

UNAVCO POLAR GPS SYSTEM TEST PROCEDURE

APPENDIX 1: TRIMBLE NETRS OPERATIONS

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DELETING FILES FROM A NETRS

A hard reset does not delete datafiles, nor does the Clear GPS Data button under the Receiver Configuration – System Reset menu. To delete large numbers of data files, the Programmatic Interface is easiest.

NOTE: If this receiver was used at a permanent station, check the UNAVCO data archive to verify all datafiles have been downloaded and archived. If the receiver was used in a campaign, verify with the campaign's project engineer that the necessary data has been downloaded and backed up.

If there is any question about data on the receiver, give the receiver to the Polar Technician and ask that the data be downloaded and stored for safekeeping.

- 1) On the web interface under Data Logging - Data Files, identify which data directories are to be deleted.
- 2) Click on Programmatic Interface, then DataFiles.
- 3) Uncheck the AutoSubmit button.
- 4) Click on *Delete LoggedFiles. A default directory path will appear in the window. Modify this path to the directory you wish to delete, then press Send.
- 5) Repeat until all desired data directories are deleted.

PERFORMING A HARD RESET ON THE NETRS

A hard reset clears certain elements of the NetRS memory, and re-loads the operating system. The GPS data files are not erased, however the receiver is reset to factory defaults. Therefore all configuration files and datalogging sessions are deleted and the receiver's ethernet interface is set to DHCP. Any firmware files previously loaded on the NetRS remain, and the active firmware version is not affected.

- 1) Connect a computer to serial port 1 on the NetRS. Open a terminal program such as Hyperterm with serial settings 115200, 8, N, 1, N.
- 2) Turn on the NetRS. Soon after a prompt will appear

>>autoboot in 3 seconds, Hit space twice to stop autoboot

3) Hit space twice to get a prompt. At the prompt, enter

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clearnv <enter>
boot_status 0 254 <enter>
reset <enter>
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4) The receiver will be reset to DHCP upon reboot. If you want to re-assign a static IP address, keep watching the Hyperterm window as the receiver goes through the reset process. A prompt will appear asking if you want to change the IP settings. Configure the receiver with a static IP and proceed to reconfigure the receiver via its web interface once it finishes booting.

PERFORMING DISK CHECKS ON THE NETRS

Disk checks verify that there are no bad blocks on the receiver's flash card, which stores the operating system and data files. Since flashcard failures have been observed with the NetRS, this test is necessary to ensure that receivers with corrupted flashcards are not deployed.

1) Connect your computer to NetRS serial port 1, the diagnostic port. Watch the output from the NetRS in Hyperterm or other terminal emulator, using serial settings 115200, 8, N, 1, N.

2) Click 5 times rapidly on the Trimble logo in the top left corner of the web interface. A new Testing menu will appear on the left side.

3) Click on Disk Tests. The screen will show a listing of the four flashcard partitions to be tested.

4) Click on the first Test button and wait for the disk check to complete. If no bad blocks are found, proceed to the second Test button, and so forth until all four partitions have been successfully checked.

5) Watch the NetRS serial port output during the disk check process. A few messages along the lines of "invalidate, busy buffer" will appear; these are normal. If the NetRS detects problems with the flashcard, a series of other strange messages will appear, and it is likely that the NetRS will reboot during the disk check process.

IMAGING A NEW NETRS COMPACT FLASHCARD

A procedure for properly imaging a NetRS CF card has been developed and tested. It is critical to use the correct make and model CF card, and to image the card following an exact procedure. See the **INTERNAL** UNAVCO document

How to image and test a CF card for a Trimble NetRS receiver v3.1 (docx or pdf)

As of May 2013, version 3.1 of this document is used. A dedicated Linux computer, with a nearby NetRS, are available in the UNAVCO repair lab for the sole purpose of imaging and pre-testing CF cards.

REPLACING NETRS COMPACT FLASHCARD

Note: this operation will invalidate the receiver's warranty. However a reliable CF card is essential for remote unattended operation. Therefore it is critical to replace a suspect CF card, as defined in the Test Procedure document.

Remove 8 screws from the NetRS front panel, 6 on the front panel and 2 underneath. These screws are Torx 15, but the screws can also be removed with a small flat-bladed screwdriver of the right size.

Gently pry the front panel away from the NetRS body. There is a ribbon cable connecting the front panel to the main board, so take care that this cable is not stressed when the front panel pulls away from the body.

Using needle nose pliers, lift up the black plastic-coated flexible metal keeper, which secures the CF card. Pull out the CF card and insert the new card. Make sure the new card is securely seated, and bend the metal keeper back into place.

Replace the NetRS front panel with the 8 Torx screws. Take care that the ribbon cable is tucked neatly into the space above the main board. Also make sure the front panel's gasket is snugly seated into its groove before reattaching it to the receiver body.

NETRS INTERNAL INSPECTION

With the NetRS front panel removed, blow any dust or debris out from inside the NetRS. Look for signs of corrosion on the main board or interior of the case. Wiggle the antenna cable and check that the connection to the back panel is secure. Check that the ribbon cable is securely attached to the front panel and the main board.