GigaStream™ Chip Set VSC872 & VSC882

OC-48 Intelligent Switch Fabric

Product Brief

Switch Fabric Family

Features:

- Highly-Integrated, Two-Chip Set
- Aggregate User Bandwidth of up to 80Gb/s
- Single-Stage Aggregate Backplane Bandwidth of up to 320Gb/s
- Maximum Configurations of up to 32x32 OC-48 or 64x64 Gigabit Ethernet
- Flexible N+1 and N+N Redundancy Schemes
- Integrated Queuing, Central Scheduling and Crossbar Switching
- Sophisticated QoS with Eight Priorities
- Advanced Unicast and Multi/ Broadcast Support
- High-Speed 2.644Gb/s Serial Link Technology

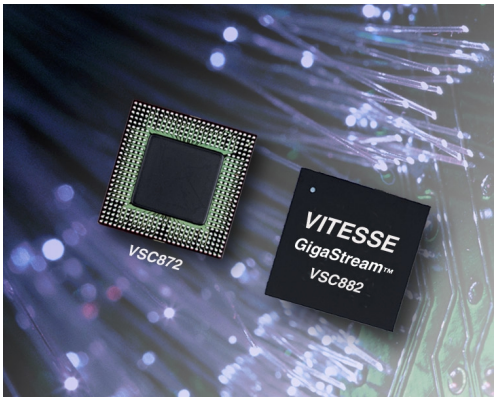
GIGAStream

General Description

The GigaStream™ chip set is a high performance synchronous switch fabric consisting of two integrated circuits: the GigaStream Queuing Engine (VSC872) and the GigaStream Crossbar Switch (VSC882). Targeted at both the access and metropolitan markets, GigaStream enables networking equipment manufacturers to build routing and switching systems capable of providing a maximum of 80Gb/s of aggregate user bandwidth with up to 320Gb/s of highly available backplane bandwidth. GigaStream provides support for sophisticated Quality of Service (QoS) algorithms, distinct handling for both Unicast and Multi/Broadcast traffic, as well as support for IP, ATM, and Ethernet traffic.

High Performance and Scalability

GigaStream's flexible architecture allows designers to increase aggregate switching capacity by adding GigaStream Crossbar Switches, scaling fabric backplane bandwidth in increments of 40Gb/s up to a maximum 320Gb/s. Each GigaStream Queuing Engine increases system port count by providing two additional OC-48 CSIX interfaces up to a maximum 32x32 OC-48 system configuration. GigaStream's scalable architecture, in conjunction with its self-synchronous serial link technology, provide the framework for next generation high-speed networking systems.



High Availability

With the special requirements of highly-reliable networking equipment in mind, the GigaStream switch fabric offers several features designed to simplify in-situ replacement or upgrades. These features include both N+1 and N+N redundant switch core protection schemes, hardware and software switchover for field maintenance and link failure conditions, fail-safe hot-swappable buffers, as well as self-synchronizing link circuitry and link health monitoring, ensuring zero loss of traffic and continuous operation under failure.

Efficient Bandwidth Utilization

The GigaStream solution is a self-routing switch fabric featuring virtual output queuing (VOQ) to eliminate head of line blocking, sophisticated QoS mechanisms to facilitate class-based traffic management, and logical backplane link rates of up to four times aggregate user port bandwidths. The fabric includes an integrated scheduler and dedicated on-chip queuing for both Unicast and Multi/Broadcast traffic, featuring eight priority classes supporting both strict priority and weighted bandwidth allocation.

VITESSE SEMICONDUCTOR CORPORATION

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Benefits:

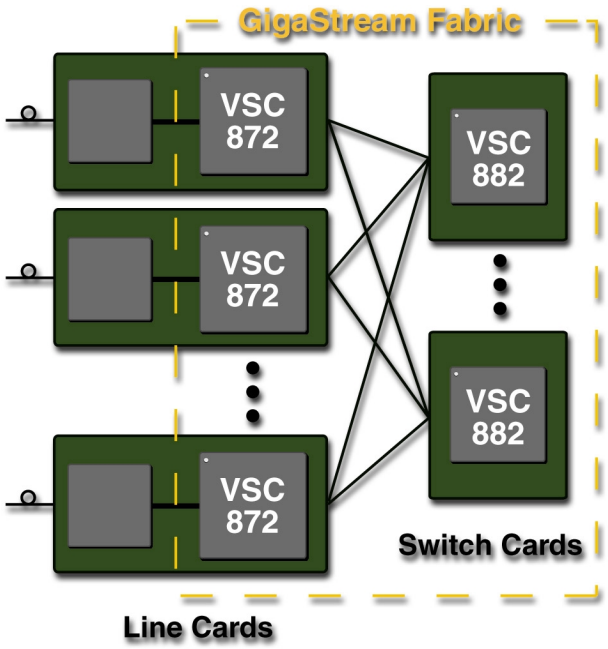
- 0.18µm CMOS Provides Low Power Consumption
- Proven Technology Minimizes Risk
- Seamless Queuing/Switch Solution Reduces Time to Market
- Active Redundancy Provides High Availability and Superior Performance
- High Integration Minimizes Required Board Space
- Field-proven, High-Speed Serial Link Technology Allows Standard FR4 Backplane Implementation

Applications:

- OC-48c, OC-12, OC-3
- IP, ATM, TDM
- Gigabit Ethernet
- Fibre Channel
- Access and Aggregation Routers
- Remote Access Routers
- Optical Edge Routers
- Metropolitan Networks
- Optical Networking

High Integration Reduces Overall Cost

The GigaStream switch fabric integrates advanced queuing and scheduling, a synchronous serial crossbar, and multiple channels of Vitesse's proven high-speed serial link technology; all in a two-component fabric chip set. GigaStream is a low-power solution that consumes only 1.4W per Gb/s of user bandwidth with the additional capability of powering-down unused serial links. This results in a high-performance, cost-effective switch fabric with low overall chip count that minimizes power, design complexity and board space requirements.



Specifications:

Description	VSC872 Queuing Engine	VSC882 Crossbar Switch
Process Technology	0.18µm CMOS	0.18µm CMOS
Package Information	440 TBGA	304 TBGA
Maximum Power Dissipation	5W	8W
Core Supply	1.8V	1.8V
Supply Voltages	2.5V or 3.3V	2.5V or 3.3V
Temperature Range	0 - 85°C	0 - 85°C
Serial Link Speed	2.125 - 2.644Gb/s	2.125 - 2.644Gb/s
High-Speed Serial Channels	8	16

For more information on Vitesse Products visit the Vitesse web site at www.vitesse.com or contact Vitesse Sales at (800) VITESSE or sales@vitesse.com

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