QRP Builder KX Mini Paddle Adapter Kit

DIFFICULTY LEVEL
EASY   SMT

Adapter shown with optional KX
Single Lever Paddle attached

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. Email qrpbuilder@gmail.com to request a part, or for any questions.

Parts List

1 – QRPBuilder KX Mini Paddle Adapter PCB
1 – J1, 3.5mm stereo pcb jack
1 – J2, 2x3 male pin header
1 – J3, 2x2 male right angle pin header
2 – Shunt for header block (Berg connector)
2 – 4-40 x 1/4"L SS pan head Phillips screw
2 - #4 SS flat washer
2 – 4-40 brass nut
4 – 3/8" self adhesive rubber foot

Even if you have done radio kit assembly before, please read through all the instructions before you start. This kit is a little different, in that the mechanical components are parts of a printed circuit board. The instructions give you the scope of the project and an understanding of the techniques we have employed. You will be assembling the adapter from PCB material, and when assembled, also forms the electrical connections. There are solder pads and registration marks that must be observed so that when you tack and solder, it will make a sturdy mechanical and electrical assembly.

The tools you will need are a soldering iron with a small tip, solder, small Phillips screwdriver, needle nose pliers, and a flat surface to work on.

[   ]   The board is shown below. Break the board into the individual pieces, discarding the center connecting spine. You may need to hold the spine with a needle nose pliers. If there are any protruding bits of pcb protruding below flat surfaces at the break points (shown in red), rub the edge on some fine emery paper to insure those edges are flat.
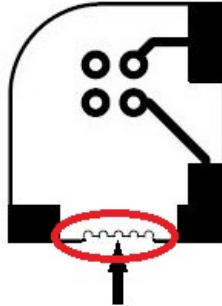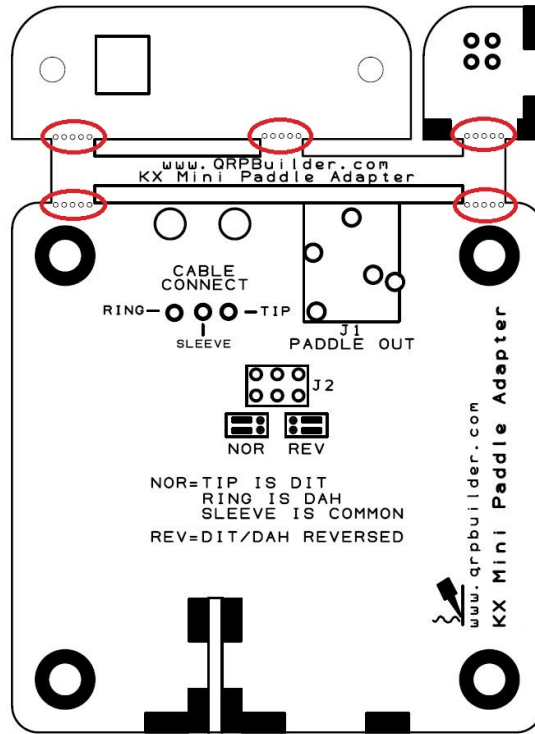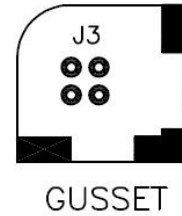

None of these 5 break areas should protrude beyond the edge of any of the boards.
If they do, lightly rub on a piece of emery paper if needed.
A light touch is all that is required. Like shown below.
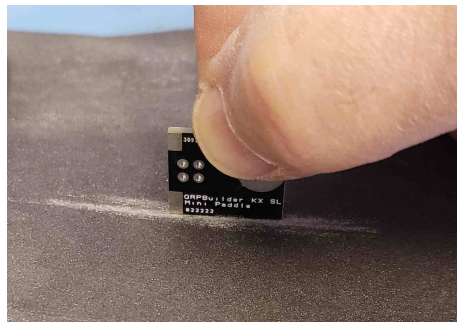
These are the three pieces after the dressing and the names we will be using during the assembly.
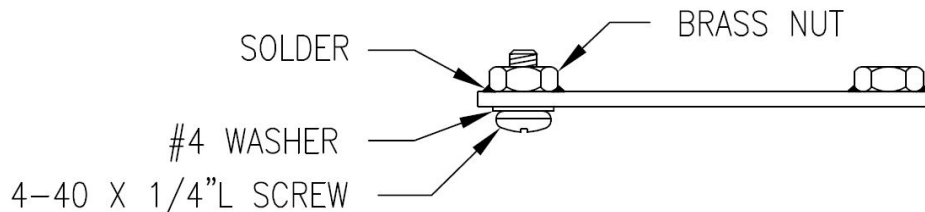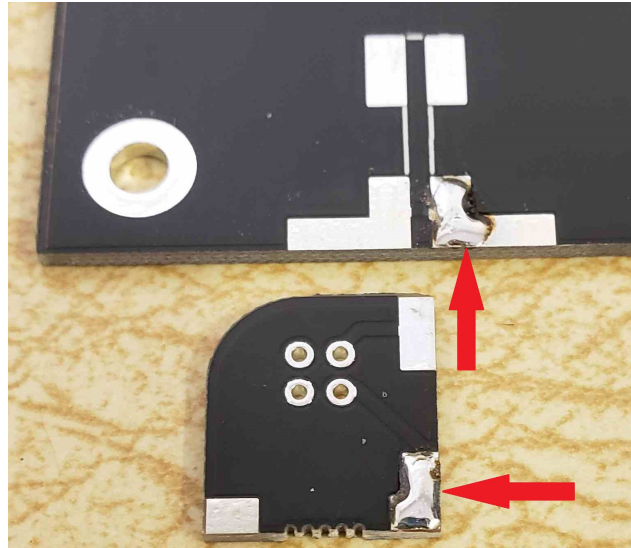

BASE
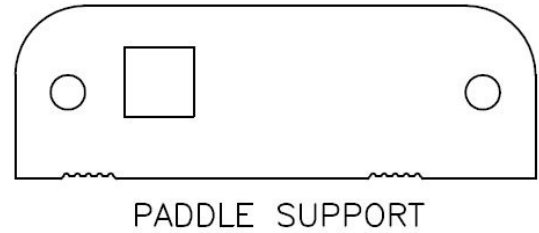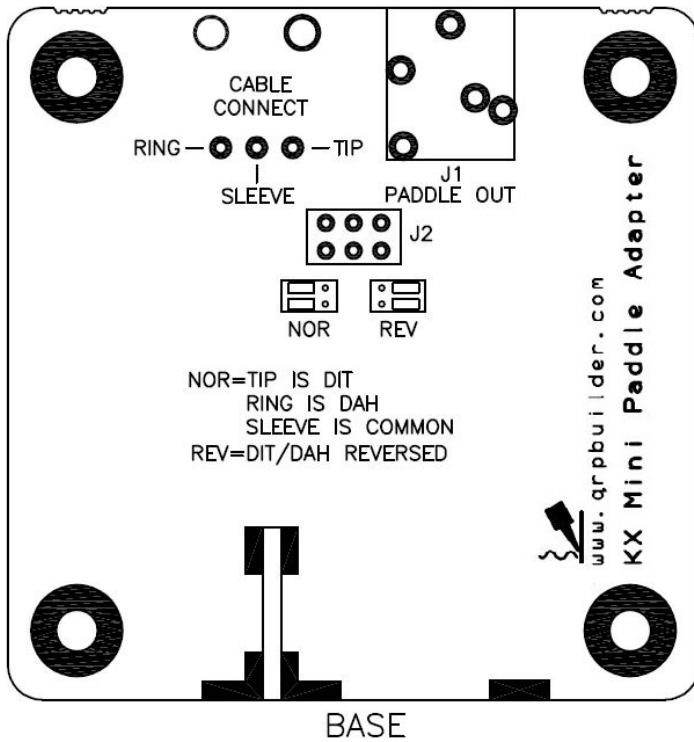
PADDLE SUPPORT

GUSSET

Important:

On all the soldering you do, you will use the same technique. You tack a single tiny point first and, then check to see that it is square and aligned with the registration lines and other notes. It is easy to re-heat the joint and adjust the alignment when there is only a single point. Then you tack the other pads, before you do the finish soldering. If you try to adjust without heating the joint, you will lift the pad off the board and ruin it.

[ ]   Solder the two 4-40 brass nuts to the paddle support pcb. Use the 4-40 stainless steel screw to secure the two brass nuts on the side of the paddle support pcb with the pads, and solder the brass nuts to the PCB. It is helpful to rub the face of the nut on some Scotchbrite or emery paper to clean up the surface contacting the PCB.

[ ]   Next in the assembly, will be soldering the Gusset assembly to the base. Place some solder on the two pads shown below.

[ ]   Using the illustration below, position the Gusset 90º to the Base, 90º to the front edge, flush to the front edge, and centered on the silkscreened lines. Re-heat the solder, let cool and check for both 90º dims., and flush with the front edge. You can use the corner of a 3x5 file card as a gage. It is easy to reposition, if there is any error, re-heat and reposition. *If you try to adjust without heating t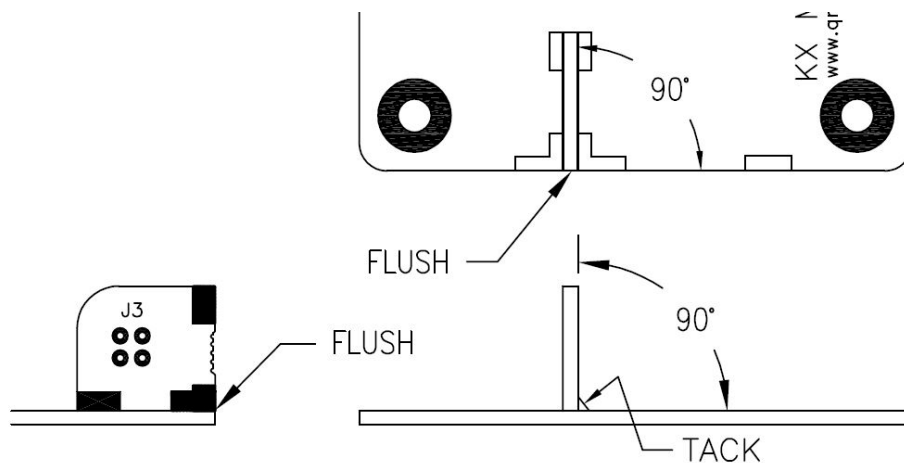he joint, you will lift the pad off the board and ruin it.* When both 90º dimensions are met and the gusset is flush with the front of the board, tack the opposite side. Recheck. If all is well tack all the remaining pads, then go back and finish soldering all the pads.

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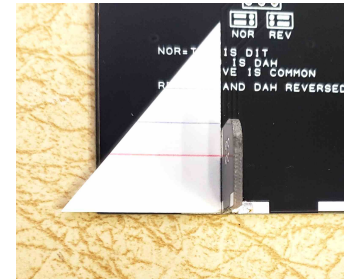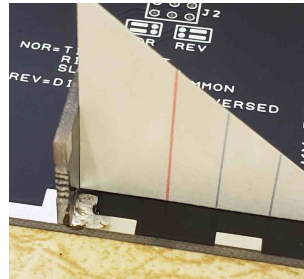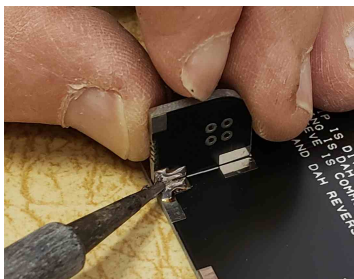
[ ]   Check that the pins on the female header are bent 90º, and correct if necessary. Install the 2x2 male right angle header to the Gusset on the side with the silkscreened J3. Solder only one pin and *check for the plastic being flush and pins parallel to the surface of the board,* as shown in the graphic below. This is necessary so it aligns with the completed paddle assembly. Solder the rest of the pins.
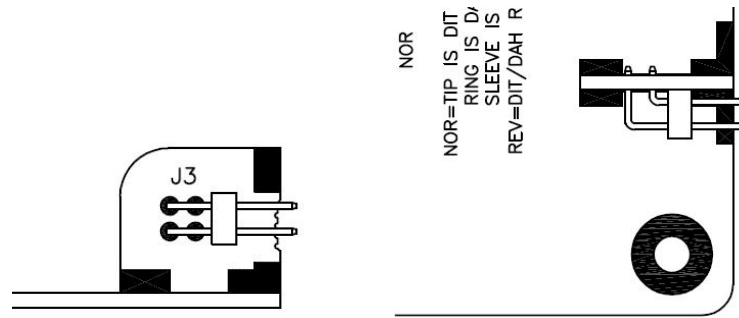
[ ]   Position the Paddle Support board on the front of the Base, flush with the bottom, and between the two registration marks on the base. The pins should be centered inside the cutout for the connector. You can now tack on each side, and at the top where the Gusset touches the Paddle Support board. Check your alignment of all points and you can carefully plug in the KX paddle to check for connector engagement and securing screw alignment. If all is ok, remove the paddle and finish soldering all the pads. Any slight pin misalignment can be corrected by gently bending the 2x2 pins.

[ ]   Install the 2x3 header pin header on the top of the Base and plug in the shunts (Berg connectors) to keep from losing them.

[ ]   Mount the 3.5mm stereo pcb jack to the top of the board. If you are using a cable to connect to the board, the connections are marked on the front side of the board. There are two holes you can route a tyrap to secure your cable

[ ]   Attach the four self adhesive rubber bumpers to the backside of the board where indicated by the silkscreen. *There are four #6 screw holes provided if you want to mount the adapter on a block of wood or metal for more weight.*

[ ]   There are two 4-40 x .25"L SS screws and washers included to attach your KX series paddles to the adapter.

This completes the assembly. Now the either the Single Lever or Iambic KX series paddles are not dedicated to a particular transceiver and you can easily use elsewhere.

With the Berg connectors in the "NOR" position, the tip on the 3.5mm plug you use will be the "Dit", ring will be "Dah", and the sleeve "Common". REV position will reverse the tip and ring. You also have the option of wiring up your own custom cable at the rear of the board.

Notes:

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