PSoC® Creator™ Release Notes

Version 3.3, Component Pack 1

This release is PSoC Creator 3.3, Component Pack 1 (CP1), which provides an updated Bluetooth Low Energy (BLE) component. If PSoC Creator 3.3 is already installed on your machine, only the updated component will be installed. Otherwise, the complete PSoC Creator 3.3 release will be installed.

PSoC Creator 3.3 was an upgrade from the PSoC Creator 3.2 release. It added the following features:

- Guided Pin Selection
- Resource Meter
- Enhanced Example Project Browser
- New Project Wizard
- Macro Callbacks
- Device Packs
- Updated Components

This release does not replace existing installations of PSoC Creator (e.g., 3.1 or 3.2); it installs alongside them. This enables you to move designs to the new version at your own pace. We guarantee that your existing designs can be opened in the new software, but please upgrade your components to the latest version. To ensure that you can always return to your previous setup, a backup of your project is automatically created when opening a project in a new version of the tool. It is stored in a folder named "backup" in the project's folder.

If you have technical questions, visit www.cypress.com/go/support or call 1-800-541-4736 and select 8.

Contents

Component Pack 1 (CP1) Features 2

PSoC Creator 3.3 Features 2
- Guided Pin Selection 2
- Resource Meter 2
- Enhanced Example Project Browser 2
- New Project Wizard 2
- Macro Callbacks 2
- Device Packs 2
- Updated Components 3

Design Impact 3
- Removing Older Components 3

Supported Devices 5

Supported Tool Chains 5
- Toolchains for PSoC 3 (8051) 5
- Toolchains for PSoC 4 and PSoC 5LP (ARM) 5

Installation 6
- Minimum and Recommended System Requirements 6
- Software Update Instructions 7

Open Source 8
Installation Notes 8
Further Reading 9

Component Pack 1 (CP1) Features

CP1 contains an updated BLE component to version 2.30. The major change to this component includes fixing the generated Passkey limitation. The Passkey range is extended to 000000-999999.

For more information, refer to the Component Change section in the BLE component datasheet.

PSoC Creator 3.3 Features

Guided Pin Selection

This feature helps the user make optimal decisions when choosing physical pins in the Pins DWR editor for PSoC 4 devices. Ideal selections are highlighted in green while legal, but resource-consuming, options in yellow.

Resource Meter

This is a new tool window, showing a convenient bar graph of resource utilization.

Enhanced Example Project Browser

This is an updated dialog that supports workspaces (multi-project examples) and can display component examples, kit projects and starter designs.

New Project Wizard

This replaces the existing, complex New Project dialog with a multi-step wizard, enabling the use of code examples, kit projects and templates as start-points for a new design.

Macro Callbacks

Macro callbacks are means of calling user code from generated files without modifying the generated source code. These replace the merge regions, which are preserved for backward compatibility reasons.

Device Packs

This feature enables the addition of new device support to future releases of PSoC Creator without impacting the user experience with existing devices.

Updated Components

The following components ere updated to new versions as part of the PSoC Creator 3.3 release to address various component defects and feature updates. Refer to the component datasheet for specific details.

- BLE 2.20
- Bootloader/Bootloadable 1.40
- cy_boot 5.20
- PSoC 4 CapSense CSD/Gestures 2.30

Design Impact

Removing Older Components

A number of old versions of components were re-classified as obsolete for all devices in this release. These components are not shipped with the PSoC Creator 3.3 software. In all cases there are newer versions of the component that are of a higher quality. You should update your designs to use these newer components.

Using the obsolete components in PSoC Creator 3.3 will cause a design-rule error to be output to the Notice List window. This message requests that you update the component version or take alternative actions to get onto supported implementations. The following are the affected components:

Component	Removed Version(s)	Current Version
ADC SAR	1.80	3.0
AMux Sequencer	1.60	1.80
Boost Converter	2.10	5.0
Bootloader/Bootloadable	1.0	1.40
CAN	2.10, 2.20	3.0
CapSense CSD (non PSoC 4)	3.20	3.50
Character LCD	1.60	2.10
Counter	2.20	3.0
CRC	2.20	2.40
cy_boot	3.0, 3.10	5.20
DFB	1.10	1.40
D Flip Flop	1.0, 1.10	1.30
Die Temp	1.80	2.0
EEPROM	2.0	3.0
File System Library (emFile)	1.10	1.20
EMIF	1.10	1.30
EZI2C	1.70	2.0
Fan Controller	2.10	4.0
Filter	2.10	2.0
I2C	3.10	3.50
I2S	2.30	2.60

Component	Removed Version(s)	Current Version
IDAC8	1.90	2.0
LIN	1.10	3.20
Mixer	1.90, 1.91	2.0
Opamp	1.80	1.90
PGA	1.80	2.0
PGA Inverting	1.80, 1.90	2.0
Power Monitor	1.10	1.60
PrISM	2.10	2.20
PRS	2.10	2.40
PWM	2.20	3.30
Quadrature Decoder	2.10	3.0
Resistive Touch	1.10	2.0
RTC	1.70	2.0
Sample Track and Hold	1.20, 1.30	1.40
Segment LCD	3.10	3.40
Shift Register	2.10	2.30
Sleep Timer	3.0	3.20
SPDIF_Tx	1.10	1.20
SPI Master	2.30	2.50
SPI Slave	2.30	2.70
Static Segment LCD	2.10	2.30
Status Register	1.70	1.90
TIA	1.90, 1.91	2.0
Timer	2.30	2.70
Trim and Margin	1.0	2.0
USBFS	2.20, 2.30	2.80
Vector CAN	1.0	1.10
Voltage Fault Detector	1.0	3.0
Voltage Sequencer	2.0	3.40

Supported Devices

The design flow and tools available in this release of PSoC Creator support the following:

	Part Numbers			
PSoC 3	CY8C32*	CY8C34*	CY8C36*	CY8C38*
PSoC 4000	CY8C40*			
PSoC 4100 / PSoC 4200	CY8C41*	CY8C42*		
PSoC 4100 BLE / PSoC 4200 BLE	CY8C41*BL	CY8C42*BL		
PSoC 4200M	CY8C42*M			
PSoC 5LP	CY8C52*LP	CY8C54*LP	CY8C56*LP	CY8C58*LP
PRoC BLE	CYBL10*			

Supported Tool Chains

Toolchains for PSoC 3 (8051)

DP8051 Keil™ 9.51a

The Keil PK51 Professional Developers Kit for PSoC is installed with PSoC Creator. It supports optimization levels 0 through 5. If you would like to use the compiler optimization levels above level 5, you should purchase the standard PK51 product by contacting Keil.

- In North, Central, or South America... sales.us@keil.com
- In Europe, Asia, Africa, or Australia... sales.intl@keil.com

The free Keil toolchain comes with a 30 day evaluation license. You can extend the license, without cost, by registering the product from within PSoC Creator (**Help > Register > Keil…**). Note that the extended license is for one year and that you will need to re-register it each year.

DP8051 Keil Generic

This option can be used to select a separately-installed version of the Keil toolchain. While any version can be selected, the only officially supported versions are 8.16, 9.03, and 9.51a.

Toolchains for PSoC 4 and PSoC 5LP (ARM)

- **ARM GCC –** The GCC ARM Embedded toolchain GCC 4.9-2015-q1-update is installed with PSoC Creator. This toolchain has no use restrictions and does not require license activation (it is distributed under the terms of the GNU Public License).
- **ARM GCC Generic –** This option can be used to select a separately-installed version of the ARM GCC toolchain.
- **ARM MDK Generic –** This option can be used to select a separately-installed version of the ARM Microcontroller Development Kit. The officially supported version is 4.72a.

Installation

Minimum and Recommended System Requirements

The following are system requirements to install and use PSoC Creator. Each requirement specifies a minimum that your system must meet or exceed.

PSoC Creator will execute correctly in highly resource-constrained systems. However, performance (startup time, project creation and opening, build times, and so on) may be impacted when resources are scarce. The most directly impacted performance metric is build time. The following sections provide examples of the resource scarcity impact.

Note During initial startup, PSoC Creator builds and caches component DLL files used to display the component parameter editors. As a result, the tool will launch less quickly the first time after a new installation or a Windows® reboot.

Summary

Hardware/Operation System Requirements	Minimum
▪ Processor	1 GHz or faster 32-bit (x86) or Intel 64/ AMD64 64-bit
▪ RAM	1 GB
▪ Free Hard Drive Space	5 GB
▪ Screen Resolution	1024x768
▪ USB	2.0

Software Prerequisites *	Minimum Version
▪ Microsoft Internet Explorer (not IE8 beta)	7
▪ .NET Framework	4.0
▪ Adobe Reader (for viewing PDF Documentation)	9.2 **
▪ Windows Installer	3.1
▪ PSoC Programmer	3.23.1
▪ Keil Compiler	8.16 (9.51a provided)

* To install and run PSoC Creator, you may also need to install additional software. The Cypress Installer will guide you through the process if the additional programs are not already installed.

** For Windows 7, the minimum required version of Adobe Reader is version 9.2. You can download the latest version here: http://get.adobe.com/reader/. You can also use a non-Adobe PDF reader if you prefer; however, Cypress has no recommendations for any particular non-Adobe reader or version.

Processor

1 GHz or faster 32-bit (x86) or Intel 64/AMD64 64-bit processor is required.

PSoC Creator exhibits a predictable relationship between CPU speed and build time above 1 GHz. Doubling the CPU speed, e.g., from 1 GHz to 2 GHz or 1.5 GHz to 3 GHz, almost halves the build time.

On a fast (3 GHz) PC, simple designs can build in about one minute. At low speeds even designs that fill the device and generate complex routing solutions will build in under 5 minutes.

Operating System

One of the following Windows platforms is required:

- Windows XP SP3 (32-bit supported)
- Windows Vista SP2 (32- and 64-bit supported)
- Windows 7 and Windows 7 SP1 (32- and 64-bit supported)
- Windows 8 and Windows 8.1 (32- and 64-bit supported)
- Windows 10 (32- and 64-bit supported)
- Mac OS X Yosemite on VMware Fusion 7 running Windows 7 SP1
- Mac OS X Yosemite on Parallels Desktop 10 running Windows 8.1

Memory

A minimum of 1 GB of RAM is required.

Free Disk Space

PSoC Creator requires 5 GB of free disk space. PSoC Creator will install and run with just 1 GB of free disk space. However, in order to allow Windows to do memory paging, we recommend a minimum free disk space requirement of 5 GB.

If your disk is highly fragmented it will severely impact memory paging time and can result in very long build times. Disks that are nearly full are particularly prone to fragmentation. We recommend de-fragmenting your disk if you experience excessively long build times (10 minutes or more).

USB

PSoC Creator requires a USB 2.0-compliant host to program and debug.

Screen

A resolution of 1024x768 pixels or higher is required.

Note The build time examples given above were obtained with new product installations on minimally fragmented disks with no other applications running. If your build times exceed these expectations we recommend closing unnecessary applications, adding RAM to the system (to reduce paging) and ensuring that there is sufficient free and unfragmented disk space.

Software Update Instructions

As part of the installation process, the Cypress Update Manager utility will also be installed and located on the Start menu. You can use this utility to update all Cypress programs you have installed when updates for them become available.

Open Source

Portions of this software package are licensed under free and/or open source licenses such as the GNU General Public License. Such free and/or open source software is subject to the applicable license agreement and not the Cypress license agreement covering this software package. The applicable license terms will accompany each source code package. You may obtain the source code of such free and/or open source software at no charge from the following web site: www.cypress.com/go/opensource.

Installation Notes

The installation process is a set of wizards that walk you through installing various components. You can install PSoC Creator and various prerequisites from the web or from a DVD. There are slight differences in the process based on the medium used to install the software.

The DVDs provide the necessary prerequisites and the wizards to guide you through installing the appropriate software. The following sections contain more specific installation details.

Note Do NOT plug in your Miniprog3 until all software installation is complete AND the PSoC Creator application has been opened.

PSoC Creator DVD Installation

The PSoC Creator DVD contains PSoC Creator and PSoC Programmer, as well as various prerequisites.

1. Load the DVD. The main installer program should run automatically. If not, double-click the cyautorun.exe file to launch it.
2. On the main installer, click the **Install PSoC Creator <version>** button to launch the PSoC Creator InstallShield Wizard.
3. Follow the prompts on the wizard. The CyInstaller for PSoC Creator opens and displays steps to install PSoC Creator.
4. Click the hyperlink for any software that is not installed as indicated (such as, Acrobat Reader, etc.). Run the installer for that program as needed.
5. Continue following the prompts to install PSoC Creator.

Cypress PSoC Kit DVD Installation

A kit DVD contains PSoC Creator and PSoC Programmer, as well as projects, documentation, and prerequisites needed for the associated kit. Refer to kit instructions.

Web Installation

If you are downloading the software from the web (www.cypress.com/creator), run the PSoC Creator single package executable.

1. Double-click the PSoC Creator executable file to launch the installer.
2. Follow the prompts to install PSoC Creator. The CyInstaller for PSoC Creator opens and displays a series of steps to install PSoC Creator, and it will perform pre-requisite checks and install the prerequisites.
3. When complete, close the installer.

Further Reading

The primary documentation for PSoC Creator is provided in the Help, which you can open from the **Help** menu or by pressing [**F1**]. Other documents included with this release are also available from the **Help** menu, under **Documentation**. These documents include (but are not limited to):

- Quick Start Guide
- System Reference Guide
- Component Author Guide

Cypress provides a web page specifically for PSoC Creator at www.cypress.com/creator. You can also find more documentation using the Cypress Document Manager (CDM) tool, which is available for download from the Cypress web site at www.cypress.com/cypressdocumentmanager.

Other documentation includes (but is not limited to):

- Device Datasheets
- Device Architecture Technical Reference Manual (TRM)
- Device Registers TRM
- Application Notes
- Training

Contact your Cypress representative, as needed.

Cypress Semiconductor
198 Champion Ct.
San Jose, CA 95134-1709 USA
Tel: 408.943.2600
Fax: 408.943.4730
Application Support Hotline: 425.787.4814
www.cypress.com

© Cypress Semiconductor Corporation, 2015. All rights reserved.

The information contained herein is subject to change without notice. Cypress Semiconductor Corporation assumes no responsibility for the use of any circuitry other than circuitry embodied in a Cypress product. Nor does it convey or imply any license under patent or other rights. Cypress products are not warranted nor intended to be used for medical, life support, life saving, critical control or safety applications, unless pursuant to an express written agreement with Cypress. Furthermore, Cypress does not authorize its products for use as critical components in life-support systems where a malfunction or failure may reasonably be expected to result in significant injury to the user. The inclusion of Cypress products in life-support systems application implies that the manufacturer assumes all risk of such use and in doing so indemnifies Cypress against all charges.

PSoC® and CapSense® are registered trademarks, and Programmable System-on-Chip™, PSoC Creator™, and SmartSense™ are trademarks of Cypress Semiconductor Corporation. All other trademarks or registered trademarks referenced herein are property of the respective corporations.

This Source Code (software and/or firmware) is owned by Cypress Semiconductor Corporation (Cypress) and is protected by and subject to worldwide patent protection (United States and foreign), United States copyright laws and international treaty provisions. Cypress hereby grants to licensee a personal, non-exclusive, non-transferable license to copy, use, modify, create derivative works of, and compile the Cypress Source Code and derivative works for the sole purpose of creating custom software and or firmware in support of licensee product to be used only in conjunction with a Cypress integrated circuit as specified in the applicable agreement. Any reproduction, modification, translation, compilation, or representation of this Source Code except as specified above is prohibited without the express written permission of Cypress.

Disclaimer: CYPRESS MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARD TO THIS MATERIAL, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Cypress reserves the right to make changes without further notice to the materials described herein. Cypress does not assume any liability arising out of the application or use of any product or circuit described herein. Cypress does not authorize its products for use as critical components in life-support systems where a malfunction or failure may reasonably be expected to result in significant injury to the user. The inclusion of Cypress' product in a life-support systems application implies that the manufacturer assumes all risk of such use and in doing so indemnifies Cypress against all charges.

Use may be limited by and subject to the applicable Cypress software license agreement.