

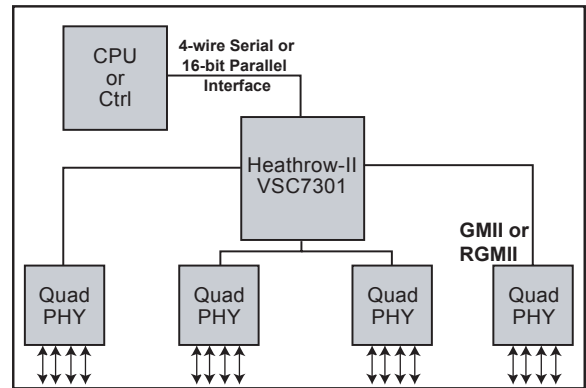
# VSC7301

VITESSE

## Heathrow-II™ - 16-port Gigabit Ethernet Switch-on-a-Chip



### TRI-SPEED DESKTOP SWITCH:



#### FEATURES:

- ▶ 16 Gigabit Ethernet Ports with Non-blocking Wire-speed Performance
- ▶ Tri-speed (10/100/1000 Mb/s) Operation via GMII, TBI, RGMII or RTBI Interfaces, and Optionally MII for 10/100 Operation
- ▶ 272 KB On-chip Frame Buffer
- ▶ 16-bit CPU Interface, and 4-wire Serial CPU Interface
- ▶ Programmable Classifier for QoS (Layer 2-4), Including **IEEE Std 802.1p™**
- ▶ 4K MAC Addresses and 4K VLANs (**IEEE Std 802.1Q™**)
- ▶ Full Duplex Flow Control (**IEEE Std 802.3x™**)
- ▶ Flexible Link Aggregation Compliant to **IEEE Std 802.3ad™**
- ▶ Spanning Tree Protocol Support (**IEEE Std 802.1D™**) Rapid Spanning Tree (**IEEE Std 802.1W™**)
- ▶ GARP, GVRP, GMRP, and SNMP Support
- ▶ Port Based Access Control (**IEEE Std 802.1X™**)
- ▶ OAM Support (**IEEE Std 802.3ah™**)

#### BENEFITS:

- ▶ Ensures Maximum Data Throughput on Even Highly Loaded Networks
- ▶ Provides a Large Choice of PHY and SerDes Devices by Offering Five Interface Modes, Including the Cost Effective Reduced Mode
- ▶ Eliminates the Need for External Buffer Memory While Maintaining High Peak Load Performance
- ▶ Enables Advanced Switch Management Using Run-time Protocols, in Addition to Low Cost Unmanaged and Web Managed Operation
- ▶ Optimizes Network Performance to Support any Digital Stream, from Internet Browsing to VoIP and Video
- ▶ Enables the Advanced Security and Topology Features of VLANs, Such as 802.1Q-in-802.1Q, by Supporting the Full 4K VLAN Set
- ▶ Ensures Loss-less Data Transmission
- ▶ Delivers High Bandwidth Uplinking Abilities
- ▶ Supports Complex Network Topologies with Fast Failure Recovery, as well as Legacy Networks
- ▶ Provides for Easy Implementation of These Advanced Management Protocols
- ▶ Enables Additional Network Security and Database Controlled Network Access
- ▶ Heathrow-II-based Switch Products are Easily Designed for Ethernet in the First Mile (EFM)

#### APPLICATIONS:

- ▶ 16-Port Web Managed Tri-speed Desktop Switch
- ▶ 16-Port Unmanaged Tri-speed Desktop Switch
- ▶ 16-Port Smart Managed Tri-Speed Desktop Switch
- ▶ Control Plane Controller

## Heathrow-II™ - 16-port Gigabit Ethernet Switch-on-a-Chip

### GENERAL DESCRIPTION:



*Heathrow-II™ is a highly integrated, single-chip Ethernet switch with 16 non-blocking ports. High performance with easy migration paths and comprehensive System Solutions enabling ultra-short time-to-market and market leading system cost.*

### A Vitesse Switch Family Member

Heathrow-II is a part of the Vitesse London Family of Switches. With its 16 tri-speed ports, it is specifically targeted at desktop and small-medium business applications.

Being a member of the switch family provides a number of unique advantages when designing with the chip, including nearly 100% software compatibility between members. Thus, software written for Heathrow-II can easily be used with other switch configurations in the family, and vice-versa.

Additionally, building a product family is easy when designing with Vitesse switches. Upgrading designs to higher port counts, or migrating to other configurations or future technology is achievable with minimum effort and time.

### The Vitesse London Switch Family

Heathrow-II, 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 option 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.

### SPECIFICATIONS:

- ▶ 25 MHz LVTTTL Reference Clock
- ▶ 2.5 or 3.3 V Interface Power Supply
- ▶ 1.8 V Core Power Supply
- ▶ 680-pin TSBGA Package

The switches provide for high performance designs with their non-blocking, wire-speed performance, which includes wire-speed MAC address learning.

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, and up to two flavors of Spanning Tree Protocol. Heathrow-II supports standard STP, and Rapid STP.

Gaining control with networks operated by the Vitesse switches is simple; advanced Layer 2-4 classification 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 MAN.

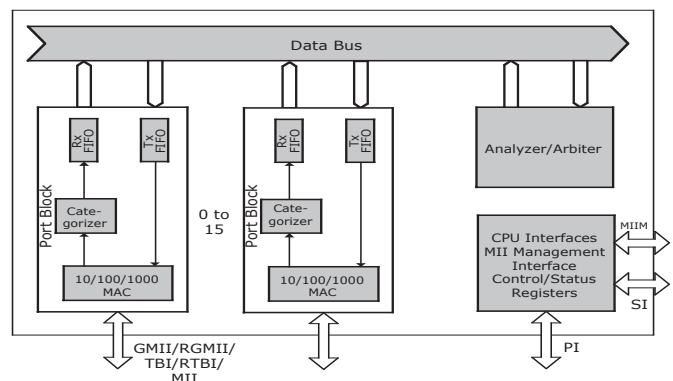
Designing with Vitesse London Family Of Switches means designing with the whole Vitesse Solution:

The outstanding Vitesse web managed switch software system that runs on a standard 8051 controller, is provided. This is in addition to the unmanaged and smart managed software systems for 8051, which are also included. For homegrown software development our full 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:



For more information on Vitesse products, visit the Vitesse web site at [www.vitesse.com](http://www.vitesse.com) or contact Vitesse Sales at (800) VITESSE or [sales@vitesse.com](mailto:sales@vitesse.com)

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