

WTK100



WMicrotracker Installation Guide

ABOUT THE WMICROTRACKER



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

Included

- WMicrotracker
- USB Cable
- USB flash drive containing USB drivers and acquisition software*
- 9V DC switching power supply with 1.5 Amps output
- Microplate adapters (384 well, 96 well flat and "U" bottom)

**You should periodically check the NemaMetrix website to install the latest version of software.*

Requirements

- PC compatible with the following minimum requirements :
 - Pentium II processor or above (>1GHz clock)
 - 512Mb of RAM memory
 - 1 USB port
 - Windows XP 32 bits (or higher) operating system
 - 200Mb of free HD space (>10Gb free HD space recommended for real time data saving)
 - DVD-ROM (optional)
- Operating temperature of 10 to 37C* with humidity below 50%
- Minimal vibration and dust in working area
- This range is for equipment optimal functionality only; biological samples might have unique temperature requirements

Dimensions

- 22cm x 28cm x 9.1cm (8.66in x 11in x 3.6in)

Additional System Characteristics

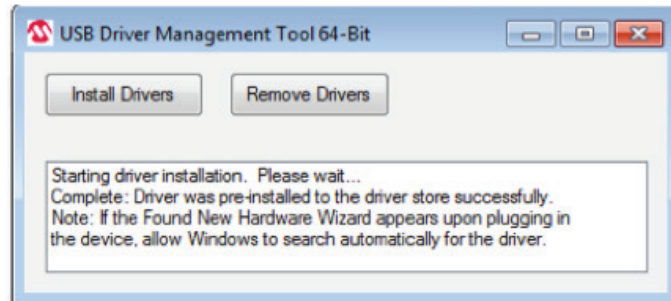
- 384 independent and simultaneous channel readouts
- Automatic calibration, real time data acquisition and monitoring
- 384 and 96 well microtiter plates adaptors with lid
- Capability to use *C. elegans* and similar nematodes
- Phenotype automatic detection
- Low current consumption (<0.5 Amps) with minimal heat emission

I. USB DRIVER SETUP AND SOFTWARE INSTALLATION

(Can be performed either by using USB flash drive included or downloaded from nemametrix.com/wmicrotracker-software.)

Please install the USB driver BEFORE connecting the WMicrotracker to your computer.

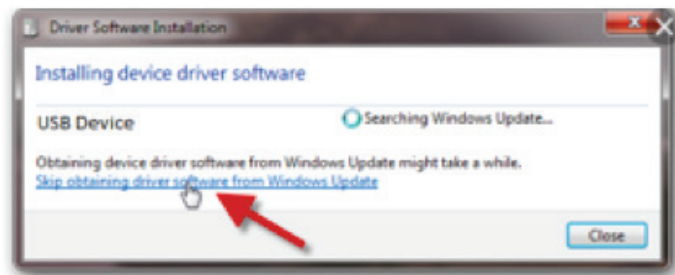
1. Unzip (flash drive files are already unzipped) the .zip and execute the file: USBDriverInstaller.exe



2. Press Install Drivers and wait for the software to show the installation text.
3. Check Driver correct installation.
4. Once the driver is installed, power on and connect the WMicrotracker and plug USB cable to your computer (see section II-Hardware setup).

MSWindows will detect the device as USB Serial CDC system and will create a new COM Port. **If MSWindows asks to search Windows update for drivers, press "Skip".**

5. After you connect the WMicrotracker, verify if a new COM Port was detected (see Devices & Printers Windows)



The COM Port number needs to be set to a number below COM15 for autodetection of the WMicrotracker equipment. If a higher number has been selected by Windows, change it to a number between COM4 and COM15 or connect to other USB free Port.

I. USB DRIVER SETUP AND SOFTWARE INSTALLATION (CONT'D)

If your system is not detecting the new COMPORT check the following:

- 1-Test proper system power source (See II. Hardware Setup)
- 2-Ask your software administrator if you are able to install new USB Drivers or change COM Port numbers.
6. Prepare to install the WMicrotracker software.
7. Unzip (flash drive files are already unzipped) the files into a temporary folder and follow the instructions detailed in the file Readme.txt.
 - a. You will need to copy \WMicrotracker\ folder to c:\WMicrotracker
 - b. After installing the USB driver, execute the 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)

II. HARDWARE SETUP

1. Plug in your Power Supply to any standard outlet and into to the back of your WMicrotracker at the plug in marked "12VDC or 9VDC".



Power Supply Connection.

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

NOTE: The lid must be used with the plate.



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

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

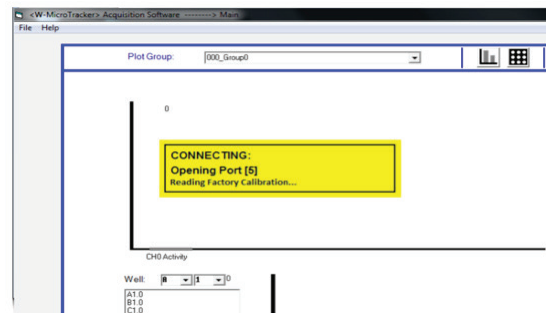


III. RUNNING THE ACQUISITION SOFTWARE

1. Run the **"WMicrotracker"** executable file from the folder you chose at the installation step. The application should start immediately and you should see this window:

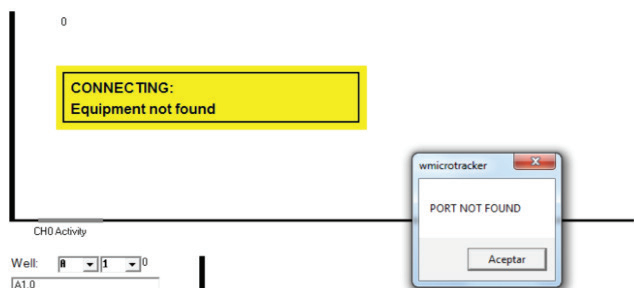


2. Check to see if the hardware was correctly detected. Go to: **"Run Latest Experiment"**. An auto diagnostic popup yellow window will appear



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

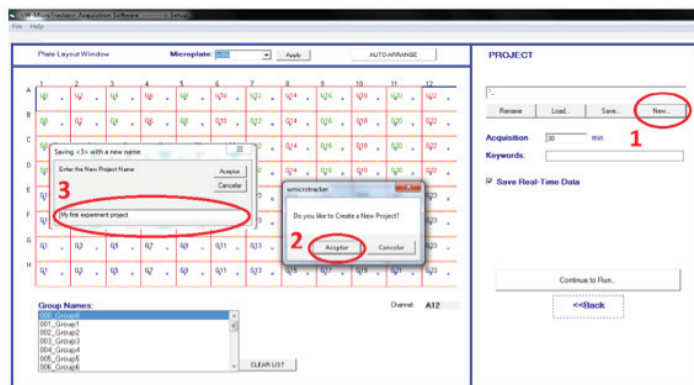
NOTE: If you have any problem please check our System Check-ups document at our website or feel free to contact us directly.



IV. SETUP EXPERIMENT/PLATE CONFIGURATION

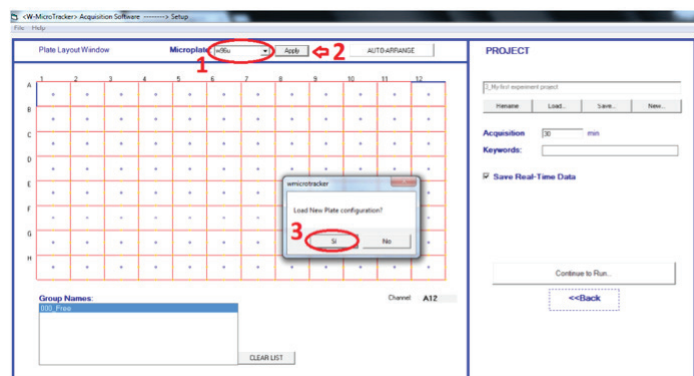
Before running an experiment it is necessary to configure your microplate format and experimental groups within the software. This configuration will be saved in "project folders" inside c:\WMicrotracker. You will find later projects with identification names similar to this format: P00001. P00002.....

1. Create New Project



2. Select Microplate format (please be sure to use the lid with the plate)

- Select plate format
- Press "apply"
- Accept change



IMPORTANT: Check to make sure proper microplate adapter has been selected.

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

IV. SETUP EXPERIMENT/PLATE CONFIGURATION (CONT'D)

3. Select experimental groups:

An experimental group contains technical replicates for the same condition.

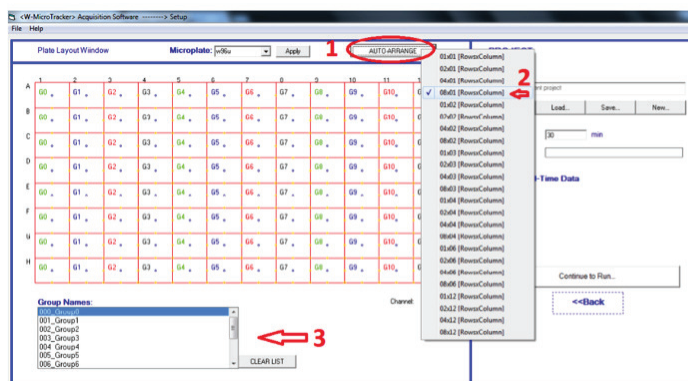
For example, if controls are within wells A1, A2, A3, A4 then these wells are part of the same "Control Group". Later, the software will calculate average and standard deviation activity for each group.

Automatic Selection:

1. Select "Auto-Arrange"
2. Select your replicates
3. Double click to name each experimental group

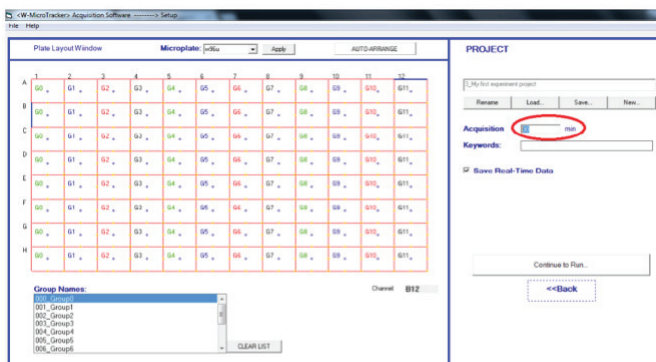
Manual Selection:

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



V. SET ACQUISITION TIME

Enter the time in minutes in the "acquisition" box.



You are now ready to run your experiment!

NOTE: The lid must be used with the plate.

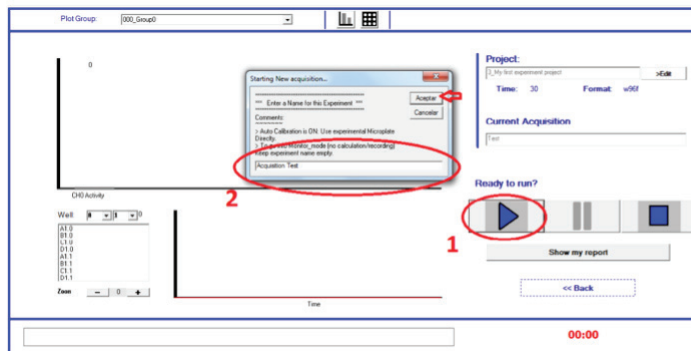
VI. RUNNING EXPERIMENTS & GENERATING REPORTS

Once you have configured your settings, running an experiment is easy.

1. Select "RUN Latest Project" from Main window, or "Continue to RUN" button from Setup window.



2. When the "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.



VI. RUNNING EXPERIMENTS & GENERATING REPORTS (CONT'D)

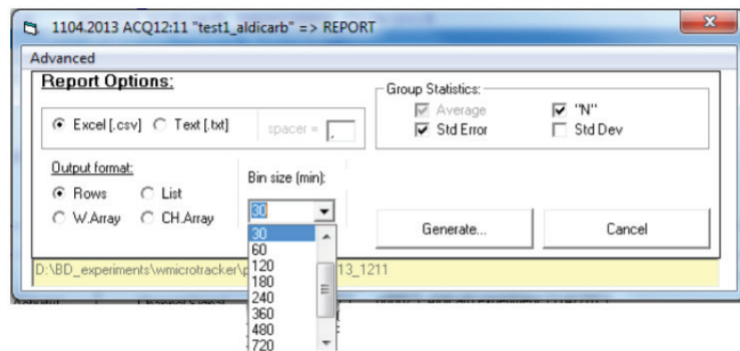
The software will automatically calibrate the 384 sensors so they recognize worm movement. This calibration will take about 1 minute for the first time, and few seconds in the future.

After 30 sec. you will see the accumulated activity for each group, (see above plot).

3. After the acquisition period is finished a report file will be generated and will include the following:

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

NOTE: Data can be grouped in fixed time-blocks in order to evaluate the kinetics of behavior. This block size (named "bin size") is possible to set in the report form:



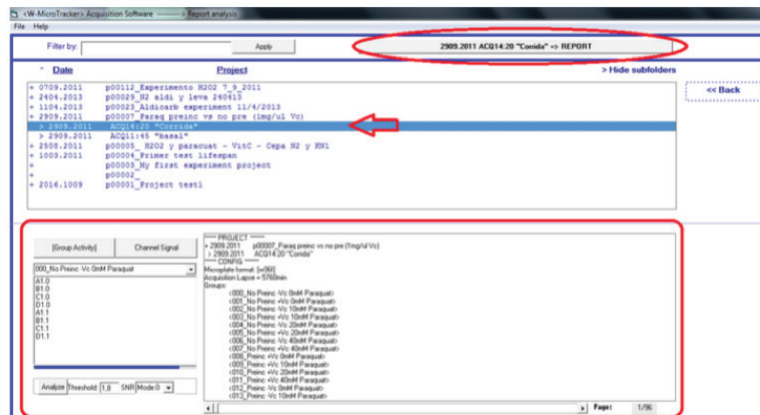
VII. RECALLING PREVIOUS EXPERIMENTS

In order to reanalyze a previous experiment you can recall it from the “**Analyze recorded experiments**” window.



To analyze previous experiments:

1. Search or filter the project of your interest
2. Double click on projects to show a list of Acquisitions
3. Double click on the acquisition to load the data.



For technical support, , please contact us at microtracker.support@nemamatrix.com

Software and system updates available at www.nemamatrix.com/wmicrotracker-software.

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