

# Simultaneous Use of CAT Control and Linear Amplifier on Yaesu FT-857D

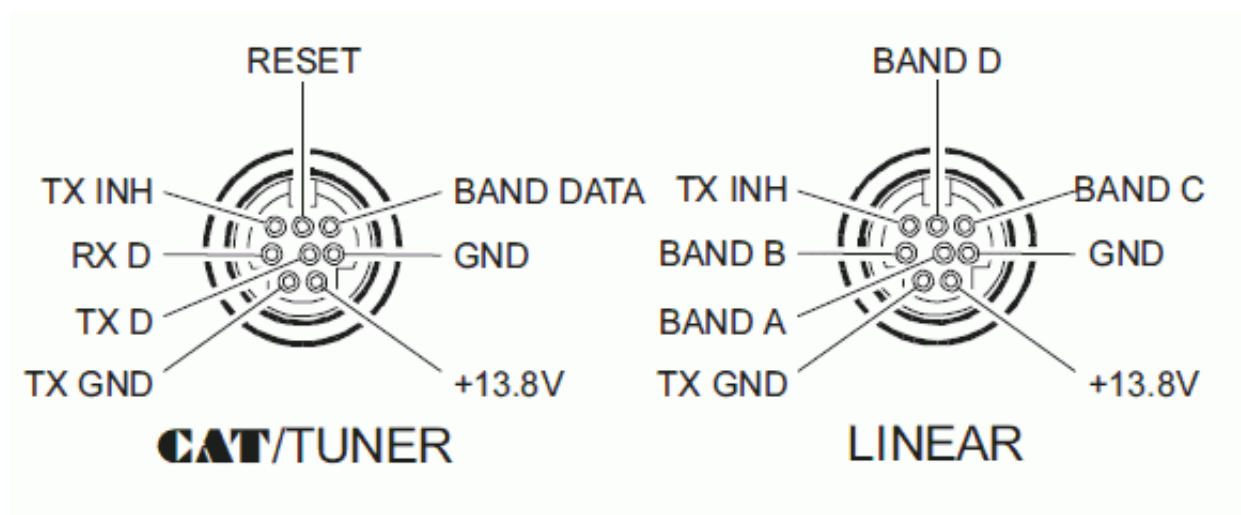
I have a Yaesu FT-857D and use an Ameritron AL-572 linear amplifier, which connects to the radio via the shared CAT Linear jack on the back of the radio.

I had enjoyed using computer control of the FT-857D, but sacrificed that option in order to plug in the relay control cable for my PA.

I looked at some options that used the microphone jack for CAT control, but these looked cumbersome and unattractive to me.

What I finally realized is that the two pins required for the external amplifier relay, TX and TX GND, are both available when the jack is switched to \*EITHER\* CAT or LINEAR in the menu options.

Here is a diagram of the jack with both menu settings:



TX GND is \*NOT\* used in CAT control of the radio – at least it is not used in the USB version of the CAT cable I am using to control my radio from my PC.

So my solution was:

1. Purchase one 8pin mini DIN male to male cable on EBay.
2. Purchase three 8pin mini DIN female panel jacks (I ended up using the version that mount on cable ends and adapting them to a bit of perf board housed in a shielded box).

The mini 8 pin DIN jacks are labeled “Radio” “Amp” and “PC”. Use short, straight through wiring from the “Radio” jack to the PC jack, but do \*NOT\* wire the “TX GND” pin. Next, from the “Radio” jack to the “Amp” jack wire the “TX GND” pin, and a common ground wire between all three jack’s “GND” pins.

House the above in a shielded box, plug the “Radio” jack into the rig, and the PC and AMP jacks into their respective cables.

It works a treat and I now have both CAT control, and switching of my amplifier – with no danger to the computer from switching voltages.

It is worth noting that if the TX GND were required by the computer, one could use simple power diodes (the rectifier diode assortments from Radio Shack are fine) between the amp and computer pins to protect the PC from the switching voltage coming from the amplifier. One anode goes to the PC and the other anode goes to the amplifier, and the two cathodes connect to the TX GND pin. I use this method to switch an MFJ-1025 or MFJ-1026 noise canceler and my amp at the same time.

Soldering these things can be quite challenging. The pins are extremely small and will not accept even a 24 gauge wire which is too large. I used a small soldering vise with a magnifier (these can be found for low cost at some “dollar stores”, Job Lot, Odd Job, etc...). I used stranded cable, tinned, and then “touch” soldered the ends. Since the jacks are securely fastened, the wiring bears no stress – if these were cable ends a more secure soldering method would be required. Check for continuity and shorts with your multi-meter. You can also check the data signals on your scope if so inclined.

Also note that you may have some 8 pin connectors with cables attached in your junk box. The problem is that many do not have all 8 pins wired. You may also be able to carefully remove the jacket and get to the internal wires of your existing CAT cable, but here you also risk not having all the pins available – as well as damaging the expensive CAT cable. This is why I purchased an 8-pin Mini DIN male to male cable separately.



Here’s a screen shot of [Ham Radio Deluxe](http://www.hamradio.com/) and the FT-857D courtesy of KC9HZC who has also constructed his own CAT cable – one could construct his cable and build a second mini DIN jack for amp control easily. <http://www.kc9hzc.com/index.php?entry=entry071022-222608>

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