The Nano-10 provides an RS-485 half duplex serial interface. This serial interface can be converted to RS-232 half duplex with RS-232 to RS-485 converters such as the “Auto-485” sold by TRi.

There are some applications that require full duplex (simultaneous sending and receiving) RS-232. The Auto-485 cannot support simultaneous sending and receiving. This note is how I modified a Nano-10 to support full duplex RS-232.

This is what I did:

I purchased an inexpensive TTL to RS-232 level converter on ebay. This converter board has a 9-pin female (DE-9F) connector.

I removed the RS-485 transceiver chip, U2, from the Nano-10.

Installed an 8-pin component header in U2’s socket on the Nano-10

I soldered the 4 wires from the The TTL to RS-232 level converter board to the component header.

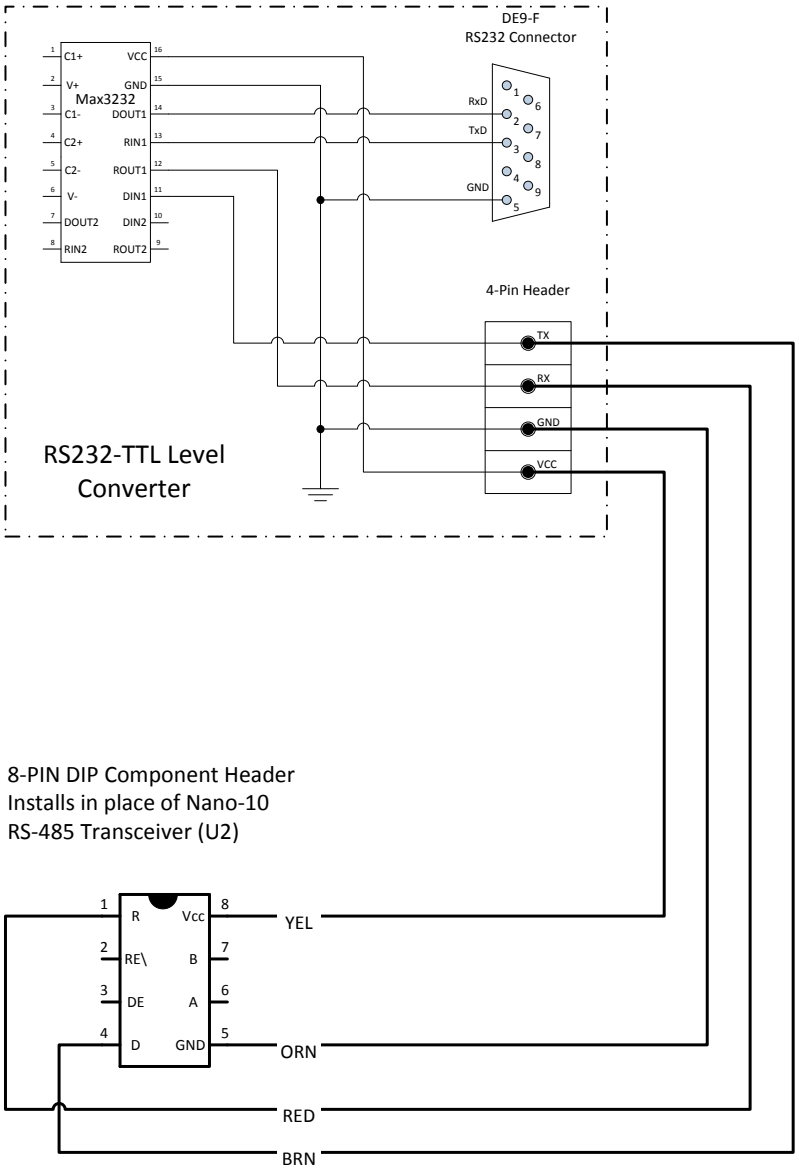
The following photos and schematic drawing are intended to document what I did.

Warning: What I did will probably void any warrantee from TRi. If you are uncomfortable with soldering and such, don’t attempt this. If you don’t know the difference between half duplex and full duplex, stop now.’

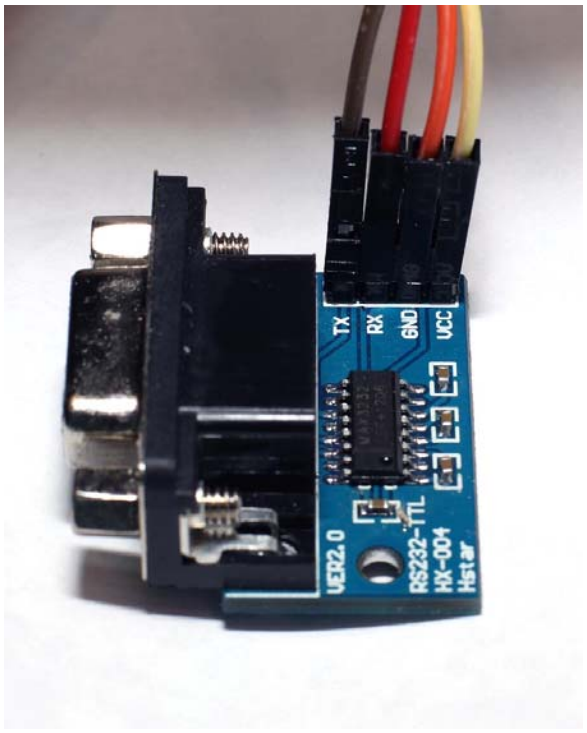
Gary Dickinson

The following is a partial schematic of the TTL to RS232 level converter board and the cabling that connects the converter board to the Nano-10.

Full Duplex RS-232, Nano-10



This is a photograph of the RS-232 to TTL level converter that I am using. I picked this one because it was the cheapest one that I found on ebay.com. Please note the 4 colored wires that are plugged into a connector on the board. These wires provide power (5VDC) to operate the converter and the the signals TX and RX.



This is a photograph of the 8-pin component header that has been installed in the socket for the RS-485 transceiver chip on the Nano-10. Please note the four wires that are soldered to the component header. These wires provide the power and signals to the RS-232 to TTL level converter.