Building UART-to-UART connection cable for sBitx

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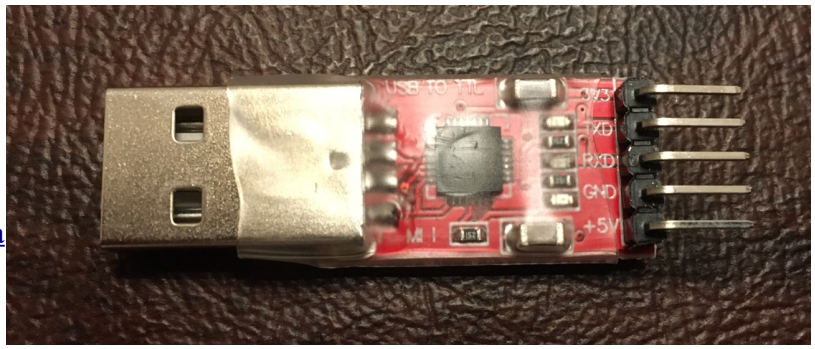
While the advanced SDR sBitx is capable of futuristic connections over Bluetooth and WIFI, older legacy technologies aren't so advanced. There are times when it is useful to emulate older radios and their technology of (gasp!) serial- or USB-port connections for CAT control.

An easy way to connect the sBitx Raspberry Pi to legacy CAT control software is to use a connection cable with UART chips on each side. The Universal Asynchronous Receiver Transmitter chip provides connections from USB ports and emulates a serial RS232 connection. (https://en.wikipedia.org/wiki/Universal_asynchronous_receiver-transmitter) Both WINDOWS and Linux appear to recognize the UART and apply the correct (built-in) driver software to create the necessary "com port" (Windows) or /dev/ttyUSB0 (Linux). It works, but I don't claim to understand it all!

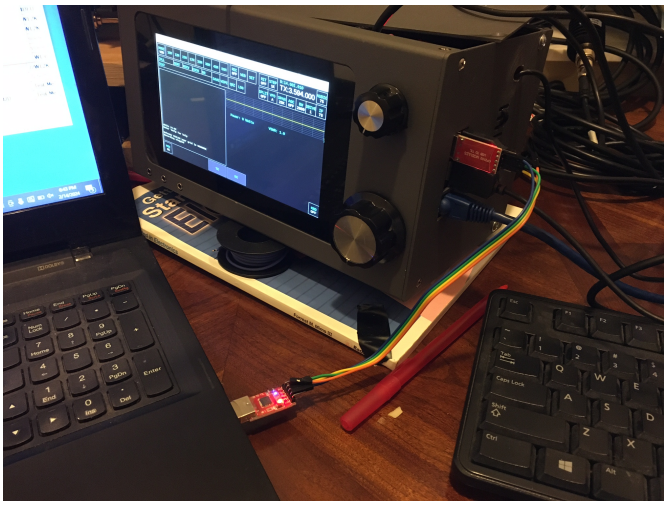


The interfaces are quite inexpensive. An example of two devices for $9: https://www.amazon.com/dp/B07D6LLX19

Communication between these devices is as simple as three wires; they don't normally require support wires such as DTR (data terminal ready) or RTS (request to send). The tiny boards have multiple pins on 0.1" spacing. All you need are the TX, RX and GND (ground) pins.

Connect the GND pin from one device to the GND pin of the other. Cross connect the TX/RX so that TX from one goes to the RX of the other and vice versa. This is the same as the old "null modems" we used to use with serial port communications between two devices in the same room.

On Windows software, I have had good success using a baud rate of 115200, and "no handshaking." I did, however, use shielded cable.



Example of test communication between Windows laptop and sBitx Raspberry Pi over 3-wire serial connection

Online: https://www.nf4rc.club/how-to-docs/communications-cable-between-windows-linux/