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Tech Note 120822-1: Using a Terminal Program to set up *ECO* Sensors

Description of Problem

Customers are reporting that when they download their data from FLNTUSBs after a deployment, the data is corrupted. This appears to be caused by an unintentional interaction with ECOView that enables extra columns during the instrument setup.

Serial Numbers Affected to Date:

FLNTUSB 2162
FLNTUSB 2164
FLNTUSB 1897

Solution

Use the low-level interface commands in a terminal program such as TerraTerm, Moto-Cross, or HyperTerminal to make sure the desired settings are saved in the *ECO* sensor.

Interface Commands

The table below shows the hardware requirements and interface commands.

- baud rate: 19200
- data bits: 8
- parity: none
- stop bits: 1
- flow control: none

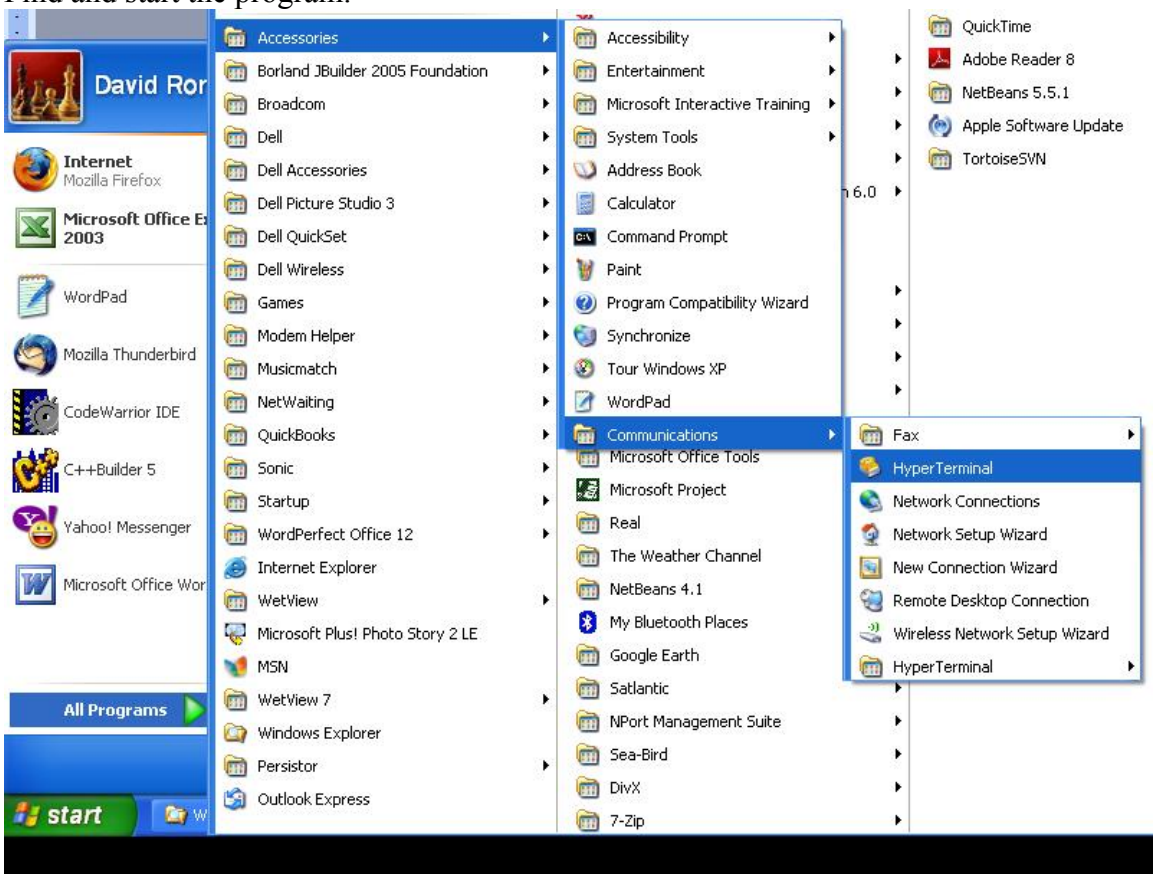
Command	Parameters passed	Description
!!!!!	none	Stops data collection; allows user to input setup parameters. Note that if the meter is in a sleep state, the power must be turned off for a minute, then powered on while the "!" key is held down for several seconds.
$asv	1, 2, or 4	Analog scaling value. Counts will be divided by this for analog output: a value of 4 will make the analog output cover the whole output range; 2 will cover half, and 1 will cover only the bottom fourth of the 14-bit count range (Fl only).
$ave	single number, 1 to 65535	Number of measurements for each reported value
$cal	1 (on) or 0 (off)	Single-channel Chl Fl only: toggles column outputting "processed" data (µg/l).
$clk	24hr format time, hhmmss	Sets the time in the Real Time Clock
$dat	date, format mmddyy	Sets the date in the Real Time Clock
$emc	none	Erases the memory; displays menu when done
$get	none	Reads data from the sensor. Prints "etx" when completed.
$int	24hr format time, hhmmss	Time interval between packets in a set
$mnu	none	Prints the menu, including time and date
$mvs	1 (open) or 0 (closed)	Opens or closes the Bio-wiper

$pkt	single number, 0 to 65535	Number of individual measurements in each packet
$rec	1 (on) or 0 (off)	Enables or disables recording data to the sensor's memory
$rls	none	Reloads settings from flash memory
$run	none	Executes the current settings
$set	single number, 0 to 65535	Number of packets in a set
$sto	none	Stores current settings to internal flash
$ugl	0 to 255	µg/l conversion value (calculates slope x 10,000). Chl Fl only.

Set up and Use a Terminal Program

The steps to set up and use HyperTerminal are given as an example.

1. Find and start the program.

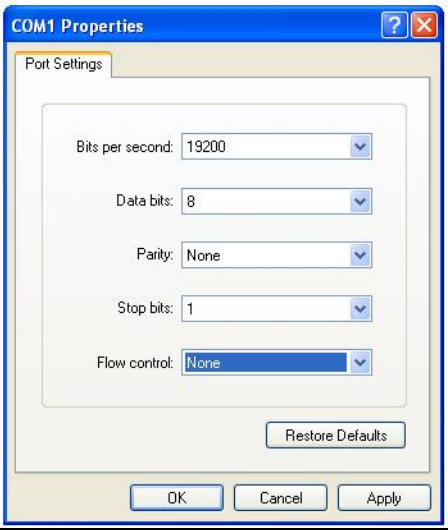


2. Select a Connection Name and press OK. In the example, the name will be ATest.

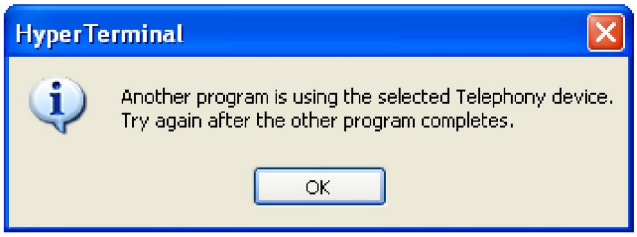
3. Select the COM port to communicate to the instrument with and then press OK. In this example, COM1 has been selected.

4. Select the desired baud rate (shown as Bits per second), turn off the Flow control by setting it to None, and press OK.

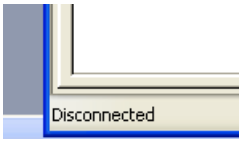
   (The default baud rate for *ECO* sensors is 19200.)



5. After pressing OK, you will either get …

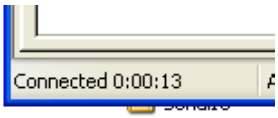


With Disconnected showing in the lower left corner,



OR

Connected. If you are connected, data will appear as soon a test cable is connected to the host PC and *ECO*, and power is applied to the *ECO*.



6. If you are Disconnected, make sure that all other programs that might be using the COM port have been turned off, then cycle the two telephone icons on the tool bar.

Press the disconnect icon to turn off the PC COM port and stop communication with the sensor.

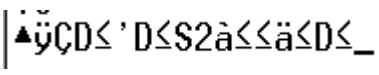
Press the connect icon to turn on the PC COM port and start communication with the sensor.

7. If you are connected and have data that looks like this:

```
5/1/09      12:27:39    695   2097  700   2556  547
5/1/09      12:27:41    695   2098  700   2556  547
5/1/09      12:27:42    695   2096  700   2568  547
5/1/09      12:27:44    695   2096  700   2563  547
5/1/09      12:27:46    695   2096  700   2565  546
5/1/09      12:27:48    695   2097  700   2563  546
5/1/09      12:27:50    695   2097  700   2561  546
5/1/09      12:27:51    695   2097  700   2561  546
```

You are all set.

If you are connected and get binary data that looks like this …

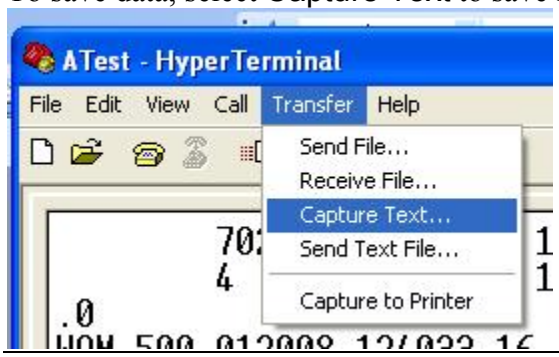


The baud rate is incorrect. Change the baud rate (go to Step 4).

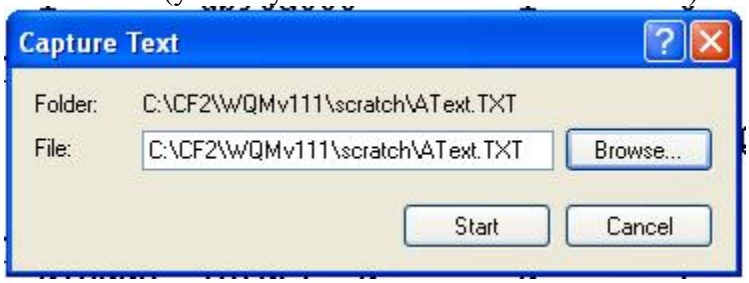
8. If the sensor is connected to the PC, powered on, with the correct COM port selected and you get a blank terminal screen, try using the connect/disconnect icons from step 6 to cycle the COM port off and on to get communications started.

9. If everything is selected correctly (baud rate, COM port, power, cable) but d see any data, you may have to shut down the computer to reset the Windows driver for the COM port.

10. To save data, select Capture Text to save incoming data.

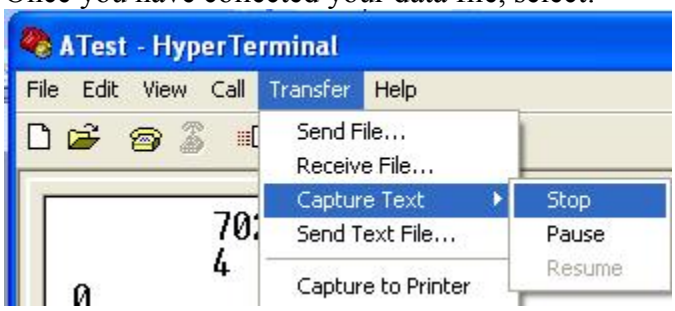


11. Select a file (you may need to use the Browse button)



and press Start.

12. Once you have collected your data file, select:



To Stop or Pause data logging.