



## Xilinx Processor Central Newsletter, March 2007

The Processor Central quarterly newsletter is meant to keep you informed of the embedded processing-related news from Xilinx and our partners. In addition to the information below, you can visit Processor Central [www.xilinx.com/processor](http://www.xilinx.com/processor) for the latest information on Xilinx Embedded Processing Solutions.

### Featured News Flashes!

#### ESC-SV San Jose CA – April 3-4-5!

- Come visit Xilinx at the Embedded Systems Conference Silicon Valley in San Jose CA
- Live booth demos, presentations, technical papers and FREE hands-on workshops
  - [Learn More and Waitlist for Workshops Now](#)

#### New EDK Version 9.1 Announced!

- Embedded Development Kit v9.1i, including the Platform Studio tool suite, introduces new device support while simplifying embedded design
- [See "What's New in Version 9.1i"](#)

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### Top Story



#### [At ESC-SV, Xilinx IS Processing](#)

See the latest Xilinx breakthroughs in XtremeDSP™, PCI Express® and Embedded Processing solutions! Visit us at the 2007 Embedded Systems Conference Silicon Valley, at the McEnergy Convention Center, San Jose CA, Tuesday through Thursday April 3-5.

#### Stop by Booth #724 and pick up a program of Xilinx activities that we will be hosting, including:

- New Product Announcements
- Live Booth Demonstrations (6 stations)
- Live Theater Presentations (6 rotating topics)
- Technical Program Papers
  - Xilinx (3 presentations)
  - Xilinx Distributor Avnet (3 presentations)
- Hands-On Workshops
  - 3 rotating DSP/Embedded topics
  - No-Cost! Join the waiting list
- Xilinx Partner Vendors

The numerous topics and activities covered include the fields of Digital Signal Processing, Embedded Processing and PCI Express design solutions.

[Visit the Xilinx events website](#) for more specific details on the Xilinx program at ESC and a link on how to register for the no-cost exhibits and hands-on workshops.

### Xilinx Processing Solutions – Product Update

#### Xilinx delivers an innovative and flexible range of processing solutions for your unique embedded applications.

Our processing capabilities provide performance and customization across a wide range of end markets including: aerospace and defense, wired and wireless communications, automotive, audio/video broadcast, industrial control, test and measurement, and consumer. To learn about all Xilinx Embedded Processing Solutions, including hard and soft processing cores, IP, development tools

and kits, start your search at: [www.xilinx.com/processor](http://www.xilinx.com/processor)

## **New EDK/XPS 9.1i Released Monday March 26th**

The v9.1i release of the Xilinx Embedded Development Kit (EDK) introduces new device support and MicroBlaze™ processing enhancements, as well as a variety of Platform Studio (XPS) embedded tool suite advances and improvements to streamline embedded processing design.

### **New Device Support:**

- Full MicroBlaze processing support for Virtex™-5 LX, LXT and SXT devices
- MicroBlaze early access (simulation) support for new Spartan™-3A/3AN devices

### **General Enhancements:**

- New hands-on guide to effective embedded system design, titled
  - EDK Concepts, Tools and Techniques
- Automatic software updates available from the web

### **Platform Studio Enhancements:**

- Color coded IP status indicator in IP Catalog
- IP instantiation and configuration improvements
- Enhanced PCI™ core (PLB\_PCI)
- Base System Builder Wizard (BSB) silicon stepping selection

### **Platform Studio Software Development Kit (SDK) updates**

- Improved ease to generate your complete software platform
  - Generation of drivers, libraries, linker scripts, etc.
  - Flash writer dialog
  - HW/SW platform synchronization

### **MicroBlaze (v6.00a) Enhancements:**

- A single MicroBlaze with options to optimize for device performance/size
  - Five pipeline stages for improved instruction throughput
  - Optimized implementation for both Virtex and Spartan FPGAs
- New Mul64 instruction allows 32-bit integer multiplication of a 64-bit result
- Optional Microcaches for BRAM-constrained designs
- Backward compatibility with MicroBlaze v5.00a and v4.00a designs

**And much, much more.**

[Learn more specific details of "What's New in EDK 9.1i"](#)

[Existing registered EDK users can download your update here](#)

## **Integrated HW/SW Development Kits Accelerate Embedded Development**

Xilinx offers fully integrated hardware/software development kits to kick-start embedded design. Kits are offered for both the Virtex-4 FX12 (PowerPC™ and MicroBlaze processing support) and Spartan-3E 1600E (MicroBlaze support) FPGA platforms. The kits include the following:

- Spartan-3E SP3E1600E or Virtex-4 FX12 ML403 Development Boards
- EDK including the Platform Studio embedded tool suite
- ISE™ WebPACK™ FPGA
- Pre-Verified Reference Designs
- All documentation, JTAG Probe, Power Supply, Serial and Ethernet Cables.

[Visit here for more information or to purchase Xilinx Embedded HW/SW Development Kits](#)

## **Xilinx Processing IP**

Xilinx provides a broad processing IP catalog along with the Embedded Development Kit for PowerPC and MicroBlaze based design. Example IP cores include peripherals, infrastructure, interface modules, memory interfaces and more. High end IP cores can be evaluated and purchased separately.

[Learn More about IP included in the EDK](#)

## **ISE and PlanAhead FPGA Design Tools**

## Xilinx Announces PlanAhead™ 9.1 - Download a free 30-day evaluation

PlanAhead 9.1 is the next generation of the Xilinx award winning environment for FPGA design and analysis. PlanAhead is employed after synthesis, enabling designers to rapidly analyze, modify, constrain and implement their designs to achieve superior performance. PlanAhead 9.1 helps achieve optimal design performance in less time.

PlanAhead 9.1 includes new PinAhead Technology providing a robust environment fully automatic or semi-automated assignment of I/O ports to physical Package Pins. Using PinAhead, FPGA designers can assign interface I/O groups to I/O pins simply by dragging them into a graphical representation of their FPGA. Designers can begin their pin assignment prior to having a completed PCB or FPGA netlist, reducing time-to-market for the larger project.

Existing customers should download this latest version. Keeping your software up-to-date is the easiest way to insure the best possible results.

[Download a free 30-day evaluation or update your existing PlanAhead installation here](#)

## Discover How ISE 9.1i, with New SmartCompile Technology, Can Help Slash Your FPGA Runtime by up to 6X! — Get it Now!

ISE 9.1i delivers the industry's fastest timing closure to help you achieve aggressive design goals in less time than ever before. With new SmartCompile Technology, ISE 9.1i enables more implementations, or turns, per day than any other PLD offering.

ISE 9.1i delivers:

- **Performance** – Achieve an average 30% faster performance over available competing solutions
- **Productivity** – Finish your design in less time with Xilinx SmartCompile Technology
- **Power** – Reduce dynamic power by an average 10%

[Get your FREE ISE 9.1i Evaluation or to purchase ISE Foundation™ 9.1i](#)

## Publications and Xilinx Embedded Magazine

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The Xilinx Embedded Magazine is published with a wide variety of embedded related articles authored by Xilinx, embedded partners, end-user customers and industry luminaries.

[View the entire Xilinx Embedded Magazine Issue #4](#)

## Other Recent Publications on Xilinx Embedded Solutions

- [Soft Processing and Customizable IP Enable Flexible, High Performance Embedded Design](#)  
— *Embedded Technology Journal* — Jay Gould, Xilinx
- [Military Processor Technology Expands but Requires Less Silicon Space](#)  
— *Military and Aerospace Electronics* — Courtney E. Howard
- [Low Cost Meets Embedded Processing Development Kits](#)  
— *Nu Horizons Nexus Magazine Article* — Jay Gould, Xilinx

## Webcasts, Workshops & Training

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### Xilinx On-demand Webcasts

Xilinx supplies "On-Demand" Webcast seminars as well as "Video Demonstrations" on Embedded and other topics.

[View "On-Demand Webcasts"](#)

### Xilinx "Demos-on-Demand"

[Check out Xilinx Video Demonstrations](#)

## Industry Leaders Team-Up to Deliver X-Fest - a Worldwide Technical Seminar Series



X-Fest is brought to you by Xilinx, Avnet Electronics Marketing and a vast array of semiconductor industry leaders. X-Fest is a series of technical seminars offering practical how-to training for FPGA, DSP and Embedded system designers. The seminars begin in April and run across North America, Europe, Asia and Japan.

Each X-Fest site includes an all-day curriculum including:

- Keynote address: "The Future of the Xilinx System Solution"
- An array of 90-minute technical presentations and how-to demos
- Demonstrations and Exhibits

[Learn more and register for a workshop in a city near you](#)

## Nu Horizons XpressTrack Training

Nu Horizons Electronics Corp. is proud to present the XpressTrack education and training program, which offers engineers the opportunity to participate in technical seminars conducted around the world by experts focused on the latest technologies from Xilinx.



[Watch for a seminar offered in your area](#)

**Additionally, Nu Horizons has created the following discounted Embedded HW/SW bundles specifically for XpressTrack attendees**

### **Spartan-3A Embedded Processing Bundle**

This development kit includes:

- NH 3S700A board, Xilinx Embedded Development Kit, and ISE WebPACK
- Resale value \$599 US., XpressTrack Discounted bundle price \$299 US

### **Virtex-4 Embedded Processing Bundle**

This development kit includes:

- NH FX12 board, Xilinx Embedded Development Kit, and ISE WebPACK
- Resale value \$744 US., XpressTrack Discounted bundle price \$399 US

### **Virtex 5 Embedded Processing Bundle**

This development kit includes:

- Xilinx ML501eval board, Xilinx Embedded Development Kit, and ISE 9.1i Foundation
- Resale value \$3989 US., XpressTrack Discounted bundle price \$2199 US

## Embedded Partner Solutions

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### Embedded Partner Solutions

[Visit All Our Embedded Partners and learn about their solutions here](#)

The following Embedded partners will be appearing at ESC-SV, promoting Xilinx solutions:

- **IBM/Power.Org**  
In booth #1216 Xilinx will be demonstrating embedded PowerPC processing solutions on Virtex-4 FX platforms.
- **Lauterbach**  
Lauterbach will exhibit in booth #2138 And will show a Trace32 debugger demonstration running on the Xilinx Virtex-4 FX12 ML403 platform.
- **LynuxWorks**  
LynuxWorks will demonstration their embedded Linux 2.6 solutions for PowerPC and MicroBlaze processing designs in booth #1330.

- **Mentor Graphics**

Mentor Graphics will exhibit in booth #1708 And will run a Nucleus/EDGE IDE demo running on a Xilinx Platform FPGA platform.

## **Electronic System Level Design (ESL) Partner Solutions**

[Get further information about Xilinx ESL Initiative, current members and their offering in ESL for FPGA solutions here](#)

The following ESL partners will be appearing at ESC-SV, promoting Xilinx solutions:

- **Celoxica**

Celoxica will be demonstrating their RCHTX acceleration board which contains two Xilinx Virtex-4 devices for implementing the co-processing user logic and system communication interfaces. The RCHTX cards fit into Hypertransport slots on high-end computing systems and are used as co-processors to AMD Opteron processors. Please stop by at booth 1438 and see live - orders of magnitude acceleration of applications for financial analysis and for oil and gas seismic exploration. Additionally,

— **ESC Presentation – Reconfigurable Accelerated Computing: A Software Programming Approach, ESC-360, X. Long Dai & David Gardner, Wed 4/4, 4:30pm-6pm**

- **CriticalBlue**

CriticalBlue – CriticalBlue will be demonstrating their Cascade tool that accelerates embedded software by generating programmable, application-optimized coprocessors for implementation on Xilinx Virtex and Spartan FPGAs. Cascade for Xilinx works with PowerPC, MicroBlaze, and ARM processors, allowing software to be accelerated without modification while fitting naturally into established software and FPGA development flows. Please stop by at booth 1926 and see live acceleration by Cascade of audio and video applications on Xilinx Virtex 4 ML405 board.

- **Impulse Accelerated Technologies**

— **ESC Presentation - Using FPGAs as CoProcessors for DSP and Image Processing, ESC-263, David Pellerin, Tues 4/3, 4:30pm-6pm**

## **Xilinx Services and Limited-Time Offers**

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### **35% off Embedded Design Xilinx Productivity Advantage (XPA) Bundle**

**Embedded Design XPA:** This limited time offer includes ISE Foundation, Xilinx Embedded Development Kit and 2 days of training. List price \$3,990, Limited time offer, \$2,550.

[Contact your local Xilinx sales representative](#) or, email [xpa@xilinx.com](mailto:xpa@xilinx.com).

### **Embedded Systems Courses:**

**Embedded Systems Development:** Introduces experienced FPGA designers to the process for developing embedded systems using FPGAs with hard and soft processor cores and soft peripheral cores.

**Advanced Features and Techniques of Embedded Systems Development:** Builds on the skills gained in the Embedded Systems Development course, and provides the necessary skills to develop complex embedded systems.

Visit [www.xilinx.com/education](http://www.xilinx.com/education) for a complete course catalog and schedule of classes available in your area.

### **Dedicated Applications Engineer for Your Embedded Design**

**Embedded Processing QuickStart!:** Combines two days of on-site training with three days of expert consulting from a Xilinx application engineer with industry experience in Embedded Systems design and Programmable Logic. Visit [www.xilinx.com/quickstart/epq.htm](http://www.xilinx.com/quickstart/epq.htm) for more information.

### **Dedicated Applications Engineer**

**Titanium Dedicated Engineering:** Expert assistance to help you partition your system for maximum performance, integrate custom IP with embedded PPC and/or MicroBlaze TM processors, and techniques enabling faster and more effective debug and verification. Visit [www.xilinx.com/titanium](http://www.xilinx.com/titanium) for more information.

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