

## Release Notes SRN076

### PSoC Designer™ Version 5.0 Service Pack 5.5 with TrueTouch™ Support

Release Date: July 24, 2009

Thank you for your interest in PSoC Designer™ version 5.0, Service Pack 5.5 (SP5.5). Service Pack 5.5 is the second release with the new, improved, and free C-compiler from ImageCraft.

These release notes are a companion to the main SP5.5 release notes. These release notes address issues that are only relevant to the password-protected TrueTouch™ content. Major sections of this document include:

System Requirements and Recommendations

[New C Compiler Info](#)

[Installation Notes](#)

[Known Problems/Limitations](#)

#### System Requirements and Recommendations

| System Requirements                            | Minimum   | Recommended         |
|--|-----------|---------------------|
| ▪ Processor Speed                              | 1 GHz     | 2 GHz Dual Core     |
| ▪ MB of RAM                                    | 1 GB      | 2+ GB               |
| ▪ MB of Free Hard Drive Space                  | 600 MB    | 1 GB                |
| ▪ Screen Resolution                            | 1024x768  | 1280x1024           |
| ▪ CD-ROM Drive                                 | ✓         | ✓                   |
| ▪ USB Port, preferably USB 2.0                 | ✓         | ✓                   |
| ▪ Windows® XP (SP2 or higher), or Vista        | ✓         | ✓                   |
| ▪ Microsoft Internet Explorer (not IE8 beta)   | 6.0 (SP1) | 7.0                 |
| ▪ .NET Framework                               | 2.0       | 2.0 (SP1 or higher) |
| ▪ Adobe Reader (for viewing PDF Documentation) | 6         | 9                   |
| ▪ PSoC Programmer                              | 3.06      | 3.06                |

#### Updates

Check <http://www.cypress.com/psocdesigner> for the latest downloads of software and documentation.

### **New C Compiler in Service Pack 5.5**

Service Pack 4.5 (SP4.5) introduced a new, free ImageCraft C-compiler. This compiler is a new, improved version of the ImageCraft compiler, which previously has been available for purchase. Service Pack 5.5 fixes a few bugs from SP4.5. The Hi-Tech Lite compiler is no longer available. For frequently asked questions regarding the C Compiler in PSoC Designer please see <http://www.cypress.com/psocdesigner/compiler-faqs.pdf>

### **Installation Notes**

If an ICE-Cube or MiniProg3 is connected to the installation machine it must be disconnected and then reconnected after installing PSoC Designer 5.0 SP5.5.

Note: PSoC Designer 5.0 SP5.5 is not compatible with the internet browser, Microsoft Internet Explorer 8 *beta* (any beta version). If you are running IE8 beta, please upgrade to the released version or downgrade to a previous version.

#### **To Install:**

Shut down any currently running instances of PSoC Designer.

Install the latest PSoC Programmer 3.06 by running the provided installer.

If PSoC Designer 5.0 is currently installed, uninstall it. Click Start, click Control Panel, and then double click Add or Remove Programs.

Install PSoC Designer 5.0 SP5.5 via the autorun feature on the CD. Do not use the setup.exe on the CD.

### **New for PSoC Designer 5.0 Service Pack 5.5**

Included in Service Pack 5.5 are many bug fixes, new features and support for many new products. New products and new user modules are discussed in following sections. Please note that in many cases, new product support may be in the beta release phase. It will be explicitly stated in cases where support is at the beta level.

### **New Device Support**

The TrueTouch™ CY8CTMA300D and CY8CTMA301D devices are now supported.

### **Notable New Functionality**

#### **Improved Tuner Speed**

The polling rate of all tuners has been dramatically improved. Many PCs will now update at 60Hz. This is due to a new multi-threading tuner architecture in SP5.5. Note that this improvement works best with multi-core processors. Single-core processors will see a lower speed increase.

#### **Improved Finger Position Calculation in TST110, TST120, TST200, TMG120, TMG200**

The Finger Position (Centroid) calculation corrects several issues with accuracy that were found in previous versions. Due to the large memory requirements of this algorithm, it will not be supported in the TMG110. This algorithm can be enabled via the "Centroid" property in the Properties page

### TMA300 Now Includes Finger ID

Finger identification is supported in the TMA300. Use TMA300\_GetFingersID() to calculate finger ID and age.

### Txx30x Code Size Reduction

The sensing code used in the Txx30x parts has been optimized for size. Most designs will see 3-4K smaller flash usage.

### Improved Support for Large Panels in TMA120

The TMA120 code has been upgraded to support panels with up to 250 X/Y intersections.

### Pipeline Processing Added for TST/TMG 200

This UM is highly useful fault-detection functionality for some projects. The main purpose of PWD is detecting signal preamble in the different communication protocols. Also it can be used as hardware signal debouncer. See the PWD User Module datasheet for more information.

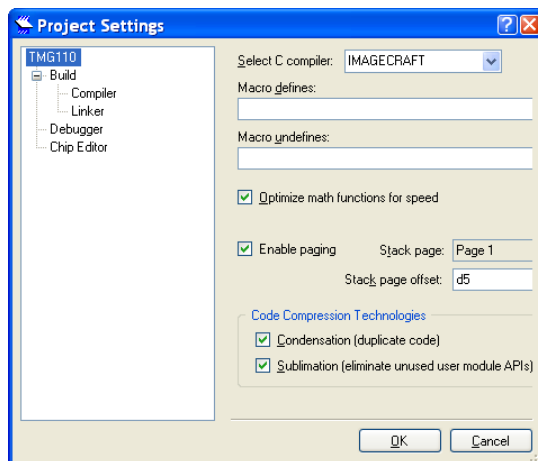
### Fixed Issue Regarding I2C Interrupt Interfering with GPIO Interrupt Vector

ISR jump statements are now placed at the proper GPIO interrupt vector as labeled in *boot.asm* and *boot.tpl*.

## Known TrueTouch™ issues for PSoC Designer 5.0 Service Pack 5.5

### General Issues

| ID    | Issue  | Work Around   |
|-------|--|---|
| 48495 | Changes to TrueTouch API<br>[43655]          | The PostMessage and cGetDoubleCentroidPos functions have been changed. See the data sheet for updated parameters and sample code. |
| none  | TMG110 doesn't compile with ImageCraft (ICC) | Change your settings as shown below:  |



| ID    | Issue   | Work Around  |
|-------|---|--|
| 40808 | Incomplete installation with 64-bit OSes.<br>[40531]  | Use 32-bit XP or Vista   |
| 49950 | Older TrueTouch™ projects fail to compile.  | Run the User Module wizard and click "OK". Your project will now compile.  |
| 49955 | Program Part doesn't find programmer in TMG120 project  | The new Program Part method of downloading firmware will not find the programmer in some TMG120 projects.<br>Closing PD50 and reopening it may fix the issue.  |
| 47595 | Cannot close programmer once tuner is running   | If you launch PSoC Programmer from PSoC Designer, then launch the tuner, you will not be able to close PSoC Programmer until the tuner is closed.  |
| 50632 | Programmer interferes with tuner  | In some installations, tuner performance will suffer if Programmer is running and connected to another device when the tuner is running.<br><br>Disconnect the other device or close Programmer to stop this issue.  |
| 50917 | Disconnect button / unplug USB interaction in the tuner   | This sequence causes issues:<br>1. Press the disconnect button in the port selection drop down. This causes the expected result - the 'Monitor Status' label says 'Bridge Disconnected'.<br>2. Unplug the bridge from USB.<br><br>This causes the port selection drop-down control to become inactive but the 'Monitor Status' label says 'Bridge Connected'. It should say 'Bridge Disconnected'. |
| 50882 | UCMP_WRK is not labeled in the debugger register map  | None.  |
| 52274 | The sample code with pipelined scanning in the TST200 user module data sheet is missing two lines of code. It will not work as it is. | Add the following two lines of code to the example before the while loop to initialize the I2C.<br><br><code>EzI2Cs_SetRamBuffer(sizeof(MailBoxes),<br/>sizeof(MailBoxes), (BYTE *)&amp;MailBoxes);<br/>EzI2Cs_Start();</code>   |

| ID    | Issue  | Work Around  |
|-------|--|--|
| 52275 | The pipeline scanning APIs are missing from the TMG200 user module data sheet.                       | Refer to the TST200 data sheet for information on these APIs.  |
|       | The CY8CTMA301D device does not work with the debugger.  | Use the CY8CTMA300D device for debugging.  |
|       | This release does not properly disable the voltage doubler, resulting in long doubler startup times. | Use the code (in the <a href="#">Appendix</a> at the end of this document) in between scans to enable/disable the voltage doubler. |

### Documentation

User guides and key documents are located in the \Documentation subdirectory of the PSoC Designer installation directory. The default location is:

*C:\Program Files\Cypress\PSoC Designer 5\Documentation*

Also included in this documentation folder is a documentation guide, which can assist you in understanding all the documentation that is included with PSoC Designer 5.0.

Supporting documents for PSoC Designer's public-domain functionality, using "Find in Files" text search (*grep.pdf*) and the build utility (*make.pdf* and *sed.pdf*), are located in:

*...\Program Files\Cypress\PSoC Designer 5\Documentation\Supporting Documents*

### PSoC Training

We recommend that first time users download and take PSoC Designer *Module 1: Introduction to PSoC* for free by visiting [www.cypress.com/psoctraining](http://www.cypress.com/psoctraining).

### Silicon Errata

The most up-to-date versions of the silicon errata are available on the web site at <http://www.cypress.com/psoc> and navigating to **Errata Update → PSoC Mixed-Signal Array**.

For assistance go to <http://www.cypress.com> or contact our Applications Team at 425.787.4814.

## Appendix

### Voltage Doubler Issue Workaround

```
void main()
{
    M8C_EnableGInt;          // Enable Global interrupt
    TMA300_Start();          // Start TMA user module
    TMA300_InitMailbox(&MailBoxes.TMA300_SMailbox); // Initialize mail box
    MailBoxes.bNumMailboxes = 1;          // Set number of mailbox
    if (TMA300_CheckRomData())
    {
        TMA300_CalibrateUM(); // Calibrate sensors, store value into flash.
    }

    TMA_DoublerStop();
    // Set EzI2C Ram buffer
    EzI2Cs_SetRamBuffer(sizeof(MailBoxes), sizeof(MailBoxes), (BYTE *)&MailBoxes);
    EzI2Cs_Start(); // Start EzI2C
    while (1)
    {
        // check update from tuner
        TMA_DoublerResume();
        {
            volatile WORD wDelayCtr;
            for (wDelayCtr=0; wDelayCtr<50;wDelayCtr++); // Delay at least
100uSec - Put useful customer code here
        }
        TMA300_ReadMessage(&(MailBoxes.TMA300_SMailbox));
        TMA300_ScanAllSensors();          // Scan all sensors
        // doubler stop, disable SAR and TX blockm, and then make doubler
tri-state mode
        TMA_DoublerStop();
        cTouchNum = TMA300_cGetDoubleCentroidPos(); // Calculate centroid
        TMA300_GetFingersID(); // Maintain fingers ID and age
        TMA300_PostMessage(&(MailBoxes.TMA300_SMailbox), cTouchNum ); // update mail box
    }
}

void TMA_DoublerResume()
{
    SAR_CSR6 |= 0x40;
    TXRX_CH0_CTRL2 |= 0x02;
    TXRX_CH1_CTRL2 |= 0x02;
    TXRX_CH2_CTRL2 |= 0x02;
    TXRX_CH3_CTRL2 |= 0x02;
    TXRX_CH4_CTRL2 |= 0x02;
    TXRX_CH5_CTRL2 |= 0x02;
    TXRX_CH6_CTRL2 |= 0x02;
    TXRX_CH7_CTRL2 |= 0x02;
    CS_CR2 |= 0x10;
    TMA300_DoublerStart(); // Start voltage doubler
}

void TMA_DoublerStop()
{
    SAR_CSR6 &= ~0x40;
    TXRX_CH0_CTRL2 &= ~0x02;
    TXRX_CH1_CTRL2 &= ~0x02;
    TXRX_CH2_CTRL2 &= ~0x02;
    TXRX_CH3_CTRL2 &= ~0x02;
    TXRX_CH4_CTRL2 &= ~0x02;
    TXRX_CH5_CTRL2 &= ~0x02;
    TXRX_CH6_CTRL2 &= ~0x02;
    TXRX_CH7_CTRL2 &= ~0x02;
    CS_CR2 &= ~0x10;
    TMA300_DoublerHiZ(); // Voltage doubler tri state mode
}
}
```



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