

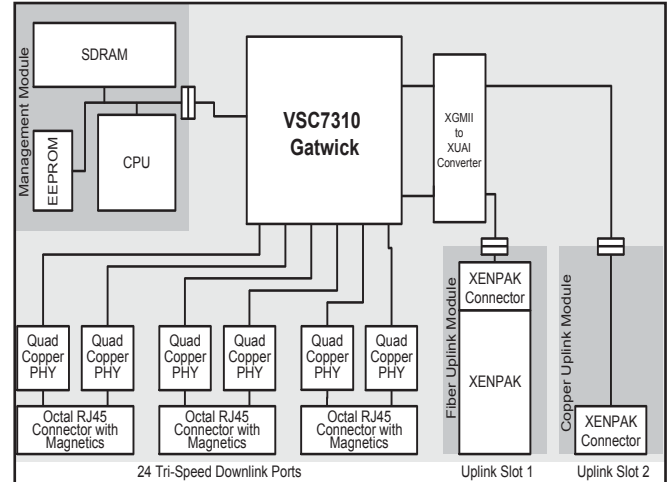
VSC7310

VITESSE

Gatwick™ – 24x1G + 2x10G Layer 2/3 Ethernet Switch-on-a-Chip



TRI-SPEED DESKTOP SWITCH:



FEATURES:

- ▶ 24 Gigabit Ethernet and 2x 10-Gigabit Ethernet Ports with Non-blocking Wire-speed Performance
- ▶ Tri-speed (10/100/1000 Mb/s) Operation via RGMII and RTBI Interfaces, 10G Operation via XGMII Interfaces
- ▶ 816 KB On-chip Frame Buffer
- ▶ 32-bit CPU Interface, and 4-wire Serial CPU Interface
- ▶ Jumbo Frame Support
- ▶ Programmable Classifier for QoS (Layer 2-4), Including **IEEE Std 802.1p™**
- ▶ 8K MAC Addresses and 4K VLANs (**IEEE Std 802.1Q™**)
- ▶ 8K IPv4 Addresses with Prefix Search Facility
- ▶ Full Duplex Flow Control (**IEEE Std 802.3x™**)
- ▶ Multicast and Broadcast Storm Control
- ▶ Flexible Link Aggregation Compliant to **IEEE Std 802.3ad™**
- ▶ Multiple Protocol Support: **IEEE Std 802.1D™**, **IEEE Std 802.1W™**, **IEEE Std 802.1S™**, **IEEE Std 802.1X™**, **GxRP**, etc.

BENEFITS:

- ▶ Ensures Maximum Data Throughput on Even Highly Loaded Networks
- ▶ Simplifies PCB Layout Significantly by Utilizing Reduced Mode Interface Standards for 10/100/1000 Speeds
- ▶ Eliminates the Need for External Buffer Memory While Maintaining High Peak Load Performance
- ▶ Enables Advanced Layer 3 Operation and Management Using Run-time Protocols, in Addition to Low Cost Layer 2 Operation
- ▶ Connects Effortlessly to Networks, Hosts, and Controllers that Utilize up to 12k Sized Jumbo Frames
- ▶ Optimizes Network Performance to Support any Digital Stream, from Internet Browsing to VoIP and Video
- ▶ Stores a Large Amount of Stations at Wire Speed in the On-chip MAC Table, Ensuring Optimal Network Performance
- ▶ Provides Ability for Wire-speed Routing with On-chip ARP Table
- ▶ Ensures Loss-less Data Transmission
- ▶ Secures the Network from Congestion by Unwanted Loops
- ▶ Provides Flexible Aggregation and Trunking Possibilities
- ▶ Supports Complex Network Topologies with Fast Failure Recovery, Access Control, and Advanced Management

APPLICATIONS:

- ▶ 24-port Gigabit L2/3 Workgroup Switch with Two 10G Uplinks
- ▶ 48-port Gigabit L2/3 Workgroup Switch

Enterprise

Access

Metro

Core

Gatwick™ – 24x1G + 2x10G Layer 2/3 Ethernet Switch-on-a-Chip

GENERAL DESCRIPTION:



Gatwick™ is a highly integrated, single-chip Ethernet switch/router with 24x 1G and 2x 10G non-blocking ports. As part of Vitesse's London Family Of Switches, Gatwick 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

Gatwick is a part of the Vitesse London Family of Switches. With its 24 tri-speed ports and 2x10G ports, it is specifically targeted at desktop/workgroup switch applications. Gatwick is well suited for designing 48-port gigabit switch systems by utilizing two chips.

Being a member of the switch family provides a number of unique advantages when designing with the chip, including very high software compatibility between members. Thus, software written for Gatwick 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 is achievable with minimum effort and time.

The Vitesse London Switch Family

Gatwick, as part of the Vitesse London Family Of Switches, shares the unique traits of the family.

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 Gatwick's wire-speed routing performance.

SPECIFICATIONS:

- ▶ 125 MHz and 156.25 MHz Operating Clocks
- ▶ 1.2 V Core Power Supply
- ▶ 2.5 and 3.3 V Interface Power Supply
- ▶ 1517-ball BGA Package

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

Designing both unmanaged and managed solutions is straightforward. The chips offer both serial and parallel CPU interfaces, and support 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 2-4 classification, plus shaping 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).

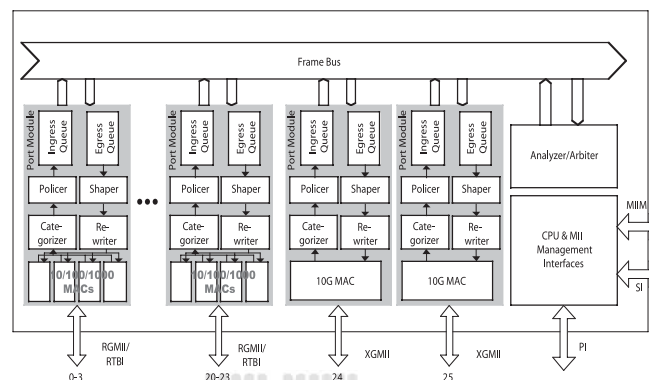
Designing with Vitesse London Family Of Switches means designing with the whole Vitesse Solution:

The outstanding Vitesse web managed switch software system that runs on a low cost CPU, is provided. This is in addition to the smart managed software system, which is also included. Furthermore, LVL7's FASTPATH stack is integrated for compatibility with Gatwick providing full management capability, and is available as well. For homegrown 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.

BLOCK DIAGRAM:



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