Inside Out Home
IBM PowerPC Solutions

Inside Out Article

Programmable Logic from the INSIDE OUT

PowerPC architecture with Xilinx FPGAs – scaling new heights togeth

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

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

- Outstanding balance of performance, cost, and power consumption— The 405 core mm^2 (depending on technology), and provides over 300 MHz and 450 MIPS of perfo 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, c 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/writ buses, and includes several features such as split and burst transfers, and addres pipelining to fully utilize the available bus bandwidth.
- Manufacturing excellence — IBM's state of the art manufacturing instills confidence 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 ma over three dozen unique general purpose and custom chips based on the PowerPC 405 c wide variety of applications including:

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

Q: How does the IBM and Xilinx licensing agreement benefit customers? The availability PowerPC 405 core in the Virtex-II FPGA will extend the availability of Xilinx FPGAs and the P architecture into new and emerging markets and applications. The combination could deliv 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 avai the Virtex-II family to build powerful PowerPC core-based FPGAs.
- Providing an excellent platform for PowerPC SOC devices. Customers can migrate cost ASICs due to the synergistic use of PowerPC and CoreConnect and other com

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/.