VSC2800

VITESSE

VSC2800 OctalMAC Fast Ethernet Controller

IQ2000™ PLATFORM PRODUCTS:

IQ2000 Family
▸ VSC2100 - 4 FOCUS16s

▸ VSC2102 - 2 FOCUS16s & 2 Gigabit MACs

▸ VSC2132 - 2 FOCUS32s

Each NPU Features
▸ Four Integrated 200MHz, Fully Programmable, Multicontext Packet Processing Engines

▸ Flexible, High Bandwidth Interface Capability (DS-0 to OC-48)

Connectivity Family
▸ VSC2800 - Fast Ethernet Controller

▸ VSC2708 - FOCUS Connect Switch

Developers Workbench:
▸ Software Development Suite

▸ Hardware Development System

▸ Application Code Building Blocks

▸ Interface Models

▸ SoftNet Networking Software Library

Alliance Partners & Solutions
▸ Traffic Management

▸ Security Processors

▸ Policy Engines

▸ Switching Fabrics

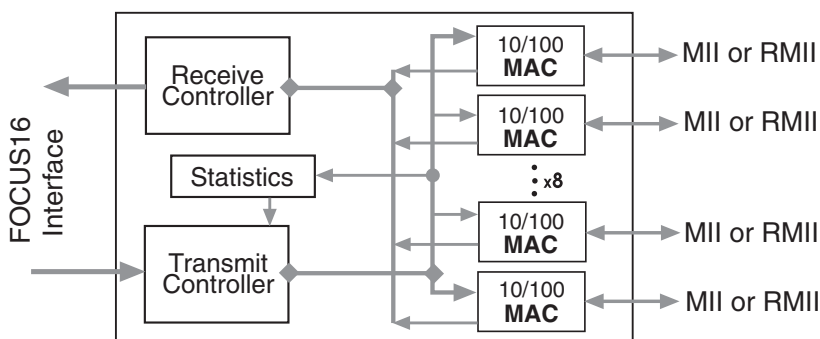▸ Optical Connectivity

▸ Network Software

▸ Consulting Services

FEATURES:

▸ Eight 10/100 Ethernet MAC Ports

▸ Communicates Via the FOCUS16 Interface - a Compact 80 MHz, 16-Bit Dual Unidirectional Interface

▸ Burst-Oriented Data Streaming

▸ Standard MII or RMII Connections - Port Selectable

▸ Statistics Gathering in Hardware

▸ Jumbo Packet Support

▸ Control, Statistics and Data Provided Over the FOCUS16 Interface

BENEFITS:

▸ Rapid Integration of Fast Ethernet in IQ2000™-based Systems

▸ Standards Compliance

▸ High Density/Low Power

BLOCK DIAGRAM:

VSC2800

VSC2800 OctalMAC Fast Ethernet Controller

GENERAL DESCRIPTION:

Seamless Integration with the IQ2000™ Family of NPUs

The VSC2800 OctalMAC is a single chip high-speed packet concentrator designed to communicate via the FOCUS16 Interface with Vitesse's IQ2000™ Architecture. The OctalMAC combines high performance packet transfer features, comprehensive packet-handling capabilities, and automated statistics gathering for network management support. The OctalMAC provides a cost effective solution with excellent performance when used in conjunction with Vitesse's IQ2000 family of network processors.

The integrated features of the OctalMAC offload the functions of the Network Processor while simplifying the design and lowering overall design costs. Vitesse's OctalMAC allows the network processor to concentrate on providing next generation services such as DiffServ and IPSec while delivering wire-rate performance. The OctalMAC also reduces host processing requirements by providing automated gathering of RMON and SNMP network management statistics.

FOCUS16

The FOCUS Interface is a high performance, point-to-point interface designed to efficiently transfer packet data between Vitesse's IQ2000 family of network processors and peripheral I/O interface devices or interconnect fabrics. In addition to data transfer, the FOCUS Interface supports in band access to statistics as well as command and status information.
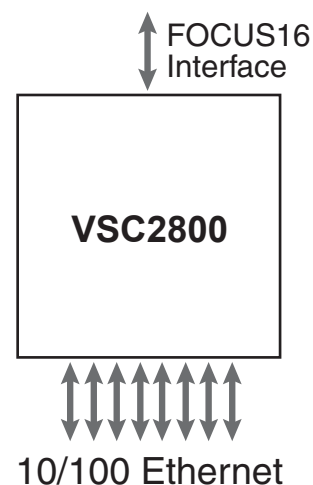
Functionality

The device incorporates eight internal 10/100 Ethernet Media Access Controllers (MACs), a single FOCUS16 Interface, and a MII management controller. Each MAC is dual speed and capable of half-duplex and full-duplex operation. Flow control is provided in the half-duplex mode with backpressure. In full-duplex mode, 802.3x frame-based flow control is supported. Each MAC is 802.3 compliant and supports maximum frame sizes up to 1536 bytes. The device also supports jumbo packets up to 64Kbytes.

The eight Ethernet MACs interface directly to commercially available PHY devices using either MII or RMII. The OctalMAC can be configured on a per port basis to support a mixture of MII and RMII PHY devices.

The OctalMAC includes automated statistics gathering on a per port basis for layer management, SNMP, and RMON support. The OctalMAC automatically counts the packet type, length, errors, and other packet characteristics for both transmit and receive. A total of 48 statistical counters per port are internally maintained for use by system software in support of the various Management Information Bases (MIBs) required by network systems.

Specifications:	
Interfaces (Port Selectable)	**FOCUS16 Interface**
• Eight 10/100 MII Ports or • Eight 10.100 RMII Ports	• 1.28 Gb/s Full Duplex bandwidth • Eight Data Channels and One Control Channel Per Interface • 36 Pin Interface
Support for IEEE Standards	**Support for Statistics Management**

• Compliant with 802.3 (Ethernet), 802.3μ, 802.3x
• Supports VLAN Based Standards:
  - 802.1d (MAC Bridges)
  - 802.1q (VLAN)
  - 802.3ac (Frame Extensions)
	• Supports 26 Receive Statistics Per Port
	• Supports 22 Transmit Statistics Per Port
	• Supports IETF RECs:
	  - 1573 (MIB-II Interfaces),
	  - 1643/1650 (Ether MIB Statistics),
	  - 1757 (RMON MIB)

Environmental	
• 2.5V Core, 3.3V I/O, 5V Tolerant • 0.6W (Max) • 208 Pin PQFP	• 0˚ - 70˚ Celsius Operating Temp
Applications:	

• High Port density Applications	• Stand-Alone or Modular Systems
	  - Intelligent Edge Devices
	  - Core Switches and Routers
	  - Packet/Voice Gateways
	  - L5 Web Switches

Ordering Information:	
Part Number	**Description**
VSC2800	Eight Port 10/100 Ethernet MAC

FOCUS16 Interface

VSC2800

10/100 Ethernet

Your Partner for Success.

For more information on Vitesse Products visit the Vitesse web site

at www.vitesse.com or contact Vitesse Sales at (800) VITESSE

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