Industry's Fastest 5V FPGAs in Production

XC4000E-1 Series Offers 25% Performance Gain

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As introduced in *XCell 24*, XC4000E devices featuring the new -1 speed grade are now shipping in production volumes. Based on an optimized 0.5μ three-layer-metal process, the new -1 devices support typical system clock speeds in the 80 MHz range — 20-25% higher performance than the XC4000E-2 FPGAs, previously the fastest devices in the XC4000E family.

Extensive performance analysis using comparable 5V FPGAs from other vendors has confirmed that the XC4000E-1 device is 5-20% faster in end-user applications. The analysis included three different types of benchmarks:

➤ the actual implementations of representative macro- and core-level functions from key application areas.

➤ the actual implementations of representative "real-world" system designs of various density and performance levels obtained from systems manufacturers.

➤ the guaranteed system I/O speed, as measured by adding the clock-to-out and global-clock-setup specifications obtained in product data sheets.

When compared with its closest competitor, the XC4000E-1 FPGA delivers 20% better performance, on average, for the scaled functions, and 12% better performance for the real-world designs. System I/O speed for the XC4000E-1 device is 5% better than the fastest competitive device.

The XC4000E-1 device expands the power of the LogiCORE PCI design solution. This performance improvement extends full PCI compliance to 20,000-gate densities and increases overall design flexibility for PCI interface designs. Other emerging applications such as networking, multimedia, and high-speed telecommunications can benefit from this FPGA family's increased performance capabilities.

The performance leadership of the XC4000 series complements its highly-integrated feature set, including on-chip three-state buffers, dedicated arithmetic carry logic, multiple global clock networks, and on-chip Select-RAM memory. The XC4000E family spans from 237 to 2,432 logic cells (approximately 2,000 to 25,000 logic gates), and is available in a variety of packages.

The Xilinx Foundation and Alliance Series development systems support the new XC4000E-1 speed grade. The Foundation series is a fully-integrated, ready-to-use, Windows-based solution, including support for industry-standard HDLs, synthesis, schematic entry, simulation, and the XACT*step* implementation tools. The Alliance series allows the use of the XACT*step* tools with the industry's most-popular third-party EDA tools; this series of development system products provides open-system benefits with support for industry-standard design methodologies and interfaces, including EDIF, VHDL (VITAL 95), and Verilog/SDF.

Please contact your local Xilinx sales representative for current pricing information. ◆

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