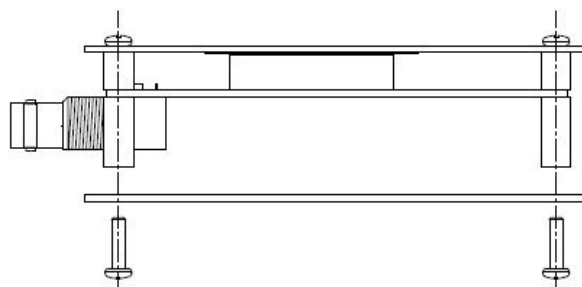
It will look like this for your testing.

After you have successfully performed the operational circuit tests, you can now complete the bottom shell of the chassis.

### Required tools for completing the chassis

- 3 x 5 file card to check for soldered joints squareness.
- Piece of 2" angle iron about 6" long, can be aluminum angle as well, or any square surface.
- A few spring loaded clamps.
- Soldering iron (40 watt should do), and rosin core solder
- Solder Wick®, for repair, if needed
- Any flat surface to work on. A cut piece of mounted Formica would be ideal.

It will be necessary to remove the bottom four M3 x 8mm screws to release the bottom pcb.



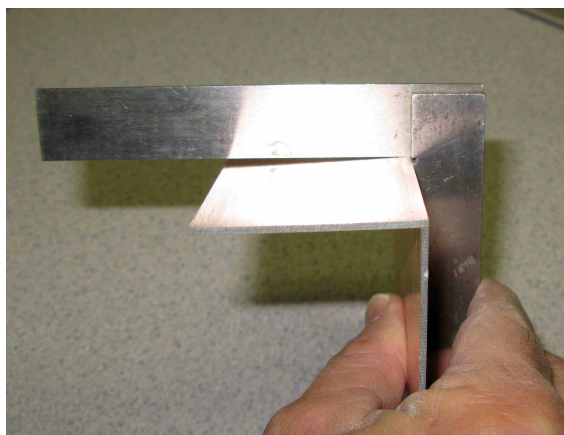
**From here to the finish, the overall results and squareness will depend on positioning the parts on a flat surface. A piece of Formica counter or any smooth flat surface is ideal.**

You will be soldering the remaining pcb pieces forming the bottom shell of the chassis. Both the front and back pieces are identical. The solder points will align when the edges are flush.

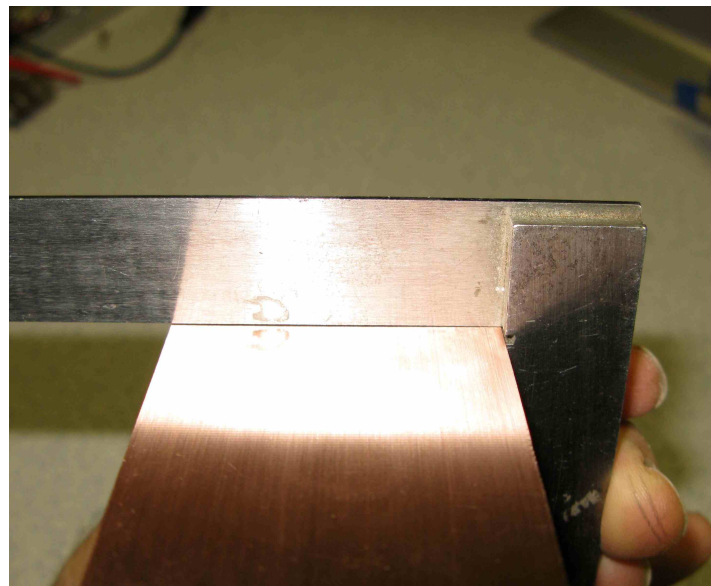
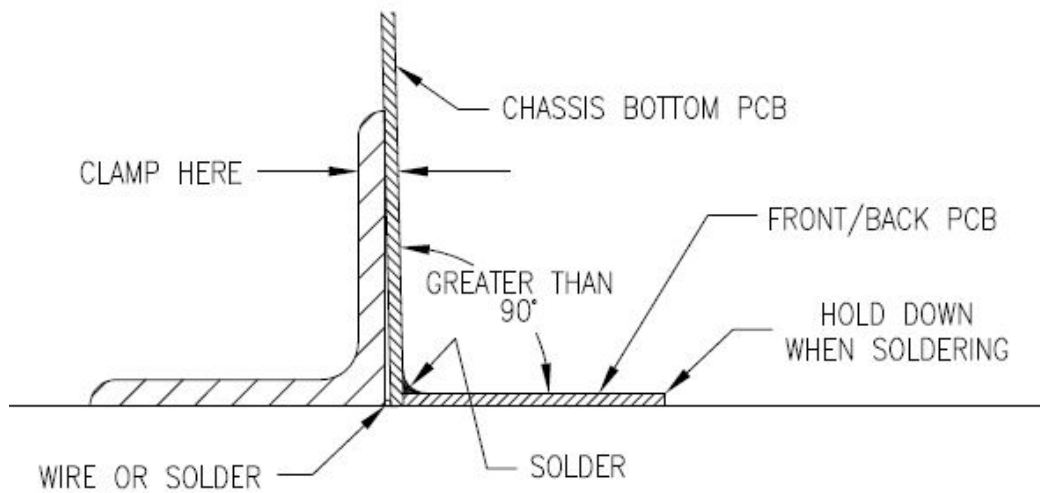
### Soldering pcb chassis pieces together

There are some physical characteristics of solder that must be understood to make this all work like it's supposed to. First, and **most important**, you must understand that the solder contracts when it cools. Knowing this, we must allow for it. When two pieces of the pcb material are clamped 90° apart, and you apply solder at the joint, the joint will close about 1°-2°, no matter how well you clamp it, and you will end up with an 88° corner. That doesn't sound like a lot, but we need it at 90°.

Below is what a clamped 90° angle looks like after it cools. Remove the joined two pieces from the angle iron and check it with the square, you can see how much the cooling solder makes the side draw in, resulting in something less than 90°, and undesirable.



We need to allow for this change. You will do it by pre-positioning the clamped angle to slightly greater than the desired 90°. By clamping the bottom pcb against the angle iron, with an approximate 1/32" diameter piece of solder or wire between the outside of the pcb and angle iron, it tilts back the pcb to greater than the needed 90° angle. When this joint is soldered it will draw back to a 90° corner. See the sketch below.

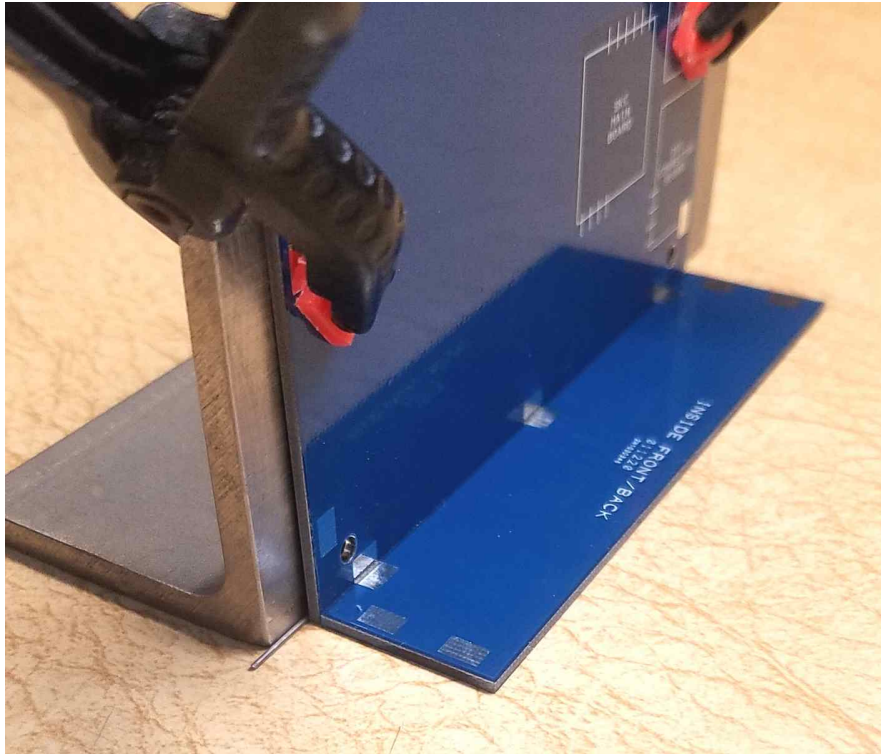


As you can see from the above picture, the results can be dramatically improved by pre-positioning. Take your time, and you can get the front/back pieces very close to 90°.

**At no time should you try to bend the pcb to achieve the 90° angle, without applying heat to the soldered stitch. If you try to force the joint, you will lift the copper off the board, and the union at that point is useless. PCB's are ordered in sets and we will be unable to supply an individual piece.**

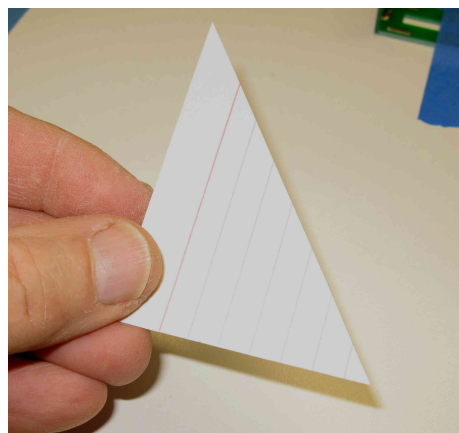
Using this technique, attach one of the front/back pcb's to the bottom pcb. The masked solder points will align when you have both side edges perfectly flush.

- [ ] Working on a flat surface, position the bottom pcb piece against your angle iron with a straightened piece of solder, at the bottom, as described earlier. Attach it to the angle iron with a couple of spring clamps. Place one of the front/back pieces against it with the side edges flush. You will see that the solder points align. While holding down the front/back piece, *lightly* tack the two solder points closest to the holes.



Here the bottom is against angle iron, and the front pcb is flat on the table.

You need this joint to be 90°. If it is not, I will tell you how to fix it, but first you must make a precision square. Take the 3" x 5" file card and cut the corner off as shown below. If you mess, up there are three more corners.



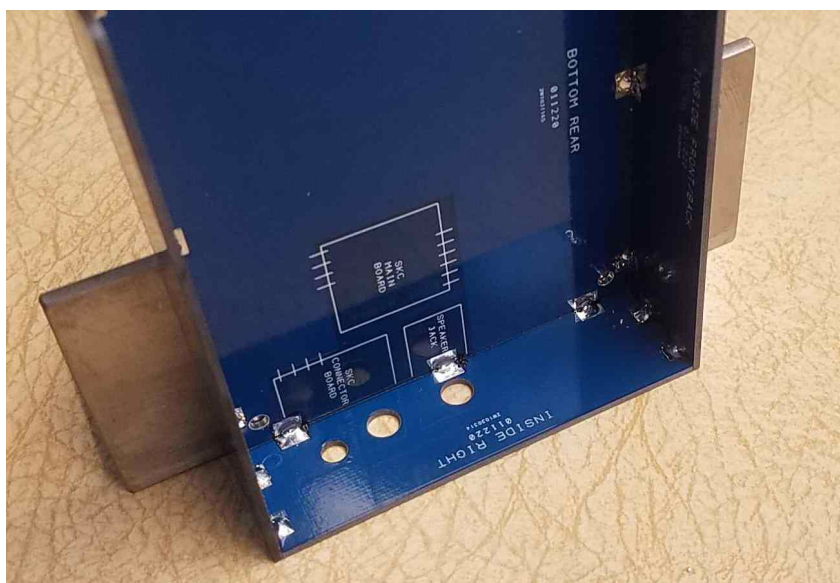


Now, use the newly created precision square to inspect your results.



Check it for squareness right beside where you did the light tack. If it is not square, simply re-heat the pad and reposition until it is square. Change wire diameter if necessary, re-check with your inspection tool, and repeat until both places are square. *You must re-heat the joint every time you want to make an adjustment.* Use the same technique for the center joint. Leave the three joints lightly tacked. Do not go back and finish solder, we'll do that later. Save the gage.

- [ ] Repeat the above for the other front/back pcb.
- [ ] Lay the partial bottom assembly on edge, and position the right side pcb between the front and back pcb, flush with the bottom. If you were careful with the two previous operations, it will slide flush on both sides. Tack the two pads closest to the holes on the bottom and the two closest to what will be the open end of the finished bottom. Check for squareness and adjust if necessary..



- [ ] Turn the partial assembly over and apply the same assembly technique to the left side pcb.

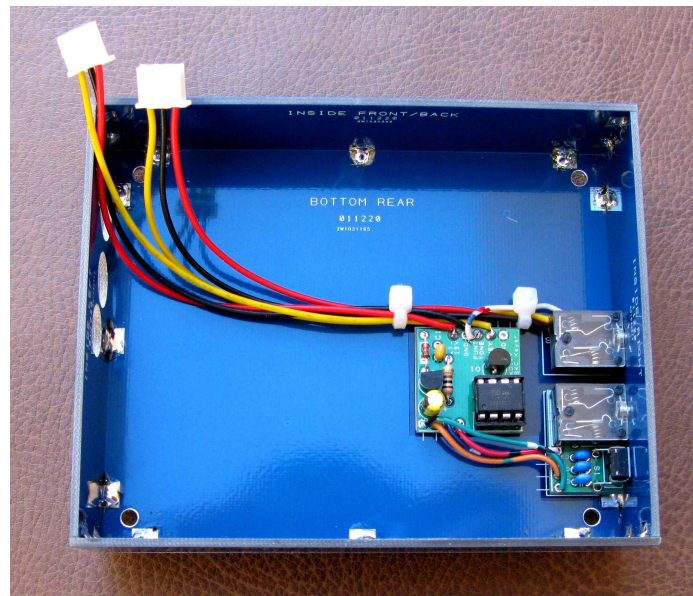
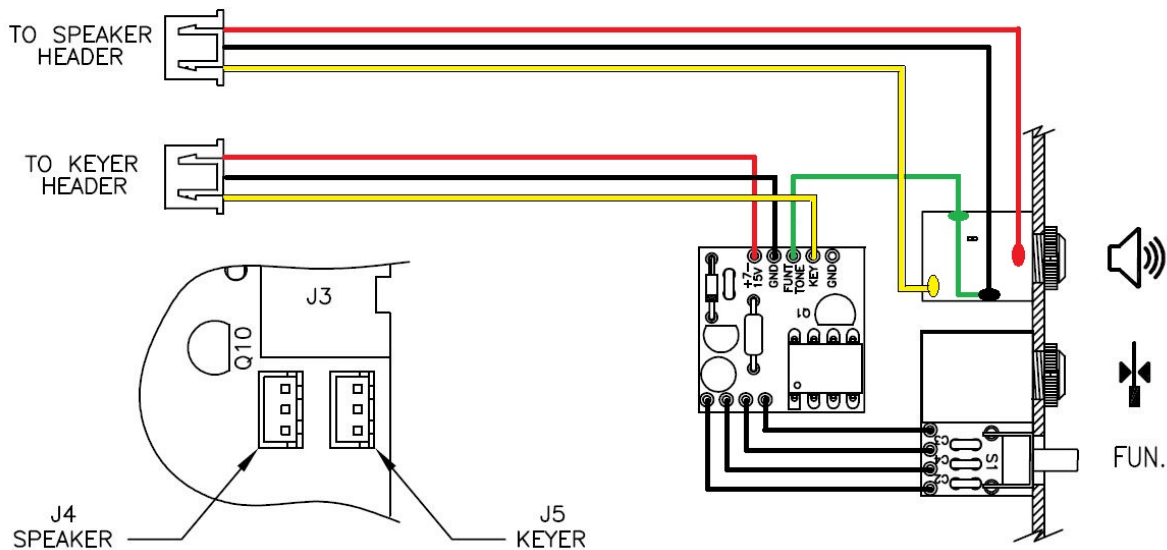


- [ ] Before going back and finish soldering the pads, check that you are satisfied with the form and fit. It is easier to correct any individual points now, than when all are completely soldered.
- [ ] Add to previously tacked and solder the total of 20 connection points.
- [ ] Attach the four self-adhesive feet where indicated by the bottom silkscreen.

This completes the bottom shell of the chassis.

If you are adding the KD1JV SKC Keyer, assemble the keyer to **Option2** in the keyer instructions. Trim the header plug and wire assemblies to 5" from the far end of the connector to the ends of the three wires on each of the two assemblies supplied. Strip and tin about 1/8" of each wire. Wire the interconnecting pigtails as shown below, and use a piece of the trimmed pigtail wire to connect the "Function Tone" pad to the speaker jack as shown in "green". Mount the main SKC board to the bottom of the chassis where indicated by the outline, with a piece of two sided foam tape. Secure the speaker jack with the **pins down**. Secure the speaker jack and keyer jack to the side pcb using the threaded rings. Plug the pigtails into the correct header.

*Wiring note: The speaker jack is shown facing up for connection clarity. Install the jack with the pins down.*



Use the two 4" cable ties to bundle the wires close to the pcb. This reduces the strain on any individual wire.

- [ ] Plug J4 and J5 pigtails into the correct board receptacles, and slide the top pcb assembly into the chassis, securing it with the four 3mm x 10mm long bottom screws.

This completes the assembly



Notes:

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