ETHERNET PRODUCTS

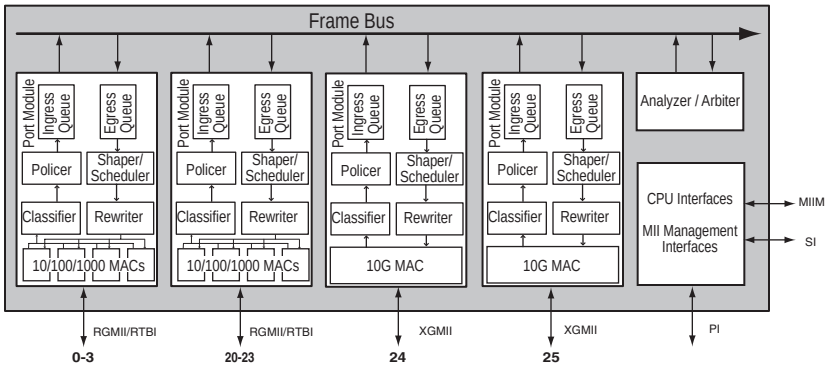
VSC7310-01

VITESSE®

24-Port 10/100/1000 and 2-Port 10 Gbps Wire-Speed Stackable Layer-2/Layer-3 Ethernet Switch



BLOCK DIAGRAM:



FEATURES:	BENEFITS:
24 x 1 Gigabit ports and 2 x 10 Gigabit Ethernet ports with non-blocking wire-speed performance	Enables the design of 24-port Layer-2/Layer-3 Gigabit Ethernet switch with 2 stackable 10 Gbps uplink ports or 48-port Layer-2/Layer-3 Gigabit switches
VstaX™ stacking for 10 Gbps operation	Provides wire-speed stacking capability for 48-port Gigabit Ethernet switch
816 kilobytes on-chip frame buffer	Eliminates the need for external buffer memory while maintaining high-peak load performance
Per-port configurable CPU-based learning	Provides great control and flexibility for address learning
Class-of-Service, link aggregation, and port mirroring across stack link	Provides virtual single chip solution for high density stackable switching system
Per-port configurable Q-in-Q multiple VLAN tags, as well as MPLS label switching and priority mapping	Enables customer to aggregate traffic in Metropolitan Area Network (MAN) with Q-in-Q or MPLS labels
Advanced security capabilities for per-port based versatile snooping and advanced storm control	Provides versatile snooping capability: BPDU, GARP, ARP, IPMC, IGMP, TCP/UDP, BOOTP, DHCP. Provides MC and BC storm control, as well as flooding control
DSCP remarking for both IPv4 and IPv6	Enables LAN edge products to generate standard priority that can be used in the core network
Per-port data-rate policer and shaper/scheduler with a granularity of 156 kbps	Enhances the switch traffic management capability with fine granularity
16 k MAC addresses and 4 k VLAN support	Stores a large amount of stations at wire speed in the on-chip MAC table, ensuring optimal network performance
8 k IPv4 unicast addresses with longest prefix match and 6 k IPv4 multicast address support	Provides large tables for both Layer-3 unicast and multicast operations, ensuring optimal network scalability
Jumbo frame support	Provides the support of frame sizes up to 10 kilobytes (Jumbo frames)
Multiple protocol support: IEEE Std 802.1D™, IEEE Std 802.1w™, IEEE Std 802.1s™ and IEEE Std 802.1X™	Supports complex network topologies with fast failure recovery and access control
Provides extensive statistics for SNMP MIBs, RMON and Layer 3, and Layer-3 SMON	Provides customer with complete management features for both Layer-2 and Layer-3 operation

APPLICATIONS:

- 24-port wire-speed stackable Layer-2/Layer-3 switch/router system
- 48-port single box Layer-2/Layer-3 switch/router system

VPPD-01328
Revision 1.1

VSC7310-01

24-Port 10/100/1000 and 2-Port 10 Gbps Wire-Speed Stackable Layer-2/Layer-3 Ethernet Switch

GENERAL DESCRIPTION:



Gatwick-Ie™ is a highly integrated, single-chip Ethernet switch/router with 24 × 1 Gbps and 2 × 10 Gbps non-blocking ports. Gatwick-Ie delivers high performance with easy migration paths and comprehensive system solutions that enable ultra-short time-to-market and market leading system cost.

A Vitesse Switch Family Member

With its 24 tri-speed ports and 2 × 10 Gbps ports, Gatwick-Ie is specifically targeted at desktop or workgroup switch applications. Gatwick-Ie is well suited for designing 48-port Gigabit Ethernet switch systems by using two devices.

Being a member of the switch family provides a number of unique advantages when designing with the device, including very high software compatibility between the family members. As a result, software written for Gatwick-Ie can easily be adapted and used with other switch configurations in the family, and vice-versa.

Additionally, building a product family is easy when designing with Vitesse switches. Migrating designs to other port counts or future technology can be managed with a minimum of effort and time.

The highly integrated switches require no external memory at all, and the use of Reduced Mode interfaces (RGMII) simplifies PCB layout to reduce time and cost. Further trimming down system cost is the persistently low-power dissipation of the family.

The switches provide for high performance designs with their non-blocking, wire-speed performance, which includes wire-speed MAC address learning and the wire-speed routing performance of Gatwick-Ie. The introduction of VStaX™, Vitesse proprietary stacking architecture, enables collaboration and scalability.

Designing both unmanaged and managed solutions is straightforward. The devices offer both serial and parallel CPU interfaces, as well as supporting a host of management protocols such as GxRP, SNMP, IGMP Snooping, RIP v1 and v2, OSPF, and three flavors of Spanning Tree: Standard STP, Multiple STP, and Rapid STP.

Gaining control with networks operated by the Vitesse switches is simple; advanced Layer 2 through Layer 4 classification, plus shaping/scheduling and policing functionality, along with port authentication support, provide flexible QoS operation. This is backed up by link aggregation and VLAN support, enabling advanced techniques such as 802.1Q-in-802.1Q to be deployed. Additionally, OAM is supported for designing switch products for Ethernet in the First Mile (EFM).

Designing with a member of the Vitesse switch family means designing with the whole Vitesse solution:

The outstanding Vitesse web-managed switch software system, which runs on a low-cost CPU, is provided. This is in addition to the smart-managed software system, which is also included. For software development, our full platform and OS-independent switch API is supplied.

Accompanying the software systems are the Vitesse Switch Reference Systems. These are production-ready hardware designs that also serve as evaluation platforms for our switches.

The Vitesse Solution is supplied with a comprehensive collateral package, which includes software source code, full documentation, and an in-depth qualification report for easy pre-evaluation.

SPECIFICATIONS:

- 125 MHz and 156.25 MHz operating clocks
- 1.2 V core power supply
- 2.5 V and 3.3 V interface power supply

Trademarks ™
Vitesse, ASIC-Friendly, FibreTimer, TimeStream, Snoop Loop, Super FEC, FOCUSConnect, Meigs-II, Meigs-IIe, Lansing, Campbell-I, Barrington, PaceMaker, HOVCAT48, HOVCAT48e, HOVCAT192, HOVCAT192e, Micro PHY, FOCUS32, FOCUS16, IQ2200, NexSAS, VersaCAT, GigaStream, HawX, SparX, StaX, VstaX, SimpliPHY,VeriPHY, ActiPHY, XFP PRO, SFP PRO, Smart-LINK, OctalMAC, EQ Technology are trademarks in the United States and/or other jurisdictions of Vitesse Semiconductor Corporation. All other trademarks or registered trademarks mentioned herein are the property of their respective holders.

Copyright © 2005, 2007
Vitesse Semiconductor Corporation ("Vitesse") retains the right to make changes to its products or specifications to improve performance, reliability or manufacturability. All information in this document, including descriptions of features, functions, performance, technical specifications and availability, is subject to change without notice at any time. While the information furnished herein is held to be accurate and reliable, no responsibility will be assumed by Vitesse for its use. Furthermore, the information contained herein does not convey to the purchaser of microelectronic devices any license under the patent right of any manufacturer.

741 Calle Plano
Camarillo, CA 93012, USA
Tel: +1 805.388.3700
Fax: +1 805.987.5896
www.vitesse.com
sales@vitesse.com