

A Lightweight PC Headset for the FT-897D

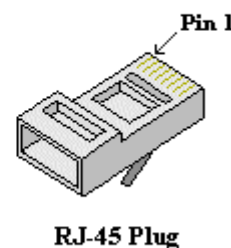
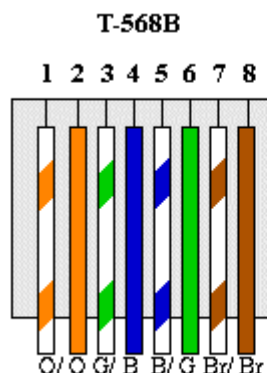
Several articles have been published recently in QST on how to use an inexpensive PC headset with ICOM (July 2007) and Yaesu (April 2007) rigs – some of these have include foot-switches, and data / cat cables, etc. This article is a simple connection of a PC Headset (stereo headphones plus an electret microphone) to a Yaesu FT-897D – a poor mans Heil Traveller headset.

This was a Sunday afternoon project. The hardest part was making a nice enclosure – drilling holes to line up with the small round switches I used for the UP / DOWN and FAST mic features and nibbling a larger, round hole for a square PTT switch.

The FT-897 is a ‘modern’ rig with a modular microphone cable instead of the typical round connectors. This makes them almost impossible to build, unless you have proper crimp tools and you can crimp evenly, etc. Instead, let’s make use of some scrap Ethernet (CAT-5) cable. This **must be** a straight through cable (not a ‘cross over cable’). This is easy to identify and we’ll use the color schemed pinout here:

Now for the FT-897’s microphone pinout (from <http://homepage.ntlworld.com/rg4wpw/date.html>) :

PIN1	DOWN
PIN2	UP
PIN3	MIC 5V +
PIN4	MIC GND
PIN5	MIC AUDIO
PIN6	PTT
PIN7	GROUND 0 V
PIN8	FAST



With this in mind, I found G8JNJ’s clever implementation of a light headset online (PDF document) here: http://www.geocities.com/martin_ehrenfried/BoomMic.pdf

In Martin’s implementation, he includes everything in the headset – cracking open one ear-piece to put his components and running the Ethernet cable all the way up to the headset.

In my implementation, I use an interface box – this way, I can try different headsets and when I’m not using the headset for Radio, I can plug it into my PC. AND I have a platform to use the 3 function buttons (UP / DOWN / FAST)

First, I run the ¼ inch phone jack plus a short pigtail of the Ethernet cable (using the modular plug to replace the mic) to a box where I have the three typical Yaesu buttons – UP and DOWN scan and the FAST button.. Wiring is straightforward:

1. The Headphone wires straight through to a 3.5mm jack in the interface.
2. Green (Pin 6) and Brown/White (Pin 7) short to make PTT – I used a square button pulled from a dead garage-door opener. (Visions of garage doors opening down the ally as I key down)



3. Now for the Mic – Three mic pins are used: 5V power, audio IN, and Ground and these will wire to a 3.5mm stereo jack.

a. Green/White (Pin 3) is the 5 V+ input which may be used to power the electret mic in the headset. This passes through a 4.7K Ohm resistor THEN can be wired to the MIC jack's CENTER (or ring) connector.



b. Audio comes out of the mic through the TIP of the MIC jack. This should run through a 0.1uf capacitor to isolate any possible DC from the 5V input from the radio's mic input. We can also provide a built in mic-gain here and pass the audio through a small variable trimpot of 10k ohms.

c. The Audio out comes to one side of a trimpot and the Ground comes from the SLEEVE of the 3.5mm jack to the other side of the trimpot.

4. Audio output then comes from the center pin of the trimpot. We provide a 680 ohm resistor to keep impedances proper at the radio (communications mics are approximately 600 ohms). A 1nf (nano-farad, or .001uf) bypass cap can help here to remove any RF that might be caught by unshielded wiring.

5. Finally the 3 typical Yaesu function buttons. Each of these: Orange/White (Pin 1) – DOWN, Orange (Pin 2) – UP, and Brown (Pin 6) – FAST can be run to momentary switches which short to ground on press.

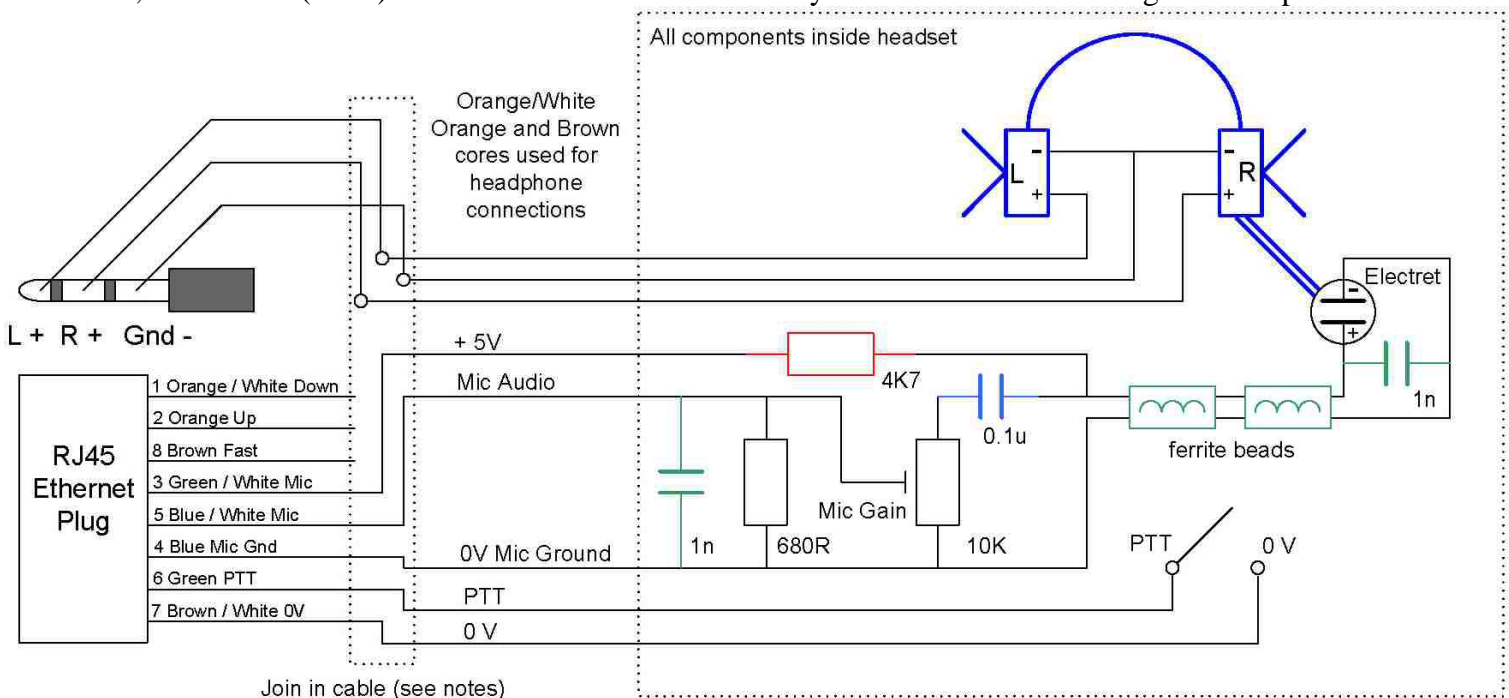
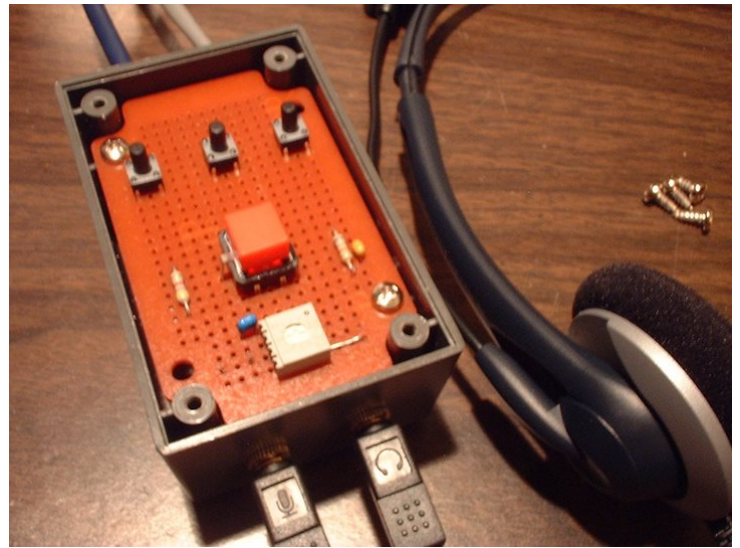


Figure 1 - Schematic from G8JNJ, Martin Ehrenfried - http://www.geocities.com/martin_ehrenfried/BoomMic.pdf

This article can be adjusted for most any radio – check your MIC pin out carefully. If 5V is not provided at the MIC port, you can use a 9V battery and a cheap 78L05 voltage regulator to power the electret mic in the headset.