

Kenwood TM-271A Mod for PL Decode Logic Out

I found what I consider a major flaw when using the Kenwood TM-271A 2 meter radio as a remote base. There is no way to use it in full PL mode. You can program it for full PL but there is only a COS logic line available externally to the RC-210. Thus when the Kenwood is in full PL mode the RC-210 thinks it sees a regular carrier operated radio. I figured out where to tap into the Kenwood to get a valid PL logic output.

To modify the radio you will need a 2N3904 transistor, a 10k resistor and a 1k resistor. I assume you have already done the remote "packet connector" mod to use the radio as a remote base.

Refer to the TM-271 service manual. It turns there is valid PL logic available inside the radio at pin 51 (SPM) of the CPU (IC-101). That is hairy to get to. I also wanted to buffer the logic line. That logic is also available at Q 254 transistor's base. Refer to figure 1. What I did was connect a 10 K resistor to Q 254's base. The other end of the 10 K resistor goes to the base of a 2N3904 transistor I added to the radio. The emitter of the 2N3904 gets a ground by connecting to pin 9 of IC 252. The collector of the 2N3904 connects to a 1K pull up resistor to pin 7 of IC 252 which is a convenient 5 volt source. The violet wire in figure 1 ties to the collector of the 2N3904. The violet wire is brought out to the rear of the radio. This violet wire is the valid PL Decode line. It goes 5 volts HI on valid PL decode.

Because I am using a 10 k resistor in the base of the transistor it places a negligible load on the CPU line.

One caveat. For this mod to work the Kenwood's volume control has to be set at greater than the 9 o'clock position. I also understand the COS line will not work unless the volume control is set to greater than the 9 o'clock position. When the Kenwood is set to COS only the PL logic line will go high on a valid squelch break. That was not a problem for me. This mod should work with any controller that supports the Kenwood TM-271A. I'm using mine with an Arcom RC-210 and it works fine.

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73 and Good Luck

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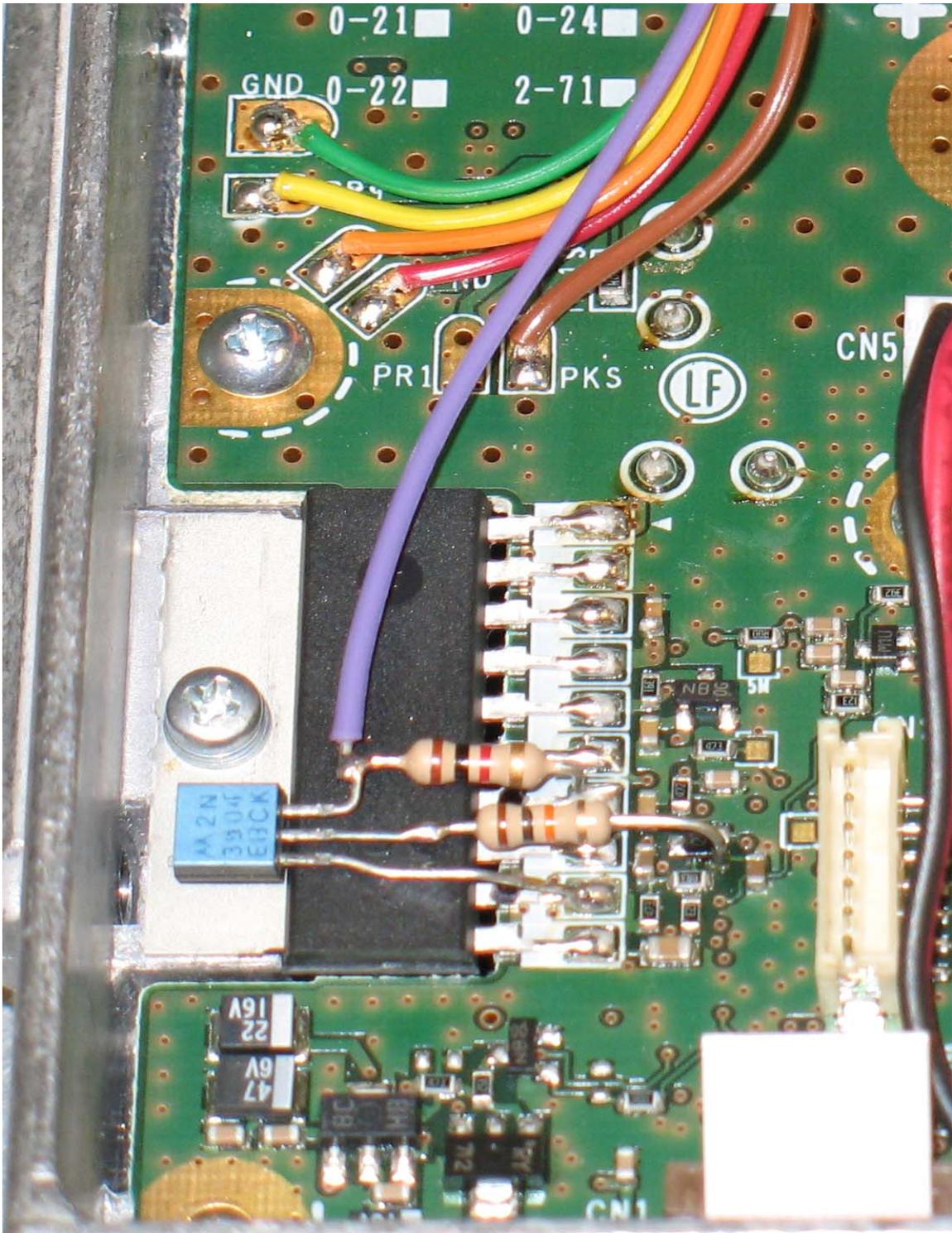


FIGURE 1

LH side of top of Kenwood TM-271