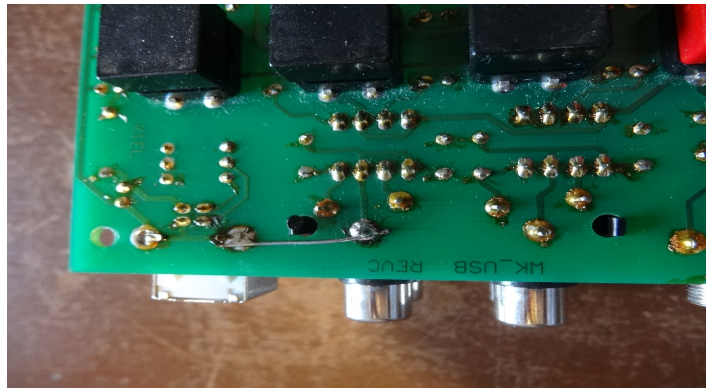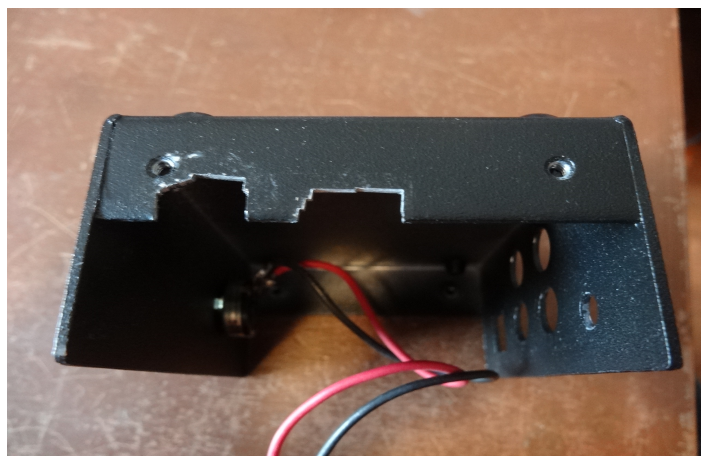Due to latency. it is impossible to send CW by hand on the WinKeyer while listening to sidetone from a remote transmitter. This mod solves that problem by routing local WinKeyer sidetone to the headphones during transmit and remote audio during receive.

To accomplish this, a 5VDC SPDT relay is installed in the WinKeyer and is controlled by the PTT line. I used hot glue to mount the relay on the top of the WK board between the PIC chip and one of the opto-isolator chips. One side of the coil is wired to the PTT1 line and the other to the filtered side of L1 for +5VDC. Since the PTT1 line is floating (opto-isolator), it is necessary to jumper the return side of the PTT1 line to system ground. The photo shows the position of the jumper on the back of the board.
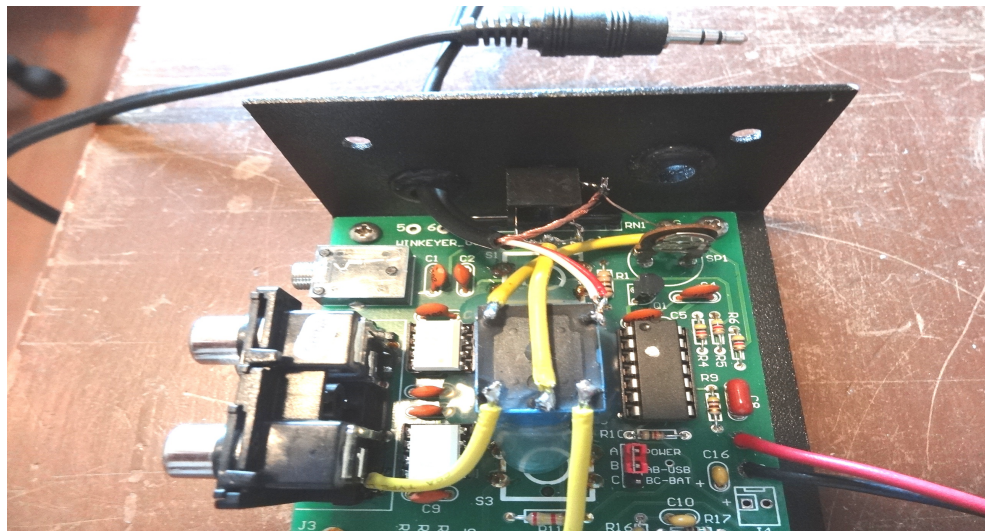

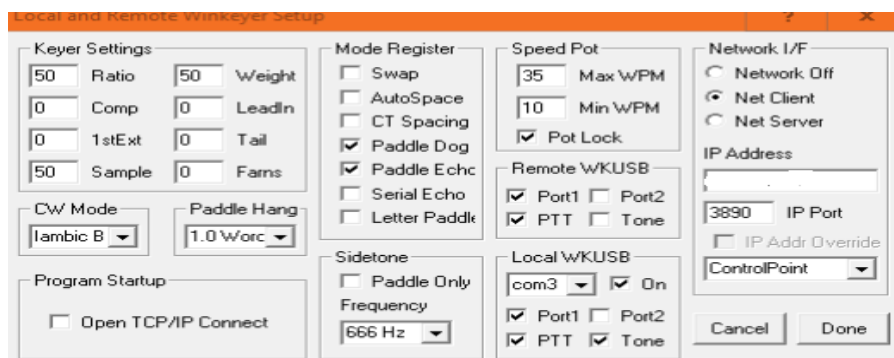To prepare the WinKeyer cabinet:
Mount a 1/8" stereo jack on the left side of the box. The jack should be centered L/R and as close to the PC board as possible. Carefully measure the location to drill a hole for access to the trimpot with a pocket screwdriver. Err toward the PC board to help with clam shell fit later and enlarge the hole enough to fit a small grommet. A third hole is drilled to fit a grommet for entry of the sound card stereo cable, also as close to the PC board as possible. It will be necessary to nibble some aluminum from the bottom part of the clamshell for it to fit. Nibble aluminum where the bottom runs into the 1/8" jack. Nibble aluminum where the bottom runs into the grommet opposite the trimpot. The grommet for the soundcard cable should be in the clear. These two locations are hidden when the cabinet is reassembled.

To extract sidetone from the WK, I removed the piezo speaker and installed a 100 ohm trimpot in it's place. The arm of the trimpot is connected to the NO side of the SPDT relay. Access to the trimpot is through the grommet mounted on the side of the WK. The other audio source being from the computer soundcard, I hardwired a stereo audio cable through the grommet on the same side of the WK and wired both channels to the NC contact on the relay. I put a bead of hot glue on the back side of the grommet to act as a strain relief. For the headphones (or earbuds), the COMM contact of the relay is connected to the 1/8" phone jack mounted on the same side with the two channels tied together.

I use WKremote v1.5 for my server and client WinKeyers. All it takes to make audio work with my modification are three mouse clicks. In the Local WKUSB box (bottom center), check "PTT", "Port1", and "Tone". The delay defaults to "1.0Word" which is the shortest available and acceptable to me. If you want a longer hang time, select it from "Paddle Hang" toward the left of the display. You can also select the pitch of the sidetone from the "Frequency" window, bottom center.

Use whatever relay you have. In my case, I ordered a 4-channel relay module from ICStation some time ago, but found it useless due to a counterfeit Prolific USB to Serial adapter. The price was only about $6 and gave me four of the type relay used for this mod. My source: http://www.icstation.com/icstation-micro-channel-relay-module-control-relay-module-icse012a-p-4012.html