# QUICK START GUIDE

We greatly appreciate the opportunity to work with you in providing high stability nanopositioning system. Below is a brief guide which describes basic procedures common to all PIEZOCONCEPT nanopositioning systems. Complete operation manuals for the stage(s) and the controller(s) can be found on the accompanying USB stick.

1.  Some nanopositioning stages are disassembled before shipment to avoid damage in transit. The screws needed to join the axis are included. **Visible screws on the stage not associated with mounting the stage or attaching items to the stage should never be removed or screwed**. The stage contains high voltages and should not be opened for any reason.

2.  Each axis of motion on the stage has a 9-pin electrical connector which plugs into the front panel of the controller. Multi-axis stages have labels on the connectors which must be matched to the axis labeled on the controller. After plugging in the stage connectors and tightening the retainer screws, you can plug the controller into AC power and turn it on. **Never connect or disconnect the stage and controller when the controller is powered on.** Electrical damage will result if this instruction is not followed.

3.  On each channel, nearby the HV/10 output, a potentiometer can be accessed by using a flat screwdriver.



Potentiometer for Offset adjustment of the HV/10 : a small flat screwdriver should be used to access it

This is provided for adjusting the offset of the HV/10 output. Offset affects the closed-loop circuitry inside the controller and allows you to compensate for mechanical stresses imposed on the stage by mounting the stage and/or mounting items to the stage as well as for temperature changes. Offset is checked by measuring the voltage on the "HV/10 output" when the stage is in the zero motion position. Although most stages are in the zero position when first turned on, controllers with non-standard input voltage ranges (such as -10V to +10V) may require you to input a negative voltage to set the stage at the zero position. If you are not certain of how to get the stage at the zero position, call or email PIEZOCONCEPT and we will advise you on the best procedure: The measured voltage on the HV/10 should be in the range of -1V to -0.5V (the precise value is unimportant. If the measured voltage falls outside of this range, use a small flat screwdriver to slowly adjust the front panel potentiometer. Typically, only small adjustment are necessary to bring the voltage into the acceptable range. It can be necessary to check the offset :
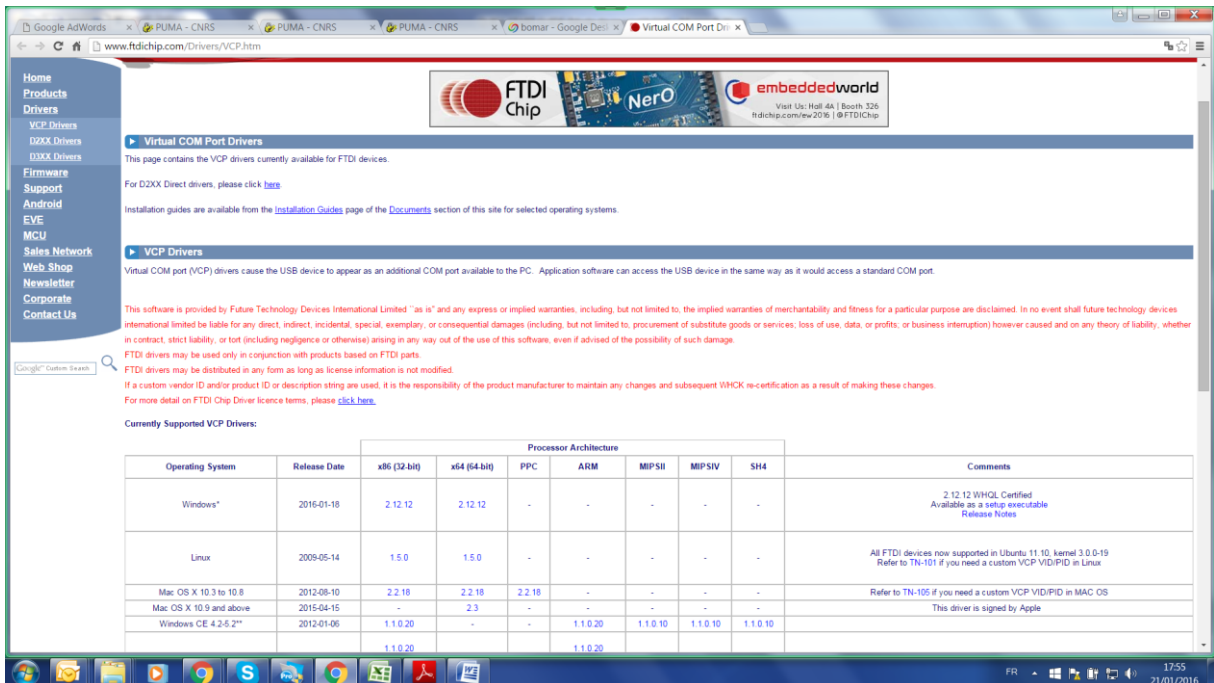-   When stage mounting has been changed or the mounting screws have been tightened or loosened
-   When items have been attached to the stage or removed from the stage
-   If the room temperature changes by more than 5°C
-   If the total range of motion appears to be reduced

4.  Your nanopositioning system is now ready to use with analogue voltage. The stage can be moved by inputting voltages into the front panel connector labeled "Analog input". Stage position can be seen by monitoring the voltage on the front panel connector connectors labeled "Sensor output".

5.  If your controller is equipped with an USB interface, first switch OFF the controller. Then connect the controller to your PC using the provided USB cable. When powering on the controller, the PC will search automatically the driver for the USB/serial interface. If your PC is connected to the Internet and if you use Microsoft Windows, the USB interface should be immediately recognized and the appropriate driver should be

installed automatically. If your computer doesn't find the correct driver (no internet connection and no Microsoft Windows), here is the procedure to follow.
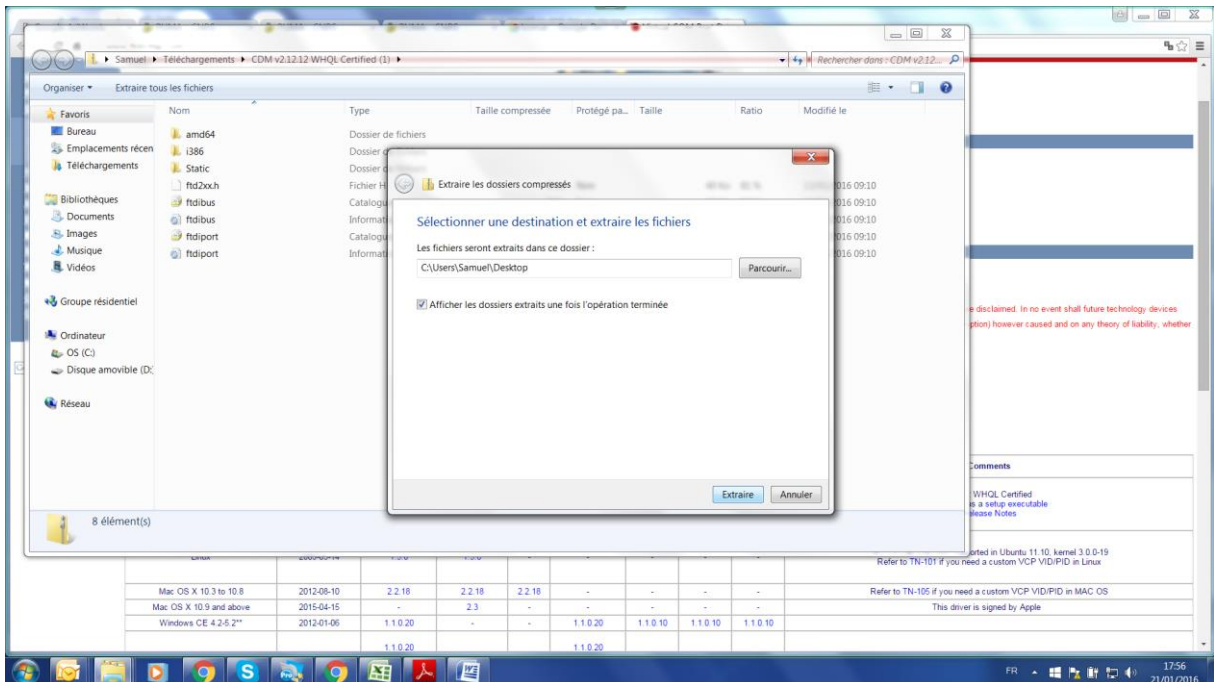
STEP 1 : Go this webpage : http://www.ftdichip.com/Drivers/VCP.htm



Depending on your operating software, you have to download the correct driver.

STEP 2 : The downloaded file is a ZIP file and there is no executable in it. The second thing you need to do is to extract the files : you can save them in a dedicated directory on your desktop (for example).



STEP 3 : You need to go to Configuration Panel => Device Manager, You should normally see the FT232RL with a yellow triangle (telling you that the drivers of the device are not installed), then you should right click on the FT232RL, then click on "update driver" (or something similar), and then you should direct the driver

research on the dedicated repertory where you saved the driver . The FT232RL should become "USB Serial port" (see below) and if it is not recognized (yellow triangle), you should follow the same procedure : that means you should again right-click on the "USB Serial Port" and , then click on "update driver", and then you should direct the driver research on the dedicated repertory where you saved the driver.
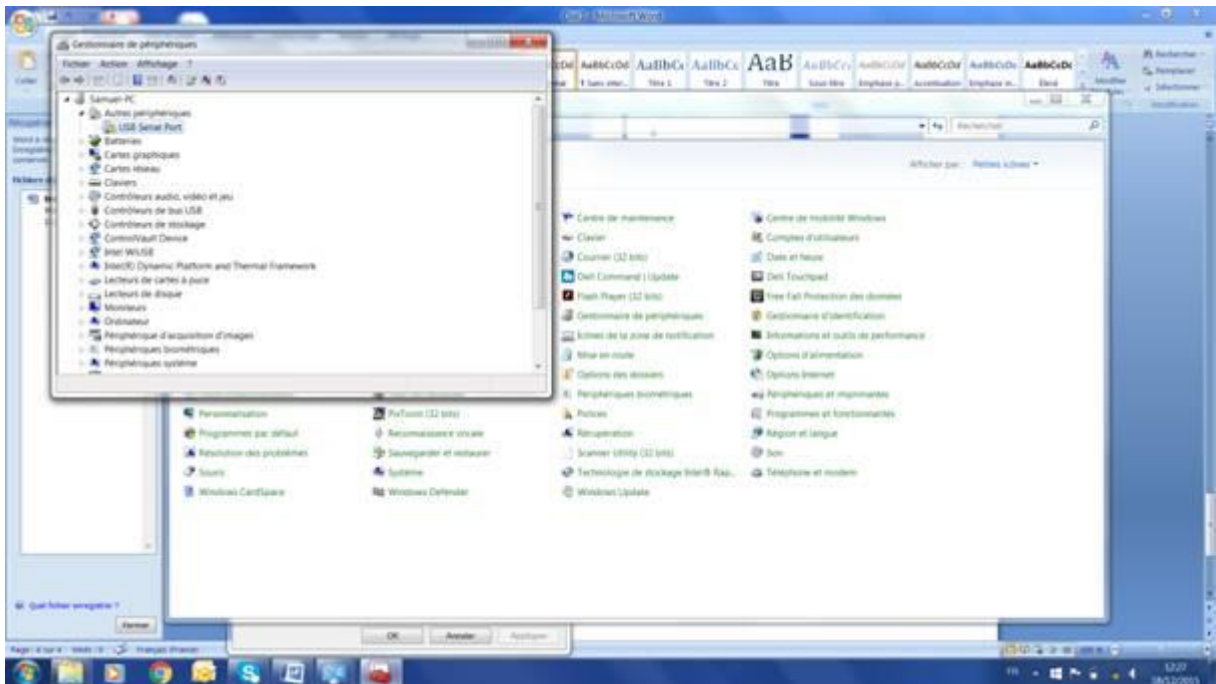


The USB interface should appear as a new COM port. In the windows below, the new COM port is Number 6 (but you may get a different number). This is this exact COM port that you should use in the other software (Termite, Labview, etc.....)
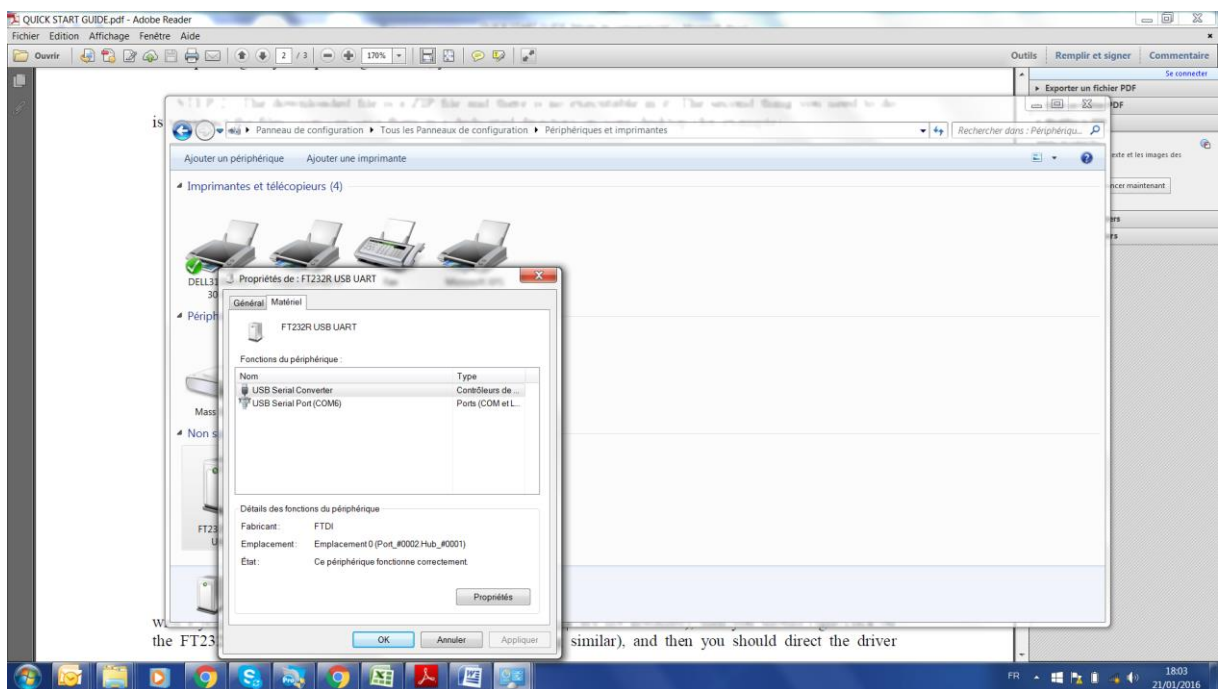


6. Software : Except for microscopy dedicated software, it is recommended to start with Termite program to get familiar with the different commands.