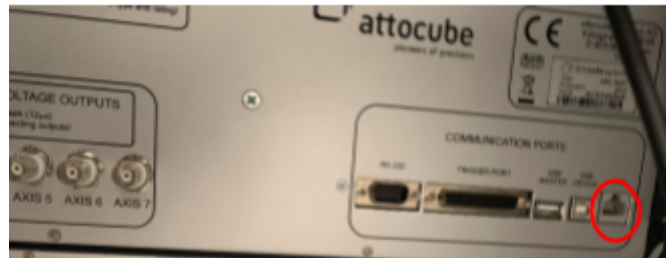


Guide for using the automation code for ANC 300

1. Connect computer via Ethernet cable to the back of the ANC 300 Controller as shown in the picture.



2. If you are using a new device first install python by simply searching install python and downloading and installing the latest version.
3. The open cmd from the start menu and type in `pip install notebook`
4. Once installation is done type in `python -m notebook` it will open the Jupyter note book it should open a window on the default browser.
5. On the browser window navigate to the file and open it.

```
import time
from numpy import random
import ipywidgets as widgets
from IPython.display import display
from ipywidgets import HBox, VBox, Label
import numpy as np
import pylablib
from pylablib.devices import Attocube
import nidaqmx
from PIL import Image
import cv2
```

```
anc = Attocube.ANC300('192.168.1.1')
```

- (1) The file opened should look like this on the top. Go back to cmd and install the libraries mentioned as import to use them in the code.

6. Type in the following in the cmd to install these libraries

- `pip install numpy`
- `pip install ipywidgets`
- `pip install pylablib`
- `pip install nidaqmx`
- `pip install opencv-python`
- `pip install pillow`

7. After successfully installing all libraries run the cells by clicking cells and run all on the task bar or simply pressing shift+Enter.
8. At the end of the last line an embedded interface should pop on to use for input and execution.

☐ Enable Axes

Move X Position: 0

Starting X Position: 0 0

Ending X Position : 70 140

Starting Y Position: 0 0

Ending Y Position : 0 0

Resolution: 1

Exposure: 0.0001

File name: APD.csv

Pic name: APD.png

Move

Scan

Reset

Interface built on Jupyter notebook using ipywidgets library. The respective distance in nm is displayed to the right of each input position. The input range 0 to 1500 translates to 0 to 30 micrometers or 30,000 nanometers in each of the two axes meaning that one step is equivalent to 20 nm on the piezo stage.