PSoC® Creator™ Release Notes

Version 3.1, Component Pack 1

This release is PSoC Creator 3.1, Component Pack 1, which provides an updated Bluetooth Low Energy (BLE) component. If PSoC Creator 3.1 is already installed on your machine, only the updated component will be installed. Otherwise, the complete release will be installed.

This release addresses a BLE device issue that results in unreliable connections and provides a workaround that allows the chip to function correctly. If you have experienced difficulties with BLE advertising and connection loss, we strongly recommend installing this software and updating the BLE component version in your projects. See BLE Component under "Defects Fixed" for more information.

PSoC Creator 3.1 is an upgrade from the 3.0 Service Pack 2 (SP2) release. It adds the following features:

- BLE Part Support
- Updated Code Editor
- New Project "Save As" Capability
- Improved Schematic Rubber-Banding
- Superset Part Programming for use with Development Kits
- Static Library Support for Components

This release does not replace existing installations of PSoC Creator (e.g., 3.0 or 2.2); 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.

This document describes general software features and changes since the PSoC Creator 3.0 SP2 release.

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

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PSoC Creator 3.1 Component Pack 1 Contents

The BLE component was updated to version 1.10. This component was updated to fix a BLE RF link (transmit/receive) defect observed on some devices. The fix increases the Rx current by ~0.3 mA to ensure connections can be reliably made and maintained.

New Features in PSoC Creator 3.1

BLE Part Support

With this release, PSoC Creator now supports Cypress's BLE devices: PSoC 4100 BLE, PSoC 4200 BLE and PRoC BLE.

Updated Code Editor

In general, autocomplete in PSoC Creator is smarter and faster. The code editor provided in PSoC Creator 3.0 has been updated with new autocomplete features:

- option to change tab key behavior
- new feature to match characters in the middle of strings
- option to control visibility of macros
- hot-key to show/hide macros

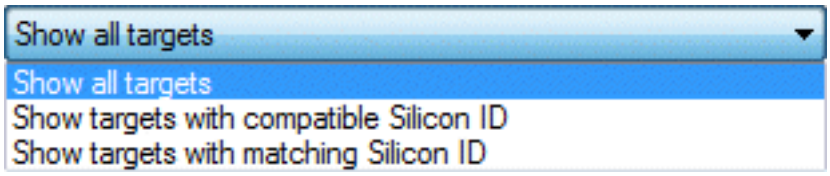
In addition, "Find All Active References" is faster and reports results in a separate window.

Note If you run PSoC Creator on a virtual machine and access source files from a shared folder, you must disable Semantic Parsing using the **Tools > Options > Semantic Parsing** menu item. There is a known issue with a third-party tool that is used to support the Semantic Parsing features. For more information, refer to the bug report for that tool (http://llvm.org/bugs/show_bug.cgi?id=21143).

Superset Part Programming

Because Cypress does not build development kits for every single device, this feature enables the programming/debugging of hex images for compatible parts of the same family.

The Select Debug Target dialog has been updated to show and select a compatible device.



Static Library Support for Components

PSoC Creator component support has been extended so that libraries can be added to the implementation of a component. Different libraries may be provided for compiler tool-chains and configurations (DEBUG/RELEASE). This helps component developers in two ways:

- Allows developers to use the standard PSoC Creator component development flow (that is, not shipping a library as an extra piece) without having to provide source code for the whole software package.
- By shipping the source code in a library, it allows component authors to avoid slowing down builds of projects that use their content.

Project "Save As" Capability

The new project "Save As" feature is more intuitive. In PSoC Creator 3.1, the "Save As" option launches a dialog that enables you to choose a new project name and location.

Updated Rubber-Banding

The Rubber-Banding feature implemented in the previous release was somewhat restrictive in allowing various moves. In this release, the underlying algorithms have been updated to allow the moving process to flow more smoothly and fail less often.

Components and Example Projects

This section contains information about new and updated components in this release. Refer to the applicable component datasheets (available in the PSoC Creator distribution and on the web) for additional information.

New Component

The following new component has been added as part of this release:

- **Bluetooth Low Energy (BLE) –** This component provides a comprehensive GUI-based configuration window to quickly design applications requiring BLE connectivity.

Updated Components

The following components have been updated in this release:

- ADC_SAR_SEQ_P4 2.0
- Bootloader/Bootloadable 1.30
- CapSense_CSD_P4 2.10
- CapSense_Gesture P4 2.10
- CharLCD 2.10
- Comp_P4 1.10
- cy_boot 4.20
- I2C LCD 1.20
- I2S 2.60
- LPComp_P4 2.0
- OpAmp_P4 1.10
- Pins 2.10
- PWM 3.10
- SCB_P4 2.0
- SegLCD_P4 1.10
- TCPWM_P4 2.0
- DVDAC 2.10
- FanController 4.0
- Filter 2.30
- ILO_Trim 2.0
- ScanComp 1.10
- SMBusSlave 4.0
- SW_Tx_UART 1.30
- Timer 2.70
- USBFS 2.80
- Clock 2.20
- cy_gsref 2.0
- cy_UDB_clockenable 1.0
- CyStatusReg 1.80
- DFB 1.30
- DieTemp_P4 1.0
- DMA 1.70
- EZI2C 1.90
- FanController 3.10
- IDAC_P4 1.0
- IDAC8 2.0
- ILO_Trim 1.10
- Opamp 1.90
- Sample_Hold 1.40
- ThermistorCalc 1.20
- ThermocoupleCalc 1.20
- UART 2.31

Updated Example Projects

The following example projects have been updated in this release:

- PRSExample
- RTDExample
- SAR_SPIM_USB
- SCB_SpiComm
- ScanCompCommonExample
- SegLCD_LowPowerExample
- Shifter_and_Library
- SPDIF_Tx
- SPI_Design
- SPIM_Example
- SPIS_Example
- StaticSegLCD_Example
- SW_Tx_UART_Example
- ThermistorCalc_Example
- ThermocoupleExample
- Timer
- UART_Rx
- USB_UART
- USBFS_Bootloader

Design Impact

Changed Internal Low Speed Oscillator (ILO) Accuracy in PSoC 4100 and PSoC 4200 devices

The accuracy of the ILO in PSoC 4100 and PSoC 4200 devices was wrong and has been fixed. This may cause some clock accuracy warnings if a design placed constraints on the accuracy of the source clock. There is no change to silicon behavior.

Watch Dog Timer (WDT) Usage in BLE Component

As a temporary implementation for the beta release only, the BLE Component used Counter #2 of the WDT for timing support in deep-sleep mode. If you used the Counter #0 and Counter #1 in your application, you must share the single WDT interrupt with the BLE Component.

In this production release of PSoC Creator 3.1, the protocol procedure timeout functionality is implemented using the Bluetooth Low Energy Sub-System (BLESS) Link Layer timer. Note that this replaces the Watchdog Timer (WDT) used in the preliminary release of the component and will require any design using the feature to migrate.

Corrected heap bounds-checking in sbrk()

The sbrk() function, which is used by malloc() and other heap-utilizing functions to check for available memory, has been updated to correct a prior defect. In PSoC Creator 3.0, the heap boundary was calculated from an erroneous assumption about the relative positions of the heap and the stack. As a result, it was possible for applications to be allocated SRAM beyond the heap boundary.

The fix ensures that malloc(), et al, now correctly handle heap overflow. Note that some projects, most notably a small number of PSoC Creator examples from the 3.0 release, will now fail to execute due to a lack of available heap. The resolution is to increase the heap size in the Design-Wide Resources System Editor (*<project>.cydwr* file), and re-build the project.

Default Stack and Heap Sizes

The default stack and heap sizes for new projects have been adjusted to more closely match real-world requirements. When new projects are created, the stack size is set to be a fraction of the total SRAM in the target device. The heap is set to a small value - 128 bytes - for all devices. You can, of course, modify these settings in the Design-Wide Resources System Editor. For example, if you are not using any heap-based memory allocation the heap can safely be set to 0 bytes.

Note that some example projects and application notes were originally created on older versions of PSoC Creator and use the larger default sizes. These projects will continue to build and run perfectly because they have sufficient memory allocated. However, if you attempt to reproduce the example yourself in your own project you may need to adjust the stack and heap. However, the example documentation will not tell you to do that because the original project did not require the settings to be changed.

Stepping Over Flash Write Functions

The PSoC Creator debugger may exit or stop responding to commands when stepping over a call to the CySysFlashWriteRow function. This issue also affects functions that call CySysFlashWriteRow, including the Emulated EEPROM component's Write function. In these cases, do not step over the function. Instead, use the Run to Cursor command to continue execution until the function call has finished.

Debugger Breakpoint Failure on GCC ARM Embedded v4.8.4 Toolchain

When a breakpoint exists in a location that is not valid, the debugger may fail to start with the message:

"Debugger exited unexpectedly during run"

This is an issue in the ARM GDB tool; not PSoC Creator. Breakpoints may be invalid because they are in a source location that does not produce code. This could be because they are in a section of code that was removed by the compiler or linker, or because the debugging information does not contain data for the address. In this case, disable the breakpoints. Then, add one breakpoint at a time to identify the invalid breakpoint.

Deep Sleep Issue with cy_boot and GCC ARM Embedded v4.8.4 Toolchain

Versions of the cy_boot component prior to v4.20 may exhibit a defect where PSoC 4100/PSoC 4200 devices cannot wake from the Deep-Sleep state. It is recommended that you upgrade your cy_boot component version to v4.20.

Access the Component Update Tool from the **Project** menu.

Removing Older Components

The following components were included in the PSoC Creator 1.0 release. Over time in various newer releases, these components have been updated with newer and better versions. Therefore, to reduce the installation size and time of PSoC Creator 3.1, these components have been removed from this and all future releases of PSoC Creator. If you need one or more of these components for your design, you can download them from www.cypress.com and import them using the PSoC Creator Import Component option (under the **Project** menu).

Component	Removed Version(s)	Current Version
ABuf	1.0	Deprecated
ADC_DelSig	1.30, 2.0, 2.10	3.0
ADC_SAR	1.10, 1.50	2.10
ADC_Vssa	1.0	1.20
AMux	1.20	1.80
AMuxSeq	1.20	1.80
BoostConv	1.10, 1.50	5.0
CAN	1.30, 1.50	2.30
CapSense_CSD	2.0, 2.10	3.40
CharLCD	1.30, 1.40, 1.50	2.10
Comp	1.10, 1.50	2.0
Counter	1.20, 1.50	2.40
CRC	1.20, 2.0	2.40
cy_boot	2.21, 2.30	4.20
cy_bufoe	not specified	1.10
cy_clock	1.0	2.20
cy_dma	1.0	1.70
cy_isr	1.0, 1.10, 1.20	1.70
cy_lcd_port	1.0, 1.10	1.50
cy_pins	1.10, 1.20	2.10

Component	Removed Version(s)	Current Version
cy_vref	1.0	1.60
CyControlReg	0.5, 1.0, 1.50	1.80
CyStatusReg	0.5, 1.0, 1.50	1.80
DieTemp	1.10, 1.50	2.0
EEPROM	1.50	2.10
EZI2C	1.20, 1.50	1.90
Filter	1.20, 1.50	2.20
GraphicLCDCtrl	1.50, 1.60,	1.70
GraphicLCDIntf	1.50, 1.60	1.70
I2C	1.20	3.30
I2S	1.0, 2.0, 2.10	2.60
IDAC8	1.20, 1.50, 1.60	2.0
LUT	1.0	1.50
Mixer	1.10, 1.50, 1.60	2.0
OpAmp	1.10, 1.50, 1.60	1.90
PGA	1.20, 1.50, 1.60	2.0
PGA_Inv	1.10, 1.50, 1.60	2.0
PrISM	1.20, 1.50, 2.0	2.20
PRS	1.30, 2.0	2.40
PWM	1.10, 1.50	3.10
QuadDec	1.20, 1.50	2.30
RTC	1.20, 1.50	2.0
SegLCD	2.0	3.40
ShiftReg	1.20, 1.50	2.30
SleepTimer	1.60	3.20
SPI_Master	1.20, 2.0, 2.10	2.40
SPI_Slave	1.20, 2.0, 2.10	2.60
StaticSegLCD	1.30, 1.50	2.30
TIA	1.10, 1.50, 1.60	2.0
Timer	1.20, 1.50, 2.0	2.50
UART	1.50	2.30
USBFS	0.2, 1.50, 1.60	2.70
VDAC8	1.20, 1.50, 1.60	1.90

Supported Devices

The design flow and tools available in PSoC Creator support the following PSoC 3 (CY8C3x), PSoC 4xxx (CY8C4x), PSoC 5LP (CY8C5x-LP), and PRoC BLE (CYBL10*).

	Part Numbers			
PSoC 3	CY8C32*	CY8C34*	CY8C36*	CY8C38*
PSoC 4000	CY8C40*			
PSoC 4100/	CY8C41*	CY8C42*		

PSoC 4200				
PSoC 4100 BLE **PSoC 4200 BLE**	CY8C41*BL	CY8C42*BL		
PSoC 5LP	CY8C52*LP	CY8C54*LP	CY8C56*LP	CY8C58*LP
PRoC BLE	CYBL10*			

Supported Tool Chains

Toolchains for PSoC 3 (8051)

DP8051 Keil™ 9.51

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 9.51.

Toolchains for PSoC 4 and PSoC 5LP (ARM)

- **ARM GCC 4.8.4 –** The GCC ARM Embedded v4.8.4 toolchain is installed with PSoC Creator. It provides improved ARM code generation in DEBUG mode over v4.7.3. As of this release, v4.8.4 is the only ARM compiler provided with PSoC Creator; v4.7.3 has been removed. 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 RVDS Generic –** This option can be used to select a separately-installed version of the ARM RealView Development System. The officially supported versions are 4.0 (build 529) and 4.1 (build 791).
- **ARM MDK Generic –** This option can be used to select a separately-installed version of the ARM Microcontroller Development Kit. The officially supported versions are 4.0 (build 524) and 4.1 (build 713).

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	512 MB (1 GB preferred)
▪ 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	2.0 SP2
▪ Adobe Reader (for viewing PDF Documentation)	9.2 **
▪ Windows Installer	3.1
▪ PSoC Programmer	3.22
▪ Keil Compiler	8.16 (9.51 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 SP2 or 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)
- Mac OS 10.9 on VMware Fusion 6 running Windows 8.1
- Mac OS 10.9 on Parallels Desktop 9 running Windows 7 SP1

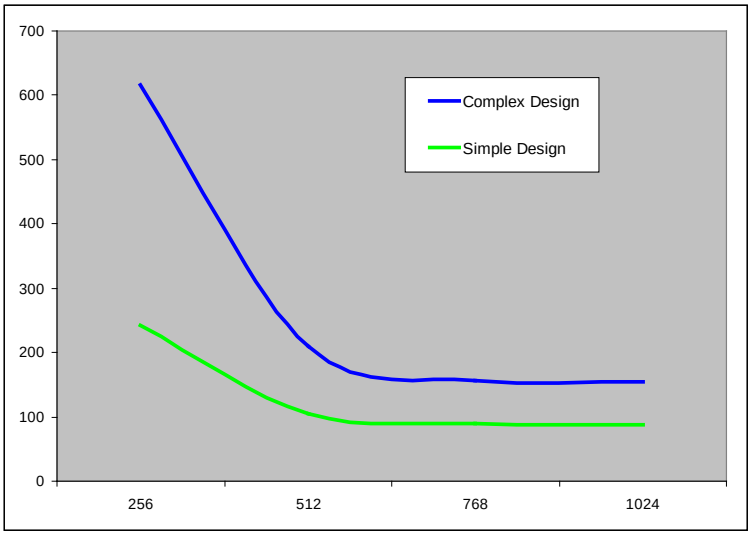
Memory

A minimum of 512 MB of RAM is required, but 1 GB is recommended.

Note Cypress does extensive performance testing on every PSoC Creator release. The minimum RAM configuration used in these tests is 1 GB. No guarantees of system performance are given below 1 GB.

With no other applications running, the minimum system configuration will ensure that the tool launches quickly, creates and opens projects in a few seconds, and responds to user input without feeling sluggish.

System RAM has the most direct impact on PSoC Creator build times. The following chart shows how insufficient RAM (i.e., below 512 MB) causes an excessive increase in build time, even for "empty" designs.



The graph shows that performance is heavily degraded below the threshold where memory paging is required but extra memory above that level does not generate a significant improvement.

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

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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 Software for PSoC…** 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. If a non-Cypress prerequisite is missing (like .Net and Windows Installer, etc), a webpage with a download link will pop up. Download and install the prerequisites. Run the installer of those programs as needed.
3. 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.
4. 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
- Migration Guides
- Application Notes
- Training

Contact your Cypress representative, as needed.

Defects Fixed

The following customer-reported defects were fixed in this release. These defects are separated into different categories.

Bootloading

Cypress ID	Defect	Fix and Impact
176522	Bootloadable projects fail to build when the associated bootloader project's ELF file is read-only.	PSoC Creator was attempting to open the files as read-write. This is unnecessary and now the file open process is done read-only and the projects build as expected.
193224	Bootloader Host Tool fails to detect the COM port of the CY8CKIT-049 kit's USB-Serial bridge on non-English installations of Windows.	The serial port enumerates correctly and has a COM port number assigned, but it is not displayed in the Bootloader Host Tool. The code to detect serial channels was updated to better address kit connection/disconnection. Bootloading should be more reliable on all Windows installations.

Build System

Cypress ID	Defect	Fix and Impact
168656	The XTAL clock, on PSoC 3 and PSoC 5LP devices, fails to start when there is a pin in that port configured to be resistive pull-down on reset. Note that this applies only to the reset state of the pin, not its run-time configuration.	During system start-up, the routing connections were being made before the pins were set up. As a result, the port to which the XTAL was connected was in its pull-down reset state, and the clock could not start (at reset all pins in the port were pulled down). Now, when XTAL is enabled, the pins on the port are set up to their (per-pin, not per-port) run-time values before starting the clock. The XTAL clock will now start even if there is a pin in its port configured to be resistive pull-down on reset.
170697	Segment LCD pin selections for commons and segments are limited when CapSense is also resident in the design. The tool reports "E2725: P3[6] cannot be used as an output when P4[2] is configured as Cmod".	The CapSense Component uses pins p4.2 and P4.3 for the CMOD and CTANK signals. When either pin is in use, it is not possible to route general (for example, UDB-based) signals to P3.6 or P3.7. However, the Segment LCD has direct (non-DSI) connections to those pains and so they should be available. PSoC Creator now correctly enables the connection of common and segment signals to those pins and the error message is not displayed.
172429	With "Quiet Output" disabled for synthesis (Build Settings dialog > Code Generation) the messages in the Output Window are truncated to 80 characters.	The message buffer was enlarged to ensure that the full path names of Verilog files can be printed without truncation.
176717	Projects that use DMA to configure the device issue the error: "Variable 'DMA_ZERO_VAL' set but not used [-Wunused-but-set-variable]".	Projects that use DMA to configure the device, but do not use DMA in the actual application, include the code in the *cyfitter_cfg.c* file. However, these projects have no need for the DMA_ZERO_VAL variable. The build tools now check if the variable is going to be needed before generating the code. The error message is no longer printed.

Cypress ID	Defect	Fix and Impact
180593	IDAC or OpAmp outputs on p1.0 are tied to 0 V on some PSoC 4 devices.	When the SAR ADC is configured to use "Internal 1.024 V bypassed" as the reference signal, PSoC Creator uses P1.5 for the bypass. On some devices, however, this pin is not bonded out on the package and so the PSoC Creator did not generate the code to close its switch. The implemented solution "fakes" the presence of the pin, which enables the generation of the code to close the switch. IDAC and Opamp outputs on P1.0 now work correctly, even on devices where the ADC bypass pin is used but not bonded out.
184166	When multiple PICU interrupts of type "Rising Edge" are included in the design, PSoC Creator reported the following error: "E1217-Failed to route all nets; unable to resove overuse".	The error message is correct because PSoC Creator has located the interrupts to adjacent interrupt locations (in the vector table). It is not possible to route that design because the interrupts share a common DSI connection. The fitter algorithm has been updated to re-route the interrupts to locations that do not share the DSI connection and the message no longer occurs.
187022	The Project Datasheet generated by PSoC Creator lists P3[2] and P3[3] (for PSoC 4) as unused GPIOs in section 2.1: Hardware Pins, while actually they are used for Debug (SWD).	This issue applies to all devices, not just PSoC 4. It was fixed along with a numer of other datasheet-generation errors.

Debugging/Programming

Cypress ID	Defect	Fix and Impact
148803	When more than one PSoC 4 device is available (connected via USB ports), the Select Debug Target dialog does not allow switching between two PSoC 4 devices. There is no way to change the target without removing the currently-selected device.	The Select Debug Target dialog did not report the correct device ID when switching between two PSoC 4 devices. Instead, it continually reported the old device. This was corrected by forcing an enumeration of devices when the dialog is opened. It is now possible to change the target device from the dialog wihout unplugging the debugger.
157752	It is not easy to program a blank PSoC 4 device. The device does not get displayed correctly in the Select Debug Target dialog unless the user does a "Port Acquire."	The issue occurred when the device was cleared by an "Erase All" procedure in PSoC Programmer. The Select Debug Target now automatically performs a Port Acquire when it does not recognize a device.
174710	Debugger reports 64-bit values as zero, regardless of the actual value.	Corrected the handling of "long long int" and "uint64" data types. Also corrected handling of "volatile" variables.
183354	Breakpoints cannot be placed in source code when the preceding code is collapsed in the text editor.	When the popup menu was used to insert breakpoints, there was a problem when the code just above the target line was collapsed. The breakpoint was placed in collapsed code, not on the required line. Fixes to the editor ensure that it returns the correct document location and the breakpoint goes in the expected location.
187799	The StepOver command halts execution on the wrong line of code when the project is built with GCC.	The defect was in the debugging information generated by the GNU linker. The shipped GNU compiler toolchain was updated to v4.8.4 and the linker error is no longer present in that release.

Framework

Cypress ID	Defect	Fix and Impact
178708	F3 shortcut fails to "Find Next".	When a search has been run, the "Find Next" button worked as expected but the F3 shortcut did not. The shortcut has now been implemented and strings may be repeatedly searched without accessing the dialog.
185932	The symbol generated from the Symbol Wizard causes errors about analog input terminals.	This is a legacy issue from very early versions of PSoC Creator (prior to the first public 1.0 release) that supported direction on analog pins. The Symbol Wizard code contained a typing error ("input" versus "inout") that caused a bad terminal type to be inserted for all analog terminals. That error has been corrected and the wizard now correctly generates non-directional analog terminals.
188707	PSoC Creator's Ohm Meter tool shows incorrect values for dedicated routes (compared with measured values).	The Ohm Meter tool erroneously reported 300 Ohms and 2000 Ohms in the routing paths from internal reference to pins P3[7] and P0[4] respectively on PSoC 5LP devices. The actual routing resistance along that path is ~20-30 Ohms. The error was in the opamp input switch resistance, which was being incorrectly added to the reported resistance. The reported value is now 0 Ohms, which is slightly low but within reported accuracy.

System

Cypress ID	Defect	Fix and Impact
188928	Writing to the most significant byte of a packed volatile structs fails with the GNU compiler.	The defect was in the GNU compiler The shipped GNU compiler toolchain was updated to v4.8.4 and the error is no longer present in that release.
191130	PSoC device CY8C3245LTI-129 is listed in the Device Selector but not in the family datasheet.	The device never actually existed. It has been removed from the Device Selector. Projects targeting the device will prompt for a new selection when opened in PSoC Creator 3.1.
194455	The device family datasheet for PSoC device CY8C5888LTI-LP097 lists support for CAN 2.0b but projects targeting that device fail when CAN is added to the design.	The device database was updated to correct the definition of CY8C5888LTI-LP097. Designs can now support the CAN component.

BLE Component

Cypress ID	Defect	Fix and Impact
202141	On some devices the BLE RF link (transmit/receive) was unreliable. The device would fail to advertise in all channels and, if a connection was made, it might fail to communicate in some RF channels.	The failures are due to frequency deviation in the radio caused by an incorrect voltage setting on the RF PLL feedback LDO. The new component version (v1.10) addresses the voltage setting and ensures connections can be reliably made and maintained.

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