340 Gb/s and 170 Gb/s OC-48 STS-1 Time-Slot Interchange Switches



## FEATURES:

- $136 \times 136$ TSI Switch with Non-blocking $6528 \times 6528$ STS-1 Switch Matrix (340G Aggregate Bandwidth)
- Bit-sliced Switching Mode Provides $13056 \times 13056$ Connectivity at Half Bandwidth (68x68 ports) Enabling a One-stage 680G Fabric with Four Switch Chips
- Serial TFI-5 2.488 Gb/s High-speed Interface with EO and Pre-emphasis
- Hitless Reconfiguration of TSI Mapping
- Split Frame Domain Support (2 Domains per Chip)
- Two Overhead Ports to Drop and Add OH Bytes for Automatic Protection Switching Support and In-band Messaging
- Cross-connect Program Memory Integrity Monitoring
- LOS Detection, Input Parity Checking and Output Parity Insertion, Scrambling and Descrambling
- Transparent Mode Enables Switching Among Complete Ports Independent of Rate and Protocol, at 2.125 , and $2.488-2.67 \mathrm{~Gb} / \mathrm{s}$
- Can Act as a Static Slice/Merge Device to Support other VSC9195 Devices in a Bit-sliced Fabric


## APPLICATIONS:

- Central Switch in $170 \mathrm{~Gb} / \mathrm{s}$ to $340 \mathrm{~Gb} / \mathrm{s}$ STS-1 Grooming Fabric
- Switch Element for $680 \mathrm{~Gb} /$ s to $1.36 \mathrm{~Tb} / \mathrm{s}$ STS-1 Grooming Fabric
- Bit-slicing Engine for $680 \mathrm{~Gb} / \mathrm{s}$ to $1.36 \mathrm{~Tb} / \mathrm{s}$ STS-1 Grooming Fabric
- Ingress/Egress Device for Multi-terabit STS-1 Grooming Clos Fabric
- Synchronous Transparent Crosspoint Switch for Generic Circuit or Packet Switching


## BENEFITS:

- Enables High Capacity Switching with a Small Number of ICs, Reducing Cost and Power
- Easy Diagnostic and Monitoring Capability
- Scalability: Using VSC9192 and VSC9195, Customer can Economically Create Products from 80G to 680G Aggregate Bandwidth Using the same Software and Hardware Interfaces, with Capability to Scale to 1.36Tb Without Requiring Specialized Clos Programming Algorithms. Clos Fabrics for Larger Throughput can be Implemented with Fewer ICs.
- Flexibility: can be Used as a Monolithic Switch, as an Element in a 680G Bit-sliced Fabric, as a Bit-slicing Engine for a 680G Bit-sliced Fabric or an Ingress/Egress Device for a Large Clos Fabric.


## SPECIFICATIONS:

- $340 \mathrm{~Gb} / \mathrm{s}$ Aggregate Bandwidth
- TFI-5 Compliant 2.5 Gb/s High-speed Interfaces
- Dual $+2.5 \mathrm{~V} / 1.2 \mathrm{~V}$ Power Supply
- 45.0mm 1072 fcBGA Package
- Power Dissipation 25W (typ), 32W (max when fully utilized) with Power-down for Unused Channels
- 0 to $110^{\circ} \mathrm{C}$ (case) Temperature Range
- 53 MHz 16-bit CPU Interface


## VSC9195, VSC9192

$340 \mathrm{~Gb} / \mathrm{s}$ and $170 \mathrm{~Gb} / \mathrm{s}$ OC-48 STS-1 Time-Slot Interchange Switches

## GENERAL DESCRIPTION:



The VSC9195 is a $136 \times 136$ Time Slot Interchange (TSI) Switch IC supporting TFI-5 (STS-48 like frame) data on every input and output. All inputs and outputs are differential serial signals running at $2.488 \mathrm{~Gb} / \mathrm{s}$ for TDM signals, or $2.125 \mathrm{~Gb} / \mathrm{s}$, or $2.488-2.67 \mathrm{~Gb} / \mathrm{s}$ for signals to be routed transparently.

The device contains a fully non-blocking STS-1 switching matrix surrounded by serial back plane interfaces that incorporate fully integrated clock recovery and synthesis, input equalization, output pre-emphasis, TFI-5/SONET/SDH compliant scrambling, framing, de-skew and alarms. Ports to drop and insert overhead bytes are included. A multi-mode CPU interface is used for device configuration and status monitoring.


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

## VITESSE

## 741 Calle Plano

Camarillo, CA 93012, USA
Tel: +1805.388.3700
Fax: +1 805.987.5896

