EDITOR'S FOREWORD

Why AdvancedTCA is at home in HSS

By Joe Pavlat

With this first issue of 2008 (Happy New Year!), our colleague Sven Freudenfeld from Kontron gives us an excellent and detailed comparison of 1U rack-mount servers and AdvancedTCA in a real application, a Home Subscriber Server (HSS). He describes the application in detail and then compares space, cooling, maintenance, management capabilities, scalability, and switching requirements. Sven makes a compelling case that AdvancedTCA provides many essential application elements that must be separately and expensively added to 1U servers. He concludes that AdvancedTCA allows Telecom Equipment Manufacturers to concentrate on developing software instead of hardware, and that reduces development costs and speeds time to market.

PICMG addressing new data bandwidth standards

While AdvancedTCA provides a great deal of backplane bandwidth, especially in full mesh configurations, designers want to go even faster to accommodate new bandwidth-hungry applications like IPTV. Last year, the IEEE ratified important new standards for 10 gigabit per second data transmission over a single pair of conductors. Of special interest to our community is the 802.3ap 10GBASE-KR standard, which details how to achieve that blazing speed over a backplane. The PICMG community is moving towards setting up a new subcommittee to incorporate this technology into the AdvancedTCA standard, and it may be operating when this issue hits the street. It has the potential of providing a total useful backplane bandwidth of 10 terabits per second in a single shelf. That's a truly amazing number. Douglas Hynd from the Simclar Group introduces us to the details of designing systems at that speed, discussing losses, signal skew, and crosstalk. At these speeds, simulation is essential, and Douglas describes some of the issues involved. Also in this issue, Stuart Jamieson from Emerson Network Power gives us additional insight into high-speed signaling design, simulation, and analysis.

A name change, from *Technology in Europe* to *Global Technology*, goes into effect this month for the column written by industry veteran Hermann Strass. In this issue Hermann tells us how CompactPCI products from MEN Micro have been incorporated into the design of a new, highly sophisticated digital cinema camera developed by Silicon Imaging. In addition to providing very high resolution and speed, the camera must also operate in harsh environments. MEN Micro won the 2007 Intel Communications Alliance Innovate and Ignite Technology Showcase award for its work.

Curt Schwaderer's *Software Corner* this month expands on a subject he wrote about last April (www.compactpci-systems.com/columns/software_corner/2007/04/). As cable companies expand their offering beyond television to voice and data services, they become subject to the same laws relating to cyber crime as the traditional telecommunications providers do. They must provide law enforcement authorities surveillance that is the subject of a lawful warrant, and industry standards are being rolled out to do this. It's a timely topic, as serious problems with identity theft and cyber crime in general are on the rise. Curt's column is an interesting read.

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