

## Freescale expands AdvancedTCA ecosystem with modular reference designs

*AdvancedTCA reference designs from Freescale feature Serial RapidIO™ and Ethernet backplane support and the industry's first Advanced Mezzanine Cards using PowerQUICC™ III processors and multicore DSPs*

ORLANDO, Fla. (Freescale Technology Forum) – June 22, 2005 – The Advanced Telecom Computing Architecture has taken another leap forward with the advent of a modular, standards-based platform solution from Freescale Semiconductor (NYSE:FSL, FSL.B). Freescale's Open AdvancedTCA Development Platform expands the growing ecosystem of reference designs based on the AdvancedTCA specification.

"Freescale's AdvancedTCA platform provides third-party developers and equipment manufacturers with the tools they need to create interoperable, modular building blocks that help speed time to market and reduce the cost of creating next-generation communications equipment," said Ernie Bergstrom, founder of Crystal Cube Consulting. "Freescale offers one of the broadest portfolios of processing building blocks for AdvancedTCA solutions, from PowerQUICC™ communications processors with integrated security to high-performance PowerPC host processors and multi-core DSPs based on StarCore™ technology."

The first components of Freescale's modular platform solution include an AdvancedTCA carrier blade and two Advanced Mezzanine Cards (AMCs). The carrier blade reference design features a PowerQUICC controller and support for both Ethernet and Serial RapidIO™ interconnect capabilities in the backplane. The AMC reference designs include the MPC8548E PowerQUICC III processor with RapidIO technology and a DSP farm module with eight MSC8122 multicore-DSPs based on StarCore technology.

Freescale's AdvancedTCA platform helps enable rapid, flexible prototyping for a wide range of carrier-grade applications, such as digital subscriber line access multiplexers (DSLAMs), IP-DSLAMs, IP-PBXs, media gateways, high-density voice over IP (VoIP) systems, enterprise routers, host processing farms, and radio network controllers (RNCs) used in 3G wireless infrastructure.

Freescale's MPC8548E-based AMC is the first mezzanine card solution of its kind to support both Ethernet and Serial RapidIO technology for fabric connectivity. RapidIO technology provides a scalable, open, high-performance backplane interconnect and point-to-point packetized architecture offering the carrier-grade reliability required by AdvancedTCA-based systems.

"Freescale's AdvancedTCA development platform demonstrates the scalable performance and versatility of Freescale's silicon portfolio, and it also showcases how the combination of Freescale's processors, legacy interconnects and RapidIO technology, together with AdvancedTCA, can deliver a significant increase in MIPS-per-watt density," said David Perkins, senior vice president and general manager of Freescale's Networking and Computing Systems Group. "As a founding member of the RapidIO Trade Association and the first semiconductor vendor to deliver a RapidIO technology-enabled processor, Freescale is committed to the commercial success of the RapidIO standard and the AdvancedTCA specification."

Freescale's highly adaptable AdvancedTCA platform solution is designed to evolve with advancements in interconnect technologies and to incorporate higher-performance, next-generation silicon offerings from Freescale and other vendors. For example, future AdvancedTCA platform implementations can be designed to accommodate Freescale's MPC8641D Dual Core processor based on e600 PowerPC cores.

Freescale's AdvancedTCA platform consists of modular, board-level building blocks. The carrier board form factor is designed to fit both an AdvancedTCA rack and a standalone PC chassis via replaceable power modules. A Freescale PowerQUICC communications processor serves as a controller on the baseboard. In addition, a Gigabit Ethernet switch links the AdvancedTCA baseboard to the control plane. The modular AdvancedTCA baseboard can support up to four AMC cards. These cards can be mixed and matched on the carrier card to address various applications, such as RNCs, base station controllers (BSCs), serving GPRS support nodes (SGSNs) and gateway GPRS support nodes (GGSNs).

Linux application programming interfaces (APIs) reside on the AdvancedTCA carrier card and can be remotely booted through Gigabit Ethernet or RapidIO endpoints on plug-in cards. Freescale's Linux-hosted CodeWarrior tools enable a commercially-supportable, open-source development environment for the AdvancedTCA platform.

Freescale is actively participating in the development of new and complementary standards, such as MicroTCA, which in concert with AdvancedTCA and AMC platforms, provide an end-to-end framework that addresses the complete range of high-availability telecom applications.

Silicon and system partners, such as Embedded Planet, Artesyn, Mercury Computer Systems and Tundra Semiconductor, have provided a wide range of semiconductor and board-level components for the AdvancedTCA platform. In addition, numerous software partners, such as Monta Vista, QNX, Wind River and Enea Data, made significant contributions to the Linux OS-based platform and APIs.

"Tundra has been a long time participant within the AdvancedTCA ecosystem by introducing the industry's first RapidIO switches. We strongly support the AdvancedTCA initiative that Freescale has undertaken," said Rick O'Connor, chief technical officer and vice president of product management at Tundra Semiconductor. "Our customers who are adopting serial RapidIO as their backplane interconnect can evaluate the Tsi568A serial RapidIO switch on the Freescale AdvancedTCA carrier blade and use this type of platform to expedite their time-to-market and reduce their system prototyping costs."

"As a long-time user of Freescale products and an early provider of open platform AdvancedTCA, AdvancedMC and MicroTCA solutions, Artesyn looks forward to collaborating with Freescale to offer integrated processor, WAN interface and signaling blades for use in production AdvancedTCA and MicroTCA systems," said Scott McCowan, president of Artesyn Communication Products. "Open architecture AdvancedTCA and MicroTCA systems using PowerQUICC and PowerPC processors provide flexible, scalable, high-performance platforms for implementing a wide range of telecom infrastructure equipment."

"The combination of Freescale's silicon portfolio, AdvancedTCA and AMC platforms and support for RapidIO technology, along with Embedded Planet's system knowledge, allows customers to design systems with greater reliability and get

products to market faster," said Matt Hoover, vice president, sales and marketing of Embedded Planet. "We are very excited to continue our long-standing relationship with Freescale, and we look forward to releasing our three new products in support of this platform: EPRapidIO ATCA carrier module, EP8548 AMC MPC8548 processor module and EP8122 AMC 8122 DSP module."

Freescale is demonstrating its Linux OS-based AdvancedTCA development platform in the Technology Lab during the Freescale Technology Forum this week. The demonstration shows how the platform can be used to prototype and evaluate entire functional systems designed around the AdvancedTCA specification. For more details about the Forum and Technology Lab, visit [www.freescale.com/ftf](http://www.freescale.com/ftf).

#### **About AdvancedTCA**

Advanced Telecom Computing Architecture is the largest specification effort in PCI Industrial Computer Manufacturers Group (PICMG)'s history, with more than 100 companies participating. AdvancedTCA, the PICMG 3.X family, is a new series of PICMG specifications targeted at the requirements for the next generation of carrier-grade communications equipment. This series of specifications incorporates the latest trends in high-speed interconnect technologies, next-generation processors and improved reliability, manageability and serviceability.

#### **About Freescale Semiconductor**

Freescale Semiconductor, Inc. (NYSE:FSL, FSL.B) is a global leader in the design and manufacture of embedded semiconductors for the automotive, consumer, industrial, networking and wireless markets. Freescale became a publicly traded company in July 2004 after more than 50 years as part of Motorola, Inc. The company is based in Austin, Texas, and has design, research and development, manufacturing or sales operations in more than 30 countries. Freescale, a member of the S&P 500®, is one of the world's largest semiconductor companies, with 2004 sales of \$5.7 billion (US). [www.freescale.com](http://www.freescale.com)

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