



## Xilinx Platform Newsletter, December 2007

### Top Story

#### The Virtex-5 Family Continues to Deliver

After releasing to production all fifteen originally announced Virtex™-5 LX/LXT/SXT devices, Xilinx is pleased to announce the addition of three new platform devices: Virtex-5 LX20T, LX155, and LX155T FPGAs.

#### • We listened to you.

You were excited about high-performance programmable logic with low-power serial connectivity and built-in PCIe® endpoint and Ethernet MAC blocks, and you were looking for devices to hit emerging “sweet spots”. For systems requiring the smallest form factor, Xilinx responded in record time with the new LX20T FPGA delivering low-power serial connectivity in a 19mm package and low price point. The new LX155 and LX155T FPGAs fit in between the LX110(T) and LX220(T) devices to address larger designs economically. Download the [product table](#) for device details. To add these new devices to your existing ISE Foundation installation, download [ISE Service Pack 9.2i SP4](#).

#### Starting your Virtex-5 FPGA design is as easy as 1, 2, 3!

1. Visit our [documentation library](#) to download data sheets, user guides, application notes, and more.
2. Download your FREE evaluation of [ISE™ 9.2i Foundation™ design tools](#) and start your design today.
3. Jump-start your design with a starter board or complete development kit:
  - [ML501\(LX\)](#) for high-performance logic
  - [ML505 \(LXT\)](#) for serial connectivity
  - [ML506 \(SXT\)](#) for DSP and serial connectivity
  - [PCI Express® Development Kit \(LXT\)](#)
  - [Gigabit Ethernet Development Kit \(LXT\)](#)

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### Quick Update

#### [New Webcast: Quick-start Your Embedded Development with Linux and MicroBlaze v7 Processor](#)

Learn how to build your embedded system on a flexible processor you can customize to meet your product requirements. See the advantages of commercial grade Linux 2.6 when used with the enhanced MicroBlaze™ v7 soft processor and its new Memory Management Unit (MMU). We will demonstrate the steps to rapidly build a Linux kernel image (BSP) for the design using automatic BSP generation tools.

#### [Xilinx at CES 2008: "At the Heart of Innovation" – Click Here for a Free Exhibits Pass](#)

Planning to attend CES 2008 - the world's largest consumer electronics show? If so, be sure to take time to visit the Xilinx exhibit in Meeting Place #35768 in the South Hall January 7 - 10. For more information contact our tradeshow team at [ces@xilinx.com](mailto:ces@xilinx.com)

## [Enter TODAY for Your Chance to Win One of 50 Prizes Ranging from Kits, to Software, to Gift Cards!](#)

Enter by registering for our new eNewsletter that will replace the multiple topic newsletters you have currently been receiving. The newsletter provides you with easy access to content that is relevant to you.

[Register now for your chance to win!](#)

## Development Tools

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### [Virtex-5 LXT Gigabit Ethernet Development Kits now Priced Under \\$1200 —Get Yours Today](#)

Get an out-of-the-box solution for 10Mbit, 100Mbit and 1Gbit Ethernet applications that makes it easy to take advantage of the low-power, high-performance built-in tri-mode Ethernet MAC blocks built into every Virtex-5 LXT FPGA. The \$1,395 development kit includes an ML505 board with Virtex-5 LX50T FPGA, programming cable, development tools evaluation, reference designs, and IP.



### [The NEW MicroBlaze Embedded Development Kit – Spartan™-3E 1600E Edition Streamlines Your Embedded Development Cycle](#)

Jump-start your design using this new development kit including the new Embedded Development Kit (EDK v9.2), IP, ISE™ software tool suites and reference designs for the new MicroBlaze v7 soft processor. The comprehensive kit includes all of the required cable including JTAG probes and costs just \$595.



### [Virtex-4 FX12 PowerPC and MicroBlaze Development Kit](#)

You can start your design using this high performance development kit including an ML403 evaluation platform, Platform Studio embedded tool suites, IP, ISE software tool suites, reference designs for both the PowerPC® hard processor core and MicroBlaze soft processor core. This \$895 kit has everything you need including a Universal Power supply and JTAG cables.

## Design Tips

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### [Physical Synthesis Flows for FPGA Designs](#)

HDL synthesis is probably the single most important software flow step when it comes to defining the performance of a design. Learn how physical synthesis enables better results by bridging synthesis and place & route in this article by Frédéric Rivoallon of Xilinx.

### [Ethernet and Multimedia Applications - The History and the Future - Part 1](#)

Ethernet audio video bridging (AVB) is a new IEEE 802 specification, under development, that provides bandwidth and latency guarantees for interactive multimedia applications. In part one of this two-part article series, Neeraj Parik of Xilinx focuses on the enhancements brought about by AVB and the details of various components of the proposed standard.

### [Generate FPGA Designs from M-code](#)

In this article, Tim Vanevenhoven of Xilinx describes how you can use MATLAB® M-files with the AccelChip™ synthesis tool to implement DSP on Xilinx FPGAs.

## Education and Services

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### [NEW PlanAhead Design Tools Video Demonstrations](#)

View these product demonstration videos to help you get started in optimizing your FPGA design.

- Improve Design Performance with PlanAhead™ software
- I/O Pin Planning with PinAhead Technology
- Optimize Implementation Results with ExploreAhead
- Using the PlanAhead 9.2 Partial Reconfiguration Flow

### **Xilinx Education Services**

Choose the curriculum path that's right for you; embedded, connectivity, digital signal processing, and FPGA. Visit [www.xilinx.com/education](http://www.xilinx.com/education).

## Partner Spotlight

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### [Avnet Speedway Workshops Coming Soon to a Location Near You](#)

This winter, plan to attend hands-on, lab-based FPGA design workshops from Avnet Electronics Marketing. Learn how to use Virtex-5 and Spartan-3 series FPGAs, ISE logic design tools, System Generator for DSP, and the Platform Studio embedded development tool suite, which includes the MicroBlaze soft processor. Designers will get step-by-step, detailed instructions on design practices, tool utilization, and code development.

### [New Virtex-5 LXT / SXT Development Kit Available Now from Avnet Electronics Marketing](#)

Get this complete development platform for designing and verifying applications based on the Xilinx Virtex-5 LXT and SXT FPGA families. Available with Virtex-5 LXT or SXT FPGA platforms. The kit enables designers to prototype high-performance, multi-gigabit serial transceiver-based designs with ease, while providing expandability and customization through the EXP expansion slot.

### [Nallatech Launches Xilinx Virtex-5 PCI Express FPGA Computing Platform](#)

The BenONE-PCIe provides users with a low cost FPGA carrier card featuring an onboard Xilinx Virtex-5 FPGA, high bandwidth 8-lane PCI Express host interface and DIME-II expansion module slot – a powerful COTS platform ideal for FPGA application development and deployment.

### [Synplify Premier Software Accelerates Hardware Bugs](#)

Debug your design faster with the Identify RTL debugger technology for simulator-like visibility into a live running FPGA with real-world stimulus.

### [Automated FPGA Symbol and Schematic Generation](#)

Generating symbols for 1000+pin FPGAs and then connecting those pins on a schematic is a tedious but necessary part of the FPGA-based PCB design flow. 7Circuits generate symbols and schematics automatically while simultaneously creating optimized pin assignments.

### **New Linear Technology Demo Boards Available at No Charge for Xilinx Customers!**

The [LTM4604](#) is a complete 4A switch mode DC/DC power supply ideal for [Xilinx based systems](#). Request your LTM4604 demo board at no charge now, contact [Gerard Velcelean](#)! Limited quantities!

### [Linear Technology Power Solutions and Special Promotion for Xilinx Customers!](#)

Check out [Xilinx Reference Boards](#) with Linear Technology solutions. Fill out the Linear Technology [Pricing Qualification](#) form to receive promotional pricing for your new Xilinx-based project!

## In the Press

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### **Customers Building Products with Virtex FPGAs**

### [Scottish FPGA Supercomputer Nominated for Industry Awards](#)

The 'Maxwell' supercomputer consists of a 32-way IBM BladeCentre chassis hosting 64 Xilinx Virtex-4 FPGAs directly connected

over high-speed RocketIO transceivers. The system requires much less space and cooling than a conventional microprocessor system. It is also over 100 times more energy efficient and up to 300 times faster.

### [Innovative Integration's New X5-210M PCI Express Module](#)

The X5-210M is an XMC IO module featuring four 14-bit 210 MSPS A/Ds with a Virtex5 FPGA computing core, DRAM and SRAM memory, and eight lane PCI Express host interface. Xilinx Virtex-5 LX110T with 512MB DDR2 DRAM and 4MB QDR-II memory provide a very high performance DSP core for demanding applications such as emerging wireless standards.

### [PCIe XMC Module Features Four Simultaneous A/D Channels](#)

Innovative Integration has rolled out the X3-SDF, an XMC [I/O](#) module that features four simultaneously sampling, sigma delta A/D channels designed for vibration, acoustic and high dynamic range measurements. Data acquisition control, signal processing, buffering, and system [interface](#) functions are implemented in a Xilinx Spartan3 1M gate FPGA.

### **Partner Solutions for Virtex Design**

#### [RF Engines Does Fast Vector Translation on Virtex-5 FPGA](#)

Implemented in a Xilinx Virtex-5 FPGA, their new low-resource algorithm for fast vector translation executes 350Mconversion/s from 2x20-bit rectangular to 20-bit magnitude, 12-bit angle, polar coordinates using only 274 DSP48E slices.

#### [LynuxWorks RTOS Supports FPGA MCU](#)

The new 32-bit MicroBlaze V7 soft core processor adds optional support for a memory management unit (MMU). This allows the platform to support more advanced operating systems like Linux including BlueCat.

#### [Lauterbach Introduces Real-time Tracing for Xilinx MicroBlaze v7 Processor](#)

The latest addition to the range of development tools for the MicroBlaze processor is an off-chip trace solution. Lauterbach's real-time trace does not use scarce on-board FPGA memory resources for storing trace data but provides up to 512MB of external high speed trace memory.

#### [Xilinx MicroBlaze Processor Supports Full Linux and Impulse C-to-FPGA Acceleration](#)

Supporting the Xilinx MicroBlaze v7 processor with MMU, the Impulse software tools let embedded systems developers create hardware-accelerated, single-chip applications that take advantage of the new MicroBlaze processor features and C-to-hardware acceleration for complex, performance-critical applications.

#### [HARDWARE TOOLS: Free Trial Version of Eridon's UnifiedLogic for Xilinx Spartan-3 Kits](#)

UnifiedLogic Development Platform provides everything needed for embedded system development, including an RTOS, hardware reference designs and the tools that automatically integrate them. Download a free evaluation version supporting Xilinx Spartan-3 Generation Starter Kit Boards.

### **FPGA Design Solutions from Xilinx**

#### [Xilinx Announces Latest and Greatest MicroBlaze 32-bit Soft Processor Core ...\(and lots more "stuff"\)](#)

New MicroBlaze v7 boasts mega-cool features like an MMU that enables commercial-grade OS support.

#### [MicroBlazing Away - Xilinx Boosts Embedded Ecosystem](#)

Using their low-cost development kit, you can try out the new MicroBlaze processor platform yourself and reach your own conclusions about how grown-up it really is. As far as we're concerned, our automatic skeptic mode has been temporarily disabled.

#### [Carrier-class FPGAs Emerge](#)

Xilinx and Brilliant Telecommunications have announced what is claimed to be the industry's first carrier-class FPGA-based network timing solution for next generation wired and wireless networks. By integrating timing functions into Xilinx Spartan or Virtex FPGAs, the solution offers significant cost savings.

#### [FPGA-based Solution Interfaces to Intel Bus](#)

Xilinx has begun commercial licensing of its FPGA-based acceleration High-Performance Computing (HPC) solution to interface with the Intel Front Side Bus (FSB). Enabled by the Virtex-5 platform FPGA and Intel QuickAssist Technology, the Xilinx Accelerated Computing Platform (ACP) M1 licensing package supports implementations capable of full 1066 MHz FSB speeds to accelerate the performance of Intel processor-based server platforms while minimizing power consumption and total cost of ownership.

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