

SIX-PORT MANAGED 10/100 ROBOswitch™

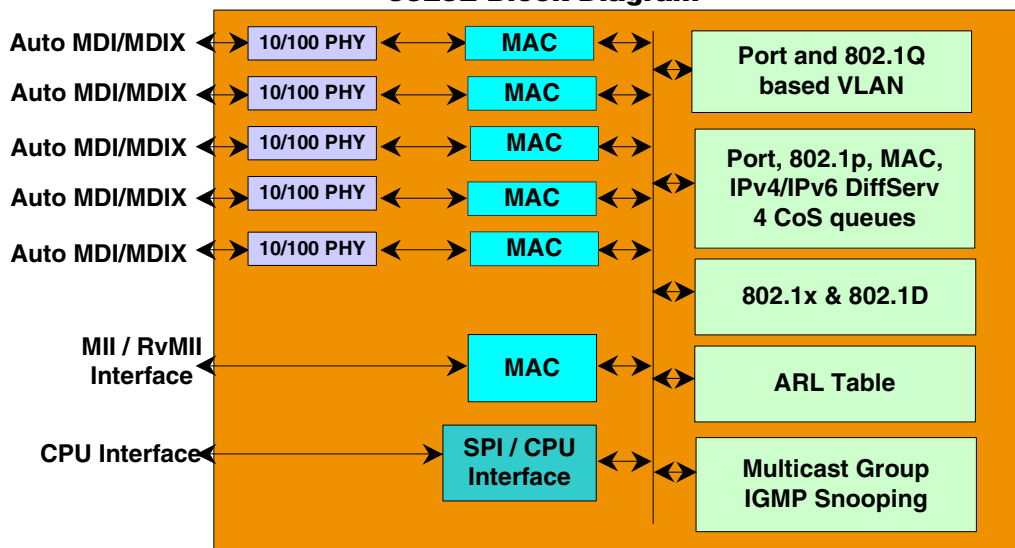
FEATURES

- **High level of integration:**
 - Five transceivers (802.3u compliant)
 - Six Media Access Controllers (MACs) (802.3x compliant)
 - 1-Mbit packet buffer and 512-Kbit control memory
 - Non-blocking switching
- 802.1p QoS packet classification with four priority queues
- Port-based and 802.1Q-based VLAN with 16 entries
- 802.1d Spanning Tree
- Supports 802.1x EAPOL higher layer protocol
- Programmable storm control
- 1K MAC addresses with automatic learning and aging
- Programmable per port flow control and back-pressure
- MII or reversed MII
- MDC/MDIO and SPI interfaces
- WAN port and protected port support
- Port mirroring and IGMP layer 3 snooping
- Internal oscillator simplifies design and reduces cost
- 3.3V and 2.5V, power consumption is less than 1.0W
- BCM5325E/BCM5325U pin-to-pin compatible with BCM5325M/BCM5325 respectively
- 128-pin MQFP package

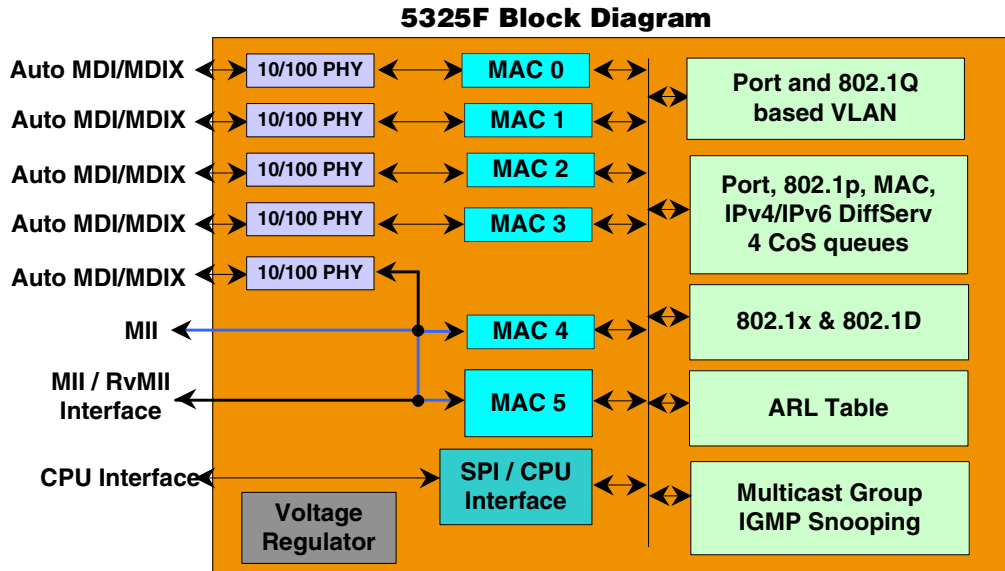
SUMMARY OF BENEFITS

- Enables a new generation of affordable five-port 10/100 switches with highest integration of enhanced L2+ features
- Utilizes field-proven industry-standard 10BASE-T/100BASE-TX (100BASE-FX-compatible) Fast Ethernet transceivers—lowering overall system interoperability and reliability risks
- 802.1Q based VLAN and flexible priority queues mapped to selectable protocols such as 802.1p, DiffServ, and COS, enables the switch to be designed into a wide variety of applications for multimedia and data traffic
- Supports 802.1x for network security
- WAN port allows one of the ports to be specified for WAN connectivity, in which case all traffic coming to the WAN port is forwarded to the CPU
- Programmable per port storm provides better traffic management
- MII port supports additional 100TX/FX
- Optional reversed MII port connects directly to an 802.3 compliant MAC
- Access to all internal registers through SPI or MDC/MDIO interfaces
- Switch management features: Port statistic counters

5325E Block Diagram



OVERVIEW



The **BCM5325E** is the feature-enhanced and pin-compatible six-port switch to the industry leader BCM5325M ROBOswitch™. This device combines all the functions of a high-speed switch system, including packet buffers, PHY transceivers, MACs, address management, and a non-blocking switch fabric, into a single 0.18- μ m CMOS device. The **BCM5325E** complies with the IEEE 802.3, 802.3u, and 802.3x specifications, including the MAC control PAUSE frame and auto-negotiation subsections, providing compatibility with all industry-standard Ethernet and Fast Ethernet devices.

The **BCM5325E** contains five full-duplex 10BASE-T/100BASE-TX Fast Ethernet transceivers, each of which performs all of the physical layer interface functions for 10BASE-T Ethernet on Category 3, 4, or 5 Unshielded Twisted Pair (UTP) cable and 100BASE-TX Fast Ethernet on Category 5 UTP cable.

The **BCM5325E** comes in the three options of **BCM5325E**, **BCM5325F**, and **BCM5325U**. The **BCM5325E** and **BCM5325U** are

pin-compatible to the industry five-port FE leader BCM5325M and BCM5325, respectively. The BCM5325F includes the PHY-MUX option where the fifth 10/100 PHY can be configured to connect to MAC 4, MAC 5 internally or external MAC via MII. This allows the flexible use of the fifth PHY for special application, or to be used with an external WAN MII interface, ideal for broadband and SOHO gateway/router applications.

In addition to the robust 10/100 Ethernet DigiPHY, the five-port switch in the **BCM5325E** includes rich feature sets such as four priority queues supporting port, MAC, 802.1p, DiffServ-based Class of Service suitable for voice over IP, video, and data traffic for multimedia applications.

In addition, **BCM5325E** supports other advanced L2 managed features including port-based and 802.1Q VLAN, 802.1x EAPOL protocol filtering, IGMP snooping, and mirroring.

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