Convert Your 1980's Era Radio Modem To USB
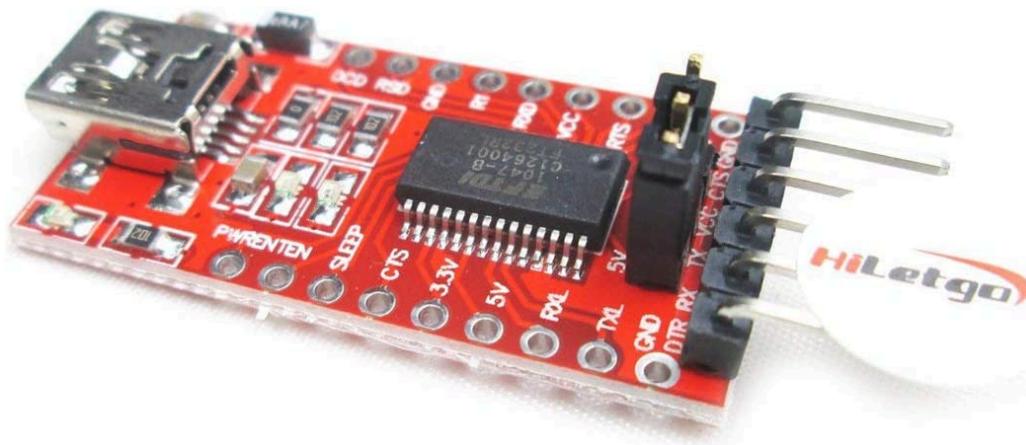
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Assumptions

- A Terminal Node Controller (TNC) with TTL output
- Familiarity with Packet Radio
- Basic electronic skills

Introduction

With the current resurgence of Packet Radio I decided to dust off my old Packet Radio Terminal Node Controller (TNC). There were untold thousands of these made in the late 80's and early 90's and to this day can be found at junk sales and hamfests for very modest prices.

Required components

- Terminal node controller with TTL
- Arduino type USB-TTL 5 Volt programmer e.g. https://tinyurl.com/nhahb7zy
- Female DuPont connecting wires https://tinyurl.com/mrvpk8cb
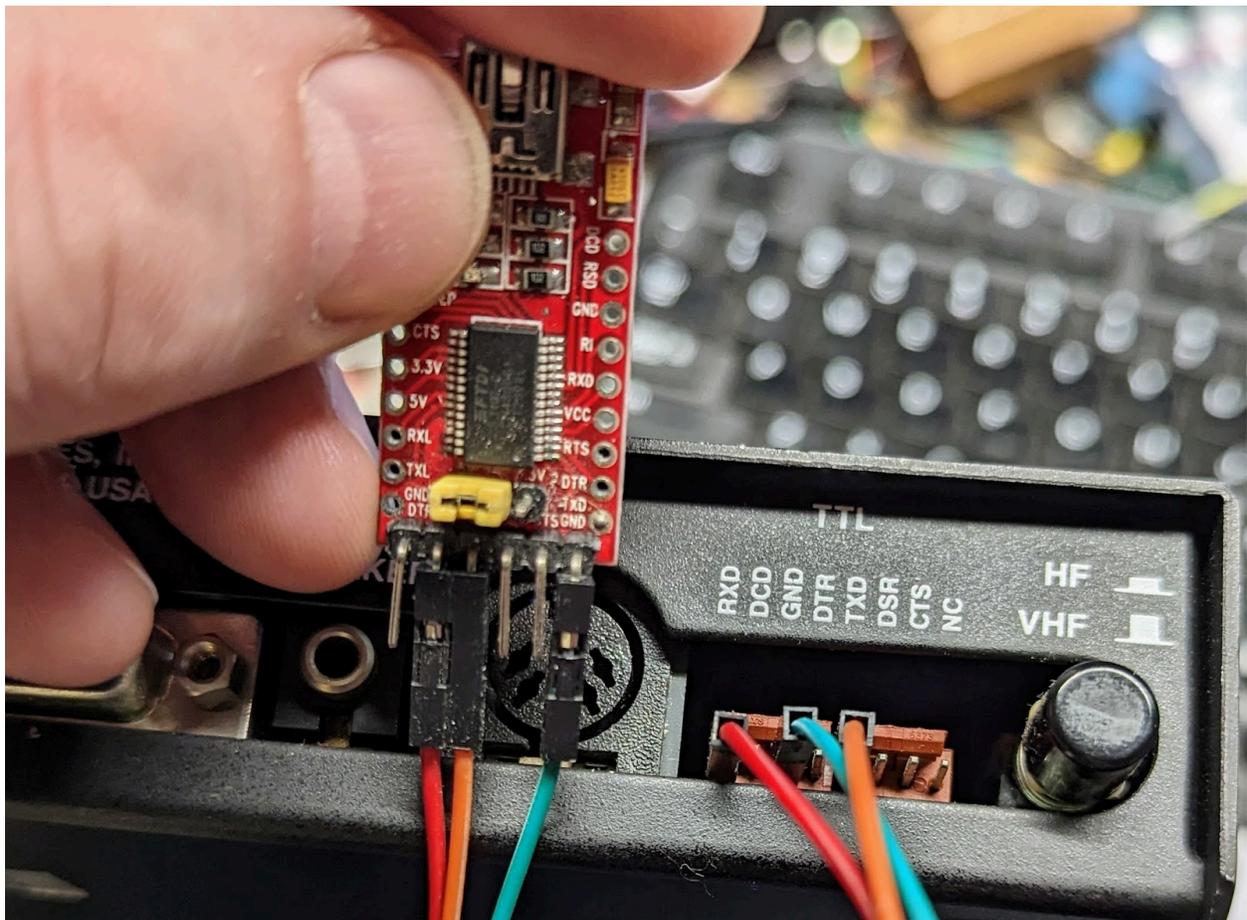- USB cable for your programmer
- Packet Radio terminal software

Connect the programmer

If your programmer has a jumper to select 3.3V or 5V set it to the 5V position.

Connect the programming pins on the programmer to the TTL port of your TNC as below. Do not wire the control lines (CTS/RTS/DTR).

USB		TNC
GND	—----	GND
TX	—----	TX
RX	—----	RX

Testing

Connect a USB cable from the programmer to your PC. Your computer should detect a new serial port. Configure your packet radio terminal software parameters for the new serial port interface, baud rate and other settings required by your TNC/Modem. Disable and hardware handshaking

Turn on your TNC/Modem. All being well you should see its copyright message appear in your terminal.

```
MFJ ENTERPRISES INC TNC-2
AX.25 Level 2 Version 2.0 + FAX
Release 1.2.6  02/17/89 - 32K RAM
Checksum $1C
cmd:
```

In some cases you may need to wire TX-RX. This will only be required if the TNC/Modem does not respond.