AN79953

Getting Started With PSoC® 4

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Associated Project: Yes

Associated Part Family: All PSoC 4 Parts

Software Version: PSoC Creator™ 3.0 and higher

Related Application Notes: For a complete list of the application notes, click here.

To get the latest version of this application note, or the associated project file, please visit http://www.cypress.com/go/AN79953.

AN79953 introduces you to PSoC® 4, an ARM® Cortex™-M0 based programmable system-on-chip. It helps you explore the PSoC 4 architecture and development tools and shows you how to create your first project using PSoC Creator™, the development tool for PSoC 4. This application note also guides you to more resources to accelerate in-depth learning about PSoC 4.

Contents

Introduction

PSoC 4 is a true programmable embedded system-on-chip, integrating custom analog and digital peripheral functions, memory, and an ARM Cortex-M0 microcontroller on a single chip.

This type of system is different from most mixed-signal embedded systems, which use a combination of a microcontroller unit (MCU) and external analog and digital peripherals. It typically requires many integrated circuits in addition to the MCU, such as opamps, ADCs, and application-specific integrated circuits (ASICs).

PSoC 4 provides a low-cost—often less than US$1 in production volumes—alternative to the combination of MCU and external ICs. In addition to reducing overall system cost, the programmable analog and digital subsystems allow great flexibility, in-field tuning of the design, and speedy time to market.

PSoC 4 offers a best-in-class current consumption of 150 nA while retaining SRAM, programmable logic, and the ability to wake up from an interrupt. PSoC 4 consumes only 20 nA while maintaining wakeup capability in its nonretention power mode.

The capacitive touch-sensing feature in PSoC 4, known as CapSense®, offers unprecedented signal-to-noise ratio; best-in-class waterproofing; and a wide variety of sensor types such as buttons, sliders, track pads, and proximity sensors.

In addition to PSoC 4, the Cypress PSoC portfolio contains PSoC 1, PSoC 3, and PSoC 5LP. These devices offer different system architectures and peripherals. For more information, refer to the Cypress Platform PSoC Solutions Roadmap.

Comparison of PSoC 4 Families

PSoC 4 includes three device families: CY8C4000, CY8C4100, and CY8C4200. Table 1 shows the features available in these device families.

Table 1. PSoC 4 Device Families

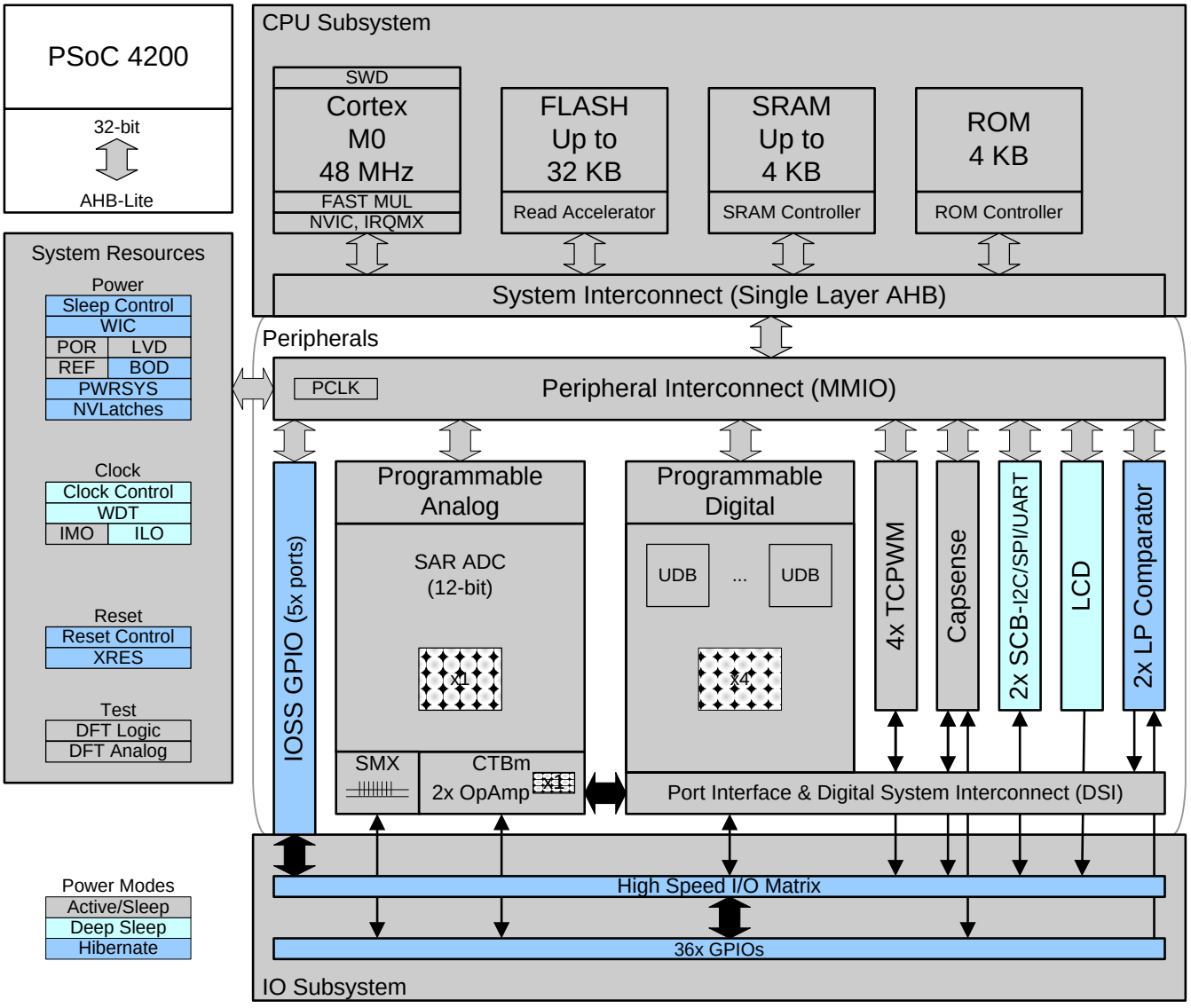
Features	Device Family		
	CY8C4000	CY8C4100	CY8C4200
CPU	16-MHz Cortex-M0 CPU with single-cycle multiply	24-MHz Cortex-M0 CPU with single-cycle multiply	48-MHz Cortex-M0 CPU with single-cycle multiply
Flash memory	As much as 16 KB	As much as 32 KB	As much as 32 KB
SRAM	As much as 2 KB	As much as 4 KB	As much as 4 KB
GPIOs	As many as 20	As many as 36	As many as 36
CapSense	As many as 16 sensors	As many as 35 sensors	As many as 35 sensors
ADC	None	12-bit, 806-ksps SAR ADC with sequencer	12-bit, 1-Msps SAR ADC with sequencer
Opamps	None	2 programmable opamps	2 programmable opamps
Comparators	1 CSD comparator with fixed threshold (1.2 V)	2 low-power comparators with wakeup feature	2 low-power comparators with wakeup feature
IDACs	One 7-bit and one 8-bit	One 7-bit and one 8-bit	One 7-bit and one 8-bit
Programmable logic blocks (UDBs)	None	None	Four, each with 8 macrocells and one datapath
Power supply range	1.71 V to 5.5 V	1.71 V to 5.5 V	1.71V to 5.5 V
Low-power modes	Deep-Sleep mode at 2.5 µA	Deep-Sleep mode at 1.3 µA Hibernate mode at 150 nA Stop mode at 20 nA	Deep-Sleep mode at 1.3 µA Hibernate mode at 150 nA Stop mode at 20 nA
Segment LCD drive	None	4 COM segment LCD drive	4 COM segment LCD drive
Serial communication	1 I^2C	2 independent serial communication blocks (SCBs) with programmable I^2C, SPI, or UART	2 independent SCBs with programmable I^2C, SPI, or UART
Timer Counter Pulse-Width Modulator (TCPWM)	1	4	4
Clocks	24-MHz / 32-MHz internal main oscillator (IMO) 32-kHz internal low-speed oscillator (ILO)	3-MHz to 24-MHz IMO 32-kHz ILO	3-MHz to 48-MHz IMO 32-kHz ILO
Power supply monitoring	Power-on reset (POR) Brown-out detection (BOD)	POR BOD Low-voltage detection (LVD)	POR BOD LVD

PSoC 4 Feature Set

PSoC 4 has a large set of features, which include a CPU and memory subsystem, a digital subsystem, an analog subsystem, and system resources, as Figure 1 shows. The following sections give brief descriptions of each feature. For more information, see the PSoC 4 family device datasheet, technical reference manual (TRM), and application notes listed in PSoC 4 Learning Resources.

Figure 1 shows the features available in the CY8C4200 device family. Subsets of these features are available in other device families; see Table 1 on page 2.

Figure 1. PSoC 4 Architecture (CY8C4200)



ARM Cortex-M0 and Memory

PSoC 4 has a 32-bit ARM Cortex-M0 CPU, capable of operating at a maximum frequency of 48 MHz, providing 43-DMIPS performance. The Cortex-M0 supports single-cycle 32-bit multiplication. PSoC 4 has as much as 4 KB of SRAM and as much as 32 KB of flash memory; the flash includes a read accelerator.

Programmable Digital Peripherals

PSoC 4 provides a rich set of digital peripherals including programmable serial communication blocks (SCBs), Timer Counter PWMs (TCPWMs), and programmable logic blocks called universal digital blocks (UDBs).

Programmable SCBs

PSoC 4 has independent run-time programmable SCBs, with I^2C, SPI, or UART. The SCB supports these features:

- Standard SPI master and slave functionality with Motorola, Texas Instruments, and National Semiconductor protocols
- Standard UART functionality with smart card reader, local interconnect network (LIN), and IrDA protocols
- Standard I^2C master and slave functionality
- SPI and EZI^2C mode, which allows operation without CPU intervention
- Low-power (Deep-Sleep) mode of operation for SPI and I^2C protocols (using an external clock)

For more information, refer to the PSoC 4 SCB Component datasheet.

Programmable TCPWMs

PSoC 4 has programmable 16-bit TCPWM blocks. Each TCPWM can implement a 16-bit timer, counter, PWM, or quadrature decoder. The TCPWMs provide complementary outputs and selectable start, reload, stop, count, and capture event signals. The PWM mode supports center-aligned, edge, and pseudorandom operations.

For more information, refer to the PSoC 4 TCPWM Component datasheet.

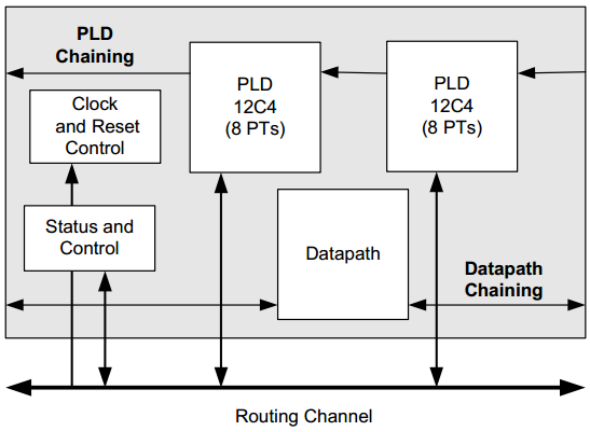
Universal Digital Blocks

UDBs are programmable logic blocks that provide functionalities similar to CPLD and FPGA blocks, as Figure 2 shows. The UDBs allow you to create a variety of digital functions such as timer, counter, PWM, PRS, CRC, shift register, SPI, UART, and custom combinational and sequential logic circuits.

Each UDB has two programmable logic devices (PLDs), each with 12 inputs and 8 product terms. The PLDs can form registered or combinational sum-of-products logic. Additionally, an 8-bit single-cycle arithmetic logic unit (ALU), known as a datapath, is present in each UDB. The datapath helps with the efficient implementation of functions such as timer, counter, PWM, and CRC.

The UDBs also provide a switched digital signal interconnect (DSI) fabric that allows signals from peripherals and ports to be routed to and through the UDBs for communication and control.

Figure 2. Universal Digital Block Diagram



You do not have to master any hardware description language (HDL) to use the UDBs. PSoC Creator, Cypress's development tool for PSoC 4, can generate the required function for you from a schematic.

For more information, refer to the following application notes.

- AN62510 – Implementing State Machines with PSoC 3, PSoC 4, and PSoC 5LP
- AN82156 – PSoC 3, PSoC 4, and PSoC 5LP – Designing PSoC Creator Components with UDB Datapaths
- AN82250 – PSoC 3, PSoC 4, and PSoC 5LP – Implementing Programmable Logic Designs with Verilog

Programmable Analog

PSoC 4 provides the industry's best-in-class analog integration. The analog system includes a fast 12-bit successive approximation register analog-to-digital converter (SAR ADC), low-power comparators, a continuous time block mini (CTBm), capacitive touch sensing (CapSense), and segment LCD direct drive.

Continuous Time Block mini

The CTBm block consists of two programmable operational amplifiers (opamps) and a switch matrix. You can configure each opamp individually as a comparator, voltage follower, or opamp with external feedback.

For more information, refer to the following Component datasheets:

- PSoC 4 Opamp
- PSoC 4 Voltage Comparator

SAR ADC with Hardware Sequencer

PSoC 4 has a 12-bit, 1-Msps SAR ADC with differential and single-ended modes. The input channels support programmable resolution and single-ended or differential input options. The number of GPIOs limits the number of channels.

The SAR ADC has a hardware sequencer that can perform an automatic scan on as many as eight channels without CPU intervention. The SAR ADC also supports preprocessing operations such as accumulation and averaging of the output data on these eight channels.

You can trigger a scan with a variety of methods, such as firmware, timer, pin, or UDB, giving you additional design flexibility.

For more information, refer to the PSoC 4 Sequencing Successive Approximation Component datasheet.

Low-Power Comparators

PSoC 4 devices have low-power comparators capable of operating in all system power modes except the Stop mode. In a power-sensitive design, when the device goes into low-power modes, you can use the low-power comparator to monitor analog inputs and generate an interrupt that can wake up the system.

For more information, refer to the PSoC 4 Low-Power Comparator Component datasheet.

Capacitive Touch Sensing (CapSense)

Capacitive touch sensors use human body capacitance to detect the presence of a finger on or near a sensor. Capacitive sensors are aesthetically superior, easy to use, and have long lifetimes.

The CapSense feature in PSoC 4 offers unprecedented signal-to-noise ratio; best-in-class waterproofing; and a wide variety of sensor types such as buttons, sliders, track pads, and proximity sensors.

A Cypress-supplied software Component makes capacitive sensing design very easy; the Component supports an automatic hardware- tuning feature called SmartSense™.

Two current DACs (IDACs), one 7-bit and one 8-bit, in the CapSense block are available for general-purpose use if capacitive sensing is not used. The CSD comparator is also available for general-purpose use in the CY8C4000 family of devices.

For more information, see the PSoC 4 CapSense Design Guide.

Segment LCD Direct Driver

Most low-power, portable, handheld devices such as glucose meters, multimeters, and blood pressure monitors use a segment LCD to display information. Segment LCDs require an external driver to interface with a microcontroller. PSoC 4 includes an integrated low-power LCD driver that can directly drive segment LCD glass.

PSoC 4 can drive LCDs with as many as 4 common and 32 segment electrodes. The segment LCD driver can retain a static display in Deep-Sleep system power mode with a system current consumption as low as 7 µA.

For more information, see AN87391 – PSoC 4 Segment LCD Direct Drive.

System-Wide Resources

This section explains the system resources available for all peripherals in PSoC.

LowLeakage Power Modes

PSoC 4 offers the following power modes:

- Active mode: This is the primary mode of operation. In this mode, all peripherals are available.
- Sleep mode: In this mode, the CPU is in sleep mode, SRAM is in retention, and all the peripherals are available. Any interrupt wakes up the CPU and returns the system to Active mode.
- Deep-Sleep mode: In this mode, the high-frequency clock (IMO) and all high-speed peripherals are off. The low-frequency clock (32-KHz ILO) and low-speed peripherals are available. Interrupts from low-speed, asynchronous, or low-power analog peripherals can cause a wakeup. The current consumption in this mode is 1.3 µA for all PSoC 4 device families except CY8C4000. The Deep-Sleep current is 2.5 µA for the CY8C4000 family of devices.
- Hibernate mode: This power mode provides a best-in-class current consumption of 150 nA while retaining SRAM, programmable logic, and the ability to wake up from an interrupt generated by a low-power comparator or a GPIO.
- Stop mode: This power mode retains the GPIO states. Wakeup is possible from a fixed “WAKEUP” pin. The current consumption in this mode is only 20 nA.

The Hibernate and Stop modes are not available in the CY8C4000 family of devices.

Power Supply and Monitoring

PSoC 4 is capable of operating from a single 1.71-V to 5.5-V supply. There are multiple internal regulators to support the various power modes, including the Active digital regulator, Quiet regulator, Deep-Sleep regulator, and Hibernate regulator.

PSoC 4 has three different types of voltage monitoring capabilities. These include power-on reset (POR), brown-out detection (BOD), and low-voltage detection (LVD). LVD is not available in the CY8C4000 family of devices.

Clocking System

PSoC 4 has the following clock sources:

- Internal main oscillator (IMO): The IMO is the primary source of internal clocking in the PSoC 4. The CPU and all high-speed peripherals operate from the IMO. See Table 1 on page 2 for the frequency ranges available in each device family. PSoC 4 has multiple peripheral clock dividers operating from the IMO, which generate clocks for the high-speed peripherals.
- Internal low-speed oscillator (ILO): The ILO is a very low power oscillator, which primarily generates clocks for low-speed peripherals operating in the Deep-Sleep mode.

Device Security

PSoC 4 provides a number of options for the protection of flash memory from unauthorized access or copying. Each row of flash has a single protection bit; these bits are stored in a supervisory flash row.

Programmable GPIOs

The input/output (I/O) system provides an interface between the CPU and peripherals and the outside world. PSoC 4 has as many as 36 programmable GPIO pins. You can configure the GPIOs for CapSense, LCD, analog, or digital signals. PSoC 4 GPIOs support multiple drive modes, drive strengths, and slew rates.

PSoC 4 offers an intelligent routing system that gives multiple choices for connecting an internal signal to a GPIO. This flexible routing simplifies circuit design and board layout.

Development Tools

Cypress supports PSoC 4 with high-quality software tools and development kits that help you get the most out of your PSoC device. They provide access to a suite of world-class integrated design environments to support your embedded development with PSoC. There is simply no faster way to configure the perfect device; develop application code; and then build, debug, and deploy an embedded design.

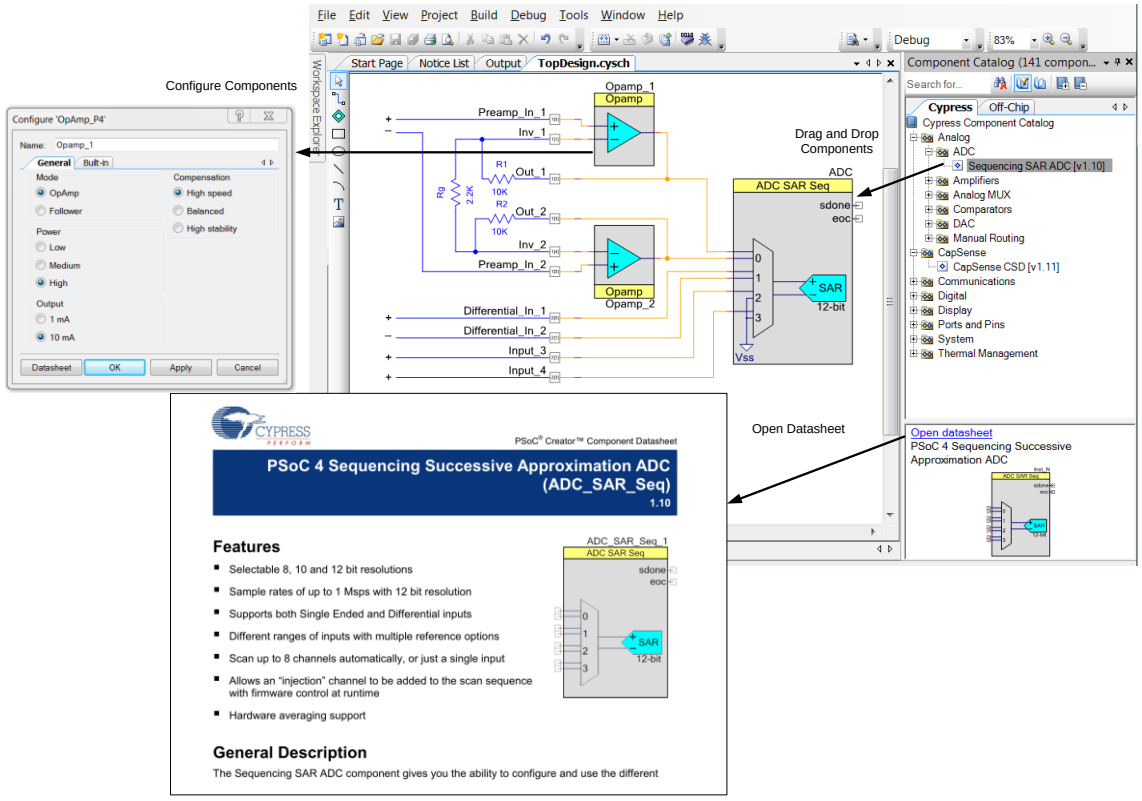
Software: PSoC Creator

PSoC Creator is a state-of-the-art, easy-to-use integrated development environment. It offers a unique combination of hardware configuration and software development based on standard schematic entry, as Figure 3 shows. You can develop applications in a drag-and-drop design environment using a library of precharacterized, production-ready Components.

You can customize each Component using a configuration window. To open the configuration window, double-click the Component or right-click the Component and select “Configure.”

Each Component comes with a detailed Component datasheet. To open the datasheet, right-click the Component and select “Open Datasheet.” For details, see the PSoC Creator home page.

Figure 3. PSoC Creator Schematic Entry and Components



Development Kits

Cypress provides several development kits to help you easily prototype your PSoC 4 design. Table 2 lists the development kits that support the evaluation of PSoC 4.

Table 2. PSoC 4 Development Kits

Development Kit	Description
PSoC 4 Pioneer Kit CY8CKIT-042	Low-cost, Arduino compatible development kit for the CY8C4200 and CY8C4100 family of devices
CY8CKIT-040	Low-cost, Arduino compatible development kit for the CY8C4000 family of devices
CY8CKIT-049-41xx	Low-cost prototyping kit for the CY8C4100 family of devices
CY8CKIT-049-42xx	Low-cost prototyping kit for the CY8C4200 family of devices
CY8CKIT-038	CY8C4200 family processor module, to be used with the PSoC Development Kit (CY8CKIT-001)

PSoC 4 Learning Resources

This section provides a list of PSoC 4 learning resources that can help you to get started and to develop complete applications with PSoC 4. You can also use the document manager in PSoC Creator to view these resources. To open the document manager, choose the menu item **Help > Document Manager**.

PSoC 4 Datasheets

PSoC 4 datasheets list the features and electrical specifications of all PSoC 4 device families.

- PSoC 4 Datasheets

Technical Reference Manuals

The TRMs provide detailed descriptions of the internal architecture of the PSoC 4 device.

- PSoC 4 Technical Reference Manuals

Learning PSoC Creator

Visit the following page to download the latest version of PSoC Creator.

- PSoC Creator home page

Launch PSoC Creator and navigate to the following items:

- **Quick Start Guide**: Choose **Help > Documentation > Quick Start Guide**. This guide gives you the basics for developing PSoC Creator projects.
- **Simple Component example projects**: Choose **File > Open > Example projects**. These example projects demonstrate how to configure and use PSoC Creator Components.
- **Starter designs**: Choose **File > New > Project > PSoC 4 Starter Designs**. These starter designs demonstrate the unique features of PSoC 4.
- **System Reference Guide**: Choose **Help > System Reference > System Reference Guide**. This guide lists and describes the system functions provided by PSoC Creator.
- **Component datasheets**: Right-click a Component and select “Open Datasheet.” Visit the following page for a list of all PSoC 4 Component datasheets: PSoC 4 Component Datasheets.

Application Notes

Application notes assist you with understanding specific features of the device and designing your PSoC application.

Visit the following page for a complete list of PSoC 4 application notes.

- PSoC 4 Application Notes

For example, here are a few application notes that can help you get started with developing PSoC 4 applications.

- AN54460 – PSoC 3, PSoC 4, and PSoC 5LP Interrupts
- AN82156 – PSoC 3, PSoC 4, and PSoC 5LP – Designing PSoC Creator Components with UDB Datapaths
- AN68272 – PSoC 3, PSoC 4, and PSoC 5LP UART Bootloader
- AN86233 – PSoC 4 Low-Power Modes and Power Reduction Techniques

Design Guide

Visit the following page to download the PSoC 4 CapSense Design Guide, which shows how to design capacitive touch-sensing applications with the PSoC 4 family of devices.

- PSoC 4 CapSense Design Guide

Technical Support

If you have any questions, our technical support team is happy to assist you. You can create a support request using the following link.

- Cypress Technical Support

If you are in the United States, you can talk to our technical support team by calling our toll-free number: +1-800-541-4736. Select option 8 at the prompt.

You can also use the following support resources if you need quick assistance.

- Self-help
- Local Sales Office Locations

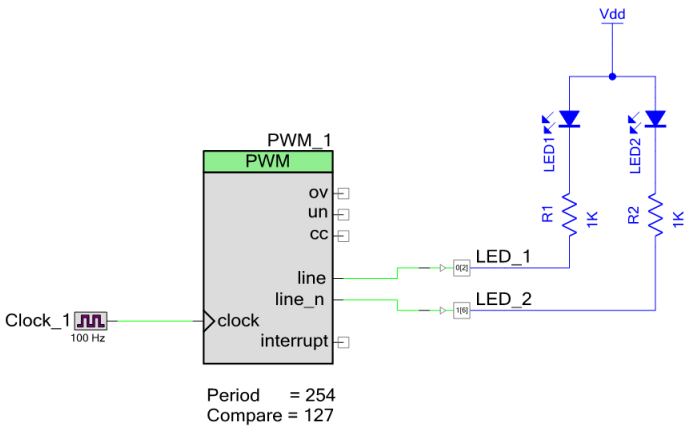
My First PSoC 4 Design

This section gives you the step-by-step process for building a simple design with PSoC 4 using PSoC Creator.

About the Design

This design simply blinks two LEDs using a TCPWM Component, as Figure 4, a PSoC Creator schematic, shows. The TCPWM is configured in PWM mode. The two complementary outputs of this PWM control the LEDs. The PWM operates at a very low frequency and 50 percent duty cycle so that the toggling of the LEDs is visible. If you use a dual-color LED instead of two separate LEDs, this project can toggle the color of the dual-color LED.

Figure 4. My First PSoC 4 Design

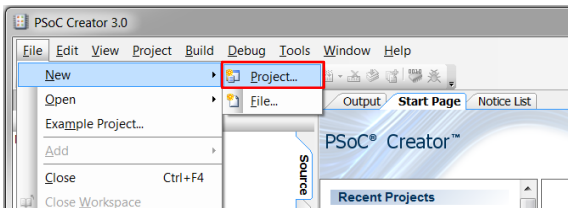


Part 1: Create the Design

This section takes you on a step-by-step guided tour of the design process. It starts with creating an empty project and guides you through hardware and firmware design entry. You can skip this section if you simply wish to try the example project provided with this application note without going through the build process.

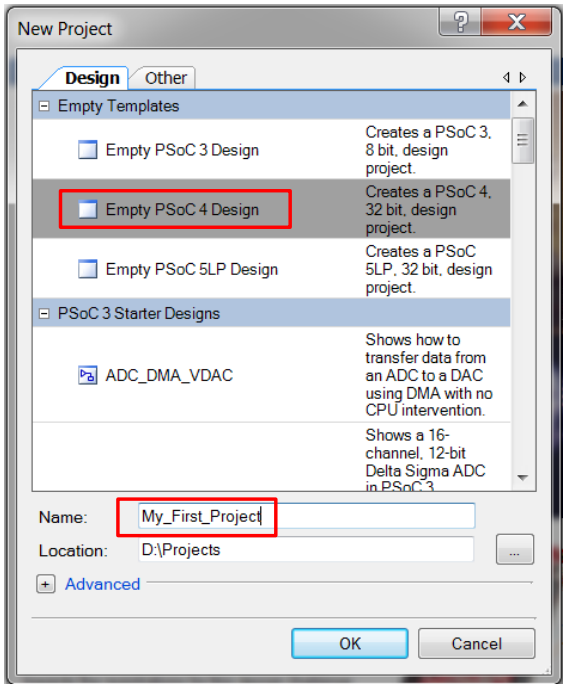
1. Install PSoC Creator 3.0 SP1 or higher on your PC.
2. Start PSoC Creator, and from the **File** menu choose **New > Project**, as Figure 5 shows.

Figure 5. Creating a New Project



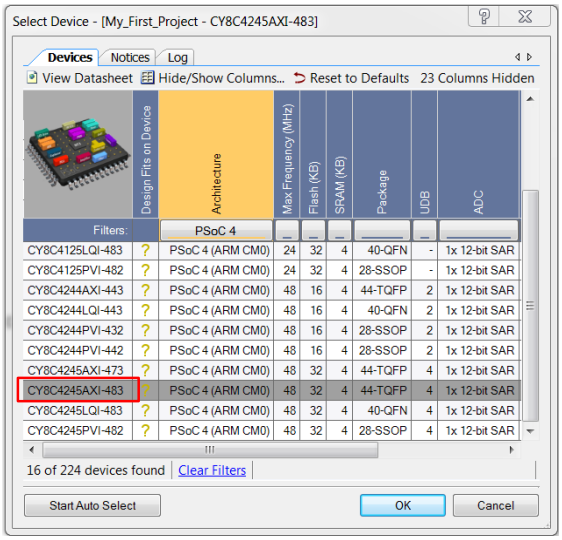
3. Choose the project template **Empty PSoC 4 Design**, and give the project a name such as "My_First_Project," as Figure 6 shows. Choose an appropriate location for your new project, and then click **OK**.

Figure 6. Naming the New Project



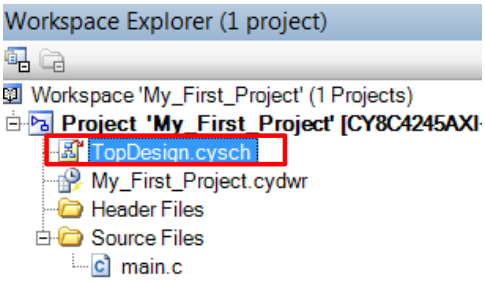
4. Select the PSoC 4 device that you want to use. Go to **Project > Device Selector** and select the device. If you are using a development kit, read the part number from the kit or refer to the kit user guide for the part number. Figure 7 shows an example selection for the CY8CKIT-042 PSoC 4 Pioneer Kit.

Figure 7. Device Selection



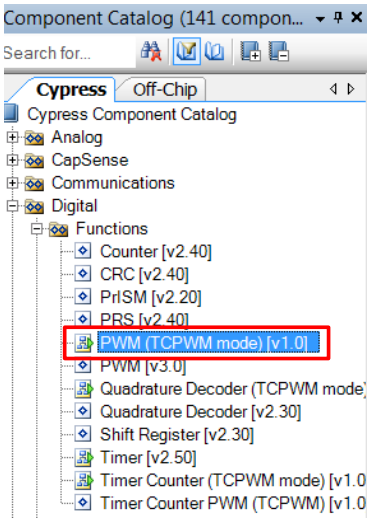
5. Creating a new project generates a project folder with a baseline set of files. You can view these files in the **Workspace Explorer** window, as Figure 8 shows. Open the project schematic file *TopDesign.cysch* by double-clicking it.

Figure 8. Opening TopDesign Schematic



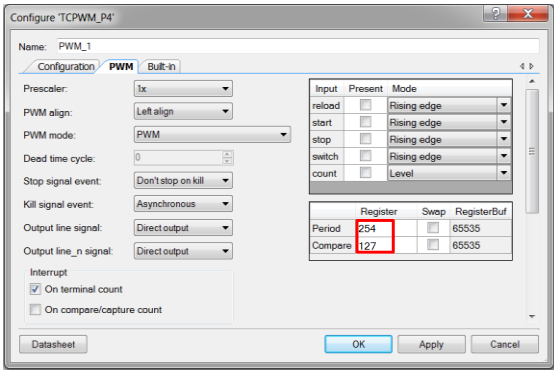
6. In the project schematic, you can create analog and digital designs by dragging and dropping Components and wiring them. Drag one PWM (TCPWM mode) Component from the Component Catalog onto the schematic, as Figure 9 shows.

Figure 9. Location of the PWM Component



7. Double-click the PWM Component on the schematic to configure the Component properties, as Figure 10 shows. Click the **PWM** tab, and set the period value to 254 and the compare value to 127 to generate a PWM signal with a 50 percent duty cycle.

Figure 10. Configuring the PWM Component



8. Drag and drop a Clock Component onto the schematic, and configure the frequency to 100 Hz, as Figure 11 and Figure 12 show. Since the PWM Component's period is 254, the PWM output frequency is 2.54 seconds.

Figure 11. Location of the Clock Component

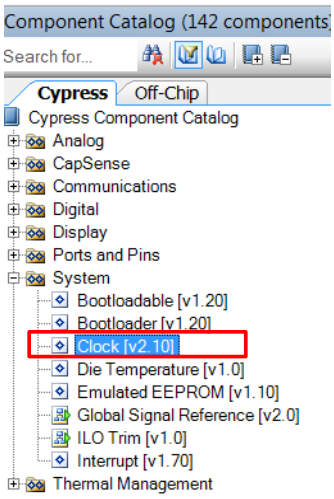
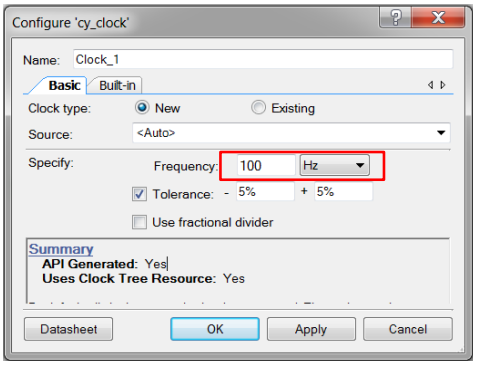


Figure 12. Configuring the Clock Component



9. Drag and drop a **Digital Output Pin** Component. Change the name to LED_1 as Figure 13 and Figure 14 show. Add another Digital Output Pin Component and change its name to LED_2.

Figure 13. Location of the Digital Output Pin Component

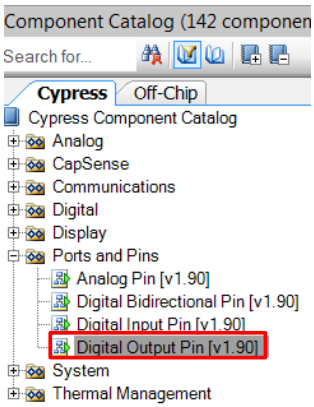
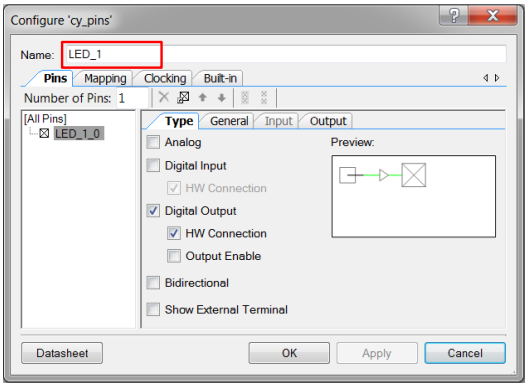
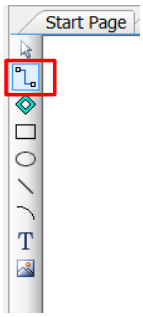


Figure 14. Renaming a Pin Component



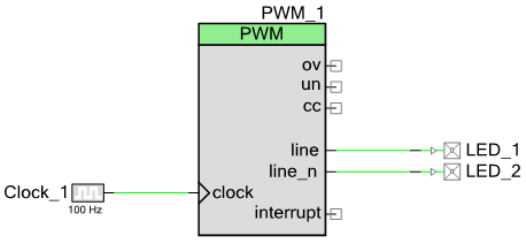
10. Select the wire tool, as Figure 15 shows, or press "W."

Figure 15. Selecting the Wire Tool



11. Wire the Components together, as Figure 16 shows.

Figure 16. Wiring the Schematic



12. Most Components are disabled at device reset (the major exception being the Clock Component, which is automatically started as a default), and you must add code to the project to enable them. Open *main.c* from **Workspace Explorer** and add code to the main() function, as Code 1 shows.

Code 1. Enabling the PWM Component

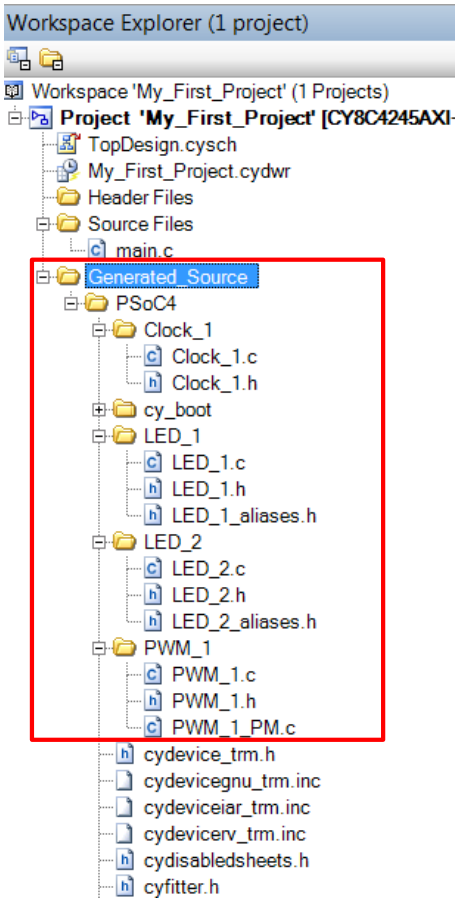
```
int main()
{
  /* Enable and start the PWM */
  PWM_1_Start();

  for(;;)
  {

  }
}
```

13. Select **Build My_First_Project** from the Build menu. Notice in the **Workspace Explorer** window that PSoC Creator automatically generates source code files for the PWM, Clock, and Digital Output Pin Components, as Figure 17 shows.

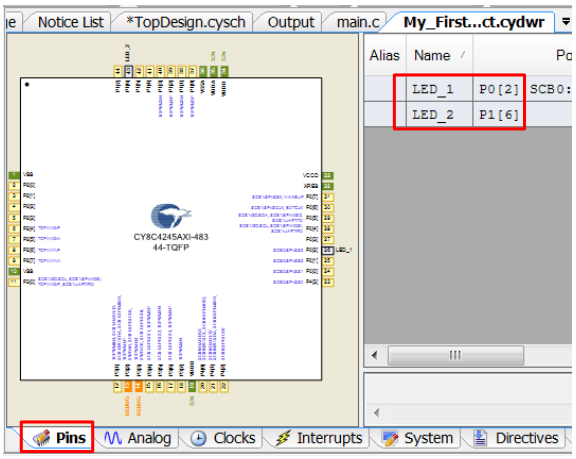
Figure 17. Generated Source Files



14. Open the file *My_First_Project.cydwr* (Design-Wide Resource file) from **Workspace Explorer** and click the **Pins** tab. You can use this tab to select the device pins for the outputs LED_1 and LED_2.

    If your development kit has onboard LEDs, refer to the kit user guide for the required pin assignments. Figure 18 shows the pin configuration to connect the LED_1 and LED_2 pins to the green and red LEDs in the PSoC 4 Pioneer Kit.

Figure 18. Pin Selection



    If you are using your own board or a development kit with no LEDs, select the appropriate pins. You can connect external LEDs to the selected pins, as Figure 4 on page 10 shows.

    Note CY8C4000 parts have fixed pins for PWM outputs. Refer to the device datasheet for details.

15. Finally, rebuild the project as Step 13 explains.

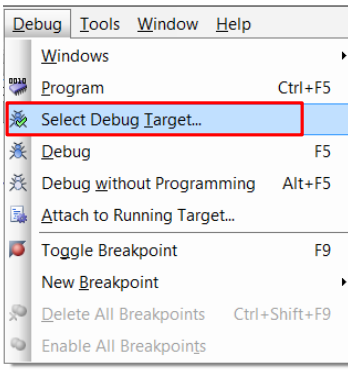
Part 2: Program the Device

This section shows how to program the device. If you are using a development kit with a built-in programmer, connect the kit board to your computer using the USB cable. For other kits, refer to the kit user guide.

If you are developing on your own hardware, you need a hardware debugger, for example, a Cypress CY8CKIT-002 MiniProg3.

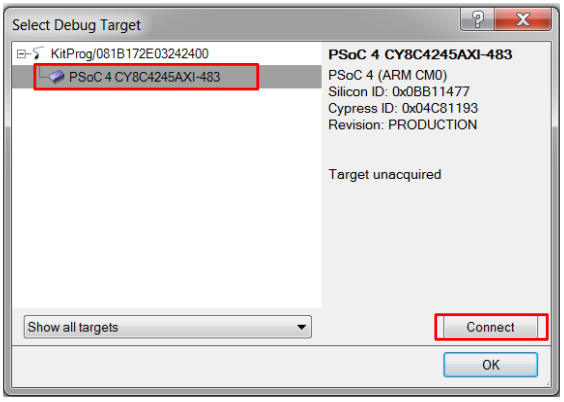
1. Select the PSoC Creator menu item **Debug > Select Debug Target**, as Figure 19 shows.

Figure 19. Selecting Debug Target



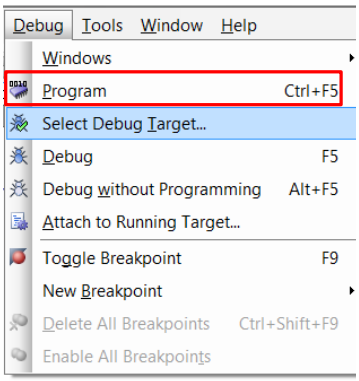
2. In the **Select Debug Target** dialog box, click **Port Acquire**, and then click **Connect**, as Figure 20 shows. Click **OK** to close the dialog box.

Figure 20. Connecting to a Device



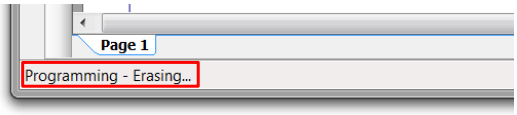
3. Choose the PSoC Creator menu item **Debug > Program** to program the device with the project, as Figure 21 shows.

Figure 21. Programming the Device



4. You can view the programming status on the PSoC Creator status bar (lower-left corner of the window), as Figure 22 shows,

Figure 22. Programming Status



5. After the device is programmed, verify the operation of the project by viewing the toggling of the LEDs.

Summary

This application note explored the PSoC 4 architecture and development tools. PSoC 4 is a truly programmable embedded system-on-chip, integrating configurable analog and digital peripheral functions, memory, and an ARM Cortex-M0 microcontroller on a single chip. Because of the integrated features and low-leakage power modes, PSoC 4 is an ideal choice for low-power and cost-effective embedded systems.

This application note also guided you to a comprehensive collection of resources to accelerate in-depth learning about PSoC 4.

Related Application Notes

AN75320 - Getting Started with PSoC 1

AN54181 - Getting Started with PSoC 3

AN77759 - Getting Started with PSoC 5LP

AN85951 - PSoC 4 CapSense Design Guide

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**	3881879	RLIU	1/24/2013	New Application Note
*A	3968932	RLIU	4/11/2013	Demo project changed to leverage Pioneer kit. Added architecture introduction.
*B	3996226	MKEA	05/09/2013	Reformatted graphics. Updated links.
*C	4219723	NIDH	12/19/2013	Updated attached Associated Project files. Updated content across the entire document. Updated in new template.
*D	4281783	NIDH	02/14/2014	Added support for CY8C4000 parts.
*E	4294266	NIDH	02/28/2014	Updated the power supply spec to match the PSoC 4000 family datasheet
*F	4314145	NIDH	03/19/2014	Updated PSoC 4000 IMO numbers to match Datasheet / Creator

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