

Network Analyzer Terminal

POWER-UP TESTING GUIDE

v1.xx

1. Before installing the dsPIC microcontroller and display module, make one final check of the DC power levels.
2. Install the processor and display module making sure the display connector is properly aligned in connector on the pc board.
3. Leave out the SD card out and the keyboard, and then turn the NAT power on.
4. After a pause of up to five seconds, you should see the splash screen showing the firmware version.
5. The splash screen will be displayed for about 3 seconds and then the Terminal mode screen will be displayed (top line for input, blue area for output).
6. If you got this far, there's a good chance that everything is working!
7. Turn power off and plug in the keyboard and turn power on again.
8. You should observe the same power up sequence as before except this time you will see the LEDs on the keyboard flash twice; the first time when power is first turned on, and the second time when the splash screen is finished. You should also hear a BEEP from the NAT at the time of the second LED flash.
9. At this point characters typed on the keyboard will appear on the input line, and pressing **ENTER** on the keyboard will send the text out the NAT's serial port (3.5mm stereo jack). Also, any text characters coming to the NAT over the serial port will be displayed on the input line. (See item 17 below for setting the baud.)
10. Pressing and releasing the **INS** key should toggle the INS/OVR indicator in the upper right corner of the display.
11. Press and release the **Scroll Lock** key on the keyboard and observe **the Scroll Lock** LED turning on. This indicates successful two-way communication between the NAT and the keyboard. (The **Caps Lock** and **the Num Lock** keys should also be working.)
12. When the **Scroll Lock** LED first comes on, the Command mode menu should be displayed.
13. Press **F1** to display the data entry screen. You will probably see garbage on the right side of the display since this is probably the first time the EEPROM has been used. Use the **UP** and **DOWN** arrows to step through the data entry lines pressing **Home** for each line to clear out the garbage. Then press **PgDn** to select the second page and repeat the process to clear these lines.
14. Press **ENTER** to save all the changes.
15. Press **F1** again and make sure the garbage is gone and all data entry fields are blank. If they are not blank, there may be a problem with the EEPROM on the display module. Double check the EEPROM placement and look for solder bridges.
16. If you like, repeat steps 8 through 12 for the other 13 function and alternate function keys.

17. Select Command mode (**Scroll Lock**) again and Select **B** (Serial Interface bps) to display the BAUD RATE menu. Press **2** (19200 bps) if you are using the modified PHSNA firmware in the UNO or press **0** (9600 bps) if you are using the standard PHSNA firmware. Then press **ENTER** to save your selection to EEPROM.
18. Insert a properly formatted SD card in the card receptacle on the display module.
19. Select Command mode and press the **ESC** key to switch to DOS mode.
20. You should see the DOS DIR command display showing the contents of the first sector in the root directory on the card. Note that if you inserted the SD card with power on, you may get an error the first time you try to go into DOS mode. In this case you will get a BEEP and the NAT will remain in Terminal mode. If this happens, make sure the SD card is inserted properly and repeat the process.
21. Press **Shift-?** (question mark) to display a list of the available DOS commands. Even if you have not recorded any files on the SD card, you can use the DUMP command to look at the data in the Master Boot Sector, the FAT tables, and the ROOT directory. If you have recorded text files on the SD card, you can view their contents with the TYPE command. Be sure to try the PENn command (n can be 1, 2, 3, or 6; any other value is the same as 6). Note that after a DOS command has been executed, the NAT is ready to accept another DOS command, you do not have to press **ESC** first; if you do you will have to exit and re-enter DOS mode.
22. Now you are ready to talk to your PHSNA system so connect the serial interface as shown in the guide documents.
23. Power up the UNO and if the PHSNA firmware has not been loaded in the UNO, load it now.
24. Turn on the NAT and wait for the Terminal mode display.
25. Reset the UNO and you should see the PHSNA startup information and the main menu on the NAT display. If you see garbage characters, recheck your baud rates.
26. If, instead of the Menu you see several lines of "CELL,GET,L2" just wait. This line will be repeated about 30 times and then the menu will be displayed. This means the PHSNA firmware was in PLX mode when last turned off and that information is kept in its EEPROM which determines the PHSNA firmware startup mode. If this happens, you can use the Options & Calibrations ('*' menu selection) to change the default startup mode to NORMAL.
27. Press '**0**' (zero) and **ENTER** and the menu should be displayed again as the NAT screen scrolls up indicating you have two-way communication between the PHSNA firmware and the NAT.

Congratulations!!! You now have a working Network Analyzer Terminal. If you have the complete PHSNA test setup, get out the NAT Quick Start Guide and get to work!