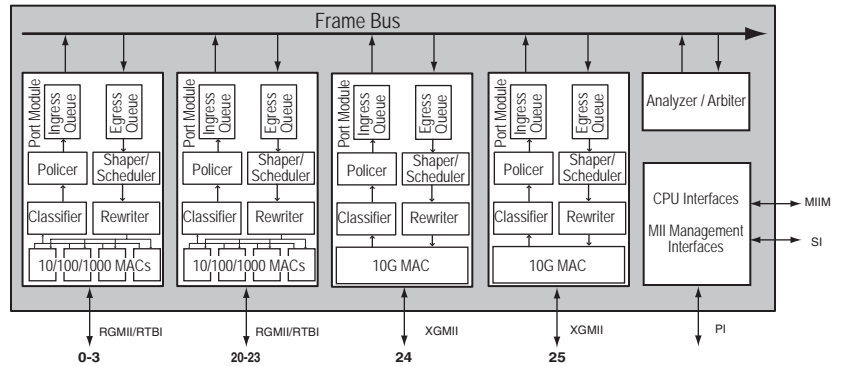


VSC7310-01

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



BLOCK DIAGRAM:



FEATURES :

- ▶ 24 x 1 Gigabit ports and 2 x 10 Gigabit Ethernet ports with non-blocking wire-speed performance
- ▶ VstaX™ stacking for 10 Gbps operation
- ▶ 816 kilobytes on-chip frame buffer
- ▶ Per-port configurable CPU-based learning
- ▶ Class-of-Service, link aggregation, and port mirroring across stack link
- ▶ Per-port configurable Q-in-Q multiple VLAN tags, as well as MPLS label switching and priority mapping
- ▶ Advanced security capabilities for per-port based versatile snooping and advanced storm control
- ▶ DSCP remarking for both IPv4 and IPv6
- ▶ Per-port data-rate policer and shaper/scheduler with a granularity of 156 kbps
- ▶ 16 k MAC addresses and 4 k VLAN support
- ▶ 8 k IPv4 unicast addresses with longest prefix match and 6 k IPv4 multicast address support
- ▶ Jumbo frame support
- ▶ Multiple protocol support: IEEE Std 802.1D™, IEEE Std 802.1w™, IEEE Std 802.1s™ and IEEE Std 802.1X™
- ▶ Provides extensive statistics for SNMP MIBs, RMON and Layer 3, and Layer-3 SMON

BENEFITS :

- ▶ 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
- ▶ Provides wire-speed stacking capability for 48-port Gigabit Ethernet switch
- ▶ Eliminates the need for external buffer memory while maintaining high-peak load performance
- ▶ Provides great control and flexibility for address learning
- ▶ Provides virtual single chip solution for high density stackable switching system
- ▶ Enables customer to aggregate traffic in Metropolitan Area Network (MAN) with Q-in-Q or MPLS labels
- ▶ Provides versatile snooping capability: BPDU, GARP, ARP, IPMC, IGMP, TCP/UDP, BOOTP, DHCP. Provides MC and BC storm control, as well as flooding control
- ▶ Enables LAN edge products to generate standard priority that can be used in the core network
- ▶ Enhances the switch traffic management capability with fine granularity
- ▶ Stores a large amount of stations at wire speed in the on-chip MAC table, ensuring optimal network performance
- ▶ Provides large tables for both Layer-3 unicast and multicast operations, ensuring optimal network scalability
- ▶ Provides the support of frame sizes up to 10 kilobytes (Jumbo frames)
- ▶ Supports complex network topologies with fast failure recovery and access control
- ▶ 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

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

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