PSoC Creator IDE

Welcome back to Cypress Academy, PSoC 6 101. Before you get started with this video you should download and install the latest version of PSoC Creator from the Cypress website. For these videos I will use PSoC Creator 4.2 but we’ll keep the projects up to date.

PSoC Creator is our IDE for developing PSoC MCU solutions. While we support developing PSoC 6 solutions in other IDEs like IAR, Keil, Eclipse, etc., I’m going to start with the PSoC Creator environment for this training and later show you how you can use those other IDEs.

In this lesson, I will walk you through the PSoC Creator IDE and show you how to get started, find example projects, understand how to interact and use components and finally how to build and debug your application.

Let’s start by creating a new PSoC 6 project.

First I’ll start PSoC Creator.

When you start up the screen, you’ll see the start page in the middle. The start page will give you a live link to the psoc creator blog in the middle. To the left of the blog you’ll see hot links to help you create new projects, learn about the tool, plus links to any recent projects.

We’ll start this off by creating a new psoc 6 project by doing file->new project.

I’ll start by creating a design project that targets the PSOC 6, the PSoC 63 family, then the next screen will let you create your new project with a code example, pre-populated schematic with some components already preloaded or a blank, new project.

The next screen will give me the choice in selecting an external IDE, I’m not using any of those so we’ll just hit next.

A PSoC Creator workspace is a container that can hold multiple projects. I’m going to create a new workspace called PSoC 6 101 to hold all of the projects that go with these sets of videos. And I’ll pick my project name, Hello World PWM, to start.

In the middle of the screen you’ll see a blank schematic. This is where you put your imagination, all your hopes and dreams can be realized by going through the Component catalog and adding them to the schematic.

Components in the component catalog represent firmware and peripherals that are inside the chip that you can use to build your IoT device. They’re categorized into folders by their type, analog, digital, capsense, etc.

Each of the components are fully characterized and are guaranteed to meet their datasheet specs. Each of them also have a driver library to allow you to easily integrate them into your firmware as well as complete documentation of those APIs.

To use them, you just click and drag them on to your screen. For example, this is how you would put an ADC into your design. I’ll be showing you more about each of these peripherals in the upcoming videos.

On the left hand side of the screen is the workspace explorer. The workspace explorer is the gateway to all of the files in your project.

Each project will have a folder in the workspace explorer.

Inside of the folder you’ll find the schematic, which you can double click to open; The design wide resources folder, which contains items that you can double click to then configure like setting the pins or configuring the interrupts.

The next thing is really cool. There’s a folder for each of the cores in the PSoC 6—a folder for the ARM Cortex-M0+ and a folder for the ARM Cortex-M4. Each of the cores can share the component resources in a design but they each independently have their own programs.

If you double click the main\_cm0p.c. That will open the main application for the ARM Cortex-M0+. If you double click the main\_cm4.c that will open the main application for the Cortex-M4.

The next thing you should do is click ‘generate application’. When you click this, it creates a folder called generated source that contains all of the required drivers and low-level firmware needed for your project based on the device, components and system resources that you have already configured or added to your project. Also, it will copy template files into your project like the startup code for the two cores, linker files and configuration files for the inter-process communication functionality.

One of the best parts about this entire thing is that we have an ecosystem of help resources that you will find under the help menu. We also pride ourselves on our documentation which you can find under the same help menu.

In the next video, I will show you how to build and program your first project, the infamous “Hello World” example, but this time with a twist.

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.