

Build a Programming Cable for a Baofeng UV-3R

Disclaimer

Before we start, it should be clearly stated that this cable was developed and tested strictly for the Baofeng (also known as Pofung) UV-3R. This author has no knowledge of whether or not the cable will work for other radios.

The Connections

Figure 1 details the type of plug used to program the UV-3R. This is a somewhat unique, but certainly not rare, audio connector used by many types of smartphones. If you choose to build this cable, make sure that you purchase the quad version of this connector. The keywords for locating the connector are "4 Pole 3.5mm Jack Male". Many sellers on eBay and Amazon carry it. Figure 2 shows the 2 different types of 4 pole jacks. The difference is irrelevant if building a cable using a single connector, but is important if building one using adapters and Y-Cables as shown in Figure 3.



Figure 1 BaoFeng Programming Connector

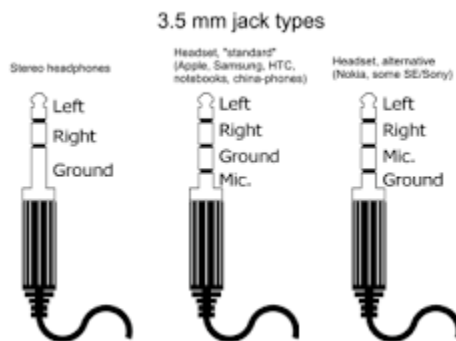


Figure 2 Types of 3.5mm Jacks



Figure 3 Prototype Programming Cable

Figure 4 shows the actual connections needed to make a programming cable. The 3 key connections are the Tip, Ring2 and Sleeve as shown in Figure 5.

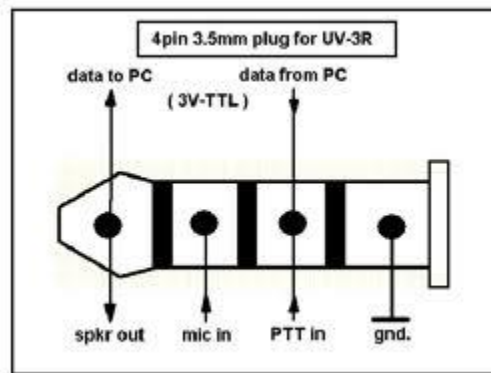


Figure 4 UV-3R programming Connections

In Figure 5, you will note that a “FTDI Friend” is referenced as the serial interface. This device is a USB to serial converter. The serial interface is at “TTL”, or logic, levels rather than the standard RS232 levels. RS232 uses up to +/- 15V levels to communicate. This permits RS232 signals to traverse reasonably large distances. The radio, however, would be destroyed if RS232 levels were used to program it. The “FTDI Friend” takes care of this. To purchase one of these modules, search for “FTDI usb to serial” on the internet. They are readily available from eBay, Amazon, as well as Fry's and Microcenter. Any other USB to serial converter would like also work (OSEPP and others make them) but the pinouts do differ and other converters may require device drivers that are not necessarily native to your PC operating system.

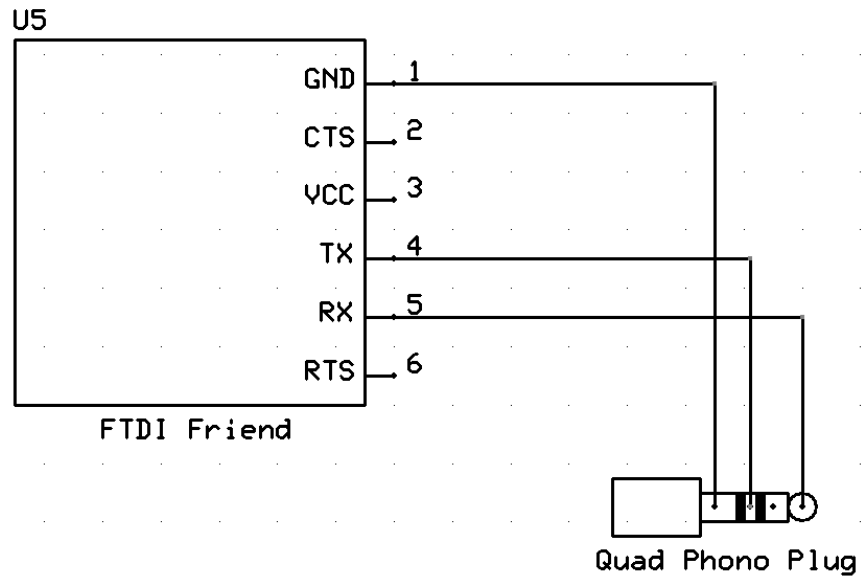


Figure 5 Home Made Programming Cable

If you look carefully at Figure 6, you will note a switch on the left side of the module. This switch changes the output logic levels to either 5 Volt or 3 Volt levels. Set the switch for 3 Volt.



Figure 6 Finished Assembly

Assuming that you have built one of these cables, now you need to program your radio. I highly recommend Chirp software for this! Baofeng does offer programming software but I found it to be clumsy to use. Chirp is easy and provides export capability for the programs.

73

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