Freescale Semiconductor, Inc.
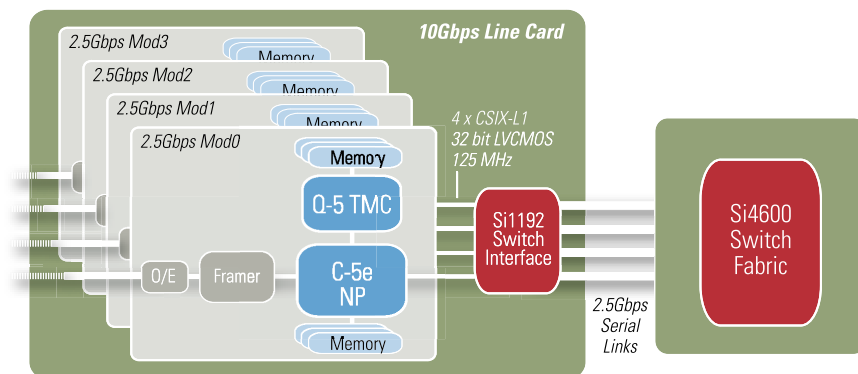
SiSilk
n e t w o r k s

HIGH-PERFORMANCE NETWORK PROCESSOR-TO-FABRIC SOLUTION WITH MOTOROLA AND SiSiLK NETWORKS

With the growth of the Internet, including the convergence of wireless communications with data networks, the demands on network infrastructure equipment are growing. Service providers are offering mixed-media services on data networks, as well as offering data services on wireless equipment, especially second and third generation wireless technologies (2G, 2.5G, and 3G). The equipment that supports these converging technologies and evolving services must provide robust multiservice capabilities and be scalable as bandwidth and service requirements grow.

An alliance between SiSilk Networks and Motorola teams two key forwarding path technologies: network processors and switch fabrics. The SiSilk Fabrium switch fabric product line and the Motorola C-Port Network Processor Family provide the necessary performance and flexibility to support next-generation Internet infrastructure solutions. A streamlined integration of these technologies helps reduce time-to-market for vendors delivering products such as multiservice platforms, high-function routing, and wireless infrastructure equipment.

Scalable Forwarding Performance with Flexibility

SiSilk's family of switch fabric products provides high-performance, flexible, non-blocking switching capabilities for a wide range of LAN and WAN interfaces and protocols, including ATM, Frame Relay, Packet over SONET (PoS), T-Carrier, SAN, and Ethernet — at switch capacities ranging from 60G - 2.88Tbps.

The SiSilk Fabrium™ product line is based on a modular and scalable architecture that gives system designers maximum flexibility and performance. This architecture allows network switches to be implemented either on a single shelf, using an electrical backplane, or multiple shelves connected by optical transceivers or electrical cables. The Fabrium chipset can be implemented in either single-chip, single-stage or three-stage fabric design. This flexibility gives product designers the opportunity to create more compact product lines.

The SiSilk chipset also incorporates the industry-standard CSIX interface for line card devices, allowing SiSilk Fabrium to operate seamlessly with off-the-shelf packet processors and traffic managers or other CSIX-compatible devices.

Motorola's C-Port family of network processors (which includes the C-5e NP) provides high-performance, flexible, forwarding plane processing for a wide range of LAN and WAN interfaces and protocols including ATM, Frame Relay, PoS, T-Carrier, and Ethernet, at speeds ranging from sub-T1 through OC-48c. The family also integrates key communications tasks, such as classification and traffic management, providing extensive hardware acceleration of these critical forwarding functions. The powerful processing capability of the C-5e NP can be fully utilized with the use of a high-performance fabric switch such as SiSilk's Fabrium chipset.

Up to four Motorola C-5e NPs can connect to the SiSilk Fabrium chipset for up to 10Gbps of forwarding per line card.

10Gbps Line Card

2.5Gbps Mod3
2.5Gbps Mod2
2.5Gbps Mod1
2.5Gbps Mod0
Memory

4 x CSIX-L1
32 bit LVCMOS
125 MHz

Q-5 TMC

Si1192 Switch Interface

Si4600 Switch Fabric

O/E Framer

C-5e NP

Memory

2.5Gbps Serial Links

Standard, Streamlined System Integration

The SiSilk Fabrium fabric chipset consists of two devices — the Si4600 (Parallel Shared Memory Fabric) and Si1192 (Line Card Switch Interface). A C-5e NP connects to the Si1192 through the Network Processing Forum (NPF) specification CSIX-L1. This enables networking vendors to easily incorporate both technologies into their designs. Through this standard fabric interconnect, vendors benefit from:

- Non-blocking shared memory architecture
- 320Kbyte embedded memory
- CSIX cell delineation
- Maximum cell forwarding size of 80Bytes
- VoQ flow control by CSIX flow control messages
- Link level flow control by CSIX ready bits, including six classes of service, four classes of unicast, and two classes of multicast

The Motorola and SiSilk Networks collaboration specifically provides:

- Faster time-to-market through flexible, easy-to-use system architectures.
- Scalability up to 10Gbps for a single line card.
- Wide-spread applicability throughout and between different LAN and WAN product families.
- Improved reliability through higher functional integration, "common-board" implementations for multiple interface types, and software reuse.
- Reference designs with Motorola's C-Ware development environment.
- Lower development and product life cycle costs.

For more information, go to:

- www.motorola.com/networkprocessors
- www.sisilk.com

SMART NETWORKS ALLIANCE

Motorola's Smart Networks Alliance is designed to enable the broadest suite of solutions for communications OEM customers leveraging the Smart Networks Platform. Members of the Smart Networks Alliance exist for almost any hardware, software or tools category, including companion chips, hardware tools, software development tools, networking software, RTOS, and emulators.

For more information, go to:
www.motorola.com/smartnetworks/alliance

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