Using the NXIC-ADC with a Serial Aanderaa Optode Oxygen Sensor

INTRODUCTION:

The Aanderaa Optode is an optical oxygen sensor. The Optode sensor has RS-232 communications for both configuring the sensor and outputting data. The NXIC-ADC integrated with an AANDERAA Oxygen Optode is configured at Teledyne RD Instruments to operate without any need for operator intervention. For the NXIC to be able to read the Optode serial data stream the Optode must be set to output % saturation and have all text turned off. If the user needs to use the Aanderaa OxyView program you can use the NXIC serial sensor pass through mode to do so. The following is the procedure.

USING OXYVIEW:

When interfaced to the NXIC ADC, the Optode RS-232 output is set to *Normal RS-232 Output but with all text removed*. When using the Aanderaa OxyView software to display oxygen data, The RS-232 output is *Normal RS-232 Output.* The Oxygen Optode must be returned to *Normal RS-232 Output but with all text removed* before exiting Serial Pass Thru Mode.

In order to use OxyView with the Optode connected to the NXIC ADC, the NXIC "Serial Pass Thru Mode" is used. It is important that before continuing the NXIC is set to 9600 baud. In CTDPro menu bar select *CTD -> Communications -> Settings*. Choose *9600* and click the *OK* button.

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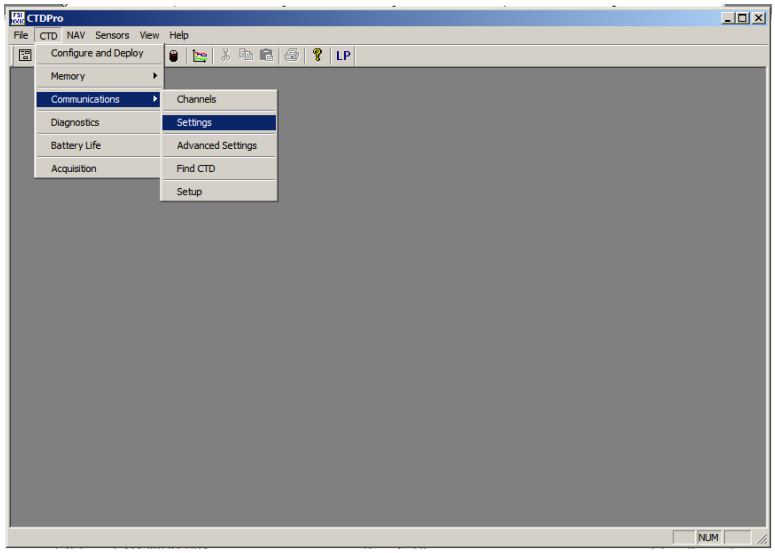
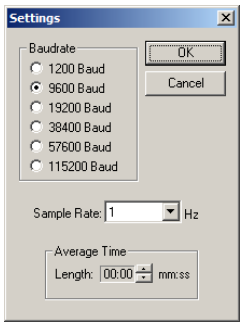
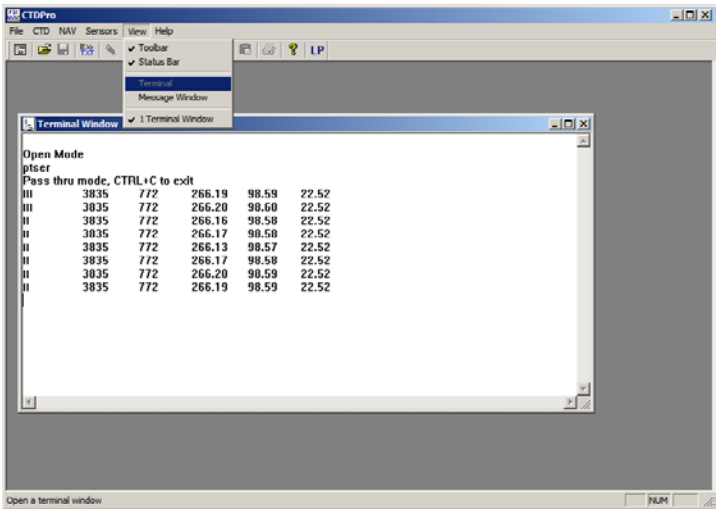




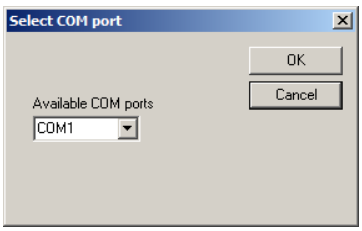
To get to Serial Pass Thru Mode use the terminal window in CTDPro. Open the terminal window by selecting *VIEW -> Terminal* from the menu bar. To get to Serial Pass Thru Mode:

1. If the CTD data is being continuously output type a capital ***S*** to stop the data (no ***<return>*** needed).
2. The NXIC first needs to be changed to Open Mode (******O<return>***).
3. Then type ***PTSER<return>*** to enter Serial Pass Thru mode.

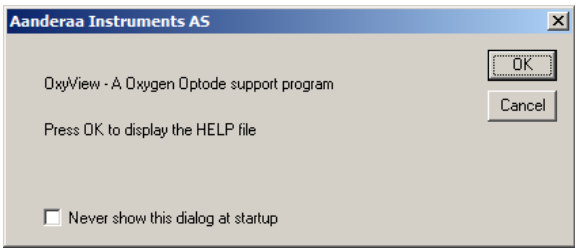


At this point all commands are directly passed to the Oxygen Optode. Oxygen data will be continuously displayed. Exit CTDPro and start Aanderaa's OxyView program.

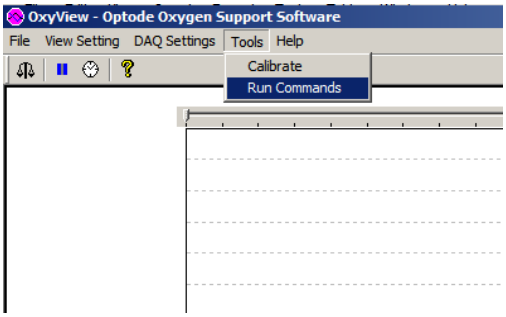
1. In the resulting dialog, choose the COM port the NXIC is connected to and click *OK.*



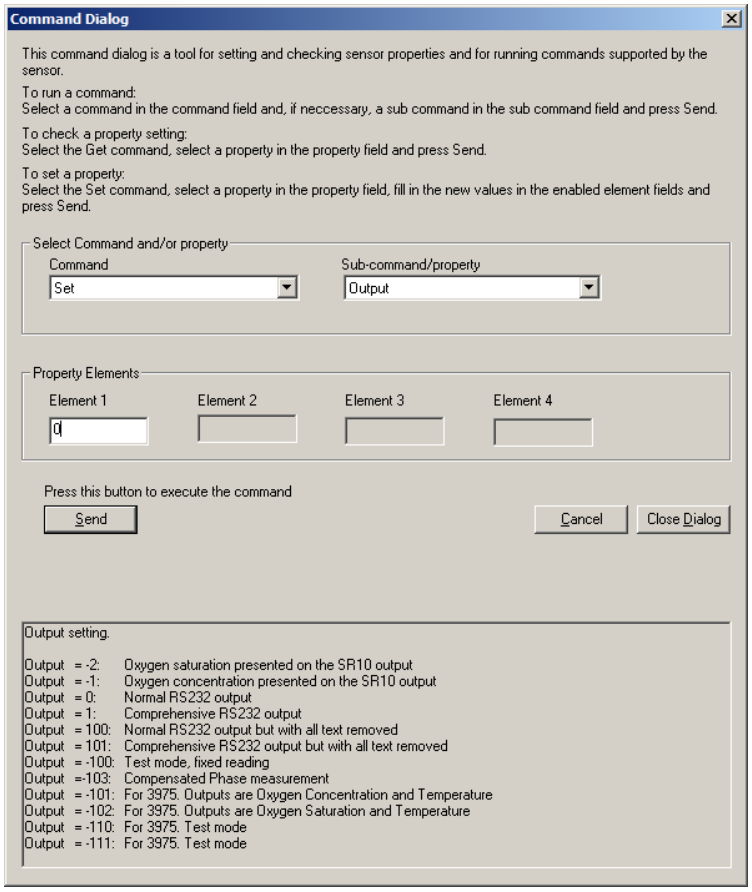
2. If the *OxyView – A Oxygen Optode Support Program* dialog appears click *OK* if you want help, if not, click *cancel.*



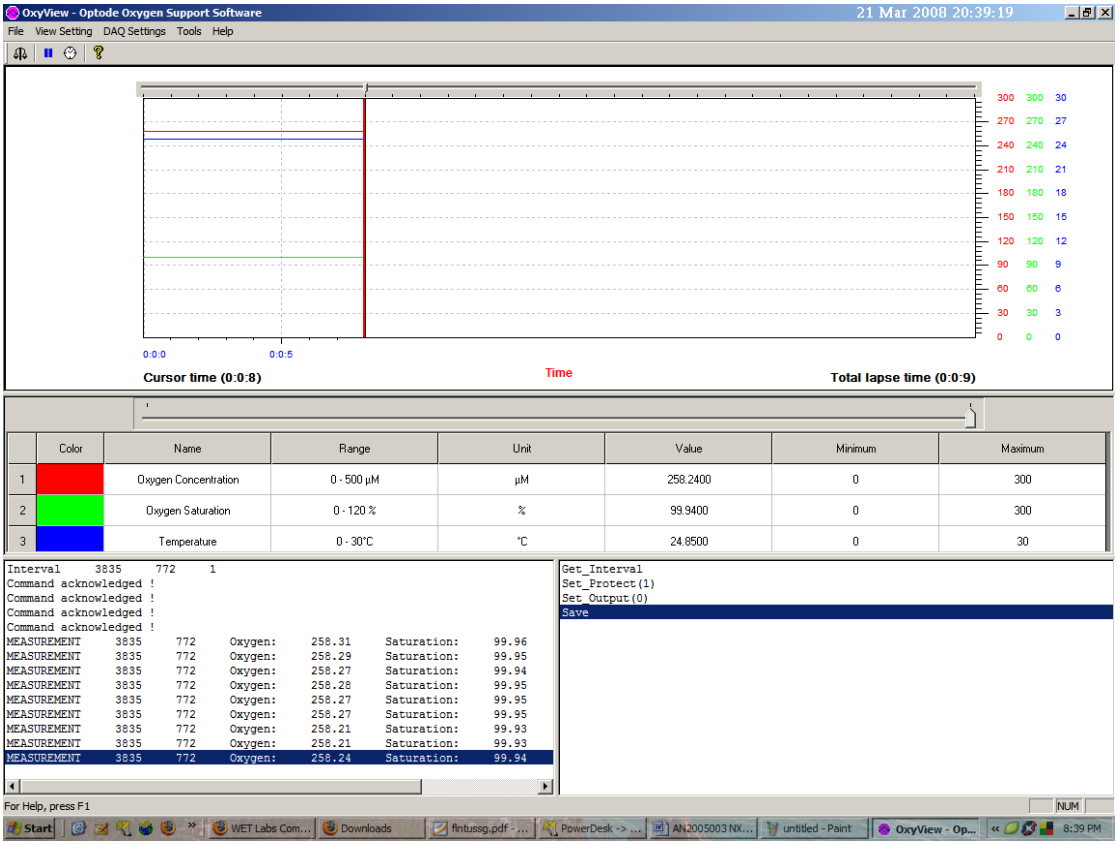
3. Once the program starts it is necessary to change the Optode's output mode to *Normal RS-232 Output*. To change the output mode, in the menu bar choose *Tools->Run Commands.*



4. In the Command Dialog box: Under *Select Command and/or property* drop down box, select *Set.* Under the *Sub-command/property* drop down box, select *Output.* Under Property Elements, Element 1, enter "0". Click the *Send* button. Now click the *Close Dialog* button.

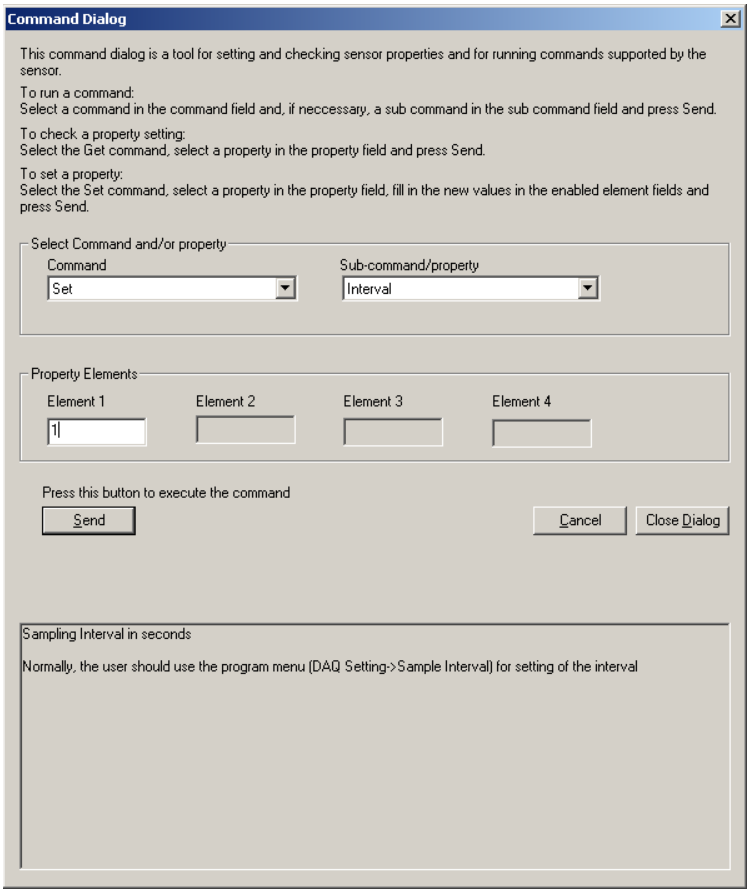


The OxyView program is now set to run.

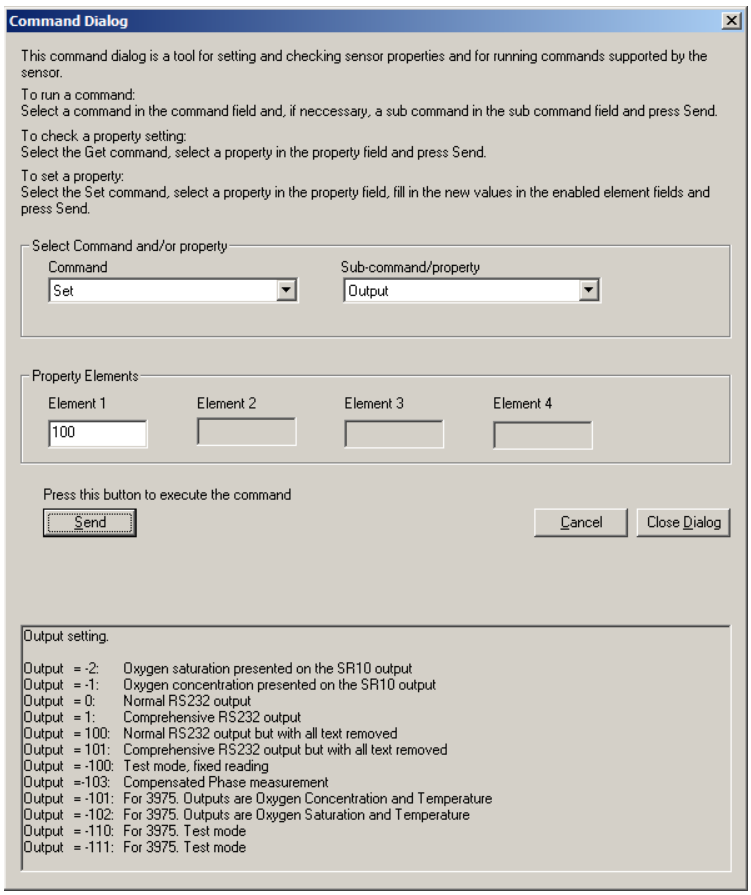

OxyView - Optode Oxygen Support Software
21 Mar 2008 20:39:19
File View Setting DAQ Settings Tools Help
Cursor time (0:0:8)
Time
Total lapse time (0:0:9)
Color Name Range Unit Value Minimum Maximum
1 Oxygen Concentration 0 - 500 µM µM 258.2400 0 300
2 Oxygen Saturation 0 - 120 % % 99.9400 0 300
3 Temperature 0 - 30°C °C 24.8500 0 30
Interval 3835 772 1
Command acknowledged !
Command acknowledged !
Command acknowledged !
Command acknowledged !
MEASUREMENT 3835 772 Oxygen: 258.31 Saturation: 99.96
MEASUREMENT 3835 772 Oxygen: 258.29 Saturation: 99.95
MEASUREMENT 3835 772 Oxygen: 258.27 Saturation: 99.94
MEASUREMENT 3835 772 Oxygen: 258.28 Saturation: 99.95
MEASUREMENT 3835 772 Oxygen: 258.27 Saturation: 99.95
MEASUREMENT 3835 772 Oxygen: 258.27 Saturation: 99.95
MEASUREMENT 3835 772 Oxygen: 258.21 Saturation: 99.93
MEASUREMENT 3835 772 Oxygen: 258.21 Saturation: 99.93
MEASUREMENT 3835 772 Oxygen: 258.24 Saturation: 99.94
Get_Interval
Set_Protect(1)
Set_Output(0)
Save
For Help, press F1
NUM

SAMPLE RATE SETUP

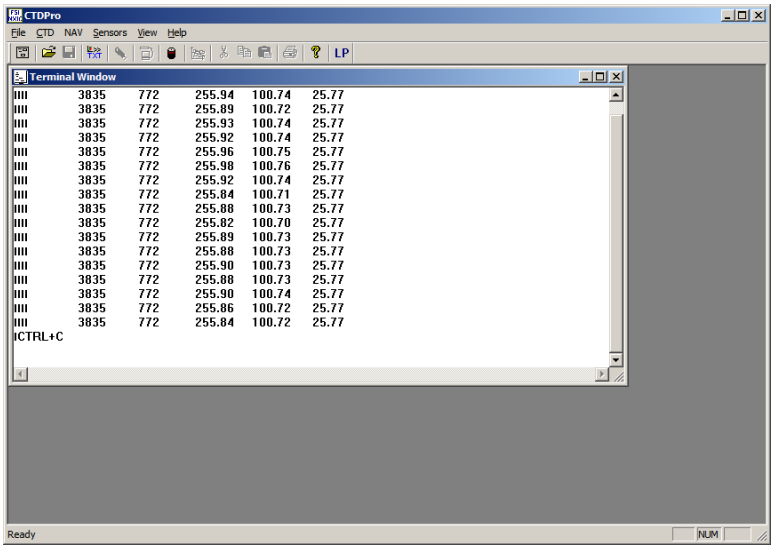
In the Command Dialog box: Under *Select Command and/or property* drop down box, select *Set.* Under the *Sub-command/property* drop down box, select *Interval.* Under Property Elements, Element 1, enter "1". Click the *Send* button. This will set the interval to 1 sample per second. Now click the *Close Dialog* button.



When finished using OxyView it is important to return the Optode's output to *Normal RS-232 Output but with all text removed* in order for the NXIC to work properly. To change the output in the menu bar choose *Tools->Run Commands.* In the Command Dialog box: Under *Select Command and/or property* drop down box, select *Set.* Under the *Sub-command/property* drop down box, select *Output.* Under Property Elements, Element 1, enter "100". Click the *Send* button. Now click the *Close Dialog* button.



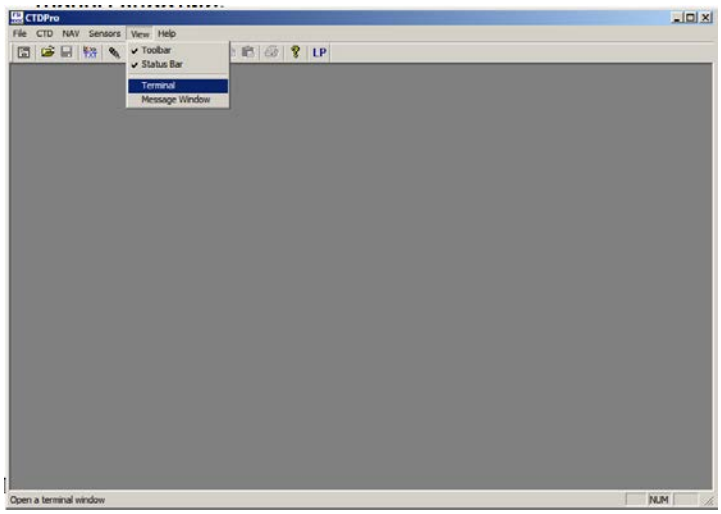
Now exit OxyView and reopen CTDPro's terminal window. Exit Pass Thru Serial Mode by typing <CTRL>C. The NXIC should now be in normal operation mode.



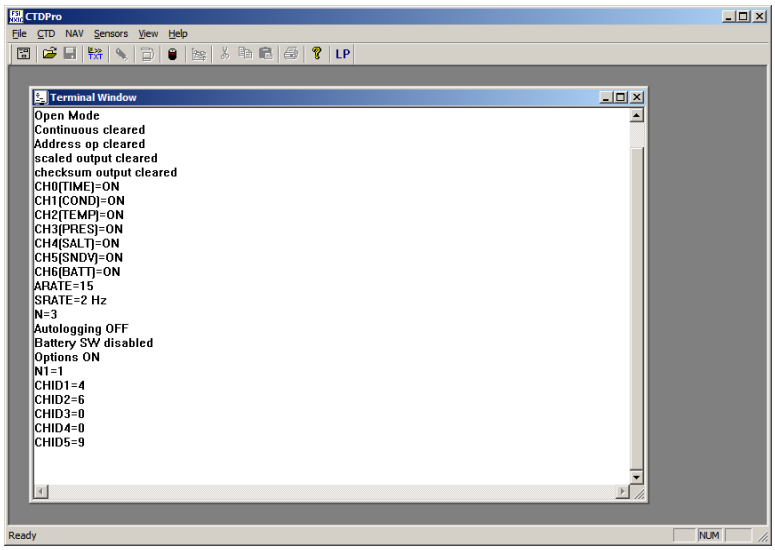
TROUBLESHOOTING:

The NXIC-CTD and Aanderaa Optode have been setup in the factory to work properly before shipping and should not need any changes other than configuring for your deployment scenario. In case of problems check the following:

1. The NXIC must have options enabled (i.e. CARD=ON;OPE=ON)
2. The AUX Serial channel id 5 must be set to id 9. (i.e. CHID5=9)
3. To check this, run CTDPro and select View -> Terminal from the menu bar



4. In the terminal window enter Open Mode by typing ***O. If data is scrolling type S to stop the data then type ***O to change to open mode. Once in open mode, type ROP and observe the following;



5. Verify that Options are on and that CHID5 = 9.
6. If options are turned off, turn them on by typing OPE = ON<CR>, and CARD = ON<CR>.
7. If the channel id is not correct, type CHIDx=y where x is the channel number and y is the id. To set channel 5 to 9 you would type CHID5=9<CR>.
8. Store any changes to the setup by typing ***E<CR>.

Please contact TRDI customer service to request technical support. TRDI can be contacted using any of the following means:

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