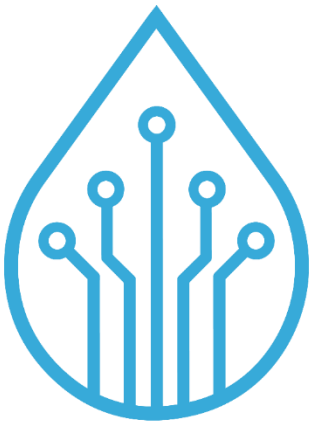

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Make All Materials Smart

DevKit communication commands

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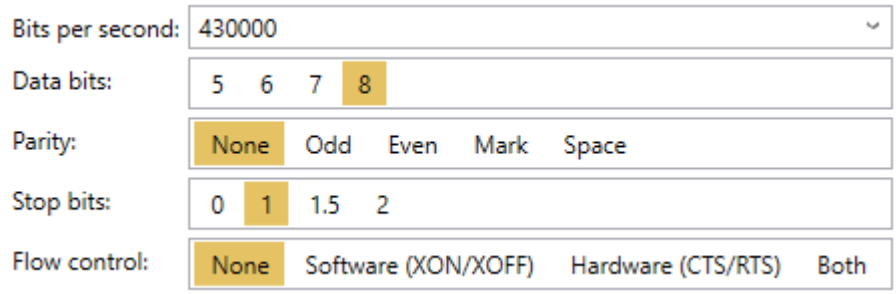
To communicate with the DevKit, first, connect it to your computer. Next, open the terminal emulator SmarTTY on your device (download it here) .

1. Connection

Select the Silicon Labs CP210x USb to UART Bridge peripheral in the list.

To connect, simply enter the following parameters in the terminal settings ( ) :



To finish, press the Enter key on your keyboard.

The Devkit's sampling frequency is 50 Hz, i.e. one value every 20 ms.

The following steps require prior connection to the board in order to communicate with it. The calibration step must be performed first each time the devkit is used. Force gain and capa threshold settings are optional.

2. Calibration

To calibrate the devkit, enter the letter K and press Enter ("K\n"). If all values are equal to 1000, it's very likely that no sensor is connected. Calibration values range from 0 to 1000.

3. Force gain settings

To set the force gain, enter the letter G, then one of the letters A, B, C, D, E, F or G corresponding respectively to a gain of 1, 2, 4, 8, 16, 32, 64 and 128, then press enter (example: "GD\n" for a gain of 16). A response should be given to this command, indicating the correct setting (e.g. ADC GAIN VALUE = 16).

By default, the force gain is set to 1.

4. Setting the capa gain

To set the force threshold, enter the letter C, then one of the letters A, B, C, D, E, F or G corresponding respectively to a threshold of 50, 100, 150, 300, 500, 750, 1000 and 1500, then press enter (example: "CC\n" for a threshold of 150). A response should be given to this command, indicating the correct setting (e.g. CAPA THRESHOLD = 150).

By default, the capa threshold is 100.

5. Start

To start the devkit, type the letter R and press Enter ("R\n").

6. Stop

To stop the devkit, enter the letter S and press Enter ("S\n").

7. Data format

Here is the format of a data frame :

X X X X X X X X X X X X X X X Y Y Y Y Y Y Y Y Y Y Y Y Y Y \r\n

X : Force value

0 to 3299 mV

Y : Capacitive value

0 : no detection

1 : detection