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PowerPC architecture with Xilinx FPGAs – scaling new heights together

Recently, a collaborative relationship was developed between IBM and Xilinx, combining two of the respective leaders in the ASIC and FPGA marketplaces. Part of the collaboration included licensing of the IBM PowerPC™ 405 core to Xilinx. This week, Dean Parker, the PowerPC Field Marketing Manager at IBM Microelectronics, discusses the features of the PowerPC 405 and customer benefits of the IBM /Xilinx relationship.

Q: What is unique about the PowerPC 405 core from IBM? The PowerPC 405 core is unique

- Outstanding balance of performance, cost, and power consumption— The 405 core provides 300 MHz and 450 MIPS of performance while consuming less than 1 watt of power. Soon, 405 core-based products will be available at even lower power consumption and higher operating frequencies.
- Ease of building true system on chip (SOC) designs — IBM's ASIC methodology, combined with the industry standard CoreConnect on-chip bus make highly complex PPC405 SOCs a reality. CoreConnect is a high bandwidth bus with separate 64-bit read/write buses, and includes several features such as split and burst transfers, and address pipelining to fully utilize the available bus bandwidth.
- Manufacturing excellence — IBM's state of the art manufacturing instills confidence in customers as a supplier who will deliver not only advanced technology but also high reliable designs built right.

Q: What are typical applications for IBM's PowerPC 405 Core? IBM has designed and manufactured over three dozen unique general purpose and custom chips based on the PowerPC 405 core for a wide variety of applications including:

- Networking: CPU switch, Ethernet switch, cellular base station, wireless LAN, wireless telecom
- Storage: Hard disk drive, RAID controller
- Consumer: Digital TV, digital set-top box, internet access phone, MPEG encoder, portable jukebox, broadband

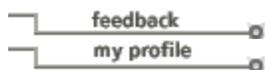
Q: How does the IBM and Xilinx licensing agreement benefit customers? The availability of the PowerPC 405 core in the Virtex-II FPGA will extend the availability of Xilinx FPGAs and the PowerPC architecture into new and emerging markets and applications. The combination could deliver solutions unlike any other embedded solution available today such as:

- Enabling custom, highly integrated programmable FPGA solutions. Customers can implement advanced features such as XCITE, DCM and embedded multipliers available in the Virtex-II family to build powerful PowerPC core-based FPGAs.
- Providing an excellent platform for PowerPC SOC devices. Customers can migrate from high cost ASICs due to the synergistic use of PowerPC and CoreConnect and other components.

such as the RapidIO™ interconnect.

- Rapidly expanding the CoreConnect IP available, thereby improving next generation IBM PowerPC solutions

For more information on IBM PowerPC processor solutions, see: www.ibm.com/powerpc/.



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