



Program Guide

Enabling Any to Any Mobile Services

LSI Corporation Facts

- NYSE Symbol: LSI
- 2009 Revenue: \$2.2B USD
- 50 years of combined industry innovation — invented the transistor, single chip DSP, single chip 32-bit microprocessor, and more.
- Over 5,000 employees including >1,500 with MS or PhD
- Over 10,600 US Patents
- Silicon to Systems and Software philosophy
- Over 25 design and development centers worldwide
- Headquarters: 1621 Barber Lane Milpitas, CA 95035
- www.LSI.com

The Multicore Challenge

LSI has delivered multicore solutions for networking applications since the turn of the century. Our approach emphasizes separate data and control paths for wire speed processing with real determinism and lower power consumption even as bandwidth demands and mobile applications proliferate. Some solutions throw generic multicore CPUs at the problem, but they just can't keep up as data and services swamp mobile infrastructure.

Only LSI has a broad portfolio of networking cores for traffic management, digital signal processing, deep packet inspection, link layer control, encryption and more. These cores are deployed with PowerPC™ and ARM® processors in optimal combinations for target applications like baseband processing, PWE3, multimedia communication, and high-end routing. The results are finely-tuned and hardened solutions for basetations, mobile backhaul, media gateways, and mobile data centers. We call this approach

Multicore Done Right™

The age of **any to any communication** is upon us. Everywhere you look you'll see a proliferation of mobile devices like cell and smart phones, wireless reading devices, netbooks, laptops, and now tablet computers. These devices are swamping networking infrastructure with increasing **demand for data** and services once unimaginable on mobile devices — services like mobile TV, location-aware applications, video conferencing, image-based search, and even mobile cloud computing. People want these services reliably available any where, any time on their mobile device. Mobile operators face many challenges by this **unconstrained evolution of mobile networks** and need solutions that will allow them to build application agnostic networks that can scale, manage and reliably deliver these services.

LSI continues to build out its portfolio of networking solutions that deliver **end-to-end network intelligence** to mobile networks. These solutions are designed to meet the challenges of the critical portions of mobile infrastructure: wireless access nodes, mobile backhaul, media gateways, and the mobile data center.

Our multicore solutions are designed with an optimal mix of networking cores and embedded processors that only LSI can provide as a result of our long legacy of telecommunications and data networking expertise. We call this approach **Multicore Done Right™**. Let us show you how LSI multicore solutions can benefit your mobile network.



LSI Multicore Solutions for Mobile Networks

Multicore Done Right™ by LSI

Axxia™ Communication Processors

The Axxia Communication Processor (ACP) is designed for the increased performance and lower power demands of next-generation mobile and enterprise networks. Using an innovative Virtual Pipeline™ architecture, the Axxia processor delivers fully deterministic performance with up to 20 Gb/s of data throughput, regardless of packet size, system loading, or protocol. These features will allow mobile operators to deploy systems with improved ROI and efficiently manage the unconstrained evolution of mobile networks.

At the heart of each Axxia processor is a high-performance multicore PowerPC capable of 2 GHz operating frequency. Function-specific acceleration engines deliver fast path processing without unnecessarily taxing the multicore complex. These acceleration engines are derived from silicon-proven cores used extensively in the broad networking portfolio from LSI, including DPI, security, and traffic management technologies. The ACP architecture uses a patented message-passing technique, called Virtual Pipelines, for intra-processor communication between the acceleration engines, multicore complex and SoC subsystem components.

The ACP is available in a range of pin-compatible configurations for a variety of networking applications including 3G/4G mobile access systems such as NodeB/eNodeB, RNCs, and mobile data centers. A complete software development environment (SDE) includes efficient tools to configure, compile, simulate, optimize, trace, and debug an entire application including the data-path and control planes. Application Development Kits (ADK) provide a comprehensive suite of production-ready, protocol-processing software modules for wireless, wireline, and enterprise applications.



VIRTUAL PIPELINE™ Technology

Tarari® Content & Security Processors

LSI Tarari Content & Security technology is available as embedded silicon cores, coprocessors, and boards designed for systems, appliances, and servers in mobile operator networks. LSI Tarari deep packet inspection (DPI) operates at wire speeds, ranging from 100 Mb/s to over 20 Gb/s. The entire family is software-compatible.

The Tarari Content & Security Processor family represents a technological revolution for Layer 7 processing. We offer DPI capabilities to off load and accelerate applications such as content-based routing (CBR), content-based billing, QoS/QoE, bandwidth management, XML processing, anti-virus, anti-spam, intrusion prevention & detection systems (IPS/IDS), and compliance. LSI solutions are built to accelerate the industry's most popular processors including Intel®, MIPS® Technologies, and PowerPC™.



StarPro® Media & Baseband Processors

The LSI StarPro SP2700 family of scalable and highly-integrated media processors can help mobile operators maximize average revenue per user (ARPU) by ensuring high quality delivery of multimedia content, reliable connectivity, and 100% call completion.

StarPro media processors combine powerful multicore SC3400e DSPs and high performance multicore ARM11 processors, with customized off load engines and a high level of memory integration to deliver the industry's lowest cost and power per channel for baseband processing and multimedia applications.

StarPro processors are supported by optimized applications software from LSI and a broad ecosystem of software and hardware partners. A large suite of hardened voice and video codecs are available for baseband, enterprise, and media gateways applications. Binary compatibility with the previous generation allows for software reuse and lowers development cost.



Multiservice Processors

The Link Communications Processor helps bridge cell and circuit-based networks with less-expensive packet-based networks. This will allow mobile operators to protect their infrastructure investment and retain traditional levels of reliability while reducing development and operational expenses (OPEX).

With seamless interfaces to other LSI multicore SoCs, the LCP provides a state-of-the-art system solution for applications from the base station, through packet transport and microwave backhaul, to the radio network controller (RNC) and beyond. The LCP platform is highly scalable and flexible enough to support a variety of wireless protocols, including Abis, TC/IMA, HDLC/ML-PPP, and PWE3 including CESoPSN. As many as three protocol paths can share the LCP bandwidth simultaneously, allowing for efficient migration from TDM to ATM to IP switching on a single platform.



Custom Silicon Solutions

The key to a cost-effective SoC is working with a vendor who can provide silicon-proven application-specific building blocks – hardware and software – that can speed time to market, and lower a customer's investment.

With silicon-proven technology from a broad networking ASSP portfolio, leading edge intellectual property, and a seamless design model for quick turn-around, LSI is the world's leading SoC supplier. Our standard products, including those mentioned on this page, are built with the same development methodology as our custom silicon products. That allows reliable reusability of basic building blocks, like embedded memory, LinkXpress™ terabit switching interconnects, memory interfaces, high speed SERDES along with powerful subsystems like our SC3400e DSP, Tarari DPI, security cores, and CPUs including MIPS, ARM, and PowerPC processors.



Networking Ecosystem Partners

LSI has assembled an ecosystem of partners with best-in-class capabilities. We foster development and collaboration to deliver comprehensive and ready-to-deploy solutions for mobile infrastructure equipment. Our partners include system OEMs, network equipment manufacturers, outsourcing firms and software vendors who provide applications and systems based on LSI multicore networking solutions.



For more information and sales office locations, please visit the LSI web sites at: lsi.com

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