PSoC Designer™ Version 1.31 Release Notes

1   How Are The Versions of PSoC Designer Different?

1.1   How Is Version 1.31 Different From Version 1.30?

Program Corrections

1.1.1 Corrected C Compiler Bug with "signed char" comparisons—Occasisionally the compiler was not correctly handling comparisons with variables of type "signed char".

1.1.2 Device Editor display of MUX settings corrected. Now when the MUX connections are updated in the Device Editor, the new selections are reflected in the GUI as well.

1.1.3 New versions of the Assembly Language Manual and the Device datasheet were included (See "Documentation" directory after installation).

1.2   How Is Version 1.30 Different From Version 1.20?

User Module Changes

1.2.1   User Module API corrections

The User Modules ADCINC12, CMPPRG, AMPINV_A, and PWMDB16 all had updates to their APIs.

1.2.2   DAC6SC User Module Re-designed

The DAC6SC User Module was re-written.

1.2.3   DAC6 and Delta Sigma 8-bit ADC added

The DAC6 User Module and DELSIG8 User Modules were added.

New Features Added

1.2.4   Manufacturing Hex file creation

The Hex file for manufacturing/reproduction of programmed PSoC MCU devices was added. This supports the development/availability of third-party bulk programming.

1.2.5   Help System Enhanced

The built-in help system of PSoC Designer now provides context-sensitive help for M8C assembly instructions. Clicking on an instruction in the application code brings up relevant help dialogs.

1.2.6   Debugger Messaging Enhanced

The debugger output/messages window of PSoC Designer now provides more real-time messages during compilation and linking.

1.2.7   Register Banks 0 and 1 now directly accessible

The debugger provides tabbed-access to the register banks directly, rather than all registers shown on a single tab by address.

Program Corrections

1.2.8   Corrected Bug—"Sometimes the Source Editor would insert a colon into the text during editing."

The Source Editor has been updated to correct the inadvertant insertion of colons.

Project Additions/Corrections

1.2.9   Calc_Trim project

This project computes the trim value for the internal oscillator. This project and the trimming operation are only applicable to Engineering Samples (chips are marked ES).

1.2.10 Corrected API Warnings for ADC2UART project

The warnings generated by APIs during compilation of this project were corrected.

1.3   How Is Version 1.20 Different From Version 1.10?

New Features Added

1.3.1   Ability to save and import Global Resource settings

The values of the Global Resources can be saved by right-mouse-clicking on any element in the "Global Resources" pane of the Device Editor. Once saved (Update Default Values), they can be imported (Restore Default Values) into any project. The same features are available from the main menu from the "Config, Global Resources" selections.

1.3.2   Breakpoint Persistence

Breakpoints set in a project persist between sessions of PSoC Designer.

1.3.3   Watch Variable Persistence

Watch variables set-up in a project persist between sessions of PSoC Designer.

1.3.4   List Files and Map File Available within the Debugger mode of PSoC Designer

Compiler generated list files and linker generated map files are available from within PSoC Designer under the "Output" tab of the project files window (Only visible in the Application Editor and the Debugger).

1.4   How Is Version 1.10 Different From Version 1.01?

User Modules That Have Been Corrected/Updated

1.4.1   ADCINC12

Added phase swapping capability.

1.4.2   AMPINV

Corrected "Start" routine to properly initialize power bits, and added "C" language interface to API.

1.4.3   CMPPRG

Corrected "Start" routine to properly initialize power bits.

1.4.4   CRC16

1.4.5   INSAMP

Corrected "Start" routine to properly initialize power bits, and added "C" language interface to API.
Eliminated gains less than 2.0 and corrected gain of 2.286 settings.

1.4.6   PGA_A

Corrected "Set Gain" routine, and corrected symbolic gain constants in interface files.

New Features Added

1.4.7   Windows Persistence

The state of various windows will persist between sessions of PSoC Designer.

1.4.8   User Module Database Validation

The User Module Database will be validated upon startup of PSoC Designer.

1.4.9   ICE

A new bitstream was added to reduce the chance of a "Loss of Lockstep" error.

2   System Requirements

Windows 95,98,NT4.0,Me,2000
> 166MHz
64MB of RAM
EPP Parallel Port
Screen Resolution 1024x768 or better
16-Bit Color
Internet Explorer 5.0
CD ROM Drive

3   Updates

Check www.cypressmicro.com for the latest updates to software and documentation.

4   Documentation

Manuals and key documents are located in the documentation subdirectory of the PSoC Designer installation directory. The default location is

\Program Files\Cypress MicroSystems\PSoC Designer\Documentation\.

These documents are PDF files that require Acrobat Reader to be read. Documents include:

**PSoC Designer Integrated Development Environment (IDE manual),
M8C Assembly Manual,
C Language Compiler User Guide,
8C20000 Data Sheet,
Analog PSoC Interconnect Diagram, and
PSoC Block Overview Diagram.**

5   Tutorials

It is recommended that first time users observe the tutorials for a basic design flow. These are available on the CD media as well as from our website (www.cypressmicro.com) from our "Download Tools" page.

On the CD, the tutorials can be found in the "tutorials" directory. These are:

Tutorial_Pwm using sample project Example_PWM_28pin.soc (800x600 screen resolution)
Tutorial_ADC using sample project Example_ADC_28pin.soc (1024x768 screen resolution)

6   Example Projects

It is instructive for a new user to view and/or run the Example projects. These projects are intended to execute on the PSoC Pup demo board (included in the development kit; for more information see application note APN2011, found in the development kit documentation package, or on our website at www.cypressmicro.com/support/appnotes). Currently there are several sample projects. These are located in the Cypress MicroSystems\PSoC Projects\Examples directory after installation. The projects are:

Example_counter_28pin.soc

Example_DAC_output_28pin.soc

Example_External_Crystal_28pin.soc

Example_PWM_28pin.soc

Example_PWM_with_DB_28pin.soc (PWM output to LED's with deadband control and external kill)

Example_TX9600_28pin.soc (Serial output from transmitter)

Example_ADC_28pin.soc (ADC input from pin to LED output)

ADC2UART.soc (incremental ADC, sampling at 9.3 Samples per second, sending 12-bit values as Hex characters over a UART). **NOTE: This project does not run on the PSoC Pup board and requires the optional C language compiler.**

7   Enabling ICE operation over the Parallel Port

In order to enable operation with the ICE, the parallel port settings for your computer need to be set correctly in the BIOS. Since the BIOS varies from machine to machine, the correct output mode cannot be known in advance and may take some trial and error. These modes may include EPP, ECP, Normal (Output only), Bidirectional(ECP+EPP). In general EPP or Normal mode works for most machines and should be tried first. For some notebook machines with only 2 modes, Bidirectional may be the best choice. (Some platform specific issues may occur.)

The way to access the BIOS, is to hit F2 or Delete from the keyboard during machine boot (For some Compaq notebooks, F10 is the correct key to press). For more details consult the hardware vendor.

NOTE For Windows 2000 and NT installations it is necessary to reboot twice in order to for the Parallel Port Driver to update the registry and operate correctly.

8   Known Errata in PSoC Designer

If large fonts are selected for the Windows settings, it is possible the dialog boxes will not appear correctly and the mouse selections may not match their intended locations. If you experience problems, try changing the selected font settings.

8.1   Debugger/ICE

i)   CPU speed of project should be set to 3MHz in Device Editor for debug sessions with ICE to work reliably with this release.

ii) Debugger operation for breakpoints, single step, and trace are nominally working. Occasionally the Debugger/ ICE will lose lockstep with the POD emulator. A message typically appears indicating loss of lockstep. In many cases program operation can be resumed. Otherwise it may be necessary to Reset/Go the program from the debugger.

iii) An I/O read and branch on a Zero Flag can cause the ICE to lose lockstep with the pod emulator.

iv) Breakpoints set while M8C is running will not work properly. Make sure CPU is halted before changing breakpoints.

v)   On assembly language Halt instructions, the CPU will halt, but the debugger shows CPU as still running.

vi) The POD contains a sticker with a calibration trim value for the main internal oscillator. See Silicon Errata number 6 in application note 1010.

vii) When using the POD to program parts in the socket only (non emulation mode), the POD cannot be connected to a target board.

viii) When using the POD in emulation mode, the programming socket must be empty. Be sure to remove any chip from the socket.

8.2   Source Editor

    i)   Find does not always work reliably and may go off screen.

9   Currently being implemented in PSoC Designer

    i)   Under Tools..Customize..User preferences menu: users cannot yet set the Trace buffer size.

    ii)   Event points are under development.