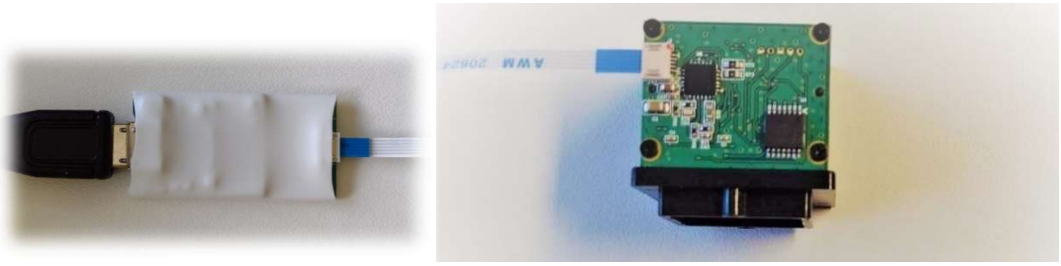
To begin with Piezo M12 focus module:

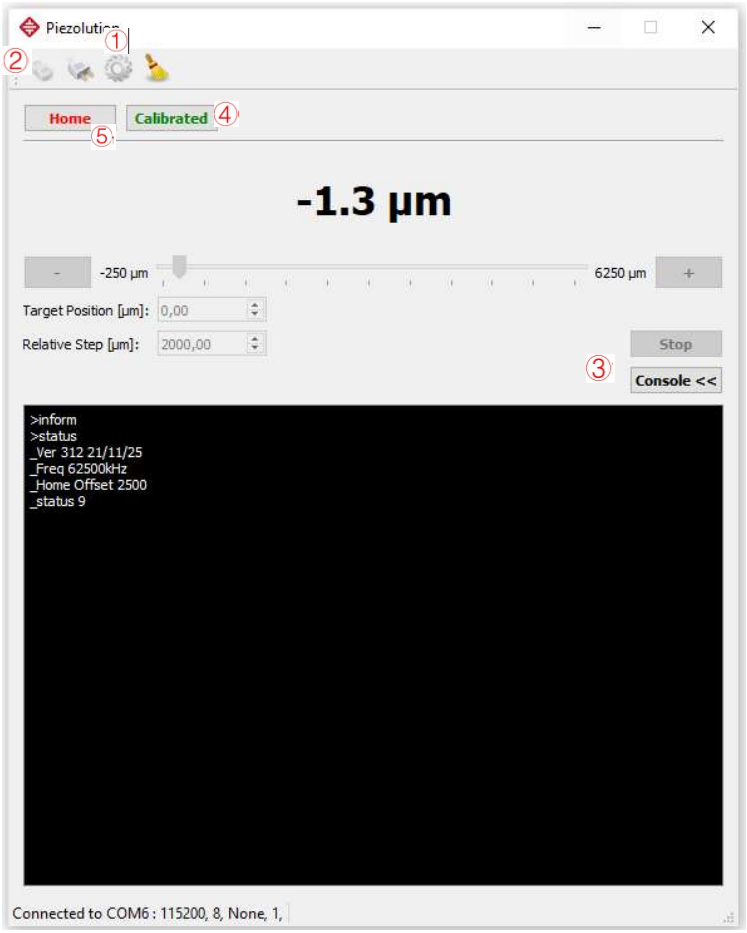
1. Connect the module with FFC-cable to UART-USB converter.
   The blue marker shows the correct connection side of the cable.



Attention! The wrong side connection of FFC-cable will get short circuits and damage the controller.

2. For Windows-System (Win10 or newer, 64 Bit):
   - Download Piezo Terminal from website and install it
   - Connect focus module with USB cable to windows PC
   - Open Windows Device Manager and check if COM-port is recognized
     If the COM-Port is not recognized automatically, download Driver from website and install (Silicon Labs or FTDI).

   - Start the program Piezo Terminal, choose the right COM-Port to connect the device and open "console"



*Encoder calibration by typing in console following 2 lines:

>optauto

>auto

Wait till the module finishing the full travel (up & down run for approx.2s)

*V321 and newer HW-version starts with 1 line:

>auto

*Home by typing in console:

>home

Home position has default offset 250um from bottom hard stop. Home offset can be configured.

*You can use the Slide Bar or type in commands in console to move the focus module to wished positions.

>ma 60000

…

>ma 0

…

>mr 10000

UART command references: PMC1901 UART Commands Reference Manual .

*If the Piezo Terminal does not recognize the focus module, disconnect and reconnect USB cable to PC, then start the terminal after connection.

3. For LINUX-System or Alternative Terminals:
   Parameters are 115000 baud, 8N1, CR as line separator.
   - Send ">inform" with end character <CR> and check response.
   - Send ">*optauto*" + ">*auto*" to calibrate the optical encoder
   - Move with ">*home*" to position 0
   - To test movement, send "mr 60000" to move 6 mm forwards.

4. Mount M12 Objective into focus module and find proper position.
   Make sure the lens gets close enough to sensor (note the back flange length) for focusing at long distance.
   Move the lens away from sensor to get focus at near distances.
   Attention!
   Check lens geometrics before use to avoid collision of lens with focus module (drive in) or external housing (drive out).

5. Mount the focus module on a camera board.
   Standard socket has 22mm mounting hole distance.
   If needed, change the socket (2-feet, 3-feet, 4-feet etc.) to adapt to camera boards.