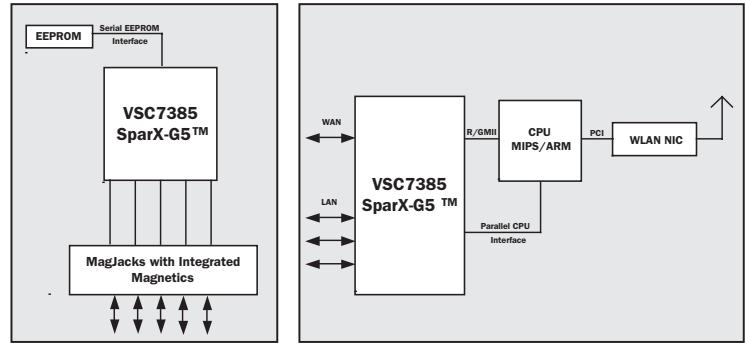# VSC7385

VITESSE

SparX-G5™ – 5-port Integrated Gigabit Ethernet Switch

5-PORT SMB SWITCH or BROADBAND ROUTER:

FEATURES:	BENEFITS:
▶ 5 Gigabit Ethernet Ports with Nonblocking Wire-speed Performance	▶ Ensures Maximum Data Throughput on even Highly Loaded Networks
▶ 5 Tri-speed (10/100/1000 Mbps) Copper Transceivers (IEEE 802.3ab™ Compliant) and 1 Tri-speed (RGMII/GMII) Interface	▶ Reduces the Need for any External PHY Components Thereby Significantly Reducing the Overall Systems Cost
▶ 96 KB On-chip Frame Buffer	▶ Eliminates the Need for External Buffer Memory While Maintaining High Peak Load Performance
▶ Selection Between On-chip 8051 CPU or Off-chip 8-bit CPU for Fully Managed Applications	▶ Enables Advanced Switch Management Using Run-time Protocols, in Addition to Low Cost Unmanaged and Web Managed Operation
▶ DSCP Remarking for Both IPv4 and IPv6 Frames	▶ Enables LAN Edge Products to Generate Standard Priority which can be used in the Core Network
▶ Jumbo Frame Support	▶ Connects Effortlessly to Networks, Hosts, and Controllers that Utilize up to 9.6K Sized Jumbo Frames
▶ Programmable Classifier for QoS, Including IEEE Std 802.1p™ and DSCP for IPv4 and IPv6, with 8 Classes of Service	▶ Optimizes Network Performance to Support any Digital Stream, from Internet Browsing to VoIP and Video
▶ 8K MAC Addresses and 4K VLANs (IEEE Std 802.1Q™)	▶ Stores a Large Amount of Stations at Wire Speed in the On-chip MAC Table, Ensuring Optimal Network Performance
▶ Flexible Link Aggregation Compliant to IEEE Std 802.3ad™	▶ Provides High Bandwidth Uplinking Abilities
▶ Integrated Oscillator Circuit	▶ Simplifies Design and Reduces Overall System Cost
▶ Full Duplex Flow Control (IEEE Std 802.3x™) and Half Duplex Back Pressure, Symmetric and Asymmetric	▶ Ensures Loss-less Data Transmission while Supporting Existing Legacy Ethernet Equipment
▶ Multicast and Broadcast Storm Control as well as Flooding Control	▶ Eliminates Unwanted Flooding of Ports and Thereby Increases Overall Network Performance
▶ VItesse VeriPHY™ Cable Diagnostics and SimpliPHY™ Magnetics Technology	▶ Enables Real Time Cable Diagnostics and Enables uses of Low Cost Magnetics with Only 4 or 8 Cores
▶ 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

APPLICATIONS:

▶ 5-port Unmanaged Gigabit Ethernet SMB/SOHO Switch

▶ 5-port Web Managed Gigabit Ethernet SMB/SOHO Switch

▶ 4-Port LAN switch and 1-Port WAN Broadband (DSL/WLAN) Router

VSC7385

SparX-G5™ – 5-port Integrated Gigabit Ethernet Switch

GENERAL DESCRIPTION:

VSC7385 SparX-G5™ is the most highly integrated, single-chip Gigabit Ethernet switch with 5 Integrated GbE Copper PHY ports. As part of Vitesse'sSparX™ Family of switches, SparX-G5 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

SparX-G5 is a part of the Vitesse SparX™ Family Of Unmanaged or Web-managed Switches and takes the family into a new generation of integration. With its 5 tri-speed Gigabit Ethernet copper ports, it is specifically targeted at SMB and SOHO unmanaged applications, and with its on-chip 8051 and Parallel CPU interface it enables Web-Managed and managed switch 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 SparX-G5 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 SparXTM Family Of Switches

VSC7385, as part of the Vitesse SparX Family Of Switches, shares the unique traits of the family.

The highly integrated switches require no external memory at all, and the integration of copper PHY as well as internal oscillator circuits 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.

Designing both unmanaged and web-managed solutions is straightforward. The chips offer both internal 8051 and serial and parallel CPU interfaces, and support a host of management protocols such as GxRP, SNMP, and three flavors of Spanning Tree: Standard STP, Multiple STP, and Rapid STP.

Controlling networks operated by the Vitesse switches is simple; advanced classification with IPv4 and IPv6 support, along with port DSCP remarking and 802.1x authentication support, provide flexible QoS operation. This is backed up by Layer 2-4 link aggregation and VLAN support, enabling managed switches to be deployed.

With its unique low power dissipation the VSC7385 enables fan less operation and thereby provides for higher system reliability and lower noise both to the benefit of the user.

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

The outstanding Vitesse web managed switch software system that runs on the on-chip 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 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:
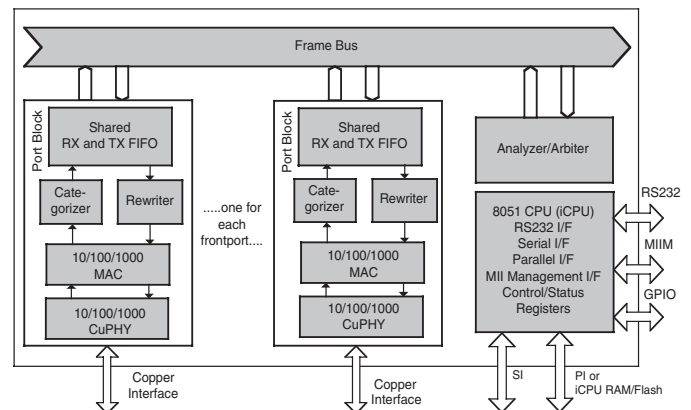
SPECIFICATIONS:

▸ 25 MHz LVTTL Reference Clock   ▸ 3.3 V Interface Power Supply

▸ 1.2 V Core Power Supply   ▸ BGA Package

VITESSE

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