

Xilinx PowerPC™ and MicroBlaze™ Development Kit FAQ

Virtex™-5 FXT70 Edition

August 4, 2008

General Kit and Collateral Questions

1. *What is included in the Embedded Development Kit*

A: This kit includes the following Items:

- ML507 Development Board with the Virtex™-5 FXT70 FPGA
- Xilinx Software Development Suite DVD which includes:
 - **Full seat of ISE® Foundation™ Software for FPGA Design** - ISE Foundation includes Xilinx SmartCompile technology, an industry-unique combination of capabilities to solve every designer's number one design challenge—timing closure. ISE™ Foundation™ software integrates everything you need in a complete logic design environment for all leading Xilinx FPGA and CPLD products. Easy-to-use, built-in tools and wizards make I/O assignment, power analysis, timing-driven design closure, and HDL simulation quick and intuitive.
 - **Full seat of Embedded Development (EDK) Design Suite for Embedded Processing Design** - The Embedded Development Kit (EDK) bundle is an integrated software solution for designing embedded processing systems. This pre-configured kit includes the award-winning Platform Studio tool suite as well as all the documentation and Intellectual Property (IP) that you require for designing Xilinx Platform FPGAs with embedded PowerPC® hard processor cores and/or MicroBlaze™ soft processor cores.
- Power Supply
- Compact Flash Card - 512 MB
- USB Download/Probe Programming Cable
- Serial Cable & Cross-Over Ethernet Cable
- DVI adaptor & SATA Cross-Over Cable
- Quick Start Guide and Online Documentation
- Reference Designs

2. *What speed grade Virtex™-5 FXT70 is on the board?*

A: The board is populated with -1 as default speed grade.

3. *Can I upgrade to a larger or faster device?*

A: Yes, you can but Xilinx can not provide any assistance and honor the board's warranty. In general, the footprint (FF1136) allows upgrading the on-board FPGA's density to FX100T.

4. *What is your return policy for boards and software?*

A: Please visit the following site:

<http://www.xilinx.com/products/quality/rma.htm>

5. Will I need an additional heat sink or fan? What does Xilinx recommend?

A: Any standard 35 mm x 35 mm heat sink and fan can be used. Xilinx does not promote any specific vendors but following are some of the known providers:

www.radianheatsinks.com

www.alphanovatech.com

www.aavidthermalloy.com

www.coolinnovations.com

www.malico.com.tw

www.wakefield.com

Software Related Questions

6. How do I register and install my software?

A: The following procedure will guide you through the SW installation and registration process:

Quick Start to Installing the Software

The Xilinx PowerPC and MicroBlaze Development Kit – Virtex-5 FXT70 Edition includes a Xilinx Software Development Suite DVD in the box, or the user can download the software from the Xilinx software registration site. In both cases, the software must be registered as part of the installation process. The software cannot be installed until it has been registered.

Step 1: Accessing the Xilinx Electronic Fulfillment Site

This development kit comes with “entitlement” to a FULL seat of the ISE Foundation Design Software (ISE) and a FULL seat of the Embedded Development (EDK) Design Suite product. To determine what software the user has – Full, Evaluation, or Free license – visit the Xilinx software registration and entitlement site.

To begin using the development kit software resources, the ISE Foundation and the EDK Design Suite, the user must first obtain installation keys. To do this, the user may register or download these products immediately on the Xilinx Registration and Download Site at:

<http://www.xilinx.com/register>.

Step 2: Determine Which ISE Design Software to Install

If the user has already installed the ISE software, please make sure the software has the latest updates. The latest software updates for all Xilinx products can be found on the Xilinx Download site: <http://www.xilinx.com/support/download/index.htm>

If the user still needs to install the ISE Foundation software, this embedded development kit comes with “entitlement” to a FULL seat of the ISE Foundation Design Software (ISE). After logging into the [http:// www.xilinx.com/register](http://www.xilinx.com/register) site, please select the check box for the “ISE Foundation”.

Step 3: Determine Which EDK Design Software to Install

If the user has already installed the EDK software, please make sure the software has the latest updates. The latest software updates for all Xilinx products can be found on the Xilinx Download site: <http://www.xilinx.com/support/download/index.htm>

If the user still needs to install the EDK software, this embedded development kit comes with “entitlement” to a FULL seat of the Embedded Development Kit (EDK) Design Suite product. After logging into the [http:// www.xilinx.com/register](http://www.xilinx.com/register) site, please select the check box for the “Embedded Development Kit (EDK)”.

Step 4: Register and Install Software

The EDK will let the user develop an embedded design and the ISE Foundation will let the user place and route the design. A version of both EDK and ISE need to be installed. Any additional software may be selected for evaluation for a period of 60 days.

After making the desired product selections, click "next". An installation code will be presented. Use this code to install the software from the Xilinx Software DVD in the Kit or use it with the software that was downloaded from the Xilinx software registration and download site.

Insert the Xilinx Software Development Suite DVD that came with the kit or select and install the Install image that was downloaded from the Xilinx Registration and Download Site. Follow the instruction included in the installation software.

7. What software do I need to run these reference designs?

A: ISE Foundation and EDK 10.1, which are included in the Embedded Development kit.

8. Where do I get the latest software?

A: [See steps 1 and 2 in QA #7 above.]

9. What is the RTOS Support for PPC 440 and ML507?

A: The Virtex-5 Embedded Kit (ML507 board) is supported by the Xilinx Software Development Kit (Eclipse-based IDE with GNU tools) as well as a wide range of Embedded OS and RTOSes, including:

- Linux
 - Wind River Linux 2.0 GPP
 - MontaVista Linux 4.0 (5.0 targeted for Oct 2008)
 - LynuxWorks BlueCat Linux 5.4.1
 - TimeSys Linux
- RTOS
 - Wind River VxWorks
 - GreenHills INTEGRITY®
 - ExpressLogic ThreadX®

10. What other Software would be helpful? Why?

- ChipScope Pro™ - an FPGA debug and verification tool. Using the ChipScope Core Generator or Core Inserter, you put ChipScope-specific logic into your design, called a ChipScope core. Then, you can connect to ChipScope cores later using the ChipScope Analyzer software to debug or validate your design.
- The AccelDSP™ Synthesis Tool - a product that allows you to transform a MATLAB® floating-point design into a hardware module that can be implemented in a Xilinx FPGA. The AccelDSP Synthesis Tool features an easy-to-use Graphical User Interface that controls an integrated environment with other design tools such as MATLAB, Xilinx ISE tools, and other industry-standard HDL simulators and logic synthesizers.
- System Generator - a DSP design tool from Xilinx that enables the use of The Mathworks™ model-based design environment Simulink for FPGA design. Designs are captured in the DSP friendly Simulink modeling environment using a Xilinx-specific block set. All of the downstream FPGA implementation steps including synthesis and place-and-route are automatically performed to generate an FPGA programming file.

- PlanAhead – a design and analysis software product used to design large FPGA devices. The core technology includes a hierarchical floorplanning tool that can partition the physical design into smaller, more manageable pieces, thus reducing the time to understand, design, verify, and implement the FPGA.

Applications & Reference Designs

11. What applications and reference designs are available for PPC440/ML507?

A: The Embedded Development HW/SW Kit - Virtex®-5 FXT PowerPC® 440 and MicroBlaze™ Processor Edition showcases various features of the Virtex-5 FXT ML507 development board. This kit includes two hardware systems with a “HelloWorld” software application and a bootable BlueCat Linux image. This document describes the hardware platform, the HelloWorld software application, and the BlueCat Linux images. For a description please read the Xilinx User Guide UG511. The reference systems are available at:

www.xilinx.com/support/documentation/user_guides/ml507_emb_ref_mb.zip

www.xilinx.com/support/documentation/user_guides/ml507_emb_ref_ppc.zip

IP Related Questions

12. Do I need to License CoreConnect?

A: Yes, execution of the IBM Coreconnect license is required in order to have access to the BFM and other interconnection bus documentations. Please go to the Coreconnect web site for free validation, obligation, and registration number:

http://www.xilinx.com/products/ipcenter/dr_pcentral_coreconnect.htm

Training, Resources and Support

13. How do I get Xilinx technical support?

A: **Web Support** - The Xilinx support site provides many ways for you to find the answers you need including tools such as: Forums, Answer Browser and My Alerts. Get the answers you need at our award-winning web site. For more information, please go to:

www.xilinx.com/support

Technical Support - Our highly-trained engineers average 5+ years of industry experience. When you contact us you will be routed directly to our team specializing in embedded support which will provide you the most up-to-date knowledge in embedded design. For more information, please go to:

www.xilinx.com/support

14. What training is available?

A: **Recorded Learning Module** - Xilinx provides Recorded e-Learning for course accessibility at your convenience. Available at no charge, topics range from high-level software updates and ASIC-to-FPGA conversion strategies to specifics on device architecture. Check one out today at:

<http://www.xilinx.com/support/training/free-courses.htm>

Webcasts - Xilinx webcasts are 60-minute live broadcasts featuring interactive technical presentations, product demonstrations, and question-and-answer sessions presented by our expert silicon and software engineers on Xilinx technology, the industry, or both. All broadcasts

are made available for on-demand viewing within 24 hours of the live session. Please register for a webcast live at:

<http://www.xilinx.com/events/webcasts.htm>

...or check out the on-demand training at:

http://www.xilinx.com/events/webcasts_od.htm

Embedded Education Courses - Xilinx provides targeted, high-quality education services designed by experts in programmable logic design and delivered by Xilinx qualified trainers. Our series of instructor-led embedded classes includes:

- Embedded Systems Development,
- Advanced Embedded Systems Development
- Embedded Open-Source Linux

For more information on Xilinx Education courses, please go to:

www.xilinx.com/education

Embedded QuickStart! - Embedded QuickStart! provides access to an engineer specializing in embedded development for one week to provide a two-day Embedded Systems Development course and three days of coaching on your embedded design. Coaching will include focus on:

- Design environment configuration
- EDK software customization
- Design architecture consultation
- HW/SW partitioning and integration guidance
- MicroBlaze/Power PC processor optimization

For more information, please go to:

www.xilinx.com/quickstart

Titanium Dedicated Engineering - This robust service provides a dedicated Applications Engineer on a contract basis who can either work remotely or at your site. The Titanium engineer can help you optimize your hardware design and FPGA implementation and provide support for advanced HW/SW debugging and complex IP integration. For more information, please go to:

www.xilinx.com/titanium

Xilinx Design Services - Xilinx Design Services perform the role of a development partner with unmatched skill and experience in system, logic and embedded software design. Leveraging these skill sets will help you optimize your budget, schedule and performance requirements. The XDS portfolio includes:

- Embedded Software Design
- FPGA Design from Specification
- FPGA System Design.

For more information, please go to:

www.xilinx.com/xds