Coralba - Portable Friction Tester

1	**Introduction**	The PFT have the facility to down load the measurement results from the electronic box to a PC via RS 232 cable connection. The Data is presented in ASCII file format and can easily be imported to a spreadsheet like Excel or similar and be presented in a table or graph.
2	**Pre-conditions**	The memory in the PFT holds the data as long as the electronic box is powered on. Any download must be performed before switching off. If the box is switched off the data is no longer available and can not be retrieved later. The next time the electronics is switched on the readout on the display will say "Ready" meaning ready for a new series of measurements with a total possible accumulated measurement length of roughly 115 meters.
3	**Connecting**	The special RS232 download cable provided by Coralba should be connected to the front panel on the PFT. The D-sub/ RS 232 connector should be connected to a PC at the COM port. If your PC do not have a serial connection but only USB ports, an adaptor can be purchased and installed in between. Note that such adaptors might need download of software provided from the adaptor supplier.
4	**Hyper Terminal**	The communication is handled over the "HyperTerminal" that is a standard feature in Microsoft Windows. For Vista users were the HyperTerminal is no longer included in the program but can be downloaded free of charge see Attachment 1. Alternatively you can also buy and download a HyperTerminal from independent software houses.

5 Set up

When opening the HyperTerminal you need to set some parameters.

-The relevant COM port where the cable is connected to needs to be entered into the HyperTerminal.

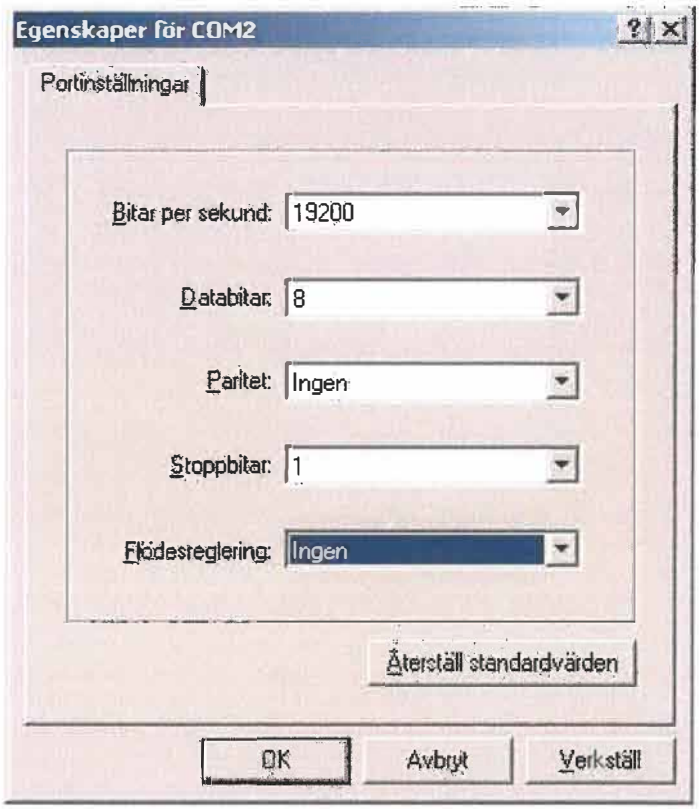
Step 1

Step 2

Note that if you are using USB port and adaptor the COM port number given by the system can be higher than what is available in HyperTerminal. In that case you need to readdress the COM port for the USB connection and enter into HyperTerminal when ready. The COM port setting can be changed in the Controlpanel, Devicemanager, Ports (COM/LPT). Select the USB to serielcomm. Port (COMXX). Right click and select Properties, Portsettings,

Advanced, Com port number and select a lower port number that is not in use.

Required settings for the HyperTerminal communication over the COM port are.



(sorry fort he swedish version but english text is not availble right now, Ingen“ means “none“)

When this set up is performed the HyperTerminal is ready to talk to the PFT box.

6 Download

If the small menu (as per below) does not appear direct please push enter.
NOTE caps lock must be on. The communication program is case sensitive.

The menu show;

**********HELP MENY**********

B	--------	SHOW BATTERY STATUS	(Battery status, shall be above 5,5V)
C	--------	CALIBRATE	(Show calibration koefficients)
S	--------	STATUS OF PFT2004	(Number of measurements and dist.)
T	--------	TRANSFER DATA TO PC	(Write T for download of data)
U	--------	MOMENTARY FRICTION	(Momentary friction)

To download a measurement press T (caps on).

First the momentary friction readings will show and following these results a summary is shown (same as on the display) under the heading "Distans X". Note that the min and max values can be affected if the speed is changed during the measurement by acceleration or decelerating and are therefore not always representative. The average value is always representative for the distance measured providing that the standard deviation is below 0,1.

Example:

0,9500821
0,9807315
0,9933519
0,832893
0,9284472
0,9284472
0,9284472
0,9933519
0,969914
0,989746
1,007775
0,9032065
0,9590965
1,045636
0,9374616
1,047439
1,04203
0,8725571
0,9789286
0,9122209
0,8148639
0,8959948
0,9014035
0,8815716

0,8491192
0,9663081
0,9446733
1,045636
0,9987605
0,9951548
0,9735198
1,025804
0,7932291
0,8383018
0,9735198
0,8996006
0,9122209
1,02941
1,004169
0,9735198
0,9627024
1,024001
1,000563
0,9590965
0,8779658
1,020395
1,101526
1,005972
0,9825343
1,078088
1,000563
0,9861402
1,018592
0,9717169
1,052848
1,02941
0,9266442
0,9158268
1,043833
0,9338559
0,9392646
0,8833745
0,9122209
0,9590965
0,8076524
0,9627024
0,9392646
0,9500821
0,989746
0,8996006
0,9248413
1,117752
0,8923889
0,9446733
0,9068122

0,9572936
1,047439
0,9789286
0,9933519
1,027607
1,014987
0,9140239
0,989746
0,8220756
0,9608995
0,8148639
0,9392646
0,9122209

**** Distans 5 ****
2 169 021 864
Min:0,8685905 (min momentary value received)
Mean:0,9582037 (this is the average value during the sequence)
Max:1,037703 (maximum momentary value received)
Std:3,835485E-02 (standard deviation should be above 0,1)
Length:1,72549 (total length measured in this sequence)

(Note no real data, just for demo purpose measured on wet asphalt)

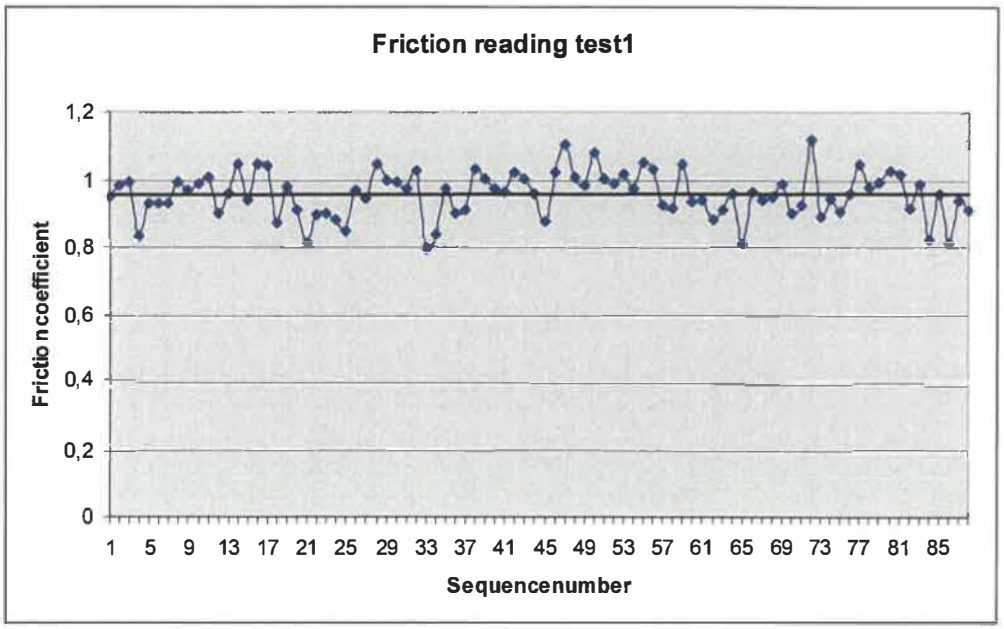
Each measurements point represents approximately 2cm of travel.

For certain special measurement the momentary values can be very important information. As example if you are measuring on a surface with extremely different frictions the momentary values can be used in order to identify exactly the readings for high and low friction when the average readings is not relevant.

7 Report

In order to present the data in a report you can either copy the data direct from the HyperTerminal or paste in a spreadsheet program for further work. In the HyperTerminal there is also a feature for Transfer, Capture text, this will then enable you to enter the desired place on your PC were you would like to save this measurement data as a text file for later use. When this feature is used the download will automatically take place when the capital T letter is entered on the Hyper Terminal screen. When ready switch this feature off.

Example of excel report as diagram;



8 Finishing

When ready with the download no special actions are needed. Disconnect the RS232 cable from the PFT and power off. Then next time the PFT is switched on it will be ready to start a new set of measurements.