AFE POT (4-1)

Welcome back to Cypress Academy, PSoC 6 101. In this chapter we’re going to divert from the regularly scheduled program of building this BLE robotic arm and, because I love showing off the analog capabilities within our MCUs, dedicate a bonus chapter of content to just that. For this section, we’re going to use the PSoC 6 BLE Pioneer Kit again as well as another board I designed here at Cypress called the xxx AFE board.

[Why I designed this board]

[What’s on this board]

[What we’re going to play with and see]

Let’s start by developing a simple project that measures the value of a variable resistor, aka. potentiometer. To do this let’s setup the hardware first and then build our project in PSoC Creator.

The xxx AFE board is an Arduino Uno form-factor compatible shield that plugs right into the PSoC 6 BLE Pioneer Kit. All of the signals are routed from that board through those headers down to the PSoC 6 MCU. And that’s it, on to PSoC Creator.

Like before, let’s start a new project in the same workspace we’ve been using. I’ll call this, “AFE Shield POT.”

[Setup PSoC Creator schematic]

Double click on the pins file under the design wide resources and assign the signals for the POT as xxx.

We’re going to use the Cortex-M4 to read the values of the POT and control the intensity of an LED. So, in the M4 main application file let’s start by xxx. [Firmware design]

And that’s it, now time to build, program and test it.

By adjusting the potentiometer you can clearly see the intensity of the LED changing…awesome! In the next video, I will walk you through controlling the OLED display on this board, interfacing to the ambient light sensor and then, lastly, how to use a PSoC 4 Arm Cortex-M0 MCU as a sensor hub to take care of all this for us and just report the values over an I2C interface.

You can post your comments and questions in our PSoC 6 community or as always you are welcome to email me at alan\_hawse@cypress.com or tweet me at @askioexpert with your comments, suggestions, criticisms and questions.