Gigabit Ethernet Switch Port Controller

FEATURES

- Monolithic intelligent Gigabit Ethernet Switch Port Controller.
- Integrates an IEEE 802.3z-compatible Gigabit MAC.
- May be used alone or in combination with other devices to build 10/100 or Gigabit switches.
- Supports the Gigabit EXACT™ Bus Protocol for device interconnect.
- May be used alone or in combination with other device to build high density Gigabit switches.
- PM3390 EXACT Bus Switch Matrix allows non-blocking expansion up to 16 Gigabit ports.
- Layer 2 line rate address lookup capability for all Ethernet port configurations supported.
- Store-and-forward switching using output association input buffering for efficient memory use without Head Of Line (HOL) blocking.
- Supports up to 8,000 MAC addresses.
- 1022 multicast groups available. Bitmask per group defines membership.
- EXACT Bus is compatible with common serial devices for simple system stacking using coax or twinax cable.
- Support for IEEE 802.1D bridging and spanning tree algorithm in an external processor.
- Embedded SmartPath™ Processor supports value-added datapath operations.
- Two 32-bit memory interfaces for flexible combinations of SSRAM and EPROM allow cost optimization of different applications.
- Programmable packet pattern matchers for identification of ARP, RARP, ICMP, and other protocol or packet types.

MANAGEMENT

- System Interface provided in CMI to support standard SNMP software packages, or the porting of existing management software.
- Hardware statistics collection supports RMON-I (nine groups), Ethernet MIB, and SNMP agent functions.
- All statistics registers and data structures accessible through the CMI.
- Supports the implementation of Spanning Tree (IEEE 802.1D) by exchanging BPDU packets on all ports.

VLAN

- Up to 4094 IEEE 802.1Q VLAN tags with support for 4094 FIDs.
- Up to 1022 active VLANs.
- Ingress filtering of packets.
- Shared and independent learning.
- GARP, GVRP, GMRP packet identification and forwarding to external CPU for processing.
- Tag insertion and removal for unicast and multicast packets.

PRIORITY

- Class of service supported via IEEE 802.1D (formerly 802.1p) with two levels of priority.

VALUE ADD

- Control and Management Interface provides standard interface for non real-time access to data structures (such as SNMP and RMON applications).
- Customer product differentiation is enabled by applications using CMI calls to leverage EXACT system resources.

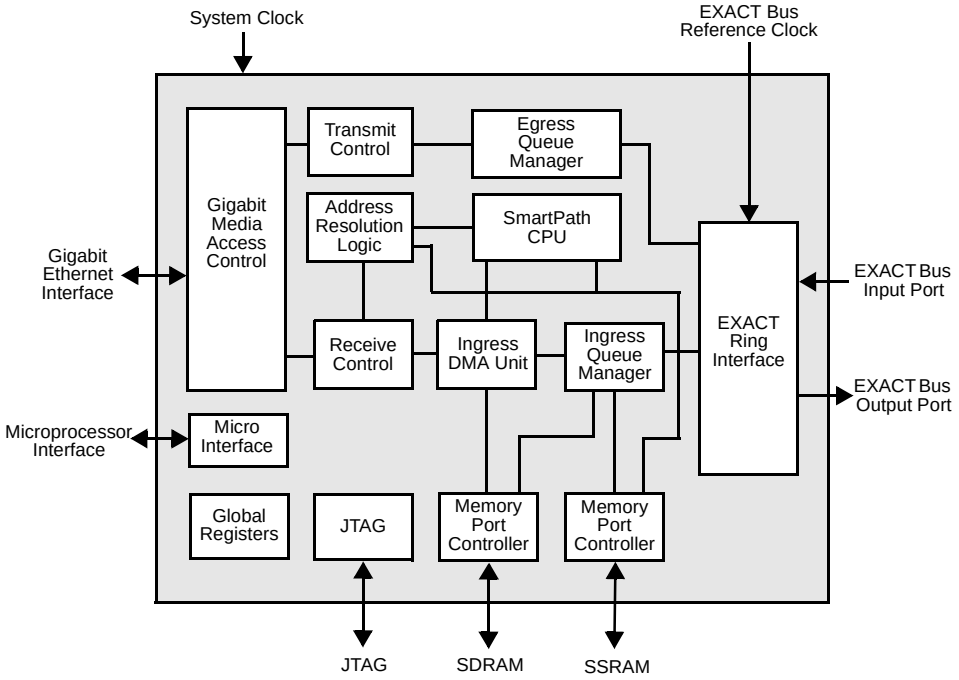
COMPATIBILITY

- Interworks with the PM3370 Octal 10/100 Switch Port Controller.
- Interworks with the PM3390 Eight Port EXACT Bus Switch Matrix.

PACKAGING

- Provides a standard five signal P1149.1 JTAG test port for boundary scan board test purposes.
- Implemented in low power 3.3 V, CMOS technology with 5 V tolerant MII interface.
- Available in a 352-pin Ball Grid Array (BGA) package.

BLOCK DIAGRAM



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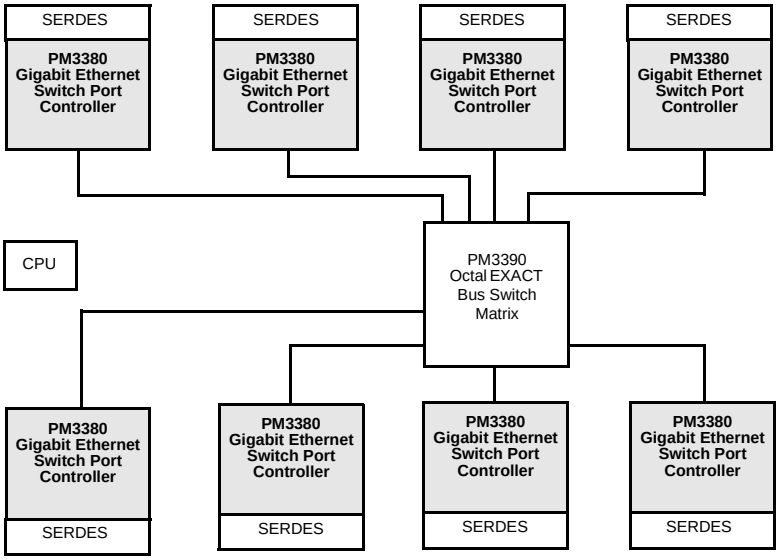
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APPLICATIONS

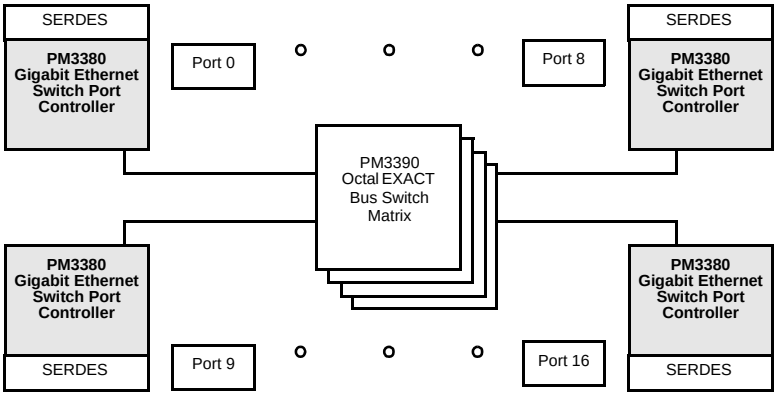
- Gigabit Ethernet Switches.
- Ethernet Switching Systems Capable of 10, 100, and 1000 Mbit/s Operation When Used with PM3370 and PM3390.
- Gigabit Test Equipment.

TYPICAL APPLICATIONS

8 × 1000 SWITCH USING PM3390



16 × 1000 PM3380 SWITCH USING FOUR PM3390 DEVICES IN EXPANSION MODE



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All product documentation is available on our web site at: http://www.pmc-sierra.com
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