ClockWizard Release Notes

Version 2.2

Release Date: April 27, 2018

Thank you for your interest in ClockWizard, version 2.2.

The ClockWizard software enables you to create the configuration file that is used to program Cypress' CY274xx, CY2941x/CY2942x, and CY29430 high-performance clock generators. This document lists the installation requirements and describes the software updates and changes.

Changes in ClockWizard 2.2

- Enhanced the performance of the calculation engine of CY294xx
- Fixed defects

Features in ClockWizard 2.2

- Added support for 4-PLL CY27430

Application Dependent on PSoC Programmer Installation

ClockWizard 2.2 requires PSoC® Programmer 3.27.1, which is installed as part of ClockWizard 2.2.

Design Impact

Output pins and PLL parameters for CY274xx

This release of the ClockWizard software adds several constrains to CY274xx settings to ensure that while an output driver can receive a signal from many sources and mux them, all other sources except one is disabled.

When you open a design created in ClockWizard 2.1, which may have sources such as PLL and DIV-I both enabled but only one used by the output driver, these constraints will force you to disable unused clock sources before you can generate the project. An error message is displayed near the **Generate** button to alert you if your design has sources configured for the output driver that are disallowed.

The following table shows the connections between the **Select** parameter for each output pin (O/P) and **PLL** > **Delay Options** > **Delay**.

A green cell indicates that the corresponding output pin can have the **Select** parameter set to the corresponding DelayN (where 'N' is the delay number) value; at the same time, the Delay parameter for the selected PLL cannot be set to any value other than GND. On the other hand, if the corresponding **Delay** parameter for the selected PLL is set to GND, **O/P** > **Select** must not be set to this value of DelayN.

Note: For outputs with two possible delays for the **Select** parameter (O/P13, 14, 23, and 24), one of these delays in configured with **PLL** > **Delay Options** must be set to GND if the other one is selected in the **O/P** > **Select** parameter.

	PLL1				PLL2				PLL3				PLL4			
O/P	Delay 1	Delay 2	Delay 3	Delay 4	Delay 1	Delay 2	Delay 3	Delay 4	Delay 1	Delay 2	Delay 3	Delay 4	Delay 1	Delay 2	Delay 3	Delay 4
11																
12																
13																
14																
15																
16																
21																
22																
23																
24																
25																
26																

For example, if your design has **O/P12** > **Select** set as **HiZ** and **PLL1** > **Delay2** set as '**From DivO'**, the new constrains require you to change **PLL1** > **Delay2** to GND or **O/P12** > **Select** to the Delay2 value.

The following are a few more examples:

O/P 11 > **Select** values are HiZ, Low, DivIDE, P1o1. If **Select** = DivIDE, **P1o1** (Delay1 of PLL1) should be GND.

O/P 12 > **Select** values are HiZ, Low, DivIDE, P1o2. If **Select** = DivIDE, **P1o2** (Delay2 of PLL1) should be GND.

O/P 13 > **Select** values are HiZ, Low, DivIDE, P1o3, P2o4. If **Select** = DivIDE, **P1o3** (Delay3 of PLL1) and **P2o4** (Delay4 of PLL2) should be GND. If **Select**=P1o3, **P2o4** should be GND. If **Select**=P2o4, **P1o3** should be GND.

O/P 14 > **Select** values are HiZ, Low, DivIDE, P1o4, P2o3. If **Select**=DivIDE, **P1o4** (Delay4 of PLL1) and **P2o3** (Delay3 of PLL2) should be GND. If **Select**=P1o4, **P2o3** should be GND. If **Select** =P2o3, **P1o4** should be GND.

O/P 15 > **Select** values are HiZ, Low, DivISE, P2o2, DivL. If **Select** = DivISE or DivL, **P2o2** (Delay2 of PLL2) should be GND.

O/P 16 > **Select** values are HiZ, Low, DivISE, P2o1, DivL. If **Select** = DivISE or DivL, **P2o1** (Delay1 of PLL2) should be GND.

Known Limitations

VCXO Parameter for CY294xx

The **VCXO** parameter is not allowed either for the part with the initial configuration 'eFused parts with vcxo-disable' or for parts with 'blank part functional programming with vcxo-disable'. **VCXO** parameters are disabled on the user interface for such configurations.

Small Change Programming Feature for CY294xx

The **Small Change programming** feature can be used to change the output frequency by up to 500 ppm. This feature works with respect to the configuration (JEDEC file) available in the ClockWizard project. Do not use the Small Change programming feature immediately after **Large Change programming** (a feature to change the output frequency by more than 500 ppm).

This limitation applies to all parts.

Measure Frequency Operation for CY294xx

A warning message appears if the reference input frequency is outside the range specified in the datasheet. Even though the ClockWizard tool allows you to continue, the tool sets the **XO_Doubler** parameter to a fixed value suitable for the entered reference input frequency. Ignoring the warning message may cause incorrect device behavior.

System Requirements and Recommendations

Hardware/Operation System Requirements	Minimum
Processor	1 GHz or faster
RAM	1 GB (32-bit OS) or 2 GB RAM (64-bit OS)
Operating System	Windows 7 or later (32-bit and 64-bit)
Free hard disk space	2 GB
Screen resolution	1024x768
USB speed	2.0
Internet connection	Optional

Software Prerequisites *	Minimum Version
Microsoft Internet Explorer (not IE8 beta)	7
NET Framework	4.0
Adobe Reader (to view PDF Documents)	7.0 **
Windows Installer	3.1
PSoC Programmer	3.27.1

* To install and run the ClockWizard, 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 and above, 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.

Updating ClockWizard

To update the existing ClockWizard to a newer version, run the Update Manager and choose to install the new version. The existing Clock Wizard 2.1 installation remains. This allows trying the new version while still using the old version for any production testing.

Documentation

The user guides and key documents are located in the *\Documentation* subdirectory of the Clock Wizard installation directory. The default location is:

For 32-bit OS:

C:\Program Files\Cypress\CyClockWizard\2.2\Documentation

For 64-bit OS:

C:\Program Files (x86)\Cypress\CyClockWizard\2.2\Documentation

You can view these files under the **Help** menu. The documents include (but are not limited to):

- ClockWizard 2.2 User Guide

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