PCI Express Compiler

June 2006, Compiler Version 2.1.1 — Release Notes

These release notes for the PCI Express Compiler version 2.1.1 contain the following information:

System Requirements

To use PCI Express Compiler version 2.1.1, the following system requirements exist:

- A computer running any of the following operating systems:
  - Windows 2000/XP
  - Red Hat Enterprise Linux 3 or 4 WS (with support for 32-bit, AMD64, or Intel EM64T workstations)
  - Solaris 8 or 9 (32-bit or 64-bit)
- Quartus® II software version 6.0 Service Pack 1 (SP1) or higher
- PCI Express Compiler version 2.1.1
- Mozilla Firefox 1.0 or higher on computers running the RedHat Linux or Solaris operating systems for following web links
- Adobe Reader version 5.0 or higher for viewing PDF documentation
- ModelSim® or ModelSim-Altera Edition, simulator version 6.1d or higher or any other Altera supported simulator.

New Features & Enhancements

The following list outlines new features and enhancements in this release:

- The Stratix II GX ALT2GXB differential output voltage (V_{OD}) and pre-emphasis settings changed to improve the margins in meeting the Transmitter Compliance Eye Diagram.
- PHY Support logic has been enhanced to provide better timing margins in Cyclone II devices.
- The example design DMA has been enhanced to handle out-of-order read completions.
- The AER Header Log registers have been enhanced for PCI-SIG read only compliance test
- The *<variation>*_**phy_support** module has been enhanced to add `cfg_msicsr`, `cfg_pmcsr`, and `cfg_prmcsr` ports.

- Example Design has been enhanced to send the correct completion for zero length read requests.

Errata Fixed in This Release

The following errata were fixed in this release.

- SDR TIXI01100 PHY Status Signals Incorrectly Clocked as DDR Input Signals Can Cause Link Training Failure
- PCI Express MegaCore Functions in Stratix II GX Cannot Train to L0 When Each End of Link Uses a Different Reference Clock
- x8 PCI Express MegaCore Function Cannot Generate OpenCore Plus Time-Limited SOF File
- x8 PCI Express MegaCore Function Supports Only Stratix II GX Devices

For existing up-to-date errata, refer to the PCI Express Compiler v 2.1.1 errata sheet on the errata page on the Altera website:

www.altera.com/literature/es/es_pci_express_211.pdf

Obtain & Install the PCI Express Compiler

Before you can use the PCI Express Compiler, you must obtain the files and install them on your computer. Altera MegaCore functions can be installed from the MegaCore IP Library CD-ROM during or after Quartus II installation, or downloaded individually from the Altera website and installed separately.

Download the PCI Express Compiler Files

If you have Internet access, you can download the PCI Express Compiler from Altera's website at **www.altera.com.** Follow the instructions below to obtain the PCI Express Compiler from the Internet. If you do not have Internet access, contact your local Altera representative to obtain the MegaCore IP Library CD-ROM.

1. Point your web browser to **www.altera.com/ipmegastore**.
2. Type PCI Express Compiler in the IP MegaSearch box.
3. Click **Go**.
4. Choose PCI Express Compiler from the search results page. The PCI Express Compiler product description web page displays.
5. Click **Download Free Evaluation** on the top right of the PCI Express Compiler description web page. Fill out the registration form and click **Submit Request**.

6. Read the Altera MegaCore license agreement. Turn on the **I have read the license agreement** check box and click **Proceed to Download Page**.

7. Follow the instructions on the PCI Express Compiler download and installation page to download the PCI Express Compiler and save it to your hard disk.

Ensure you download the MegaCore function for the operating system on which the MegaCore function will be running.

Install the PCI Express Compiler Files

The following instructions describe how you install the PCI Express Compiler on computers running the Windows, Linux, and Solaris operating systems.

Windows

Follow these steps to install the PCI Express Compiler on a computer running a supported version of the Windows operating system:

1. Choose **Run** (Windows Start menu).

2. Type <*path name*>\pci_express_compiler-v2.1.1.exe, where <*path name*> is the location of the downloaded MegaCore function.

3. Click **OK**. The **PCI Express Compiler Installation** dialog box appears. Follow the on-screen instructions to finish installation.

Solaris & Linux

Follow these steps to install the PCI Express Compiler on a computer running supported versions of the Solaris and Linux operating systems:

1. Move the compressed files to the desired installation directory and make that directory your current directory.

2. Decompress the package by typing the following command:

```
gzip -d pci_express_compiler-v2.1.1_linux.tar.gz ↵
```

or

```
gzip -d \
pci_express_compiler-v2.1.1_solaris.tar.gz↵
```

3. Extract the package by typing the following command:

```
tar xvf pci_express_compiler-v2.1.1_linux.tar ↵
```

or

```
tar xvf pci_express_compiler-v2.1.1_solaris.tar ↵
```

Contacting Altera

Although every effort has been made to ensure that this version of the PCI Express Compiler works correctly, if problems occur, use the following contact information to communicate issues to the appropriate Altera representative.

For technical support or other information about Altera products, go to the Altera website at **www.altera.com**. You can also contact Altera through your local sales representative or any of the sources listed in Table 1.

Table 1. Contacting Altera

Information Type	USA & Canada	All Other Locations
Technical support	www.altera.com/mysupport/	www.altera.com/mysupport/
	800-800-EPLD (3753) 7:00 a.m. to 5:00 p.m. Pacific Time	+1 408-544-8767 7:00 a.m. to 5:00 p.m. (GMT -8:00) Pacific Time
Product literature	www.altera.com	www.altera.com
Altera literature services	literature@altera.com	literature@altera.com
Nontechnical customer service	800-767-3753	+ 1 408-544-7000 7:00 a.m. to 5:00 p.m. (GMT -8:00) Pacific Time
FTP site	ftp.altera.com	ftp.altera.com

Revision History

Table 2 shows the revision history for the PCI Express Compiler version 2.1.1.

Table 2. PCI Express Compiler Revision History

Version	Date	Revision
2.1.1	June 2006	The following enhancemnets were made: ● The Stratix II GX ALT2GXB Vod/pre-emphasis settings changed to improve the margins in meeting the Transmitter Compliance Eye Diagram. ● PHY Support logic provides better timing margins in Cyclone II devices. ● The example design DMA now handles out-of-order read completions. ● The AER Header Log registers have been enhanced for PCI-SIG read only compliance test ● The <variation>_phy_support module added cfg_msicsr, cfg_pmcsr, adn cfg_prmcsr ports. ● Example design now sends the correct completion for zero length read requests.
2.1.0	April 2006	● Additional Transaction layer support for x1 MegaCore function to operate at 62.5 MHz or 125 MHz. ● Added support for Advanced Error Reporting (AER) and ECRC generation and checking in the x8 MegaCore function (previously only supported in x4 and x1) ● Additional Rx Buffer configuration options that optimize your application's performance with minimal resource utilization. ● Enhanced flow control algorithmimproves throughput when both PCI Express link directions are heavily loaded ● Support additional custom external PHY modes ● Support for compliance with *PCI Express Specification v1.1*
2.0.0	October 2005	● Added Stratix II GX, HardCopy II, and Cylcone II device support ● Added x8 support
1.0.0	April 2005	● Initial Publication

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