Installation Guide

www.wmicrotracker.com

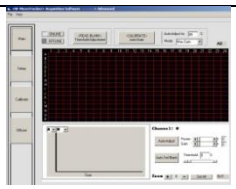
Data acquisition system WMicrotracker ONE
Hardware version: WMTK09-R01/V1.4-R01
Software version: WMTK V3.0 Rev.Beta (2016)

For research purpose only. Not for human diagnostic.

Thank you for acquiring our wMicrotracker system. The following document should guide you through the installation process.

Packing List

The system includes the following accessories:

	Microplate reader system.		9V DC, 1.5Amp switching Power Source.*
	USB-B cable.		Microplate format adapters: -384 wells -96 w. flat bottom -96 w. "U" shaped bottom.
			Acquisition Software: available from www.phylumtech.com.

* Due to customs restrictions, in some countries the shipping might not include the power supply.

Installation and setup requires the following items:

- 9V DC (up to 12VDC) switching power supply with 1.5 Amps output.
- USB-B connection wire (Provided).
- IBM PC compatible with the following minimum requirements :
    - Pentium II processor or above (>1GHz clock).
    - 512Mb of RAM memory.
    - 1 USB port available.
    - DVD-ROM unit (optional)
    - Windows XP 32bits (or higher) operative system.
    - At least 200Mb of free HD space.
- Workbench space required for equipment installation: 22cmx28cmx9.1cm.
- Ambient free of vibrations and dust.
- Optimal temperature range: 10 to 37ºC*. Preferably low humidity (<50%).

* This range is for equipment optimal functionality only; biological samples might have unique temperature requirements.

Step One, Software Installation

- Install the “USB driver“ in the computer you plan to use for the data acquisition of your wMicrotracker system. You’ll find the driver at www.phylumtech.com →Support page → “USB Direct connection”.

Note: If you like to check USB-driver was properly installed, verify if a new COM Port has been detected in your computer (into Devices&Printers Windows menu) after you connect WMicrotracker equipment.

- Install the wMicrotracker Acquisition Software: Download the files from www.phylumtech.com →Support page → Version 3.x
- Unzip the files into a temporary folder and follow the instructions detailed in the file Readme.txt. In Brief:
    - you will need to copy \wmicrotracker\ folder to c:\wmicrotracker
    - after installing the usb driver, just execute c:\wmicrotracker\wmicrotracker.exe file

Some files included in the acquisition software:	
wmicrotracker.exe	Main application
wmt_help.pdf	help file
setup.dat	Experimental setup
threshld.dat	Channel threshold values
groups.dat	Groups names
chgroup.dat	Groups of channels
status.dat	Channel status (enable/disable)
w96f.dat	384 channels setup for 96well flat bottom plate
w96u.dat	384 channels setup for 96well "U" shape plate
w384.dat	384 channels setup for 384well plate
Runtime files .dll	Runtime for programming language
com32.ocx	communication protocol library (only in ocx software version)

Step Two, Hardware Setup

- Plug in your Power Supply to any regular Power Outlet and the output cable of the Power Supply to the back of your WMicrotracker at the socket marked “12VDC or 9VDC”.

Power Supply Connection.

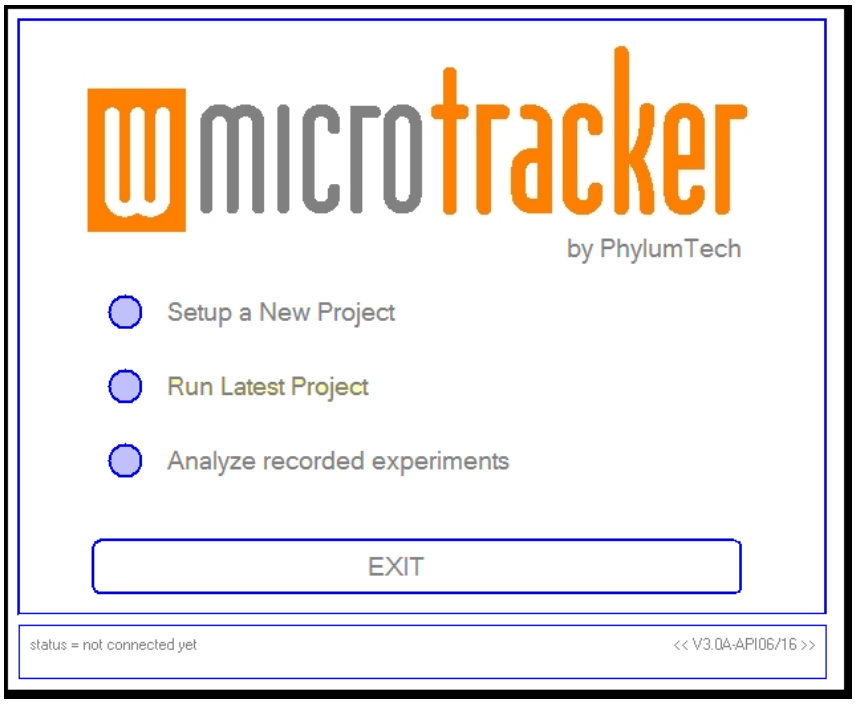
- When you connect the Power Supply to the equipment the green light on top of it should turn on and the blue light should flash three times (this is a system check of the microprocessor).

- Connect the USB-B cable to the USB COMM PORT at the back of the equipment and the USB end the any free USB port on your computer.

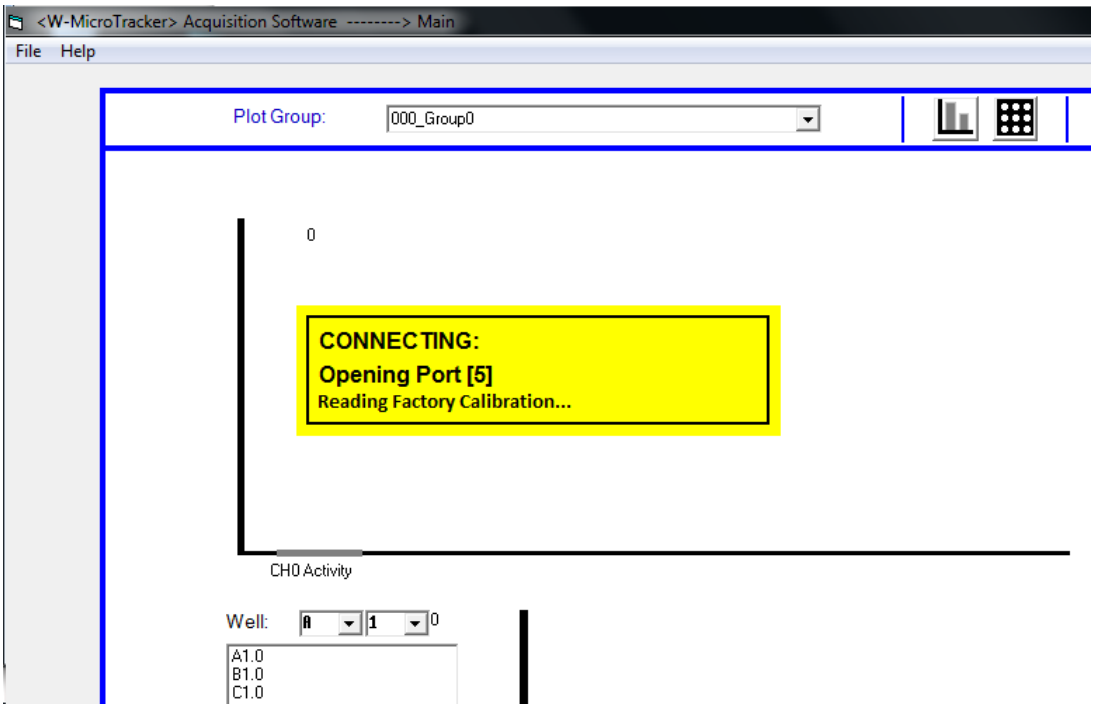
*RS232 backup port is not necessary to connect. It is only maintained for compatibility issues.

Step Three, Running the Acquisition Software [V3.x]

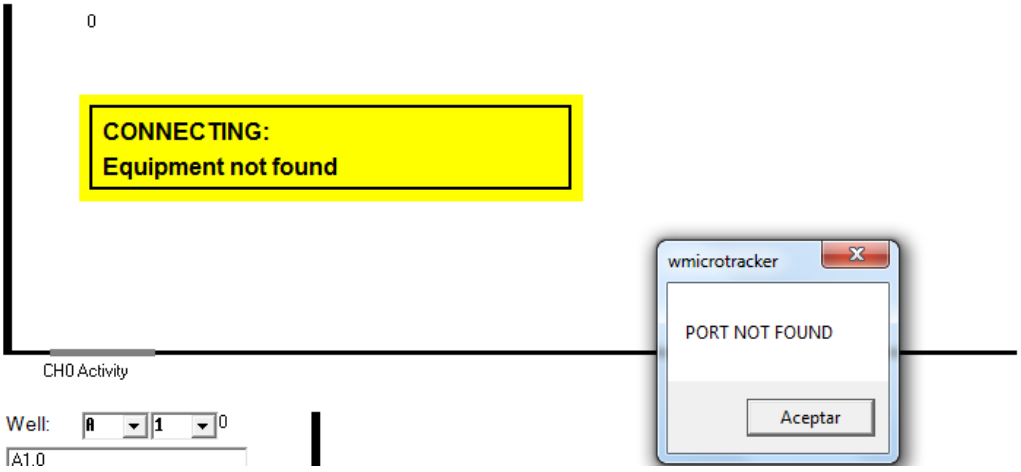
- Run the “wmicrotracker” executable file form the folder you chose at the installation step. If everything went well the application should start immediately with this window:



- To check if the hardware is correctly detected go to: “Run Latest Experiment”. An auto diagnostic popup yellow window is going to appear:



- If there is any problem with the detection of the system then a COM PORT ERROR pop-up will be shown;



if you have any problem please check our *System Check-ups* document at our website or feel to contact us directly.

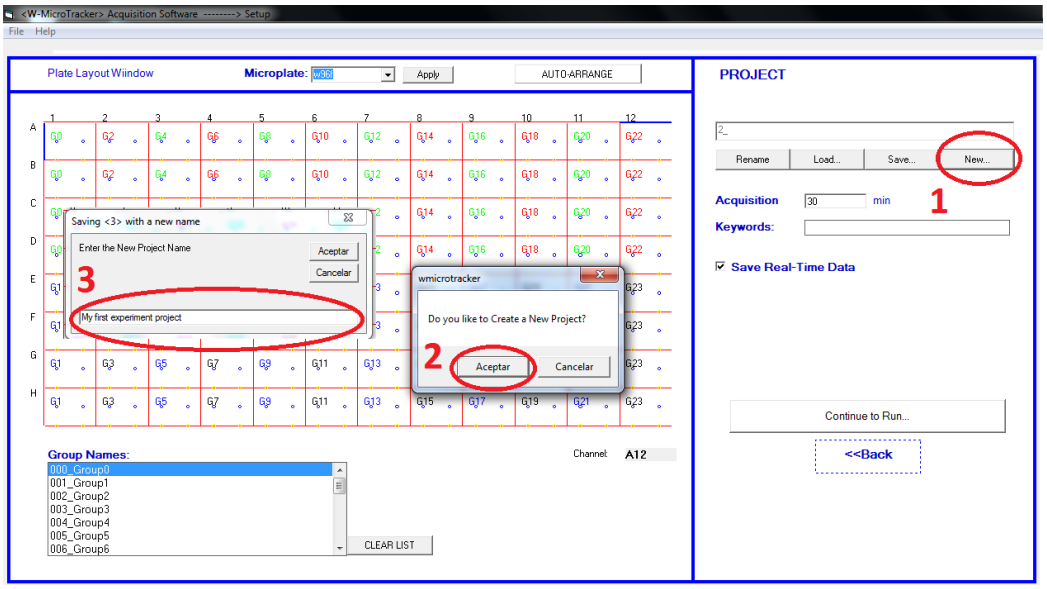
Step Four, Setup experimental plate configuration

Before running an experiment it is necessary to configure your microplate format and experimental groups. This configuration will be saved in ”project folders” inside c:\wmicrotracker . You will find later

projects with identification names similar to this format: P00001. P00002…..

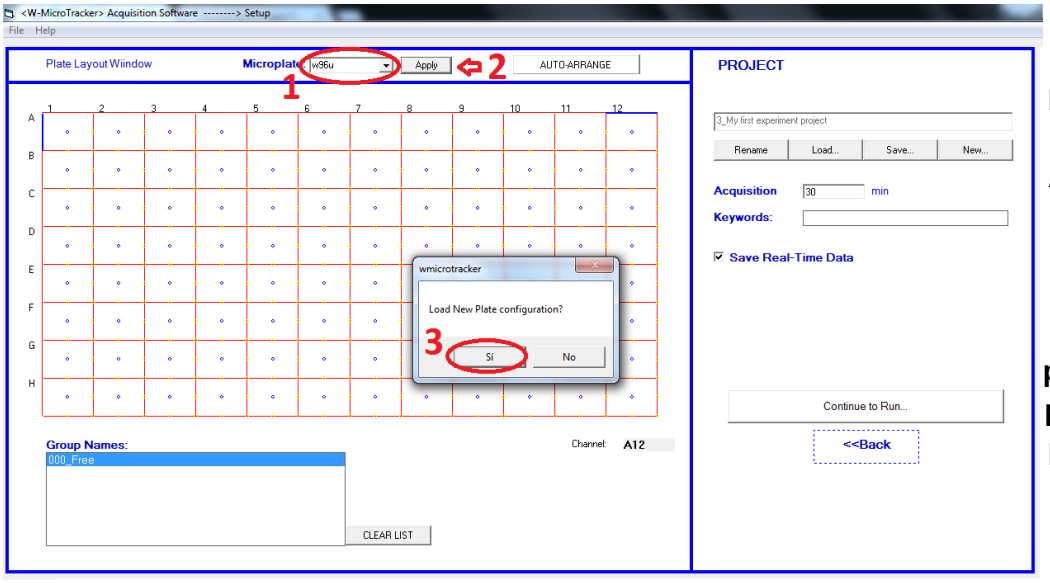
Follow these steps:

- Create a new project



- Select Microplate format.

1. select plate format
2. Press apply
3. Accept change



IMPORTANT! Check proper plastic microplate adapter has been chosen

Microplate to use	Configuration file	Acrylic adapter	microbeams/well
384 wells microplate	W384	W384	1
96well microplate "flat" bottom	W96f	W96 "F"	2
	W96_flat*	W384	4
96well microplate "U" bottom	W96u	W96 "U" (or W96 in old versions)	1
24well microplate "flat" bottom	W24	W384/W24	4

*Discontinued for incompatibilities with some microplate trades.

- Select experimental groups:

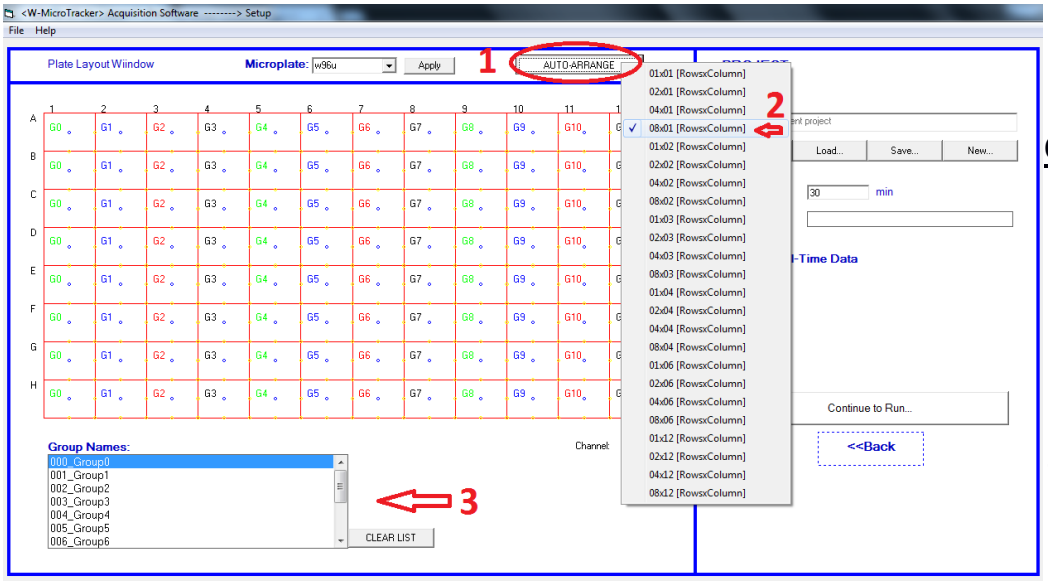
An experimental group contains technical replicates for the same treatment.
As example, if Control animals are within wells A1, A2, A3, A4 then these wells are part of the same "Control Group". Later, the software will calculate average and standard deviation activity for each group.

Automatically Selection:

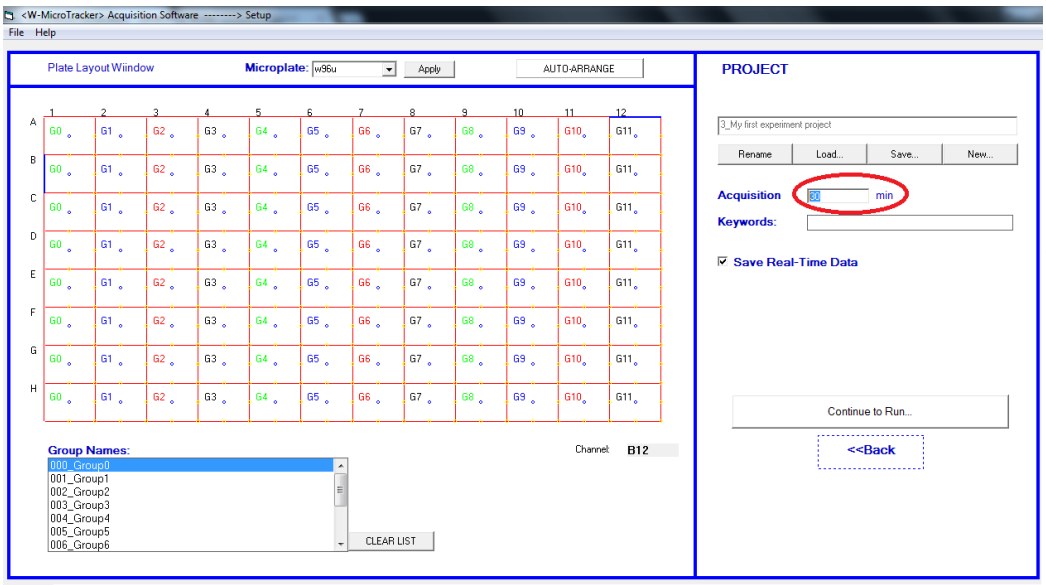
1. Set Autoarrange groups
2. Select your technical replicates / treatments distribution
3. Write the name of each experimental group Double Clicking the list.

Manually Selection:

- Select Group from the group List
- Click left mouse button on the Microplate plot to add wells
- Click right mouse button to remove wells from the group.



4 Configure acquisition period



After these steps yo

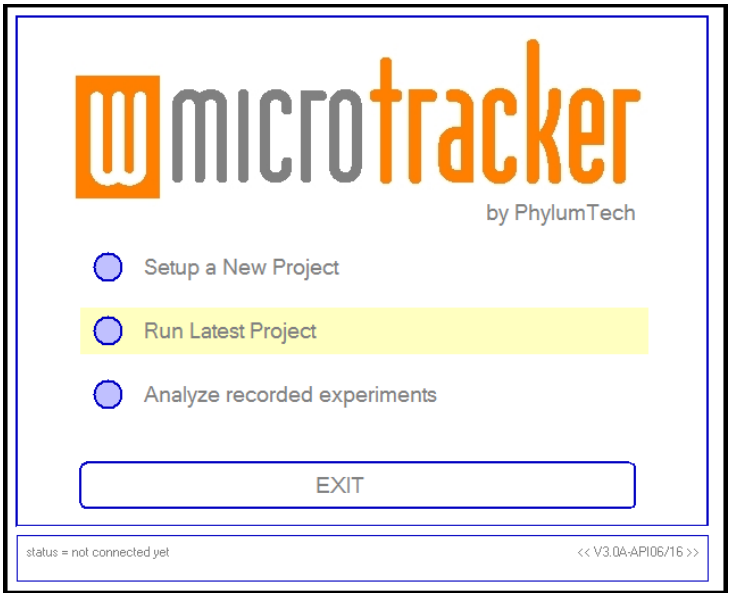
u are ready to run an experiment acquisition (microplate reading)

Step Five, Running acquisitions and generating report files

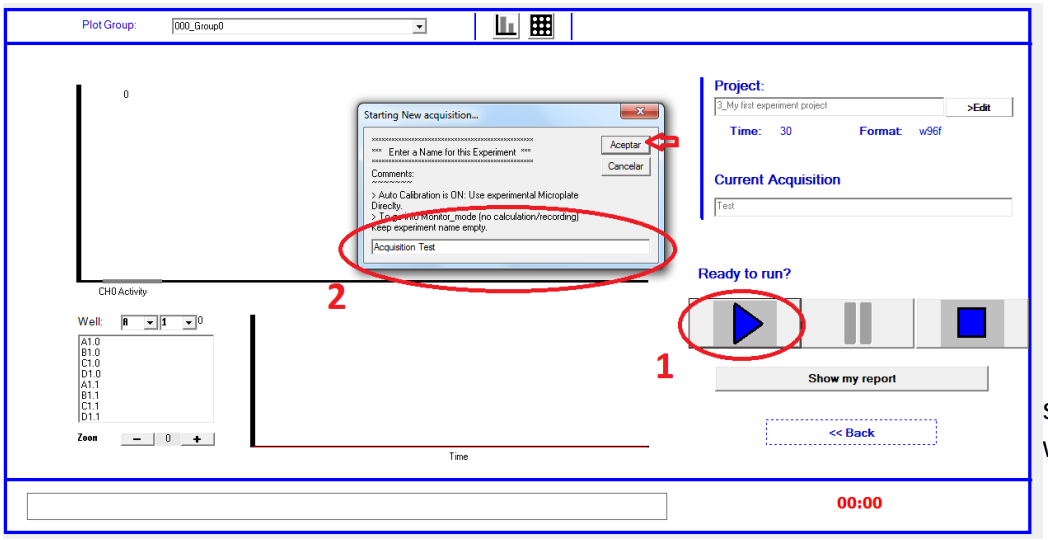
Once you have configured your microplate setup, running an experiment is very easy.

Follow this steps:

- Select “RUN latest project” from Main window, or “Continue to RUN” button from Setup window.



- When RUN window loads, the software will automatically search for the system connection, and it will be ready to acquire. Press Play button to start acquisition, and enter a description for your acquisition/measure



The software will

automatically calibrate the 384 sensors into the system to recognize the worm movement. This calibration will take about 1 minute for the first time, and few seconds in the future.

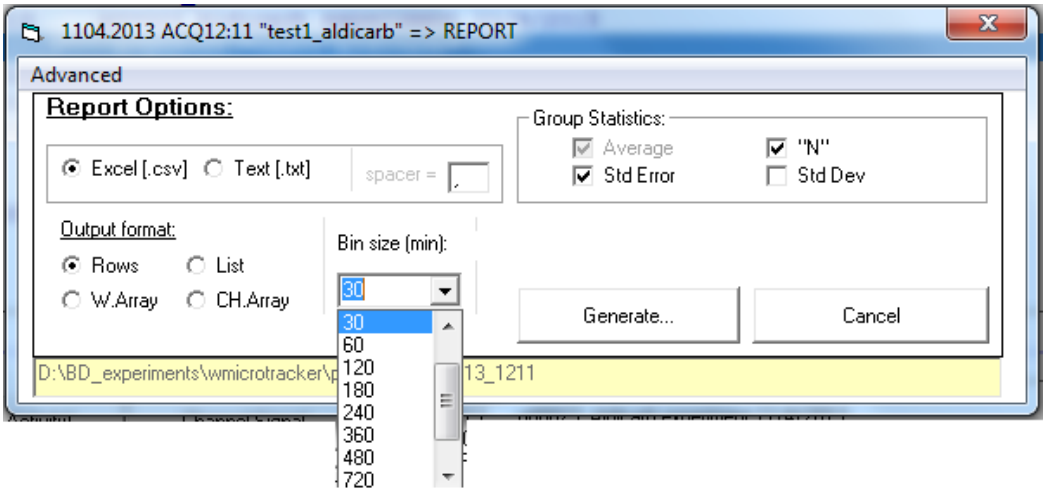
You will see after 30 seconds the accumulated activity for each group,at the TOP plot.

- After acquisition period finish a report file is going to be generated.

It will include:

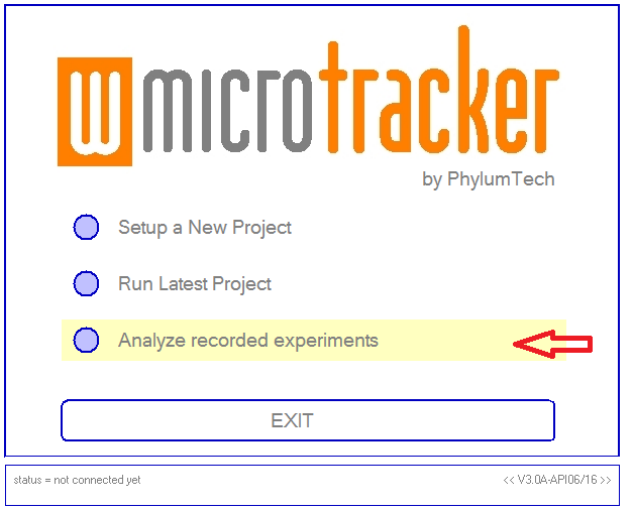
- Locomotor activity data: equal to the number of microbeam crosses for each experimental group (average of wells).
- Standard deviation
- number of wells per group

COMMENT: Data can be blocked in fixed time-blocks in order to appreciate the kinetics of behavior. This block size (named “bin size”) is possible to set at the report form:



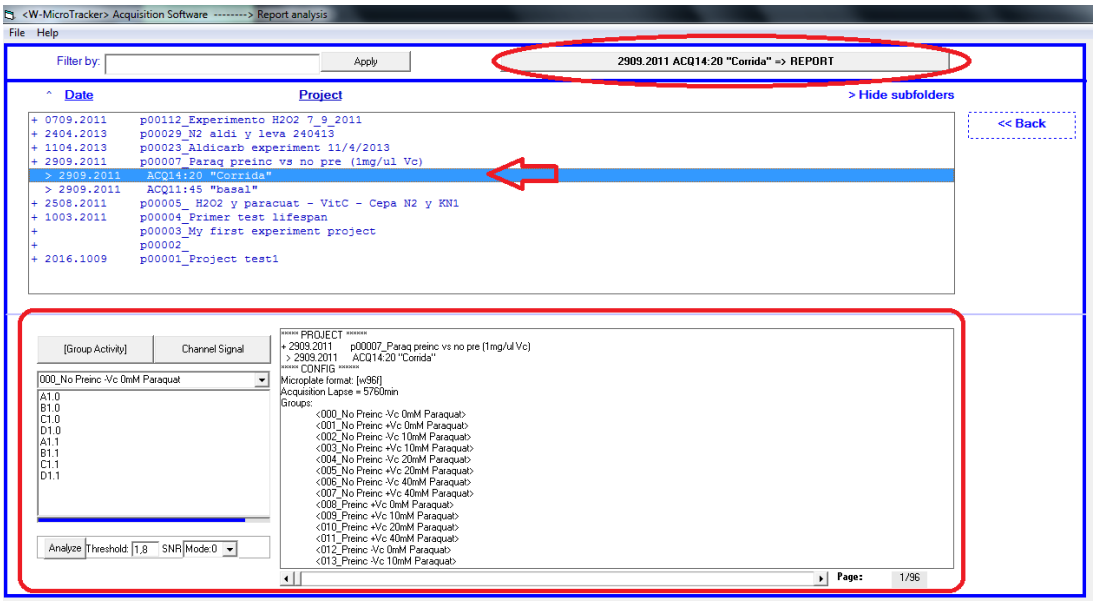
Step Six, Recalling old experiments/acquisitions

- In order to reanalyze old experiment you can recall it from the “Analyze Recorded experiments window”



Follow this procedure:

- Explore or Filter the project of your interest.
- When you Double click on projects then a list of Acquisitions will be shown.
-Double click on the acquisition to load Data to Memory and have the capability to recall the Report and watch extra information.



If you have any comment or problem just contact us to

info@phylumtech.com.

Software and system updates available at www.phylumtech.com