SuomiNet - Computer and GPS Receiver Installation Instructions

589 Beth Bartel June 19, 2020 SuomiNet Equipment 2511

Note - content is provided for historical continuity and may be out of date. The UNAVCO SuomiNet pages are not actively maintained, and up-to-date SuomiNet information should be obtained from UCAR's COSMIC program at: www.cosmic.ucar.edu/suominet.html

Setting up the hardware

1. Connect the mouse, keyboard and monitor to the back of the computer.

2. Open the UPS and re-connect the internal batteries (disconnected for shipping).

3. Plug the monitor and computer power into the "Battery Back Up" plug on the back of the UPS, and plug the UPS into the wall.

4. Screw the UPS adapter into the back of the UPS and connect it to port 3 on the computer with a straight RS-232, 7 pin cable (supplied by the university).

5. Mount the GPS antenna, and connect the antenna to the lightning surge protector with the yellow N-N antenna cable. Connect the surge protector to the GPS receiver with the N-Lemo antenna cable.

6. Connect the Met cable (the curly cable) 7 pin Lemo end into GPS receiver Port 1. Connect the DB9 connector into the serial surge protector.

   For Vaisala units: Connect the serial surge protector to the adapter provided for the Vaisala metpacks. Connect this to the metpack housing.

   The Vaisala pressure sensor is on the electronics housing. If this unit is mounted inside a building where the pressure is different from the outside ambient pressure (which is likely to be the case), a 4mm inside diameter tube must be run from the pressure port to the outside. This tube may be routed with the GPS antenna cable. Be sure to terminate this pressure tube facing down to avoid rainfall, and in a baffled location to avoid dynamic pressure effects from the wind.

   For ParoScientific units: Connect the serial surge protector to the metpack cable.

7. STANDARD SYSTEMS. Connect the two identical power cables to the GPS receiver and computer. These are Y-cable 7pin Lemo/DB9 cables.

   a. The first cable (port 2 RX) connects to port 1 on the computer. Also connect this cable to

the AC switching power adapter which plugs into the accessory surge protection outlet on the UPS.

b. The second cable connects Port 3 on the receiver to Port 2 on the computer.

RADIO MODEM SYSTEMS ONLY.

8. Connect one the two identical power cables to the GPS receiver Port 3. These are Y-cable 7pin Lemo/DB9 cables. Save the other cable for maintenance/troubleshooting as required.

9. Connect this Y-cable to a male-male DB-9 adapter, a DB-9 null modem adapter, and to the endpoint radio modem. A straight DB-9 serial cable may be used to lengthen this cable run.

10. Also connect this Y-cable to the AC power adapter or directly to a 12 VDC source.

11. Connect the endpoint radio modem to the AC power adapter or directly to a 12 VDC source.

12. Connect the access point radio modem to the computer serial Port 2 using a straight DB-9 serial cable.

13. Connect the access point radio modem to the AC power adapter that plugs into the accessory surge protection outlet on the UPS.

14. Mount the radio modem antennas for a direct line-of-sight link.

15. Connect the radio modem antennas to the radio modems using low-loss N-male to N-male cables.

16. Connect the computer to your local network. It is pre-configured with the network information provided in the "Required Site Information" submitted to UNAVCO, so there should be no need unavco.org if you require root login information. For network security reasons this information will not be sent via email, and temporary root access will only be provided when absolutely required.

17. Turn on the computer and GPS receiver. The computer will display the login prompt - there is no need to log in. The red LED on the GPS receiver will flash once per second when satellites are being tracked.

Checking the system for data

Linux commands are in ***bold italic***.

1. Log into computer:

   User: ***suomiops***

Password:_____

2. Check for data:

   cd .data/temp
   ls -la (a *.bnx file should exist in this directory)

   Run ***teqc -binex +mdjm *.bnx***
   The output should look something like this:

   1134 5 75900 1134 5 76290 1134 5 76200 5000 sa08_16085_sa08_1134-5-75900.bnx

   The fields are:
   Date/time of first GPS observation
   Date/time of last GPS observation
   Date/time of met observations (-1 -5 00000 means no met observations are present)
   Filesize
   Filename

3. Check LDM status after 2+ hours:

   cd
   cd .data/backup
   ls -lrt

   If there is a *.bnx file present - the system is working. Contact Teresa Van Hove
   ucar.edu) to begin sending SuomiNet data to UCAR.

unavco.org if you need troubleshooting assistance.

4. Check that the system clock is synched to UTC time

   date
   If there is no file present - the system is not working correctly. Contact support

5. Turn off the computer monitor.

Online URL:
https://kb.unavco.org/article/suominet-computer-and-gps-receiver-installation-instructions-589.html