Contribution ID: **24** Type: **not specified**

New MTCA.4 products from IOxOS Technologies SA

Wednesday 11 December 2013 13:00 (8 minutes)

IOxOS Technologies SA introduces a new MTCA.4 product line based on its most powerful VME64x platform, the IFC_1210 FMC/XMC Intelligent FPGA Controller, and a comprehensive family of ADC mezzanines in FMC form factor, already deployed on particle accelerator control systems in some of the most reputed institutes of Physics.

The new MTCA.4 product line features VITA 57.1 FMC High Pin Count (HPC) carriers powered by Virtex-6T FPGA devices and optimized development kits, ensuring total compatibility with its successful and widely deployed VME64x counterpart.

The following two boards are the cornerstone of the new MTCA.4 product line:

(1)The MTCA.4 IFC_1410, a Single Board Computer which leverages a Freescale QorIQ P2020 running Linux with RT extension or VxWorks, combined with a Xilinx Virtex-6T FPGA connected to a local PCIe GEN2 infrastructure. A PCIe GEN2 Switch -with configurable port operation modes (UPstream, DOWNstream, Non-transparent, Partition) manages the interconnection of on-board PCIe resources and peripherals, together with the attachment to the two AMC PCIe ports. The Virtex-6T FPGA, connected to the local PCIe infrastructure, controls one VITA 57.1 FMC slot. All MTCA.4 specific features are fully integrated on-board. An XMC mezzanine can be optionally plugged instead of the FMC, enhancing the interconnect capability of the solution

(2)The MTCA.4 RTM_1411, a dual VITA 57.1 FMC carrier featuring a Xilinx Virtex-6T FPGA -connected to the local PCIe infrastructure through the RTM connector- to control both FMC HPC slots

To overcome the challenge of the Virtex-6T FPGA programming, the IFC_1410 and the RTM_1411 are delivered with the TOSCA II FPGA Design Kit solution, a comprehensive FPGA design environment which provides full visibility and facilitates the integration of the user application within a PCIe GEN2 switch centric architecture. This approach makes possible the implementation of a complete Network on Chip (NoC) solution which includes PCIe EP, four dedicated DDR3 Memory Controllers with built-in DMA capabilities and programmable QoS for local data buffering (enabling a sustained bandwidth of 4 x 1.6 GBytes/s), and fully customizable embedded user areas tightly coupled with these resources. TOSCA II also includes reference designs, Bus Functional Models (BFM) for simulation purposes and full access to VHDL source code.

The MTCA.4 product line is enhanced with the ADC_311x series, a comprehensive family of ADC mezzanines in FMC form factor providing high-performance data acquisition capabilities including:

- ADC_3110: Eight channels ADC 16-bit 250 Msps, AC/DC coupled
- ADC_3111: Dual channels DAC 16-bit 500 Msps and Dual channels ADC 16-bit 250 Msps
- ADC_3112: Quad channels ADC 12-bit 1 Gsps, DC differential coupled

Summary

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Session Classification: New products

Track Classification: New products