QUICK START GUIDE

USE OF NIS-ELEMENTS WITH THE NANOSCAN SP RANGE OF SAMPLE SCANNERS AND THE NANOSCAN OP OBJECTIVE POSITIONER.

NIS-Elements
Imaging Software

The NanoScan SP series sample scanners and the NanoScan OP400 objective positioner have basic control within NIS-Elements using the NanoScan Z functionality.

CONNECTING YOUR SYSTEM - FRONT OF UNIT

POS MON connector
Analogue position monitor output
BNC connector(s)
Single ended output(s)

COMS indicator LED
Indicates status of communications with connected computer
Not lit = No communications taking place
GREEN lit or flashing = Communications active

IN POS indicator LED
Indicates status of stage position in CLOSED loop mode
OFF = Stage has not reached desired position
ORANGE = Stage settings being loaded on connection
GREEN = Stage has reached desired position

Nanomechanism connector
Provides all connections to nanomechanism
NOTE: High voltage present on connector – up to 160V DC

ANA I/P connector
Signal used to control the stage position
Analogue command input
BNC connector(s)
Single ended output(s)

PWR indicator LED
Indicates power status and controller ready
RED steady = Controller configuring/not ready (can take up to 30 seconds)
GREEN steady = Controller powered and ready for operation

CLOSED indicator LED
Indicates status of control loop
OFF = Stage not connected
ORANGE = Stage settings being loaded on connection
RED = Controller operating in OPEN loop mode
GREEN = Controller operating in CLOSED loop mode
YELLOW = Controller servo output frozen

CONNECTING YOUR SYSTEM – REAR OF UNIT

On/off switch

Earth stud – M4 threaded
Provides additional ground connection to reduce interference of background electrical noise. Do not raise above 0V ground potential

ETHERNET connector
Used to communicate with controlling computer. Dual connector for pass-through connection.

USB type B connector
Used to communicate with controlling computer

PWR connector
Provides power to controller electronics
4 pin mini-DIN with screen input
+24V DC ±0.75V @ 5A
Only connect an approve power supply

SYNC IN/OUT connector
Provides RS-232 connection with connected computer using supplied gender changer adaptor
Also used to synchronise multiple 6000 controllers
9-pin D-type socket

DIGITAL I/O connector
Provides digital inputs and outputs for interfacing controller to external equipment
TRIG inputs and outputs
IN POS outputs
Stepped inputs and outputs
25-pin D-type socket, 5V TTL inputs/outputs
MUST use shielded cable

CONNECTING THE CONTROLLER TO THE COMPUTER

Connect the NPC-D-6110 controller to the computer using an RS232C cable from the serial port on the computer to the SYNC IN/OUT port on the NPC-D-6110. A gender changer adaptor is required to connect the RS232C cable to the sync port. The adaptor required is a 9-pin male to male adapter as shown.

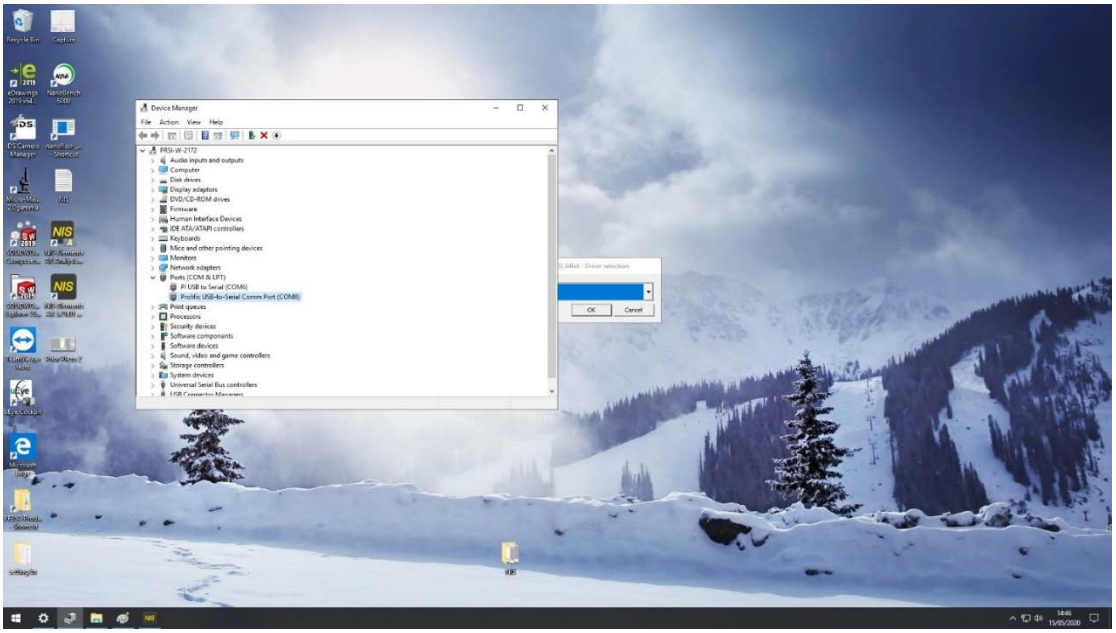
9 pin male to male adaptor

On ‘power up’, the controller will always sweep the stage across its range to carry out auto-calibration. **It is important to ensure that there is sufficient clearance between the lens, sample and illumination to allow this to take place.** If the temperature or load changes significantly the stage can 'clip' at one end of the travel. Should this happen restart your system to allow auto-calibration.

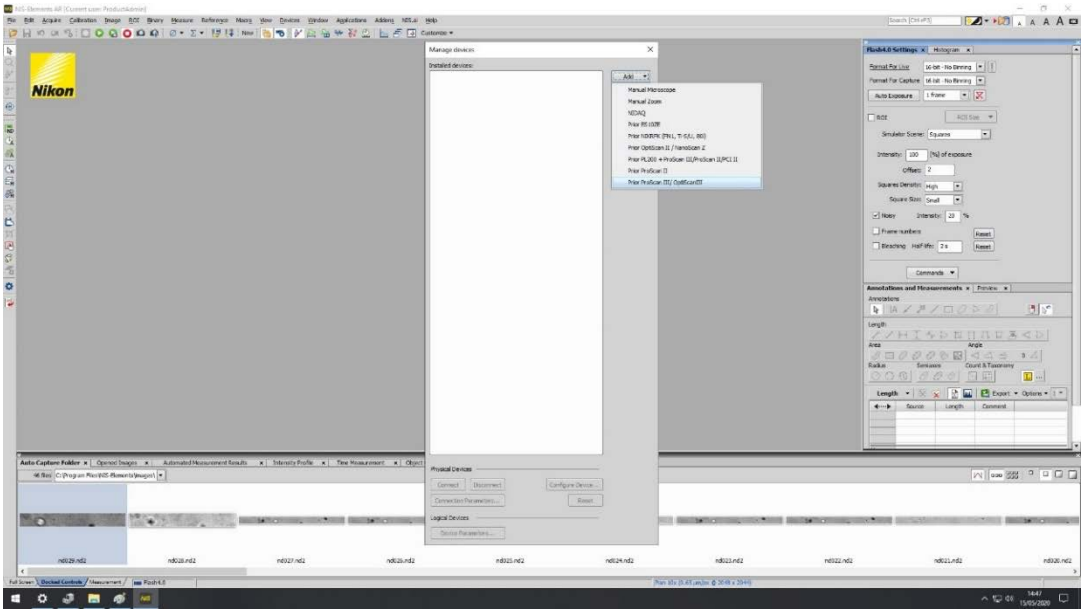
NIS-ELEMENTS

Once installed navigate to Device Manager and make a note of the serial COM port used.

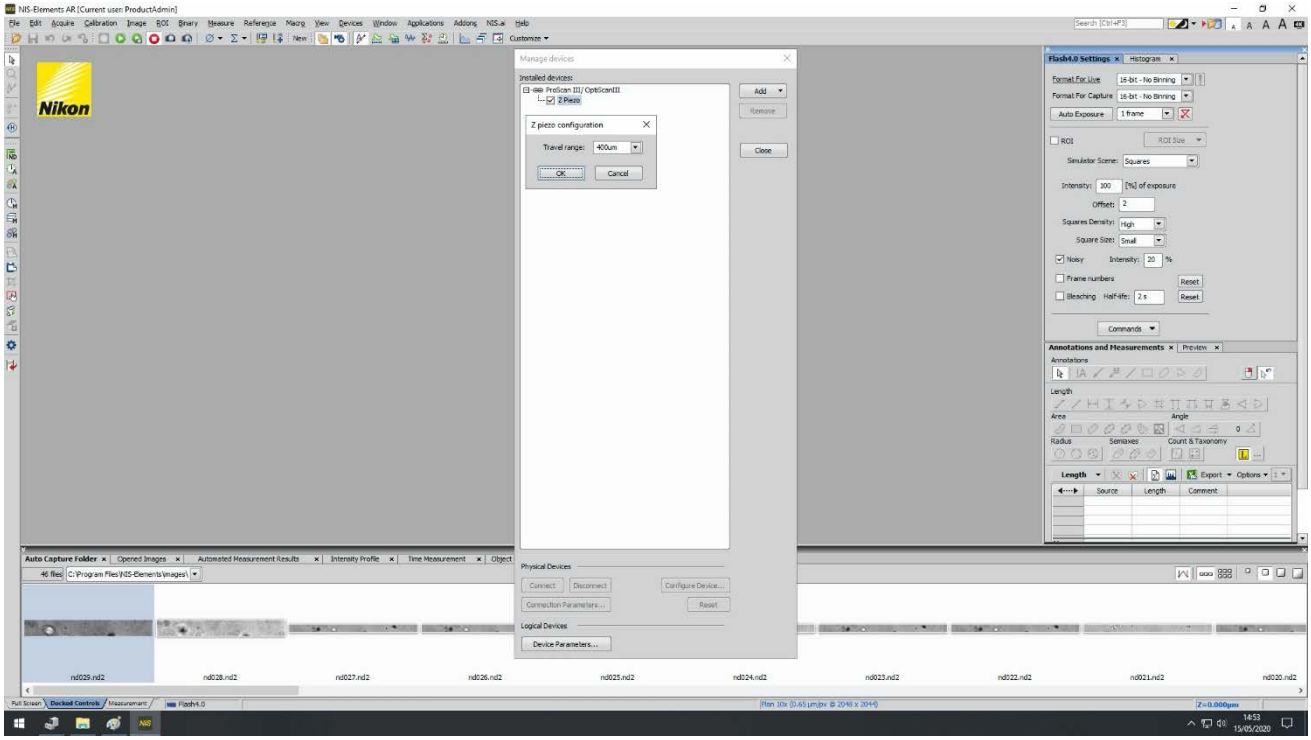
Open NIS-Elements and navigate to the manage device section; install devices as shown below and select “Prior ProScan III/ OptiScan III”.



Set the port to the setting found under Device Manager.



Under Manage Devices within Elements select “Prior ProScan III/ OptiScan” and then select “Z Piezo”.
Within the Z piezo configuration set the travel range. This is 400um for the NanoScanOP-400 and NanoScanSP-400 and 600um for the NanoScanSP-600.



The conditions for operation are set within the capture Z series page within NIS-Elements. Here you can set the step size, direction and number of steps to build a Z stack.