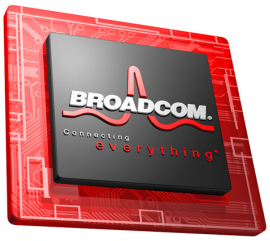
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BCM5382M PRODUCT Brief



8FE+2GE PORT SWITCH WITH ON-CHIP PACKET BUFFER

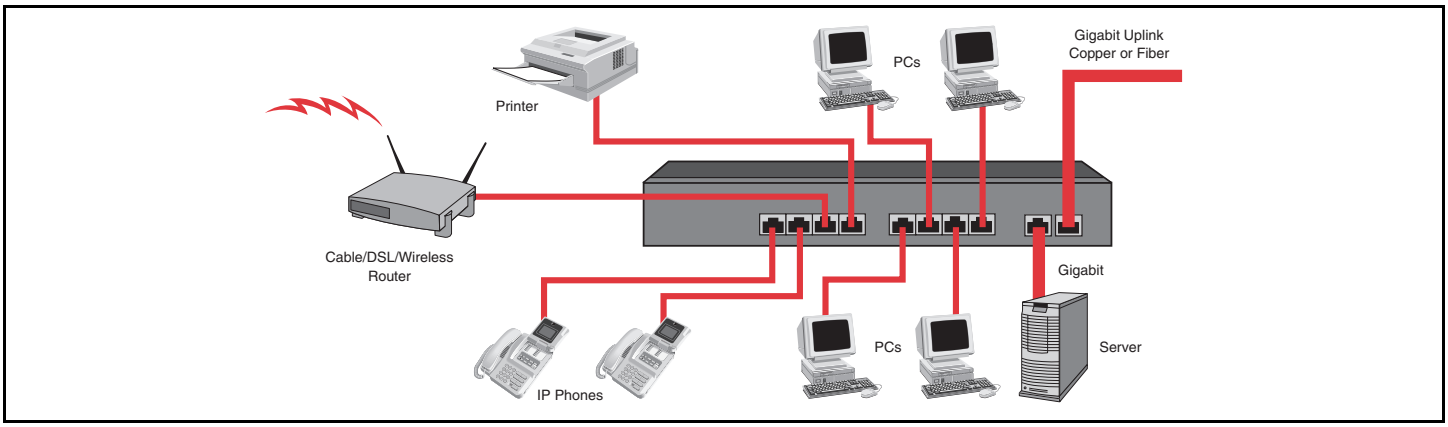
FEATURES

- **The highest level of silicon integration achieved for an eight+two-port, 10/100/1000 Ethernet switch device**
- **Sixth-generation switch on a chip**
- **The BCM5382M integrates:**
  - Eight 10/100 transceivers (802.3u compliant)
  - Nine 10/100 media access controllers (802.x compliant)
  - Two 10/100/1000 integrated switch controllers
  - One integrated 10/100/1000BASE-T/TX transceiver (802.3ab compliant)
  - 256-KB packet buffer and 128-KB control memory
  - Nonblocking switch fabric
  - One integrated 1G SerDes module
- **Nonblocking 8 Fast Ethernet + 2 Gigabit Ethernet fully integrated switch fabric**
- **Packet classification 802.1p QoS priority queues**
- **VLAN 4K 802.1Q or port-based supported**
- **Reverse MII, MII, or 7-wire interface supports an additional 100BASE-FX or 100BASE-TX connection or uplink**
- **Supports up to 4,000 unicast MAC addresses**
- **Flow control: full-duplex (802.3x) and half-duplex options supported**
- **Supports automatic address learning and aging**
- **Internal oscillator circuit**
- **Low power 0.13-µm 1.2V CMOS core: 3.5 W Pd.**
- **324-pin FBGA package (small form factor 19 mm ∞ 19 mm)**
- **Management features:**
  - Low-cost MIB Autocast™ function
  - Hardware support for simple network management protocol (SNMP), remote network monitoring (RMON), and spanning tree

SUMMARY OF BENEFITS

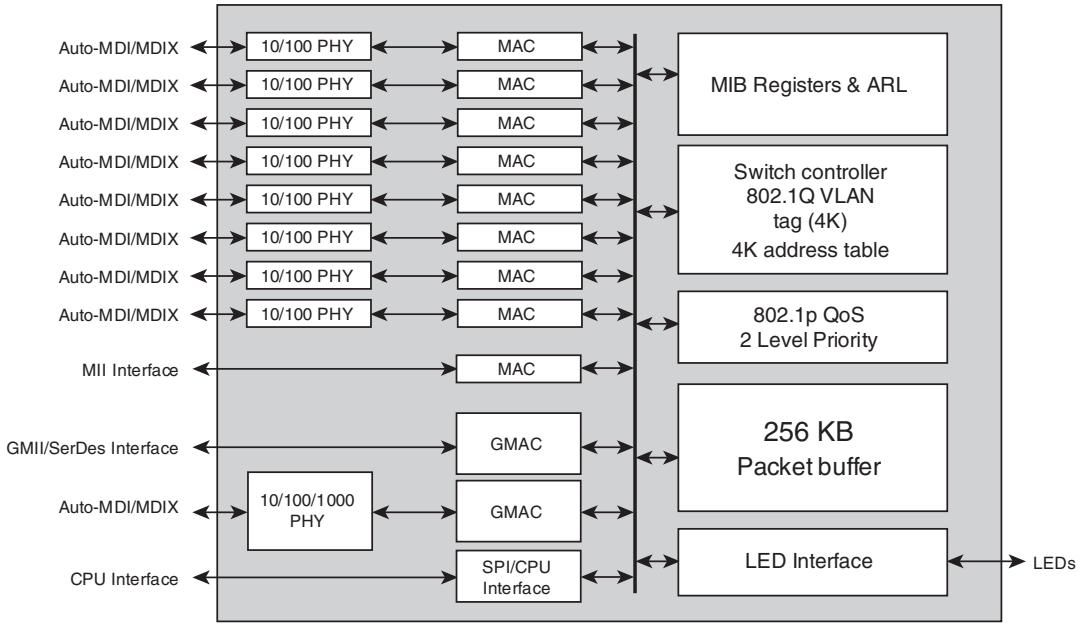
- **Enables a new generation of lower cost switches with gigabit connectivity and much smaller form factors**
- **Uses field-proven industry-standard 10BASE-T /100BASE-TX Fast Ethernet/100BASE-T transceivers—lowers overall system interoperability and reliability risks**
- **Flexible interfaces support a wider variety of application needs—SerDes, fiber for long distances or additional 10/100/1000TX ports**
- **Provides the most cost-effective gigabit connectivity to the desktop for all remote, branch, and home office needs**
- **802.1Q tag VLAN, trunking, and 802.1p priority enables the switch to be designed into a wide variety of applications from unmanaged to smart switches**
- **CPUs are not required to initialize and run in cost-sensitive unmanaged applications, providing true Plug and Play connectivity**
- **Internal oscillator circuit simplifies design and reduces overall system cost**
- **Ability to gather and support basic management statistics with only a very low-cost microcontroller**
- **Low-cost management using the on-chip MIB registers allows the collection and transmission of statistics for each port and allows an upward migration path for corporate users**
- **On-chip HP auto-MDI/MDIX on all transceivers automatically detects and corrects for crossover cables and allows direct switch-to-switch connection**

High-Performance 8+2 port ROBOswitch™ for SOHO and Subnetwork Applications



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OVERVIEW



The Broadcom BCM5382M device is a highly integrated solution. It combines all the functions of a high-speed switch system, including packet buffer, PHY transceivers, media access controllers, address management, and a nonblocking switch fabric into a single 0.13-µm CMOS device. It complies with IEEE 802.3, 802.3u, 802.3ab 802.3x specifications, including the MAC control, pause frame, and auto-negotiation subsections, providing compatibility with all industry-standard Ethernet, Fast Ethernet, and Gigabit Ethernet devices.

This device contains eight full-duplex 10BASE-T/100BASE-TX Fast Ethernet transceivers and one 10/100/1000BASE-T transceiver, 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.

SPI or EEPROM interfaces provide easy programming of the 802.1p QoS. This allows switch traffic to be given different classes of priority or service—for example, voice traffic for IP phone applications, video traffic for multimedia applications, or data traffic for e-mail applications. Up to 4,000 VLANs can be set up via the SPI port.

Even though this device is primarily targeted for the cost-sensitive unmanaged market, very low-cost management can also be provided using the proprietary MIB Autocast function. MIB Autocast encapsulates the on-chip MIB statistics and sends them out automatically on a predefined port (or ports) at programmed intervals. This feature is part of the 8051 micro smart switch option for basic smart management via a console port.

As part of the Smart Switch mode, the BCM5382M periodically transmits Ethernet frames on a designated port. The frames can be intercepted by an external management probe or a dedicated network management application, resident on any node within the network. In addition, the ROBOSmartSwitch™ software provides system and port configuration, VLAN and QoS setup, and IGMP snooping.

The BCM5382M designed to work in Unmanaged Standalone or Managed mode via the on-chip MII interface to an ARM7 CPU. This provides support for the Ethernet-like MIB, bridge MIB, layer 2 management functions, private MIB, MIB II, and 4 groups of RMON. ROBO-managed Linux® software also supports RTOS, BSP and loader, SNMP agent, console, WEB UI, spanning tree, Tenet UI, port mirroring, trunking and easy programming of VLAN groups, QoS priorities, and IGMP snooping.

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