W9YA's Constructive Critique of the K5BCQ Mega 2560 Mini K3NG Keyer P.C.B.

26-Jan-2022

I ***love*** this P.C.B. It's a quality board that sturdy enough to hold up to re-work. The layout is well suited to allowing the end user to build up the keyer with his or her's desired sub-set of useful functions including a full-build out with the user's choice of various LCD display sizes.

Further bottom mounting ALMOST all of the jumper-headers which allows them to be easily accessed even with the largest of displays mounted to the P.C.B. ...WOW ! The Board is even silk-screened with markings on the bottom for this. (Alas bottom mounting the jumper-headers and the audio-input pot does not seem to be mentioned in the current manual, v-0.7 .)

My critique below is a rather small number of adds, moves, and changes; which indicates that this is a well though out board, that only costs the end user $5 delivered. EXCELLENT.

Here's what I would add: (The first item is a SHOULD-DO. The second item is a "cherry on top", not needed but an idea.)

- A reset switch on the top side just to the left of the ENCODER. It can be a small tactical switch of the same size and type as the memory switches to the right of the encoder. There seems to be plenty of room to do the small amount of re-arrangement of traces to allow for this. WHY ? … Well the software allows for using the USB port for either CLI or WINKEY use. The user switches between those choices by rebooting with the CMD switch held either open or closed. Without such a top mounted switch the user ends up removing and reinserting the USB cable, which will lead to prematurely wearing out the USB sockets and cabling. ** Additionally this switch might also be useful by removing the requirement to remove the "ASR" jumper for software/firmware uploads.

- I would also add some way to hookup a pot with switch to replace the ENCODER/COMAND (CMD) SWITCH. They could be located in the same place as they would be a substitute. The software package allows the user to set up the end-point WPM settings for the pot. This faciilitates rapid speed changes without referring to the display output for what speed the pot is set for. Contesters will LOVE this !

Here's what I would move: (Hopefully, if the board goes through another revision, these items will be considered.)

- I would move both of the PTT enable headers to the right their current location, so they can be mounted on the bottom of the board without any interference to their use. They are the only jumper-headers that cannot be gotten to without removing sub-assemblies. There seems to be plenty of room for this move and the move would not require much, if any, adjustment of other parts or traces.

- Additionally, by moving these jumpers there is now enough room to move around the serial and keypad holes so cabling to be used with right angle headers while a display is mounted. NOTE: Q8 might have to be move slightly to the right as well, but like the PTT jumpers, there seems to be room to the right.

Here's what I would change: (I'm polishing the apple here. Simple changes to the B.O.M, manual/docs, and silk-screening.)

- Is there a way to make a slight change/add-to the height of the female headers for the 4 and 8 pin display connector ? Only a few mm of additonal height would be needed when using the largest display as there is currently some "interference" between the right side of the display and the TRS connectors which are mounted on the right side of the P.C.B.

- The current manual (v0.7) needs to have a schematic that matches the latest version (2.2) of the P.C.B and the ASR could use some further explanation.

- I would also change the silk-screening from ASR to ASR with a bar over the letters to indicate what this jumper really does and reversing the sidetone/osc markings on the bottom of the P.C.B.)

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