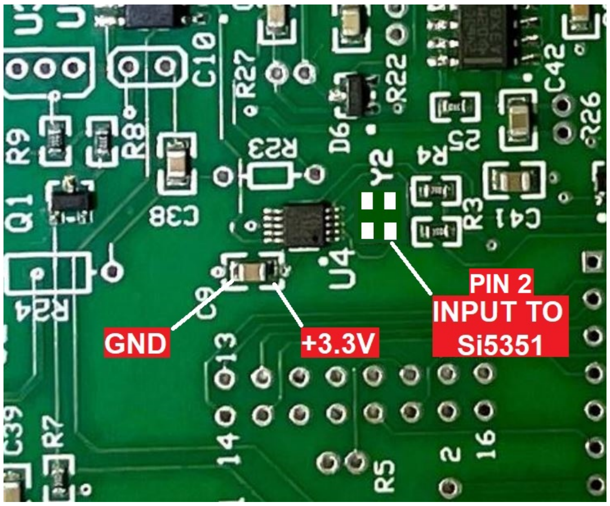
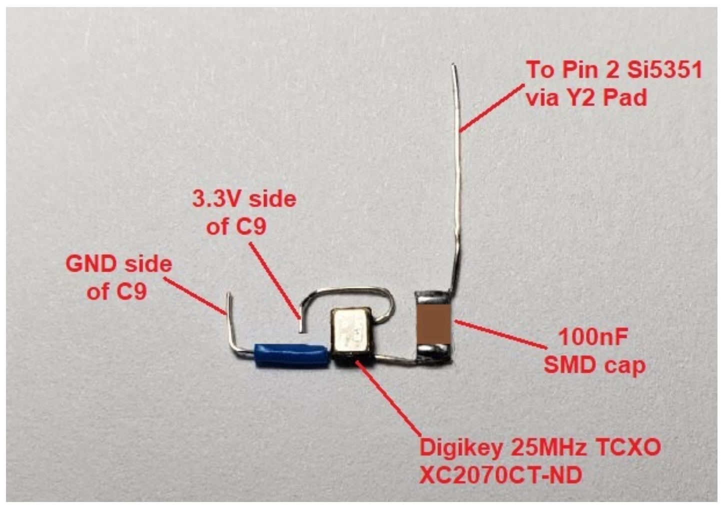
My modifications for the Dave Benson (K1SWL) “Old Friend” transceiver

TCXO substitution for the Si5351 clock crystal Y2

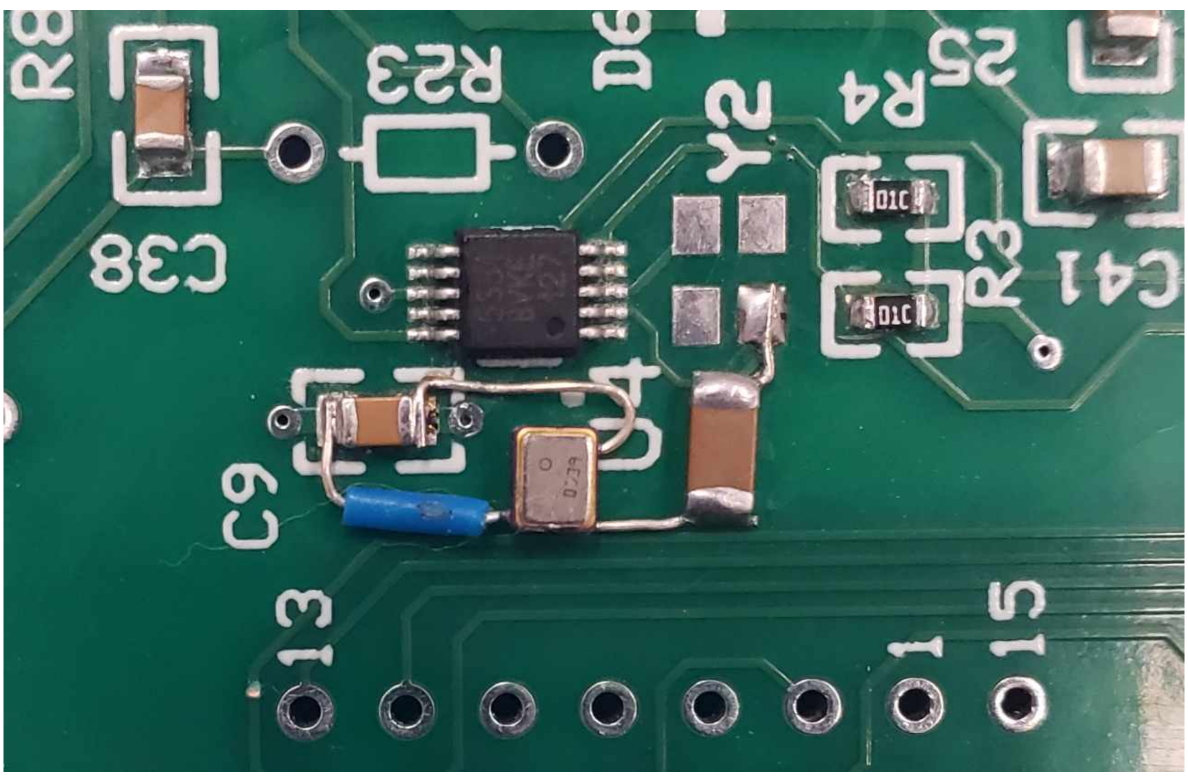
I used a 25.000 MHz, 2.5 PPM, Digikey TCXO, XC2070CT-ND, ~$3, to replace the 25MHz Y2 crystal to eliminate any drift.

I carefully unsoldered the Y2 crystal near the Si5351, and prepared the TCXO as shown below using an SMD 100nF cap and 30awg wire wrap wire for the connections.





The lower right pad of the removed Y2, shown in the picture above, is the input to pin 2 of the Si5351 that I used. As shown below, the TCXO mod. can be secured after soldering with a dot of hot melt if desired.

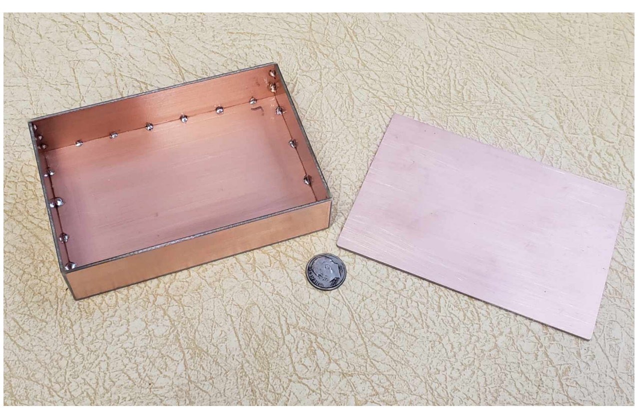


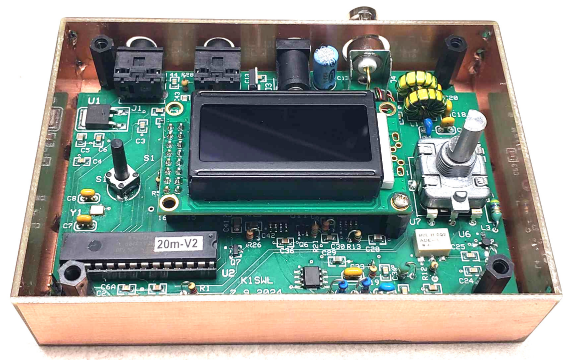
Volume control

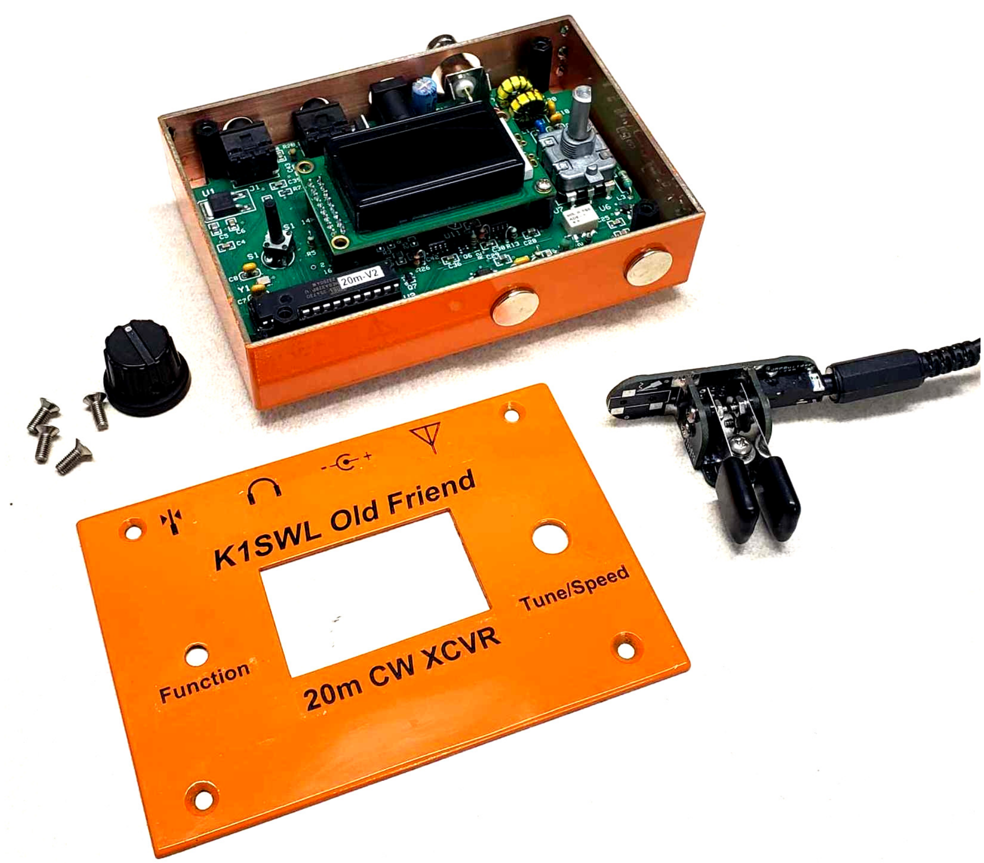
As per the George (N2APB) post, I added the volume control. Both my earbuds and Headphones were very loud on strong signals, and this is a welcome modification well worth the effort to anyone experiencing the same issues. I used a 9mm vertical Tayda 50K trimmer pot (A-1869) with the shaft extended through the case cover, and I secured the pot with some small dabs of epoxy on the inside of the cover.

PCB case 4.50" x 3.12" x 1.0"

All my pcb chassis all are fabricated from .06" thk. FR4 copper clad pc board stock with simple tools. The best pcb stock prices I have found, other than hamfests when you can find it, is on Amazon. I purchased 15pcs. 7" x 4.75", for less than $20 delivered. This is enough for many projects. My pcb chassis construction techniques are on a separate .pdf on the qrpbuilder.com projects page. This chassis I used M3 threaded nylon standoffs and screws, as they have become inexpensive and readily available on eBay in assortments for all my small projects, such as these. The paddle shown in the finished picture is one of the magnetically attached Iambic paddles available from the qrpbuilder.com site.

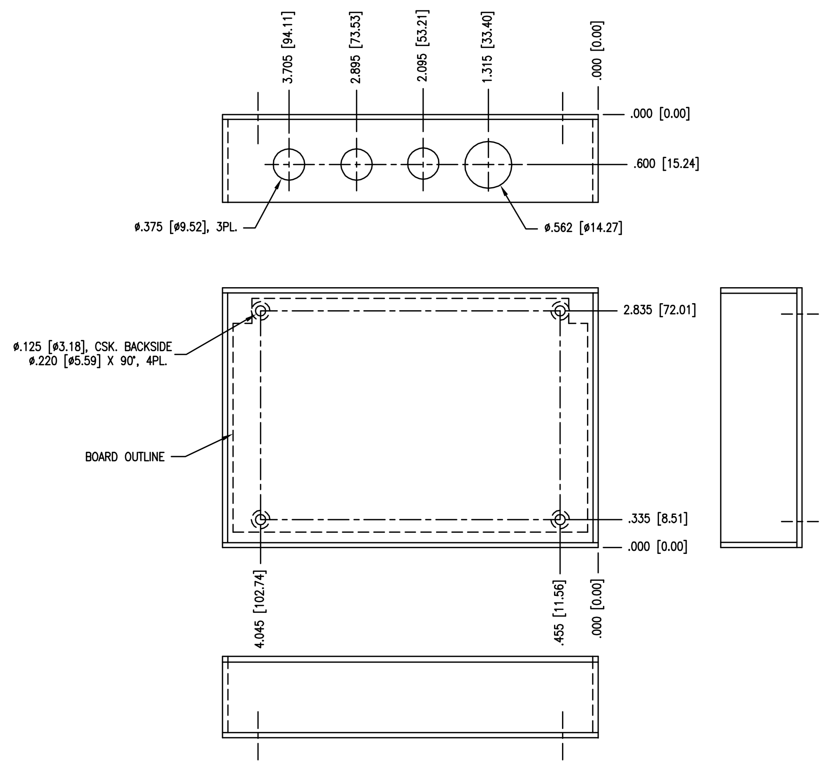




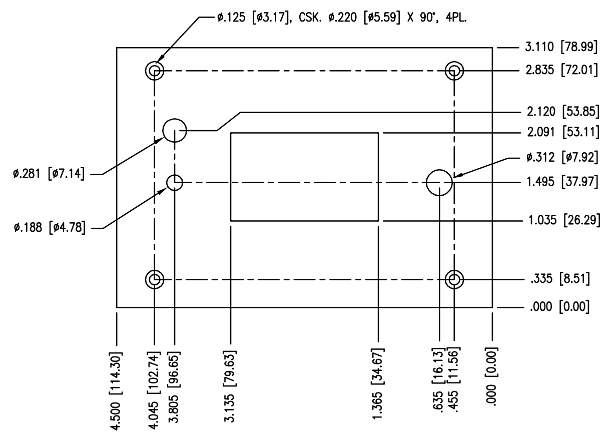

K1SWL Old Friend
Tune/Speed
Function
20m CW XCVR


K1SWL Old Friend
14060.00
Tune/Speed
Function
20m CW XCVR

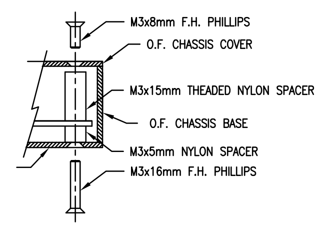
REVISIONS		
REV	DESCRIPTION	DATE
A	ADDED HOLE FOR VOLUME CONTROL	11/18/24



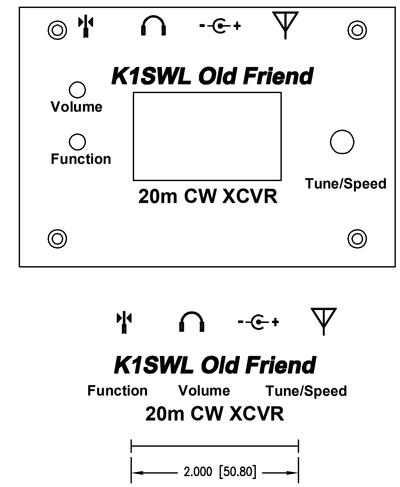
CHASSIS BASE



CHASSIS COVER



CORNER HARDWARE DETAIL



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DECAL ARTWORK

MATERIAL – 1/16" THK. FR4 COPPER CLAD PCB

2EA. – 4.500 X 3.110
2EA. – 4.500 X .913
2EA. – 2.990 X .913

FOR PCB CHASSIS FABRICATION TECHNIQUES, SEE PROJECTS PAGE ON QRPBUILDER.COM

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± 1/32 DECIMALS .XX ± .020 .XXX ± .010 ANGLES ± 1°
SURFACE FINISH √
BREAK EDGES .005–.020 RADIUS OR CHAMFER

QRPBUILDER.COM					
TITLE	PCB CHASSIS FOR OLD FRIEND				
DRAWN	WA4MNT	SCALE	FULL	DATE	111824
SHEET	OF	REF.		DWG.#	OF 01