NimsVI User interface from Emscope User Guide

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Nims VI Field Instructions

How to Start a NIMS Instrument Using the NIMSVI Matlab Gui Based Software from Emscope

INTRODUCTION:There is available a download of a Lab View based front end to the NIMS MT instrument that can be used to setup and monitor the instrument in the field, and to receive and log telemetry from suitably equipped NIMS.

This ZIP archive contains the beta release of the WindowsXP version of the Lab View based front end, as well as the National Instruments (c) run time libraries that make it possible to run the Virtual Instrument on computers that do not have their own Lab View licenses installed. The version provided in this ZIP file does not require a Lab View license to run. This has been tested on a Toshiba laptop with both DB9/serial port and with a Cables-to-go USB->Serial converter cable; and on an Acer ONE Aspire Netbook also with a Cables-to-go converter cable.

The machine on which this interface is installed will either require an old-style DB9/RS232 serial interface, or a USB-to-serial converter cable, with **drivers installed prior to installation of the interface** contained within this zip file.

Download Sites

The Original Emscope download site is
http://mgg.coas.oregonstate.edu/~adam/emscope/EMScope_Software_Portal.html

The tools and installation software outlined in this manual are available at the following FTP site.

http://www.polarisnet.ca/nims/

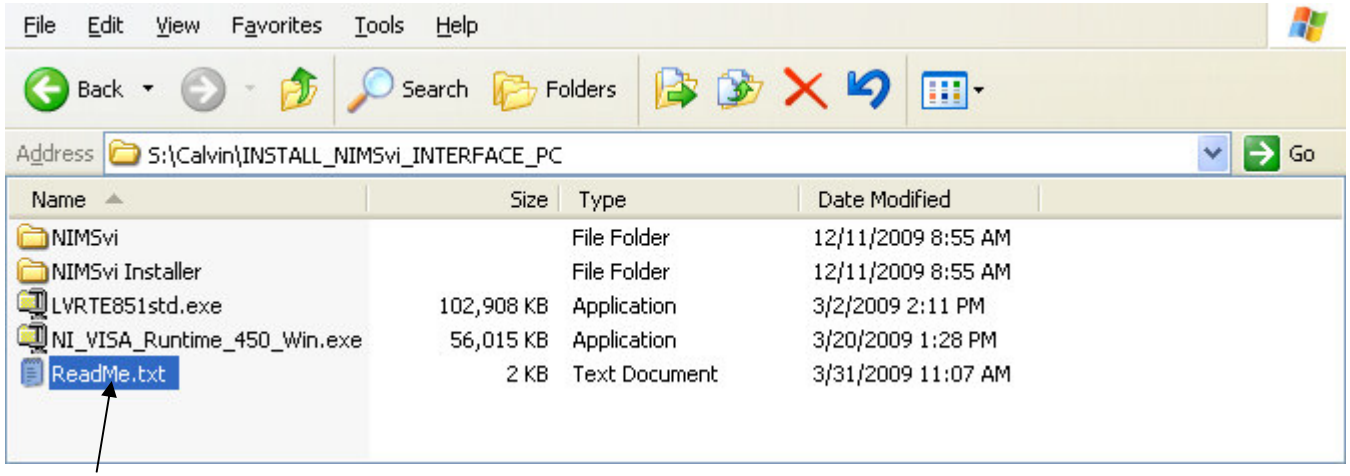
-This site contains all the software and documentation required for Operating the Nims Units.

Nims to PC Comm Cable Pinout

You will need a communications cable with this pin-out in order to be able to Use the full functionality of any of the Nims interface software available.

DB9 Female PC Side		Nims Comms CTI 851-06EC10-6P30
2	----------	B
3	----------	A
4	----------	C
5	----------	D
7	----------	E and F

NIMSVI Software Installation



Readme file has instructions for installing the NIMSVI Nims Gui interface Software.

INSTRUCTIONS FOR INSTALLING THE NimsVI interface

1. close all applications and windows.

2. Open the folder INSTALL_NIMSvi_INTERFACE_PC

3. Run the NI_VISA_Runtime_450_Win.exe (there is an application for either Mac or PC)
   -this will allow the serial/USB ports to communicate with the interface
   -this will require a reboot to properly install

4. Run the 'setup.exe' file, located in the folder INSTALL_NIMSvi_INTERFACE_PC\NIMSvi Installer\Volume
   -this will install the necessary drivers for the interface
   -this will install the Lab View Runtime Engine v8.5.1 (also included in root folder)
   -this may require a reboot to properly install
   -the NimsVI interface should open up after the setup is complete

5. If NimsVI does not self-initiate after setup is complete...
   -open INSTALL_NIMSvi_INTERFACE_PC\NIMSvi\
   -double-click NIMSvi.exe
   -the aliases and config files must remain with NIMSvi.exe

How to Start a NIMS Instrument

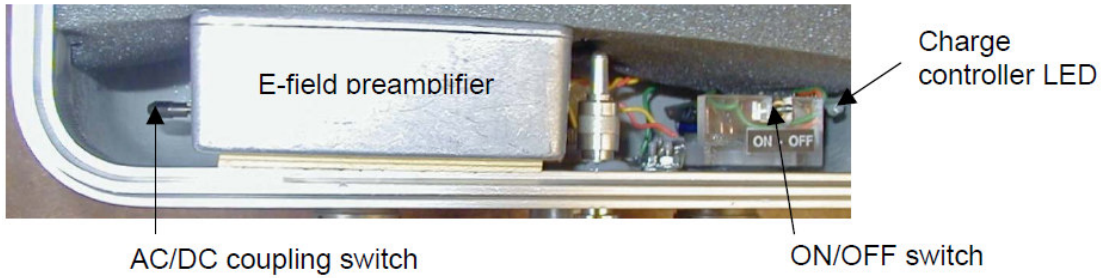
It is recommended you use the Brooker Startup Instructions manual for initial setup. The manual explains more thoroughly the Nims configuration settings you Required for proper field setup and system hardware configurations.

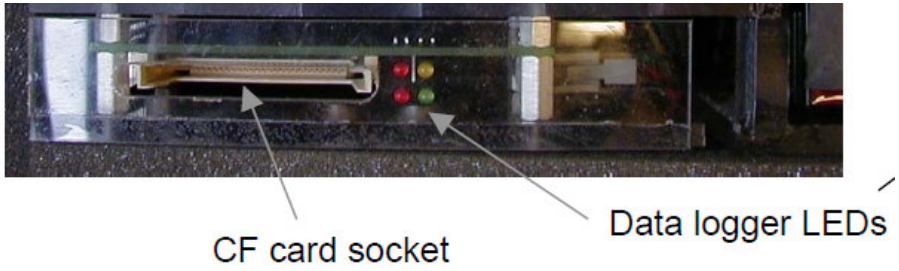
STEP 1

•Set up MT Site and connect all cables for station startup, Power, GPS, Mag, E-lines, and PC to Nims Communication port

STEP 2

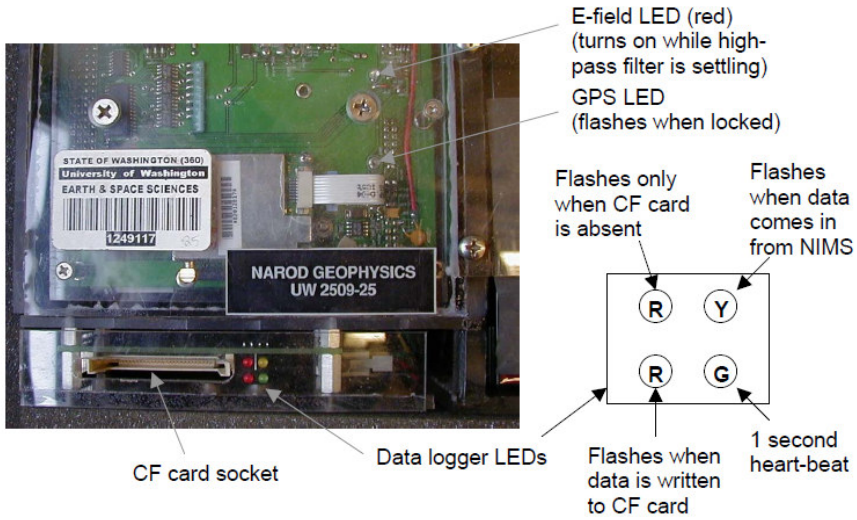
• select either AC or DC coupling using toggle switch on inside right of instrument Remember to set the E-Line Amplifier gains as needed. (See section 12,13 and 14 of the "Brooker-Startup-Instructions.pdf) Document"
• turn on NIMS recording unit using the toggle switch marked ON / OFF
• on the flashcard reader you will see fast alternating blinking yellow, green and red lights (Data Logger LED's)

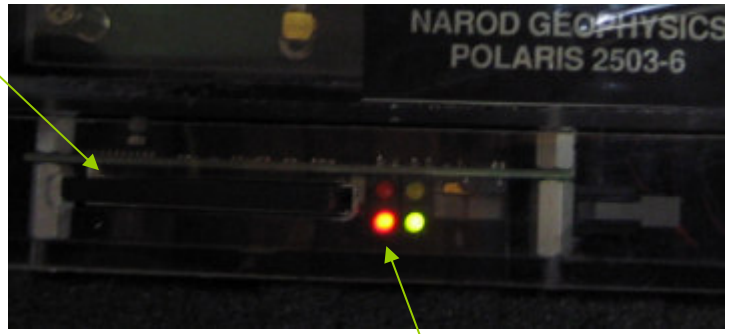




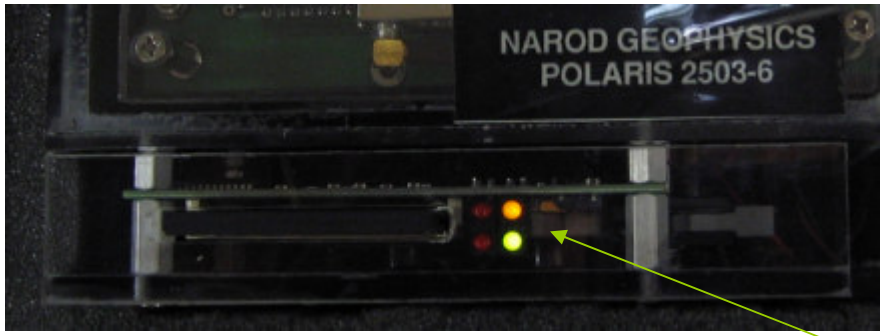
STEP 3

•Insert a blank pre-formatted CF card into the SF Card Socket





Red Light indicated card
Indicates Format in progress.

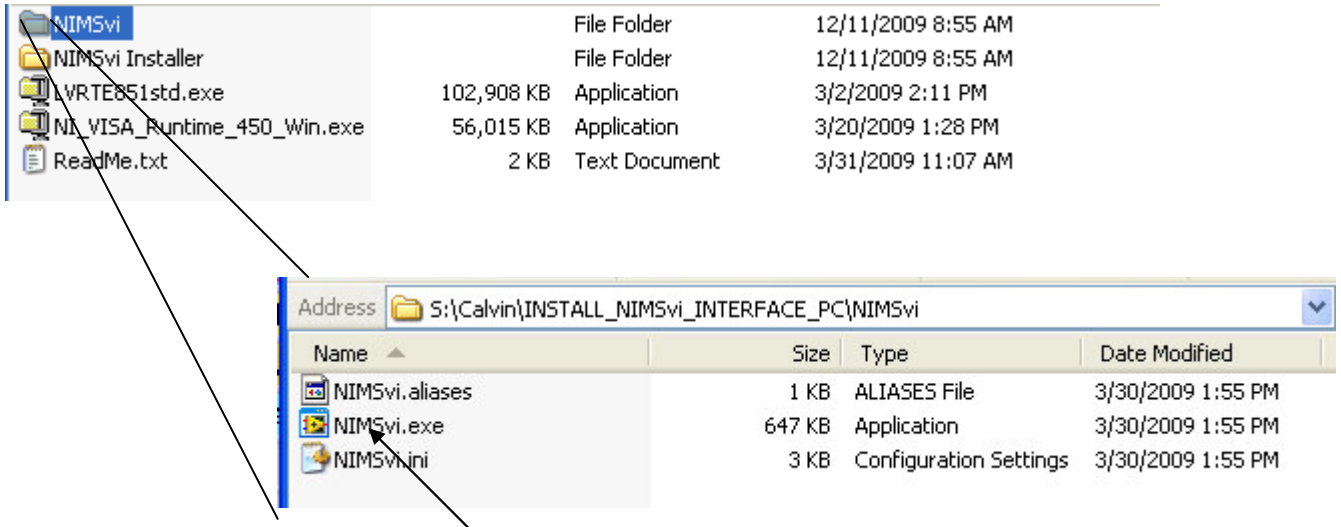


After format complete Green and Yellow Lights flash

NIMSVI interface

STEP 4 Continued

Start the NIMSVI interface (Ensure you are not running any other software which uses the Com port on the PC).



Copy this to your desktop and run it from there
If you wish.

STEP 6

This interface window will open

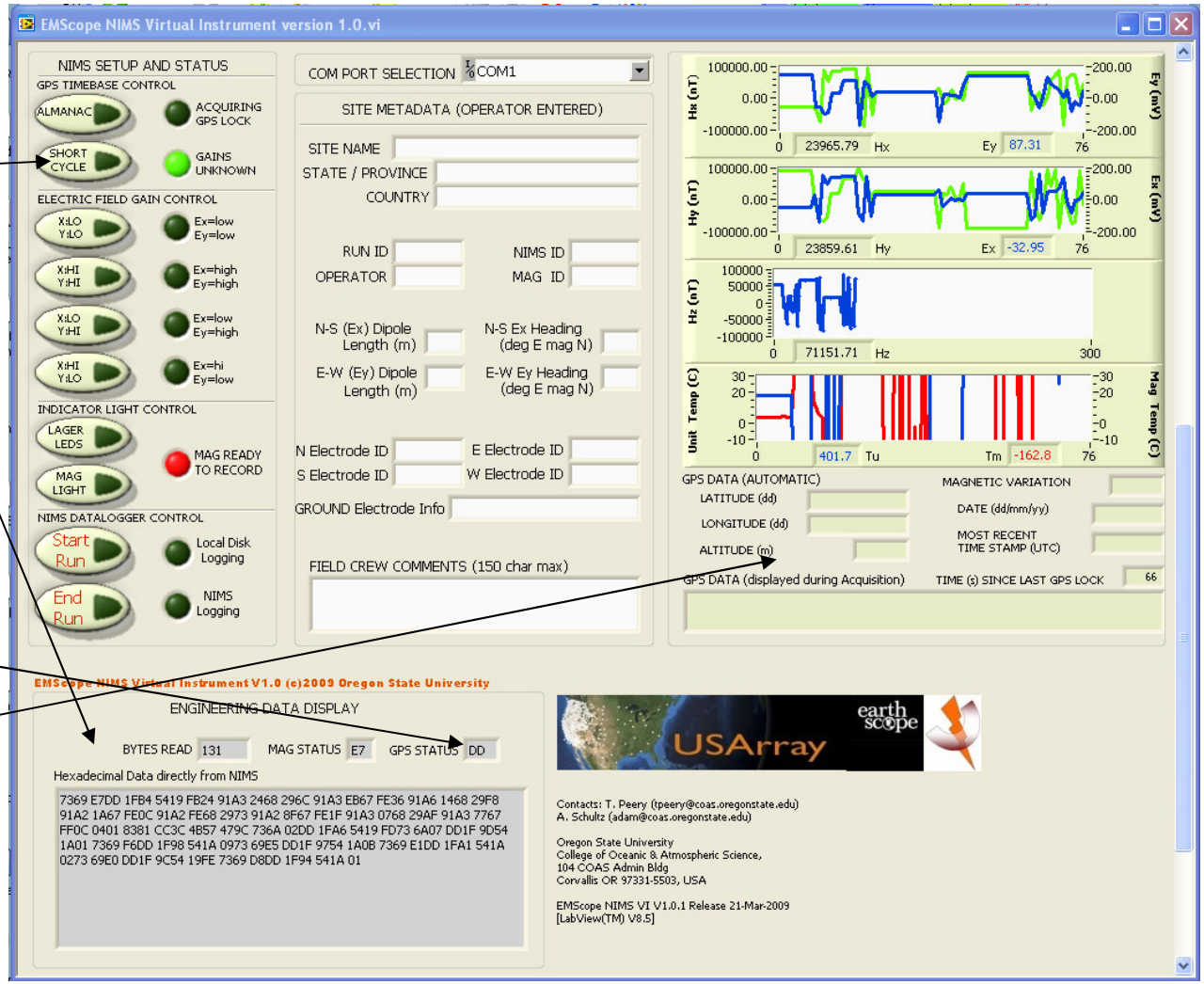
Click Short cycle GPS

You should see the Nims data Here

GPS Status should say CC when Locked

The GPS data will also update and be shown

Wait until all this occurs.



STEP 7

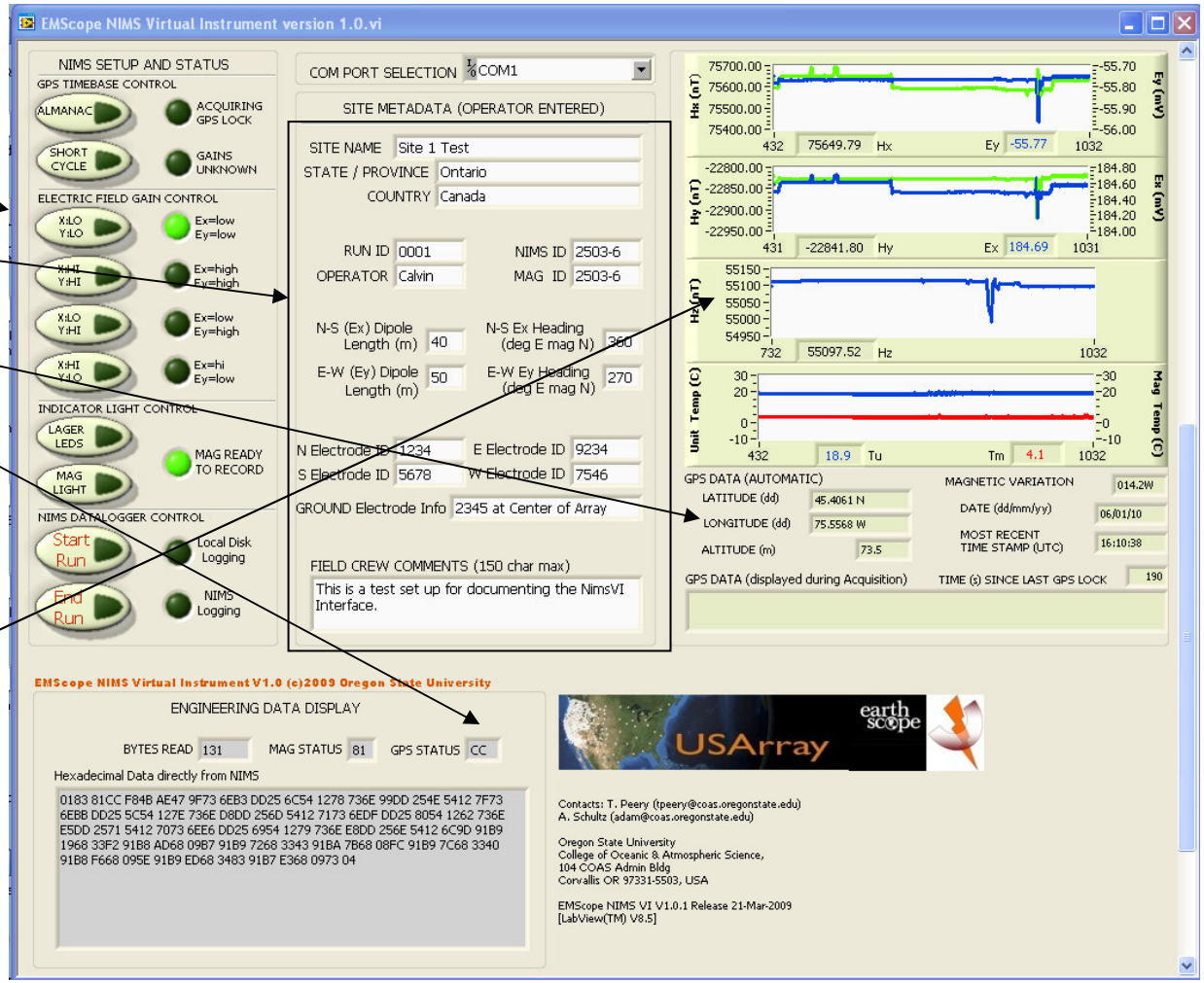
Set Your Gains
As needed

Enter Your
Metadata

Ensure the GPS is
locked

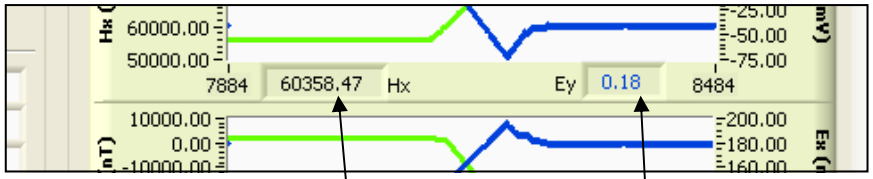
Check your Elines
and Mag data is
OK

Once all of the
above is
completed
Proceed to step 8



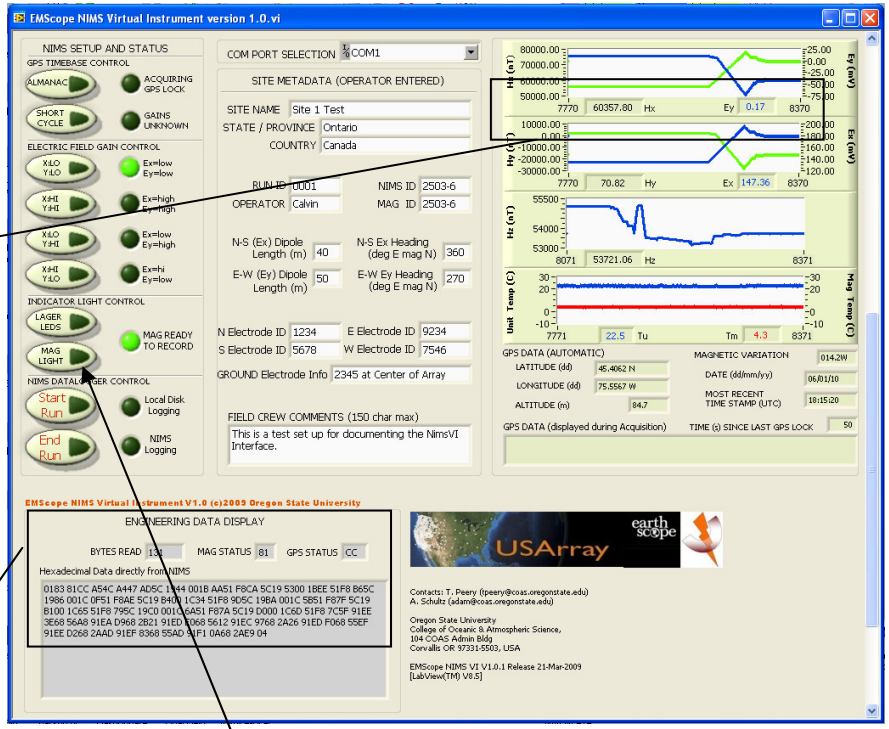
Mag Orientation

STEP 8



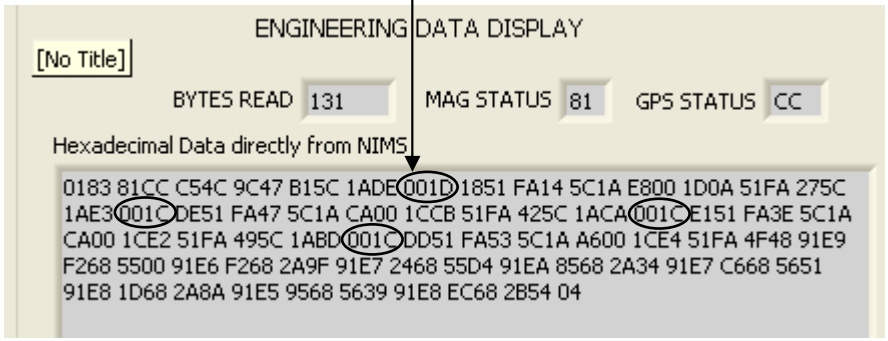
Proper Mag Orientation
HX should be a positive Figure

EY should be between
+ 2 or -2

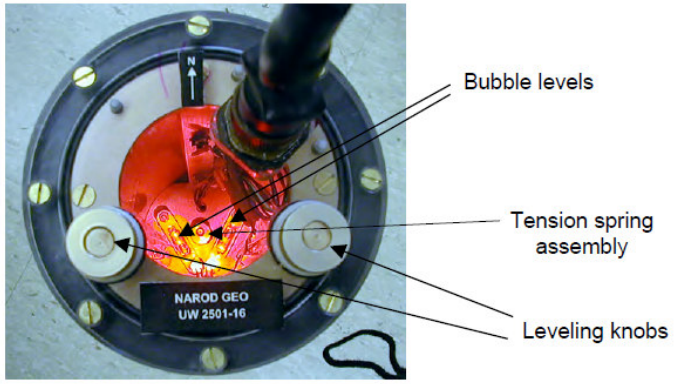


These Bytes will show 00XX when the mag is
Properly adjusted to Magnetic North

The one right under the S in Nims



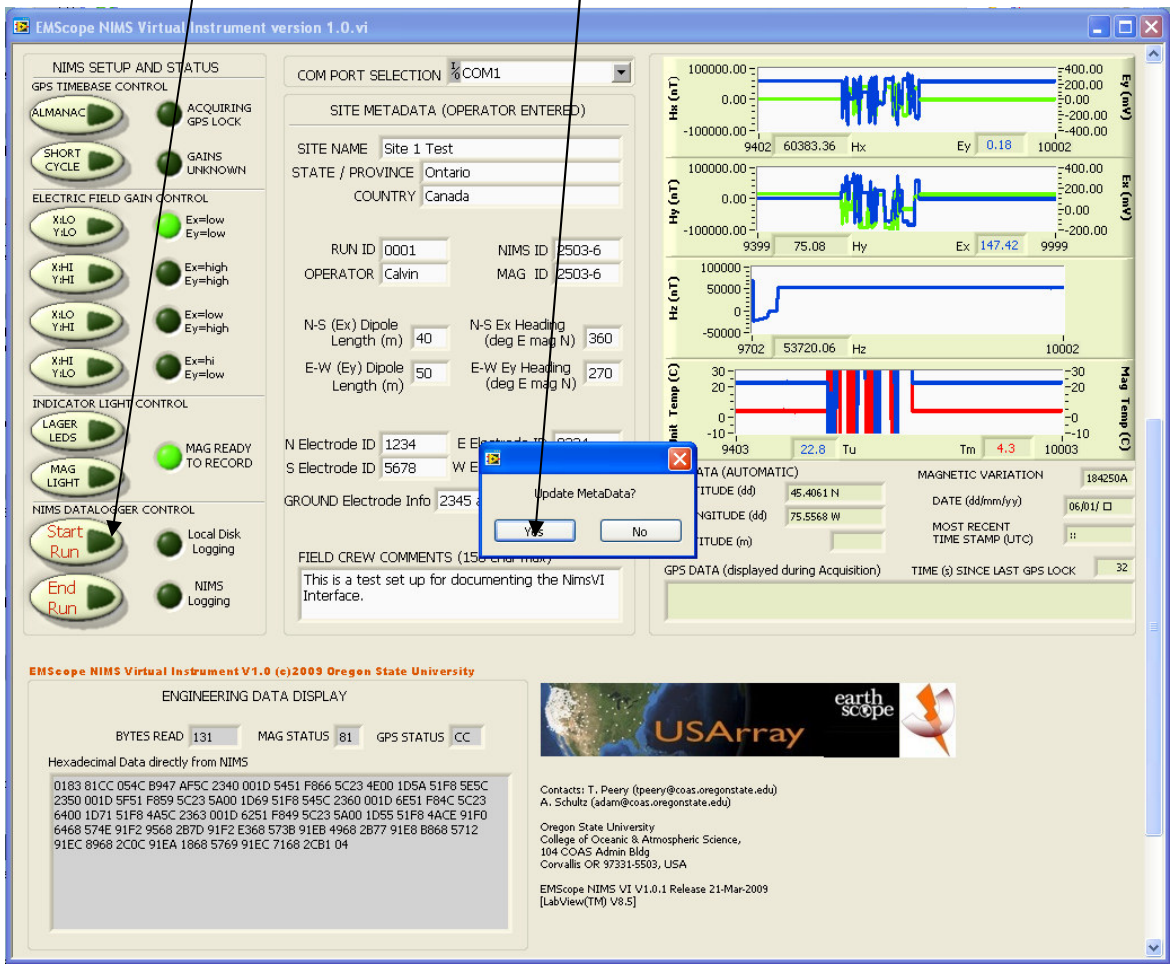
Turn on mag Light and check
Mag should be Level after orientation



STEP 9 Start recording Data

1. Click Start Run

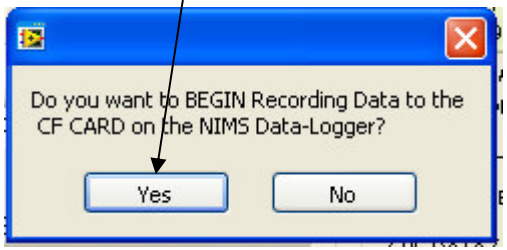
2. Yes for update Meta Data



3. Answer as you need y/n

NimsVI is capable of using the Laptop as the record device. In this case we wish to use CF.

4. Enter yes



This will update the Meta Data on the flash card which is Already recording data.

STEP 10 Follow these steps in order to ensure the data continues recording….

1. Disconnect the Comms cable from the Nims unit and install the Connector Cap on the Nims unit.
2. Close the NIMSVI software leave the site to record Data.

Step 11 Flash card retrieval (Follow these steps exactly.)

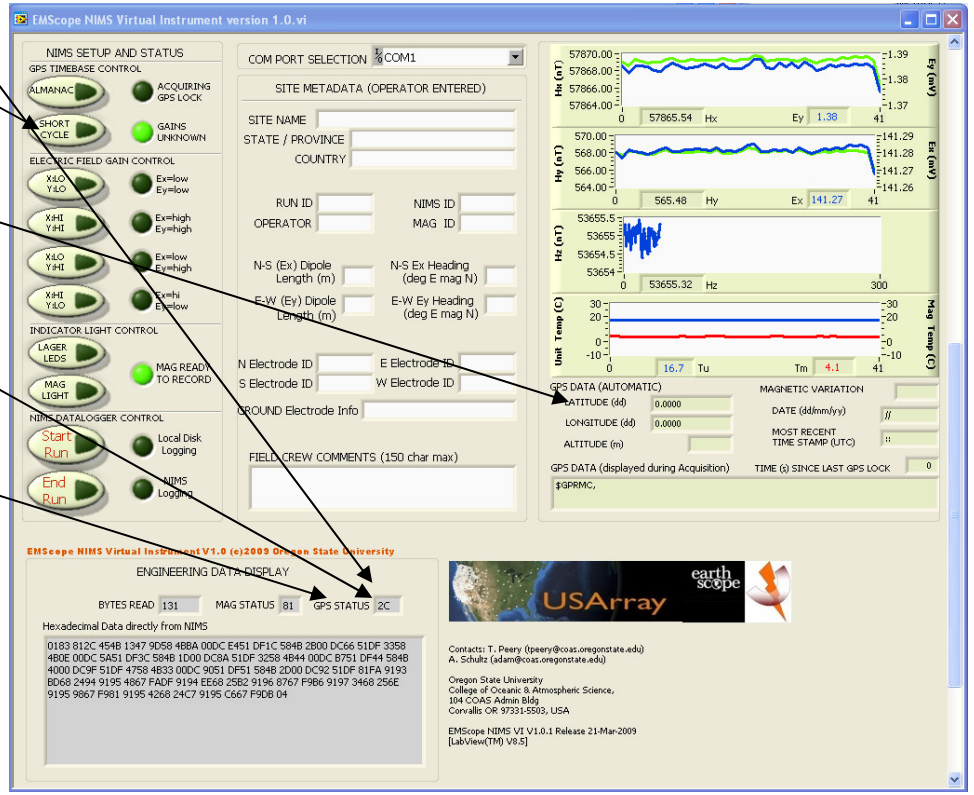
1. Connect the PC comms cable to the Nims unit and the PC.

2. Start the NIMSVI Software

3. Check the status of the Nims unit
   And ensure the GPS is locked.
   If not then you may wish to Shortcycle
   the GPS prior to proceeding.
   Wait for GPS lock. GPS Data
   will fill in showing here.

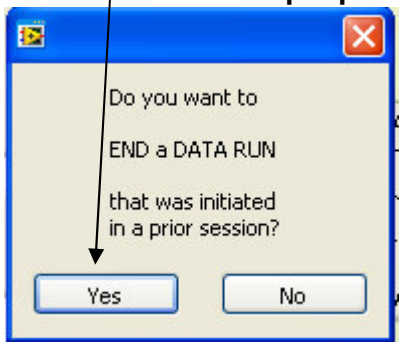
Pease note- (I have noticed a bug in the Software that shows GPS byte as “DC” After using the GPS shortcyce button. (Just Close the software and Start it Up again and the GPS will confirm CC Lock on the GPS.)

4. Flash card lights should still be off
   at this point. Low Power Mode)

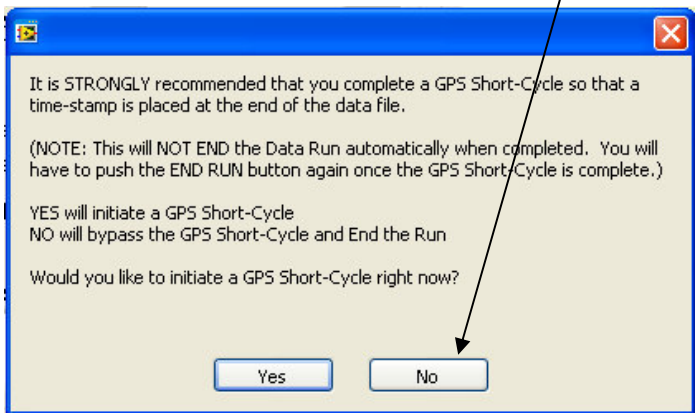


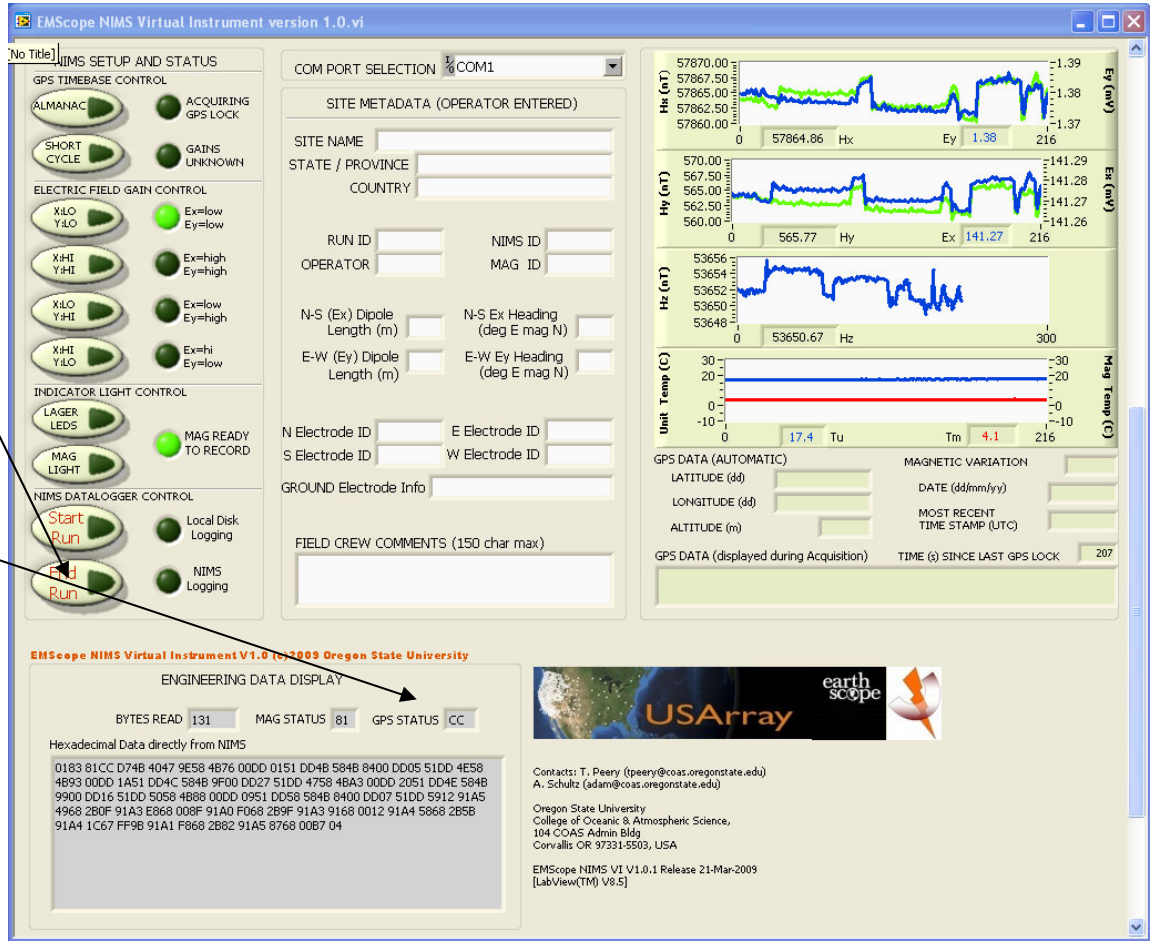
1. Click End Run and Flash card
   lights will turn on when EOF is written

Answer Yes to Popup Window



IF GPS is locked answer no to
GPS Shortcycle Question.





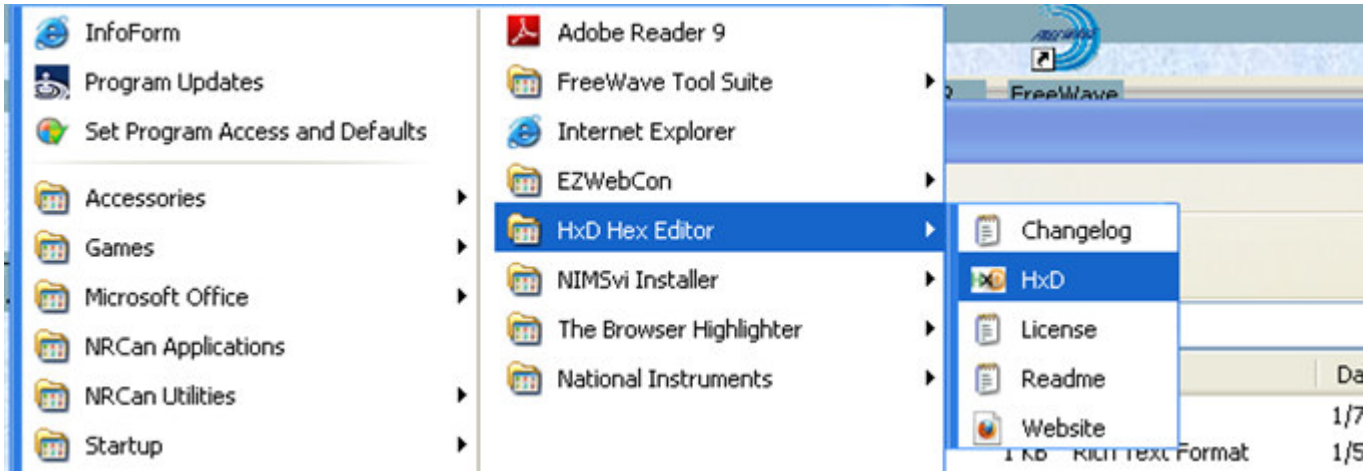
2. Remove Flash Card From the Nims unit (While it is still powered on)
3. Power off Nims Unit. Shut down the NimsVI software.

How to verify DATA.BIN Header as been updated on your CF Card

The use of a binary Hex Viewer file is used to verify the header information on Your newly retrieved CF card with recorded Nims data on it.

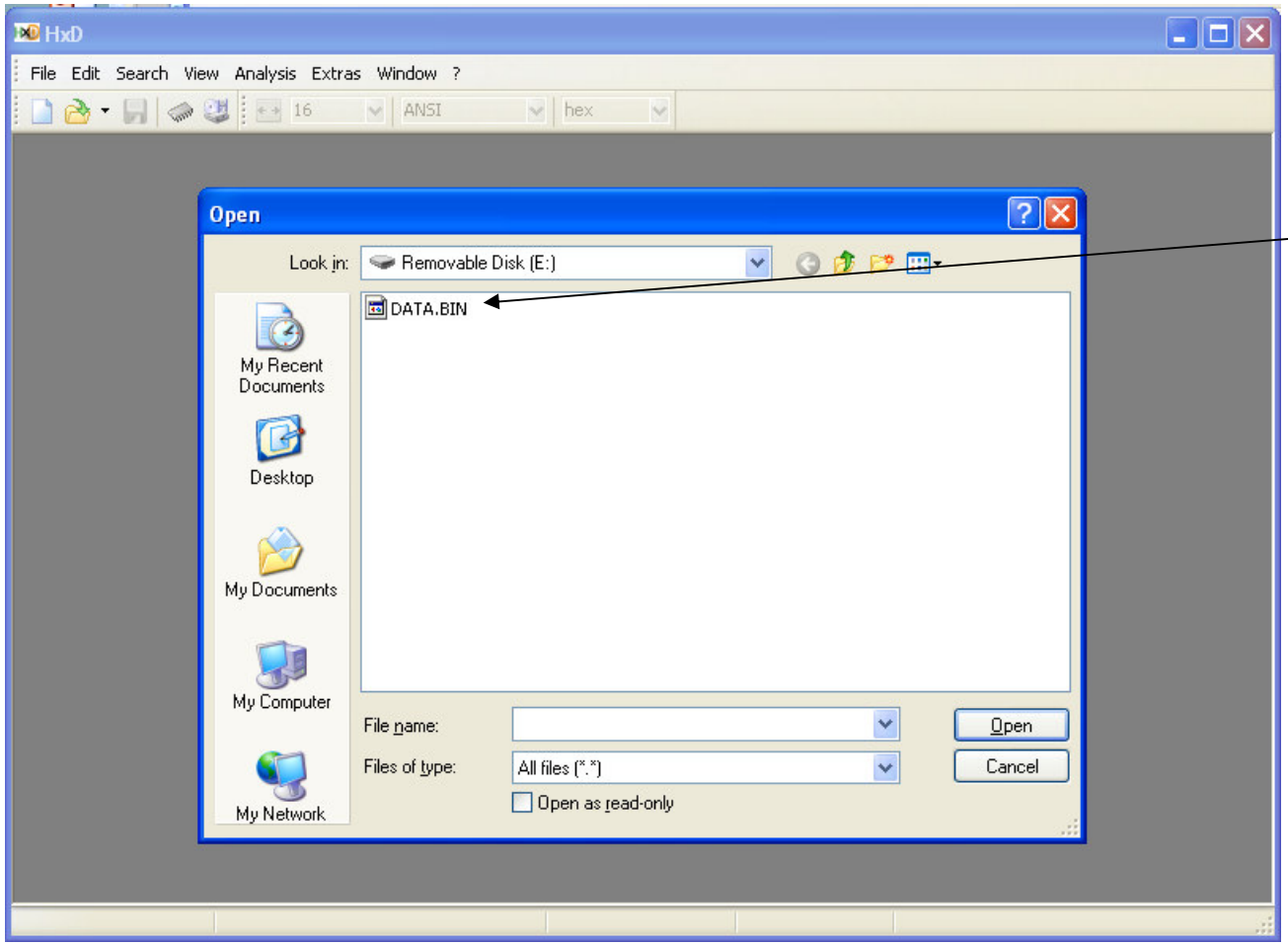
Install the HXD software from the installation directory you have already downloaded From the FTP site.

Execute the HXD program 



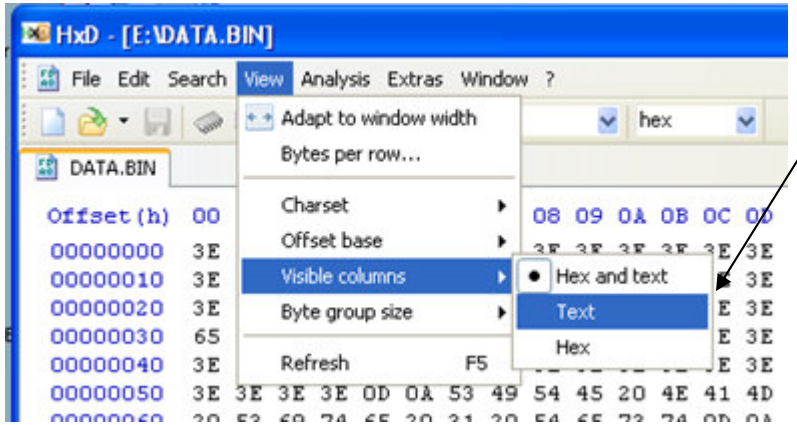
HDX File Viewer

Insert the Nims CF card into your Flashcard reader.

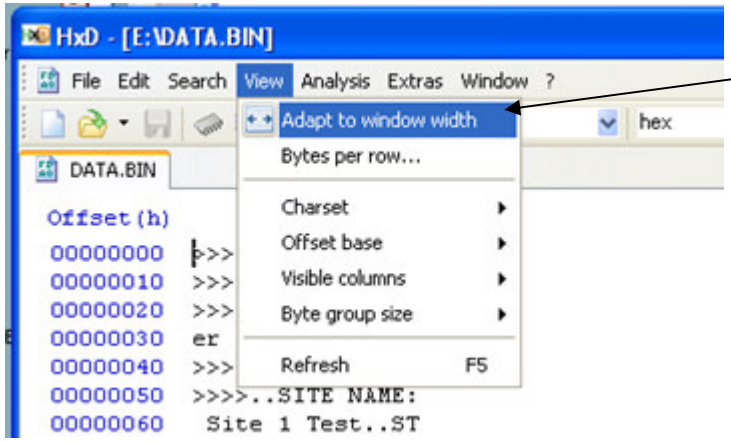


Open the DATA.BIN File on the Flash Card From the Nims

View the DATA.BIN

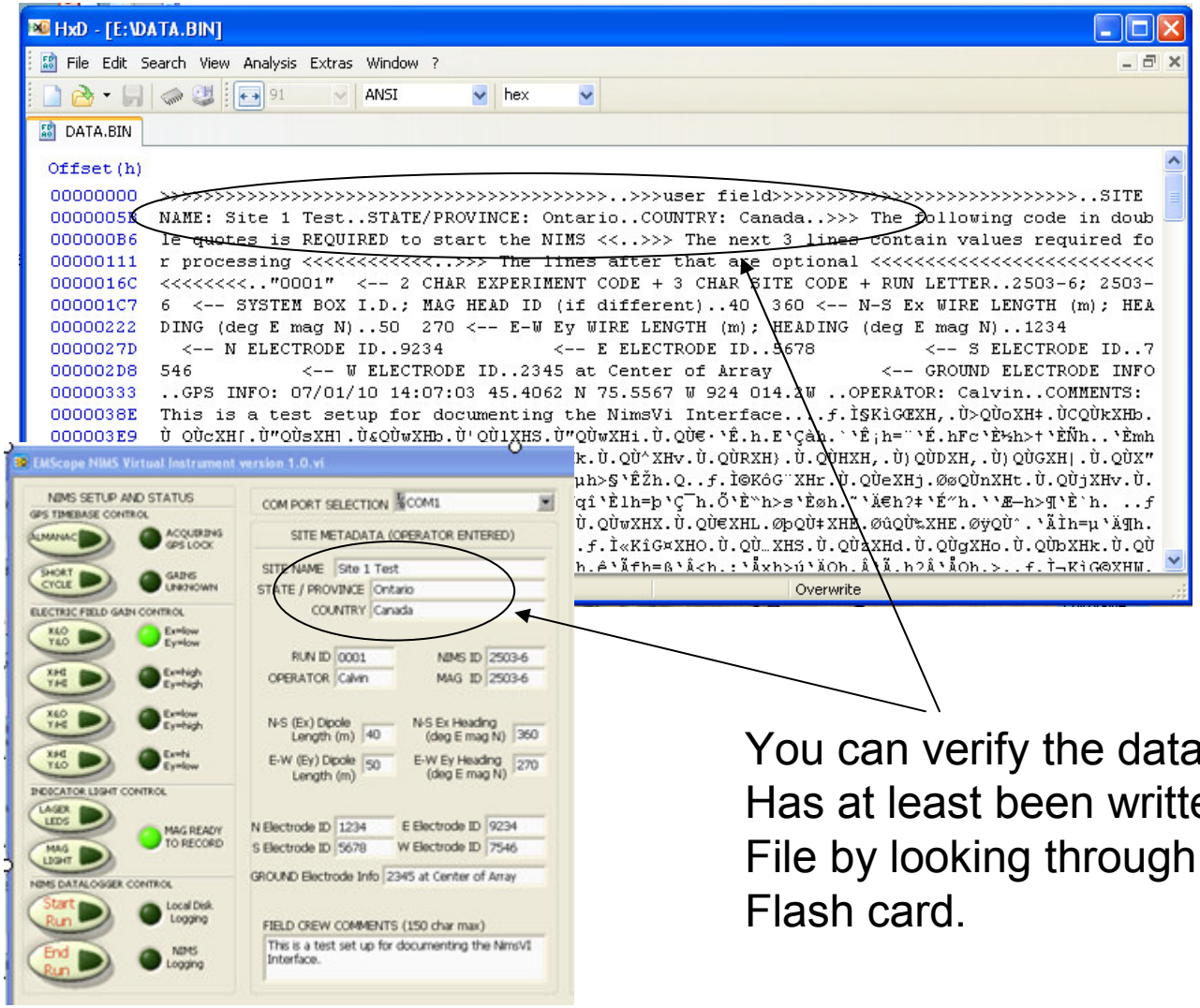


Set view to Text



Click Adapt to Width

Verify Data in Header



You can verify the data you entered
Has at least been written to the DATA.BIN
File by looking through the header on the
Flash card.