

Interfacing ATMOS

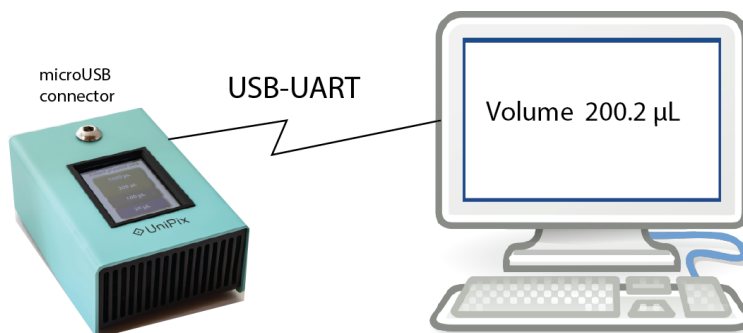
The ATMOS calibrator is designed to be an autonomous instrument with a touch screen panel to be easily accessible by anyone in the laboratory.

ATMOS was conceived to allow transfer of the captured results to any computer (Window, Mac, Linux) using the appropriate software.

However, ATMOS is also designed to be compatible with automated platform and can be interfaced to any computer system (Window, Mac, Linux or other). Connection to the microUSB port allows a direct interface that can be used for pipette calibration. ATMOS microUSB is connected to the industry standard CP2102 from Silicon labs and the appropriate driver for a given computer system can be downloaded at:

<https://www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers>

Typical connection between ATMOS and a computer system



Connection is read as a serial port and communication is done at 115200 bauds using the standard ASCII code.

Commands are sent as a single ASCII character and will be interpreted by the ATMOS internal parser. Upon reception of a meaningful command the device will issue a reply followed by <CR/LF>

Command summary:

- C** **Calibrate**
- L** **List of the last value read**
- P** **Pipette ID**
- V** **Define pipette volume**

List of the commands and data transmission

Commands might be issued as small or capital letter. The ATMOS parser will convert any incoming letter into lower case.

C (Calibrate)

Upon reception of the single letter **C**, ATMOS will enter the calibration sequence. To acknowledge of appropriate reception of the command and allow continuation of the liquid handler program the character “<” **followed by <CR/LF>** will be issue. This should prompt the liquid handler to exert the desired pressure in less than 2000 ms (2 s).

Pressure should be maintained until the character “>” **followed by <CR/LF>** is received. At this time pressure can be released.

ATMOS will then send a string of characters of the type “Volume ###.## uL” terminated by <CR/LF>

L (List of the last value read, optional)

Upon reception of the single letter **L**, ATMOS will issue a string of characters listing the last sets of measurements.

P (Pipette ID, optional)

Upon reception of the single letter **P**, ATMOS will read a string of character terminated by <CR/LF> used for the identification of the pipette to be calibrated. Should this command be issued, the Pipette ID will be sent together with the calibration measurements.

V (Volume, should be sent on first read)

Upon reception of the single letter **V**, ATMOS will read a string (integer) indicating the volume that should be calibrated. While measurements can be done even in absence of a volume definition it is recommended to issue the volume prior to the first measurement or changes in the desired volume size. Issuing volume is not necessary between measurements of the same volume size.