



Release Document

**Xilinx
LogiCore™ PCI Interface
Version 1.0**

March 1996

Read This Before Installation

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Introduction

Welcome to the LogiCore PCI Interface from Xilinx!

The Xilinx LogiCore PCI Interface provides you with a fully-verified, fully-implemented PCI Target design and a pre-release Initiator design for an XC4013E-3PQ208C FPGA device. The detailed and well-documented Viewlogic design saves you months of engineering time and money. Please note that the Initiator function is not fully verified in this release.

This release note supports the following product.

- LogiCore PCI Interface Version 1.0 (LC-DI-PCIM-C)

Contents

The LogiCore PCI Interface (LC) product you received contains software and documentation.

Software

Xilinx software for all platforms is provided on CD-ROM. It consists of the following.

- LogiCore PCI Interface Version 1.0

Documentation

The following documentation is included with your Xilinx LogiCore PCI Interface product.

- *LogiCore PCI Interface User's Guide* (Version 1.0)
- *Xilinx LogiCore PCI Interface Release Note*

The *LogiCore PCI Interface User's Guide* is provided on CD-ROM in Adobe Acrobat format, see the /docs directory.

Maintenance and Support

This product comes with free technical and product information telephone support (toll-free in the U.S. and Canada). You can also fax and e-mail your questions. See the “Xilinx Customer Support Information” chapter of this release note for offices and phone numbers.

This product comes with one year of maintenance; you will receive all software and documentation updates automatically during that time. You will receive a notice at the end of the year giving instructions on how to renew your maintenance contract.

PCI-specific Technical Support

The fastest method to obtain PCI-specific technical support for the LogiCore PCI Interface is via the `pci@xilinx.com` e-mail address. Your e-mail inquiry will be routed to a team of engineers with specific expertise on using the LogiCore PCI Interface.

Before beginning a LogiCore PCI Interface design, you should have a good understanding of the PCI bus and a general knowledge of how to use Xilinx FPGAs. The Xilinx support engineers can assist you with general questions on how to interface your application to the LogiCore PCI Interface. While they cannot do the actual design work, they can recommend a number of PCI designs consultants to help you with your design work, if required.

For general technical support information, offices, and phone numbers, see the “Xilinx Customer Support Information” chapter of this release note.

Installation

This chapter explains the system requirements and how to install the Xilinx LogiCore PCI Interface software on CD-ROM.

System Requirements

Before installing the LogiCore PCI Interface software, verify that your system meets the requirements listed below.

Hardware

IBM PC

- Pentium[™]-based PC compatible. A 100 MHz or faster processor is highly recommended.
- 32 Mbytes RAM.
- Approximately 10 Mbytes of available disk space.

Sun and HP Workstations

- 32 Mbytes RAM.
- Approximately 10 Mbytes of available disk space.

Software

- XACTstep 5.2 or later software supporting the Xilinx XC4000E FPGA family.
- Viewdraw, Viewdraw-LCA, ProSeries, or PowerView schematic editors from Viewlogic.

- Viewsim, Viewsim-LCA, ProSeries, or PowerView digital simulators from Viewlogic.
- Adobe Acrobat Reader — Included with the Xilinx Development Software.

Installing LogiCore PCI

This section describes how to install LogiCore PCI software on IBM PC, Sun workstation, and HP workstation.

IBM PC

This section describes how to install LogiCore PCI software on a IBM PC.

1. Create a directory on your hard drive to contain the design.

```
mkdir <hard_drive>:\pci_lc
```

2. Change to the directory on your hard drive.

```
<hard_drive>:
```

```
cd \pci_lc
```

3. Copy the files from the CD-ROM onto your hard drive.

```
copy <cdrom_drive>:\pc\pci_lc.zip
```

```
<hard_drive>:\pci_lc
```

4. Uncompress the files, along with the directory structure.

```
<cdrom_drive>:\pc\unzip <hard_drive>:\pci_lc\pci_lc
```

Sun Workstation

This section describes how to install LogiCore PCI software on a Sun workstation.

1. Mount the CD-ROM drive. Requires root privilege.

```
mount -t hsfs -o ro /dev/sr0 /cdrom
```

2. Create a directory on your hard drive to contain the design.

```
mkdir pci_lc
```

3. Change to the directory on your hard drive.

```
cd pci_lc
```


4. Create the files, along with the directory structure.

```
tar xvf /cdrom/unix/pci_lc.tar
```

HP Workstation

This section describes how to install LogiCore PCI software on a Hewlett-Packard workstation.

1. Mount the CD-ROM drive. Requires root privilege.

```
mount /dev/dsk/3s0 /cdrom
```

2. Create a directory on your hard drive to contain the design.

```
mkdir pci_lc
```

3. Change to the directory on your hard drive.

```
cd pci_lc
```

4. Create the files, along with the directory structure.

```
tar xvf /cdrom/UNIX/PCI_LC.TAR\;1
```

Getting Started

After installing the LogiCore PCI Interface files, you will need to set up your Viewlogic environment. Due to multi-platform compatibility issues, a standard .INI file is not included.

Setting Up Your Viewlogic Environment

The steps for setting up your Viewlogic environment include the following.

1. Create a project directory.
2. Set up the project directory.
3. Edit the viewdraw.ini file to point to the appropriate Xilinx design libraries. An example portion of the file is shown below and is included in a file called `example.ini`.

```
DIR [p] . (primary)
DIR [r] <path_to_libraries>/unified/xc4000e (xc4000e)
DIR [r] <path_to_libraries>/unified/xc4000e (xc4000)
DIR [r] <path_to_libraries>/unified/xblox (xblox)
DIR [r] <path_to_libraries>/unified/builtin (builtin)
DIR [r] <path_to_libraries>/unified/xbuiltin
(xbuiltin)
```

Note: The XC4000E library is aliased to XC4000 to solve issues related to PROflow.

The actual steps may vary between the different Viewlogic products. Please consult your Viewlogic documentation for more information.

What is the Top-Level Design File?

The schematic page `pci_top.1` is the top sheet for the LogiCore PCI Interface. All the higher-level co-simulation sheets are included for reference only.

General Notes

XC4000E-2 Speed File Available

The LogiCore PCI Interface is designed around the XC4000E-3 speed grade. At release time, the faster XC4000E-2 speed file was not yet available. However, you can obtain the XC4000E-2 speed grade from the Xilinx BBS or WEB site.

Xilinx BBS

Xilinx BBS: 1-408-559-9327 (8 data bits, no parity, 1 stop)

Xilinx WEB Site

Xilinx WEB Site: <http://www.xilinx.com>

Various .WIR, .LCA and, .INI Files Not Included for Platform Compatibility

Due to mutli-platform compatiblity issues, various sub-files are not included on the CD-ROM. These sub-files include the following.

- Viewlogic wire files (* .wir)
- Viewlogic initialization files (* .ini)
- Viewlogic simulation output files (* .vsm)
- Xilinx layout files (* .lca)

All of these sub-files are created during the design process described in the *LogiCore PCI Interface User's Guide*.

Features in This Release

This release is available on CD-ROM for IBM PC, Sun workstation, and HP workstation.

PCI Target Design for Xilinx XC4000E FPGAs

- 32-bit PCI Target and Burst FIFOs utilize 40% of an XC4013E-3PQ208C FPGA.
- 0 to 33 MHz worst-case performance.
- Fully verified using the VirtualChip PCI bus simulation model (not included).
- Integrated, scaleable burst FIFOs for maximum PCI data transfer performance.

Viewlogic Design Files

- Highly-documented, hierarchical Viewdraw schematics.
- Viewsim command files for functional and timing verification.

Known Issues

This chapter describes the known issues in this release.

Software

This section lists the workarounds for the software. They are presented in the order that they occur in the design process.

Design Entry

VIEWDRAW.INI Color Scheme on ProSeries

Platform: PC
Architecture: XC4000E
Design Step: Design Entry
Reference Number: Not Available

If you are using the Viewlogic ProSeries products, you may experience problems with the color scheme defined in the viewdraw.ini file. The “classic colors” do not display all the symbols. Changing to the ProSeries “new defaults” fixes the color scheme problem.

Timing Simulation

Unknown Status During Test Number 9

Platform: All
Architecture: XC4000E
Design Step: Timing Simulation
Reference Number: Not Available

Occasionally, when performing timing simulation on a placed, routed, and back-annotated design, Viewsim indicates unknown

states during test number 9. The cause is unknown. This appears to be a software bug in the back-annotation process from the LCA layout file to the Viewlogic VSM file. Some of the back-annotated delays are overly pessimistic and do not match the delays indicated by the XDelay timing calculator. At the time of release, this bug is unresolved. However, the timing has been checked and verified correct using the XDelay timing calculator. The following are possible workarounds.

- Re-Route the design. Different placements have slightly improved delays. When back-annotated, these improved delays may be under the 30 ns cycle time indicated in the PCI_TOP.CMD command file.
- Increase the step-size time indicated in the PCI_TOP.CMD file to a value larger than 15.0. This increases the cycle time to a value larger than 30 ns. For most designs, a step-size value of 16.0 is sufficient. Again, the timing has been verified using the XDelay timing calculator.

Example:

```
| ----- CLOCKS -----  
|  
STEPsize 16.0ns
```

Use LCA2XNF Version 5.2.0a for Back Annotation

Platform: All

Architecture: XC4000E

Design Step: Timing Simulation, Back Annotation

Reference Number: Not Available

For proper results, LCA2XNF Version 5.2.0a or later is required. The executable is provided on the CD-ROM. See the “readme.txt” file on the CD-ROM for further details.

Documentation

This section lists the workarounds for the documentation.

LogiCore PCI Interface User's Guide

Incorrect Report File Referenced on Page 22

Platform: All
Architecture: All
Design Step: Documentation
Reference Number: Not Available

Step 5 described at the top of the left hand column on page 22 should read as follows.

5. Check the report file for any failed timing constraints.

browse pci_top.xrp

The printed copy of the documentation is correct, this incorrect reference is in the on-line document.

Drawing Sheet PCI_LC.5 Omitted on Page 28

Platform: All
Architecture: All
Design Step: Documentation
Reference Number: Not Available

The printed copy of the documentation describes the schematic drawing sheet named PCI_LC.5. This description was omitted in the on-line documentation.

Xilinx Customer Support Information

For registration, authorization codes, update information, warranty status, shipping, product issues, and technical support call Monday through Friday, 8 a.m. to 5 p.m. Pacific time.

Registration, Authorization, and Customer Service

- United States and Canada.....1-800-624-4782
- Europe.....44-1-932-349401
- Japan.....81-33-297-9164
- Southeast Asia/All Other Countries.....852-2410-2739
- Facsimile Transmission.....1-408-559-0115
- International customers may also contact their local sales representative or distributor.

Technical Support

- Technical Support Hotline
 - United States and Canada.....1-800-255-7778
 - International.....1-408-879-5199
- Technical Support FAX (24 hours/7 days)1-408-879-4442
- Technical Support BBS (24 hours/7 days)1-408-559-9327
- Internet E-mail Address (24 hours/7 days).....hotline@xilinx.com

Training

- Xilinx Training Administrator1-408-879-5090
- International customers contact your local sales representative or distributor.



The Programmable Logic CompanySM



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