NABU Computer Adapter Connection\Build

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Created by Rudy's Retro Intel   https://www.youtube.com/@RudysRetroIntel

Please email me (retrointeldiy@gmail.com) if you would like to add to this document. Future versions will be available as more information is collected, tested and verified.

Additional support provided by:

- Geek With Social Skills (https://www.youtube.com/@geekwithsocialskills)

For the latest version of this document and other NABU related information, use the links below.

https://www.nabunetwork.com

https://github.com/RudyRetroIntel/Vintage-Computer-Diagnostics

In order to connect your NABU computer to work, you will need to create an adapter that will connect your NABU computer to a server. Follow the steps below to create your own.

*** This document is based on the work I have performed on my NABU computer and is provided "as is". I\we do not take any responsibility for errors and\or damages that may occur when creating your NABU computer adapter. This is information is provided freely to all NABU computer owners. Please ensure you know how to perform electronics\electrical work. If not, please contact someone who has these skills before starting. ***

Building a NABU Adapter Cable

Before starting, you will need the following:

1 – 5 PIN male DIN connector

1 – USB 2.0 to RS422 adapter. I used the DTECH with part number DT-KJ501

1 – A section of LAN cable. Ensure that the cable has "twisted pairs" and has at least 2 wire pairs. Now a days, LAN cable are twisted pairs and have 4 sets of twisted pair wires. *Ensure the cable is working. With a multimeter, test each wire for connectivity and that there are no shorts between each wire *

1 – Misc. parts: soldering iron, solder, heat shrink tubing, wire strippers, needle nose pliers

Step 1

Become familiar with the following wiring diagram.
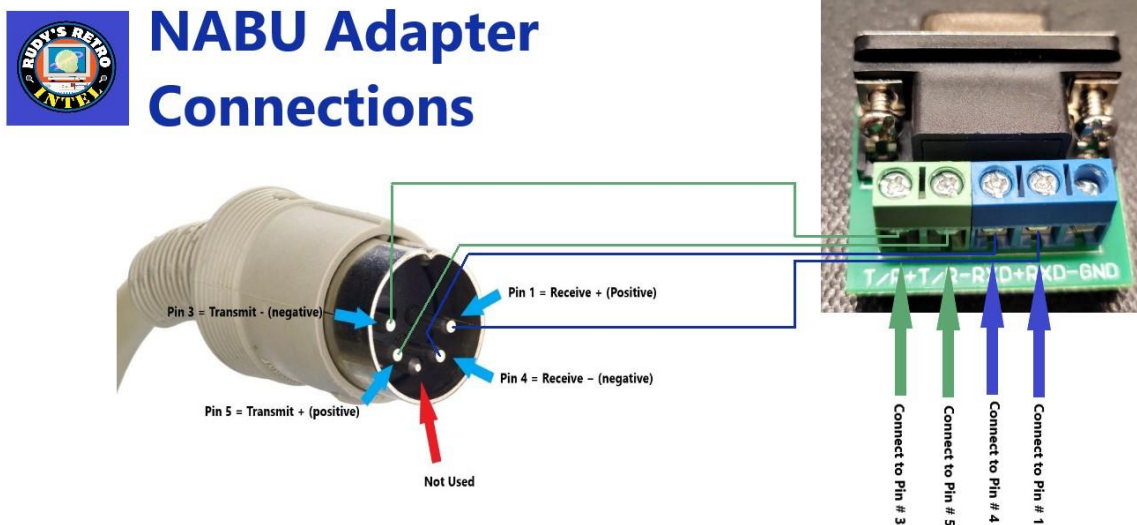
Step 2

- Select 2 sets of twisted pair wires. The colors used are usually as follows:

  Brown and white with brown markings

  Orange and white with orange markings

  Blue and white with blue markings

  Green and white with green marking

Once 2 pairs are picked, cut the others so that you only have 4 wires (2 pairs). There should be 2 wires that have a solid color and 2 wires will white with the corresponding color markings on it.

Note: Do not use only all solid colors or only all white with markings wires. These combinations will negate the twist in the wires and could introduce noise. Noise introduced could introduce errors with communications between the NABU computer and your desktop\laptop computer.

Step 3

- Strip each wire on both ends
- With multimeter, test each wire to ensure there is continuity and no shorts between the wires
- Before soldering, place some heat shrink tubing on each wire
- Solder each wire to the 4 pins on the back of the 5 PIN DIN
- Your cable should look similar to this

- Record which color wire is soldered to which pin. Below is an example of how I recorded my wiring. You can do something similar and can use different colored pairs

  Pin# 1 – White with orange markings

  Pin# 4 - Orange

  Pin# 5 – White with brown markings

  Pin# 3 – Brown

Step 4

- Connect each wire to the connector provide with the RS422 adapter. Follow the diagram in Step 1. and use the information you recorded in Step 3

- This is how I wired my adapter with matching wire colors. Your wired connection will look different as it depends on the colors you picked; however, placement would be the same.

- Double check your connections and once more use your multimeter to test from each terminal (at the screw), as above to the pins on the *<u>front</u>* of the 5 PIN DIN as in step 1

Step 5

- Connect the 5 PIN DIN to your NABU computer and the USB cable to your desktop\laptop computer
- Execute the server software and turn on your NABU computer
- The NABU software should now start loading. If not, disconnect the USB cable and check all your connections on both ends of the cable. Review the diagram in Step 1 or the larger image on the next page

Cable Length

If you are using a cable less than 100 feet/30.48 meters then you should be good. My cable is 3 feet/0.9 meter. If your needs are for a longer cable then follow the graph below and the article here
https://en.wikipedia.org/wiki/RS-422
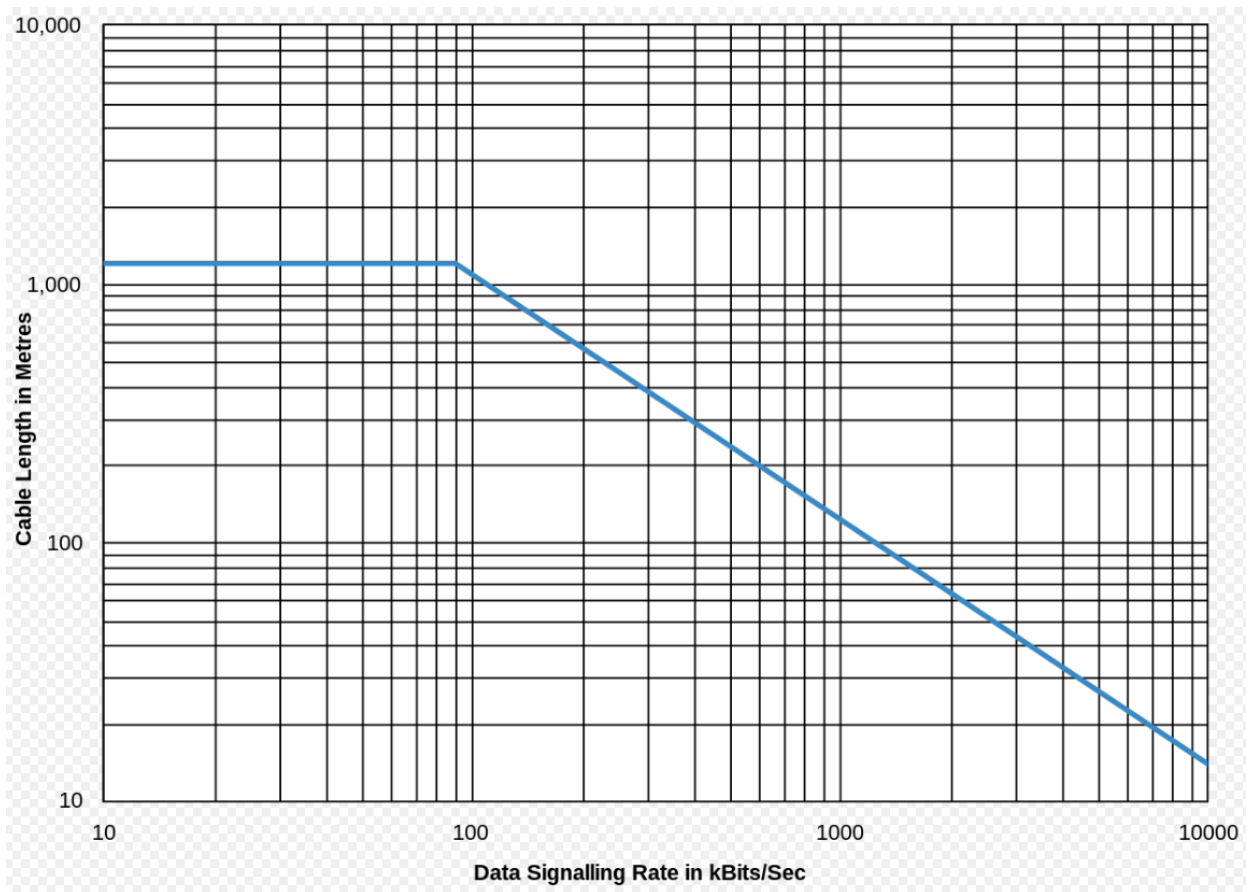
Ensure you are using twisted pair wire like Local Area Network (LAN) with value of CAT 5E or higher. If you are finding errors, ensure you have grounded both ends. The unused pairs should be used for ground connections. In my case, no ground wire was used/needed.

NABU Adapter Connections

Connect to Pin # 1

Connect to Pin # 4

Connect to Pin # 5

Connect to Pin # 3

T/R+ T/R- RXD+ RXD- GND

Pin 1 = Receive + (Positive)

Pin 4 = Receive – (negative)

Not Used

Pin 3 = Transmit – (negative)

Pin 5 = Transmit + (positive)