

Xilinx XtremeDSP Video Starter Kit

Spartan™-3A DSP Edition *FAQ*

October , 2008

General Kit and Collateral Questions

1. *What is included in the Video Starter Kit*

A: This kit includes the following Items:

- XtremeDSP Development Platform – Spartan-3A DSP 3400A Edition
- ISE Design Suite Development Software DVD which includes:
 - **Full seat of System Generator for DSP** – System Generator enables the use of The Mathworks DSP friendly Simulink™ and MATLAB™ modeling environments for Xilinx FPGA design. System Generator includes the Xilinx DSP Blockset that provides over 100 Xilinx optimized DSP building blocks for use within the Simulink environment.
 - **Full seat of Embedded Development (EDK) Design Suite for Embedded Processing** - 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.
 - 60 evaluation version of ISE Foundation
- Universal Power Supply
- Compact Flash Card - 256 MB
- USB Download/Probe Programming Cable
- DVI adaptor
- Quick Start Guide and Online Documentation
- Reference Designs
- FMC-Video daughter card supporting the following video interfaces:
 - DVI Input
 - Single Channel In and Out Composite
 - S-Video In and Out
 - Two Independent LVDS Camera Interfaces
- Micron VGA CMOS Camera Module with Tripod
- Miscellaneous Cables:
 - S-Video, RCA composite
 - CAT 5 Ethernet crossover
 - CAT 6 Ethernet patch
 - VGA
 - DVI
 - Null modem

2. *What speed grade Spartan™-3A DSP 3400 device is on the board?*

A: The board is populated with -4 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.

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

A: Please visit the following site:

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

Software Related Questions

5. 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 XtremeDSP Video Starter Kit – Spartan-3A DSP 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 System Generator for DSP 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.

Note: *The Video Starter Kit does not include an entitlement for ISE Foundation Customers who do not own ISE Foundation can get started using a free 60-day software evaluation. At the end of this 60 day trial period, however, customers will need to either transition to an existing ISE foundation entitlement or purchase one from Xilinx.*

To begin using the development kit software resources, the ISE Foundation, System Generator for DSP 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: Check for Software Updates

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 then log into the following registration web:

[http:// www.xilinx.com/register](http://www.xilinx.com/register)

Please select the check box for the "ISE Foundation". If you do not already own an entitlement for ISE Foundation you may request a 60 day evaluation at this time

Step 3: Register and Install Software

A version of System Generator for DSP, EDK and ISE Foundation 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.

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

A: ISE Design Suite 10.3

7. Where do I get the latest software?

A: [See steps 1 and 2 in QA #5 above.]

8. 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.
- 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 FGPA.

Applications & Reference Designs

9. What reference designs are available for the Video Starter Kit

A: There are 4 reference designs available for the XtremeDSP Video Starter Kit – Spartan-3A DSP edition. Design files and detailed information about these designs can be accessed from the following web page:

http://www.xilinx.com/products/devboards/reference_design/vsk_s3/vsk_s3.htm

Reference Design	Functionality Description
DVI Pass-Through	<ul style="list-style-type: none"> • Capture a video stream input port • Perform real-time image processing on the video stream • Displaying the processed video
DVI Frame Buffer	<ul style="list-style-type: none"> • Capture a video stream input port • Buffering the video stream in external memory • Reporting memory bandwidth utilization data • Display video stream on output DVI port
Camera Frame Buffer	<ul style="list-style-type: none"> • Capturing a video stream from a camera • Performing processing on the video stream • Buffering the processed video stream in external memory • Displaying the processed video at a different rate • Using a microprocessor to configure various aspects of the video pipeline
S-Video Processing	<ul style="list-style-type: none"> • Capture video stream from an s-video interface • Performing processing on the video stream • Buffering processed video stream as “weaved” image data (not de-interlacing)

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| | <ul style="list-style-type: none">• De-weave image data and display video stream on output s-video port |
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Training, Resources and Support

1. *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

2. *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 and DSP 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:

- DSP Development
- 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
- DSP Design

For more information, please go to:

www.xilinx.com/xds