

Band Specific PTT outputs for the Elecraft K3

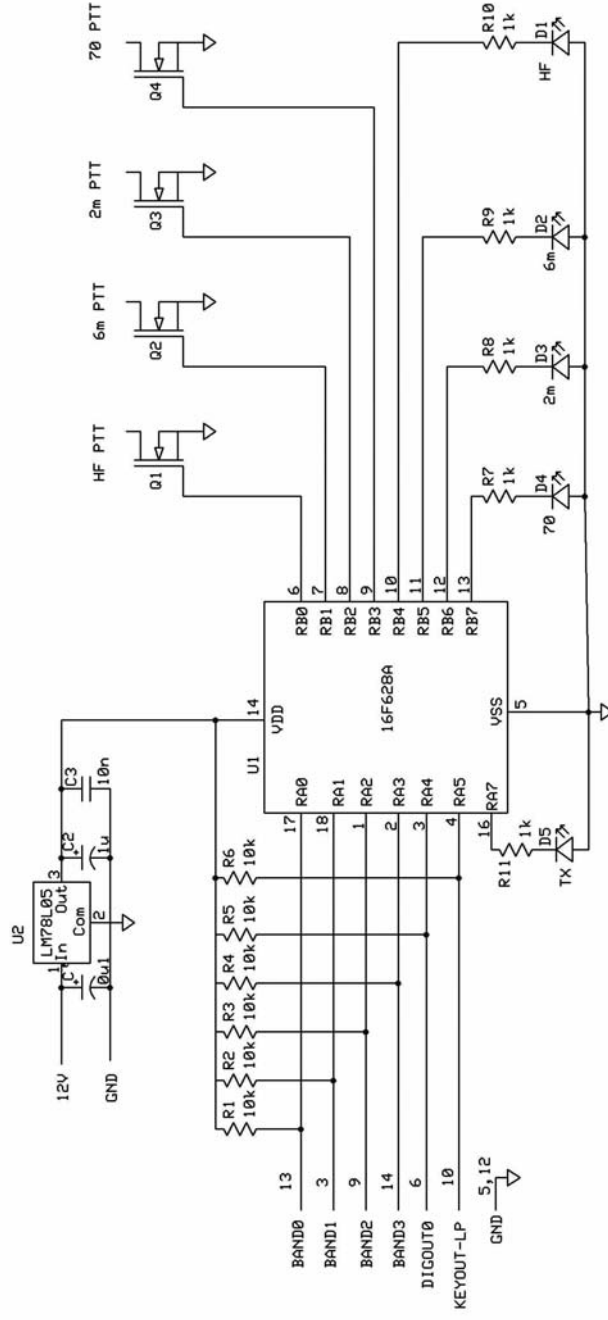
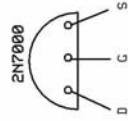
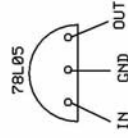
Dave Robinson, WW2R

The most annoying "feature" of the Elecraft K3 is the lack of a separate PTT output for each band. I am used to the FT847 which has an HF PTT output, a 6m PTT output, a 2m PTT output and a 432 PTT output which means I don't have to parallel up the amplifiers PTT signal and key all amps on every band. With all the amplifiers powered up, unless I unplug the keying leads operating on 20m keys the 6m, 2m and 432 finals which is unacceptable. This has been particularly annoying during the sporadic-E season when switching rapidly between 6m and 2m.

I decided it was time to fix the issue and provide an HF PTT output, a 6m PTT output, a 2m PTT output from the internal transverter and a 432 PTT output from the K3. All the necessary signals are available from the K3's 15 pin aux connector. My 432 transverter is XV4. The DIGOUT1 signal is used to identify that operation is currently on a transverter band. This can be set via *CONFIG:DIGOUT1*. The following is a table of the band outputs produced by the K3 via its 15 pin ACC connector with *CONFIG:KIO3* set to **HF-TRN** and the DIGOUT1 appropriately set

BAND	DIGOUT1	BAND 3	BAND 2	BAND1	BAND0
160	1	0	0	0	1
80	1	0	0	1	0
60	1	0	0	0	0
40	1	0	0	1	1
30	1	0	1	0	0
20	1	0	1	0	1
17	1	0	1	1	0
15	1	0	1	1	1
12	1	1	0	0	0
10	1	1	0	0	1
6	1	1	0	1	0
2	0	0	0	0	0
432	0	0	1	0	0

I used a PIC to decode the band data and route the PTT signal appropriately. The PIC chosen was a 16F628 as I had some and it had enough pins for this application and an internal oscillator. The final circuit is as follows:-

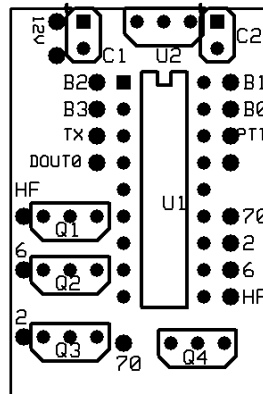


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One of four LEDs indicate which band the K3 is on. If the decoder gets an invalid band, no LEDs are illuminated. The 5th LED indicates when the K3 is on Transmit. 4 FETs capable of switching 0.2A provide open drain outputs to key amplifiers

Construction

A small 1.5" x 1" DS PCB was designed and produced using [Expresspcb](#) miniboard service. R1 thro 6 are SMT resistors mounted on the track side of the board. R7 thro R10 are 0.25W resistors mounted vertically on the PCB.



The PCB was mounted in an LMB TF773 3.5x2.1x1.6" Aluminium box with the 15pin connector, 4 phono connectors and a coaxial connector on the rear panel and the 4 LEDs on the front panel



Software

The program was written in assembler using MPLAB IDE as it is so simple. It took 1 hour to write, test and debug the code. The resultant hex file is available from the author upon request

Conclusion

Objective met. Now I only key one amplifier when I key the microphone. If there is sufficient interest PCBs and programmed PICs can be made available.