

What you can with the Hendricks's QRP Kits BitX20 20M SSB Board Kit



Doug Hendricks asked me to fabricate a BitX20 so he would have something to show at the hamfests, for his board kit. He wanted me to include the KD1JV digital dial, and a cooling fan for the finals. This is my attempt using simple hand tools to show what an average ham can do with a little extra effort. My philosophy has always been, "If you are so careful soldering and spending the time to get everything working right, why not spend a little extra time on the packaging". We all have enough projects labeled with Dymo embossed labels.

I started out with TenTech's stock unpainted aluminum TP-43 case, which is a little less than \$8 +shipping. The pictures below show a plastic top for "show", that I added, but it comes with an aluminum top. At the end I'll show my panel layouts, but many other combinations are possible. If you print out the layouts, make sure Adobe is set to 1:1 ratio. The front layout should measure exactly 6.00" wide.

I had one of the 5:1 reduction knobs that were very plentiful a few years back, but faded away. Mouser has them now in stock as #45KN100. The 5:1 reduction really isn't necessary, with the fine tuning pot, but I still chose to include it.

If you choose to use the vernier knob you will need to bend up a piece of sheet metal to space the polyvaricon away from the back of the vernier dial.



I also decided to use the old standard 4 pin microphone chassis mount. A small 12vdc fan was used was from an old hard drive enclosure, and only draws 50ma, but moves more than enough air. Don't forget to provide some inlet holes for the air inlet, or you'll just circulate hot air. Not shown, but necessary is a simple U shaped shield around the digital readout to reduce any interference caused by the display, suggested by Dan Tayloe.

I always have problems getting paint to stick to my aluminum projects, no matter how much I clean and prime, until I picked up the cheapest sandblasting nozzle I could find. \$10 at a surplus store. Since then, all my problems went away with a minimum of effort. Just lightly sandblast, and spray with any color.

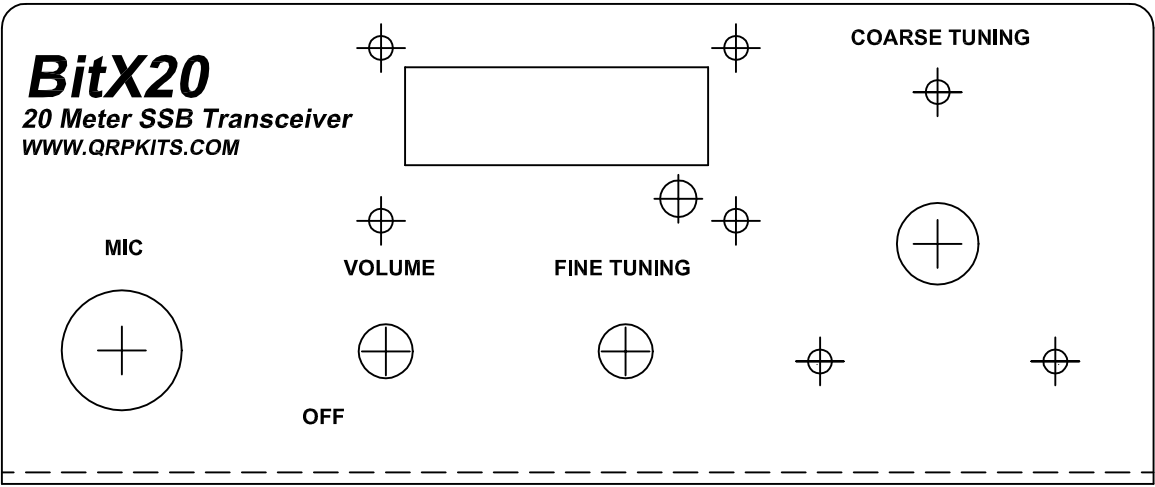
As far as labeling goes, my past projects have spanned, magic markers, Dymo labels, engraved plastic labels, Datak transfers, labels printed and sealed with clear packaging tape. My latest kick, that looks like a professional silk screened chassis, is the waterslide decal paper technique. I wish I could take credit for it, but alas...

It involves using "Waterslide" decal paper that you run thru your laser or inkjet printer. It works just like the decals from the old model airplane kit days. You use any graphics, or document program you are comfortable with, and just print it on the glossy side of the decal paper for either inkjet or laser printer (there is paper for specifically for inkjet or lasers). The paper I bought was found on eBay for about \$1 a sheet. Just search for "waterslide decal paper". Local office supply houses hadn't a clue what I was talking about.

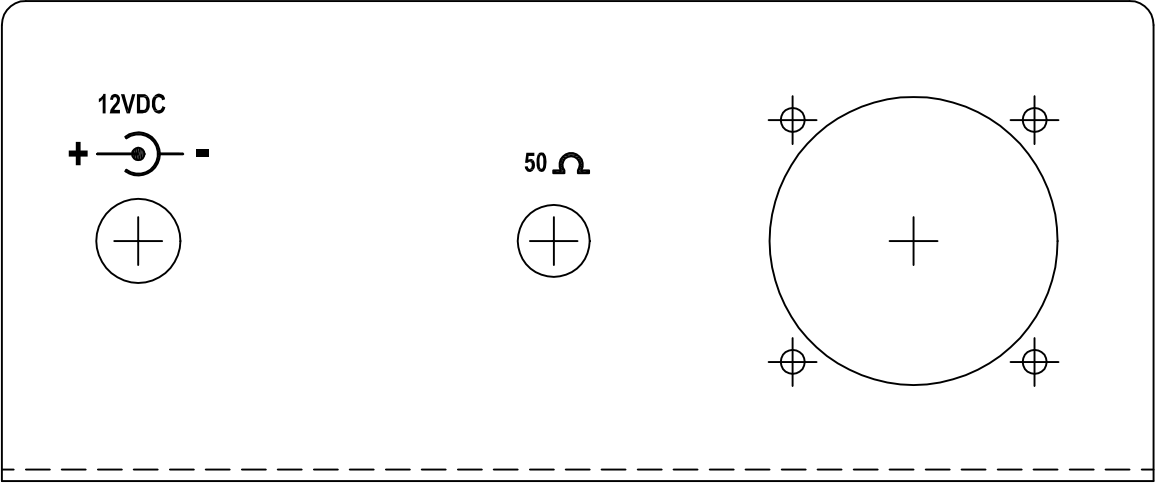
Inkjet labels must be sealed with a clear spray before they are transferred, because inkjet ink is water soluble. Take your time and get all the text straight. It's a good idea to print up extras, so you can practice a bit. After the decals were dried I sprayed a thin coat of clear Krylon to seal and protect the lettering. Then mount all your components.



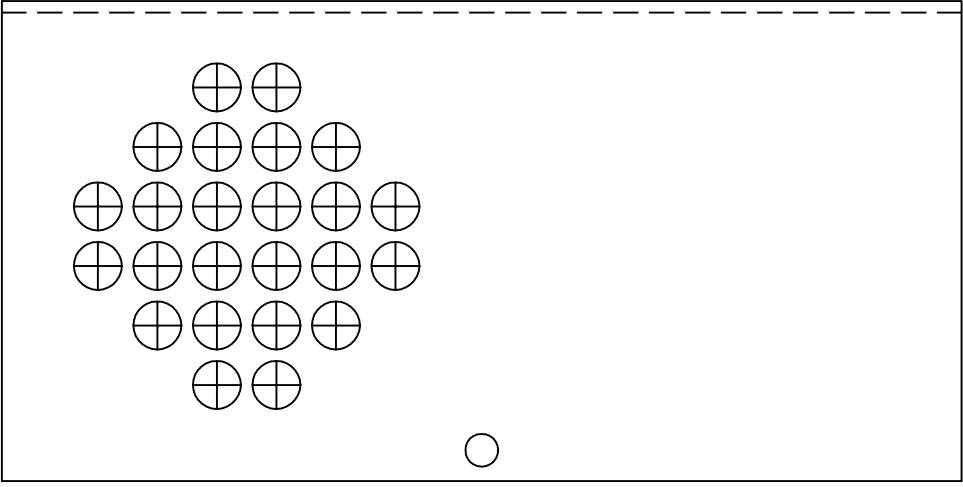
Kit shown assembled with the KD1JV Digital Dial
Modified TenTech TP-43 stock chassis
Mouser # 45KN100 Vernier Dial
Std. 4 pin microphone chassis socket
12vdc cooling fan



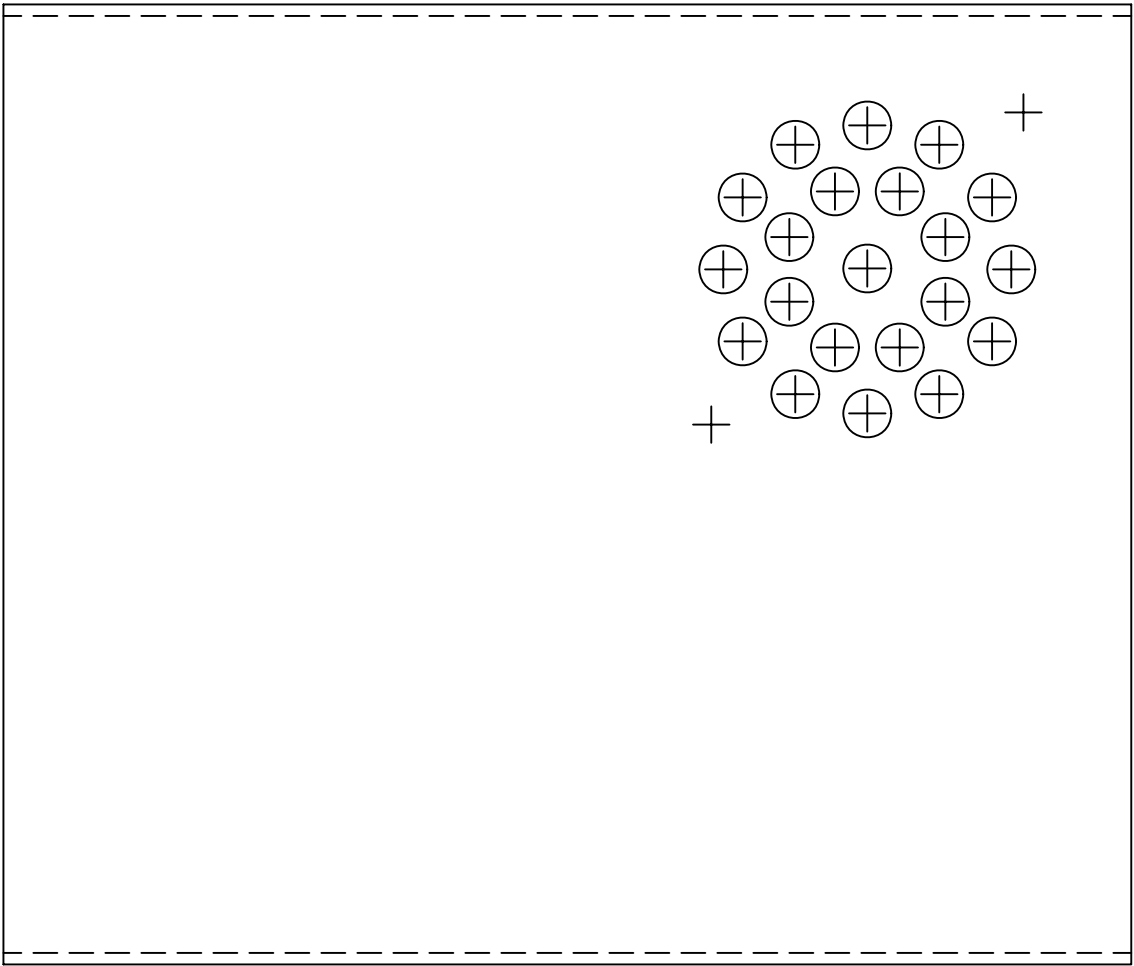
FRONT SIDE



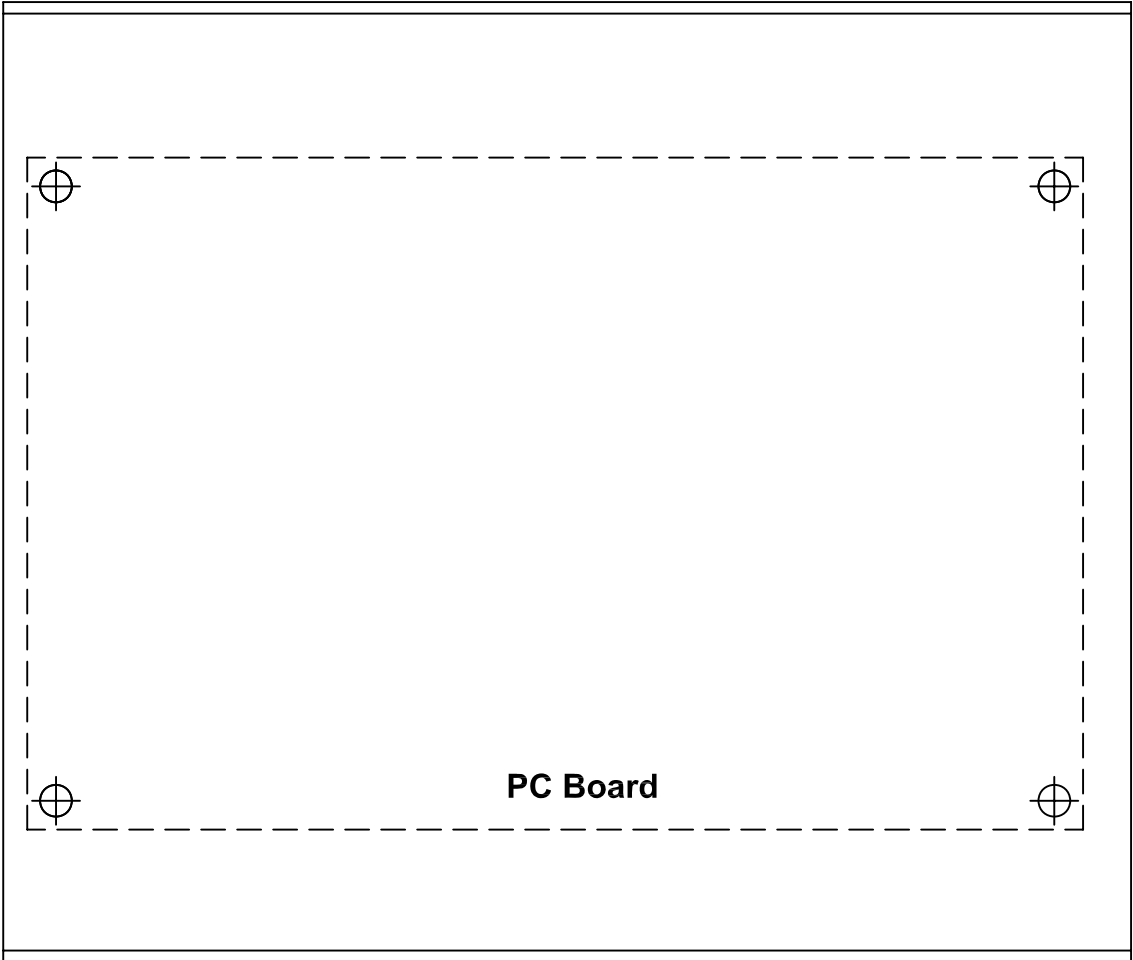
REAR



RIGHT SIDE



FRONT - TOP



FRONT - BOTTOM

BitX20

20 Meter SSB Transceiver
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BitX20

20 Meter SSB Transceiver
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COARSE TUNING

FINE TUNING

VOLUME OFF

50 Ω MIC

12VDC



COARSE TUNING

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Here are two complete decal sets for your project. They are applied the same as old model airplane decals. Cut around each group of text you wish to apply, leave a border. It doesn't have to be perfect, as the background film is clear and transparent. Place decal in lukewarm water for 30 seconds. Handle carefully to avoid tearing. You can feel when the image starts to slide off the backing paper. Gently slide the decal into place on location. Use a damp cloth to wipe excess water. Remove any bubbles by wiping gently to the sides. Allow to set 3 hours or speed drying by placing near a fan. After drying spray Krylon clear spray.