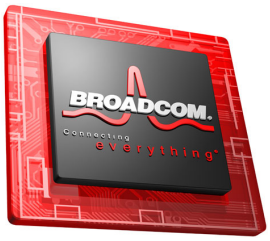
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BCM5348M PRODUCT Brief



SINGLE-CHIP L2+ MANAGED SWITCH WITH 48 10/100 PORTS + FOUR GbE PORTS

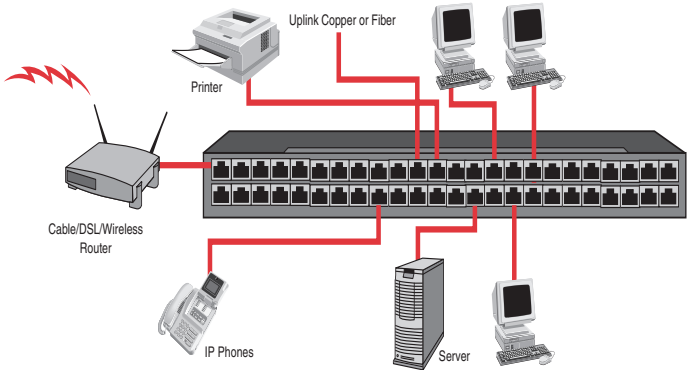
FEATURES

- Eighth-generation ROBO L2+ 48 FE + four SGMII interfaces
- Twenty-four fully integrated 10/100 PHYs
- Twenty-four ports providing external PHY connectivity via SSSMII
- Compact Field Processor (CFP) based on TCAM technology
- Clustering with single IP management
- Double Tagging supports traffic aggregation
- QoS packet classification supports four priority queues
- Port-based VLAN and 802.1Q VLAN with 4K entries
- Spanning Tree (IEEE 802.1D/1s/1w)
- MAC-based trunking with automatic link failover
- Port mirroring
- IGMP snooping Layer2/3
- Programmable Broadcast, Multicast, and Unknown Unicast storm control
- Per port bandwidth/rate control
- 8K MAC addresses with automatic learning and aging
- Protected port
- Multicast address table for 256 entries
- RvMII, MII, or GMII additional port for management
- EEPROM, SPI, MDC/MDIO, or EB Bus Interfaces
- Hardware and software reset
- Provides per port 70+ MIB counters with MIB Snapshot capability
- Jumbo frame support up to 2048 bytes
- JTAG
- Embedded 1.8V and 1.2V regulators, typical power consumption: 5W
- 676-pin PBGA package

SUMMARY OF BENEFITS

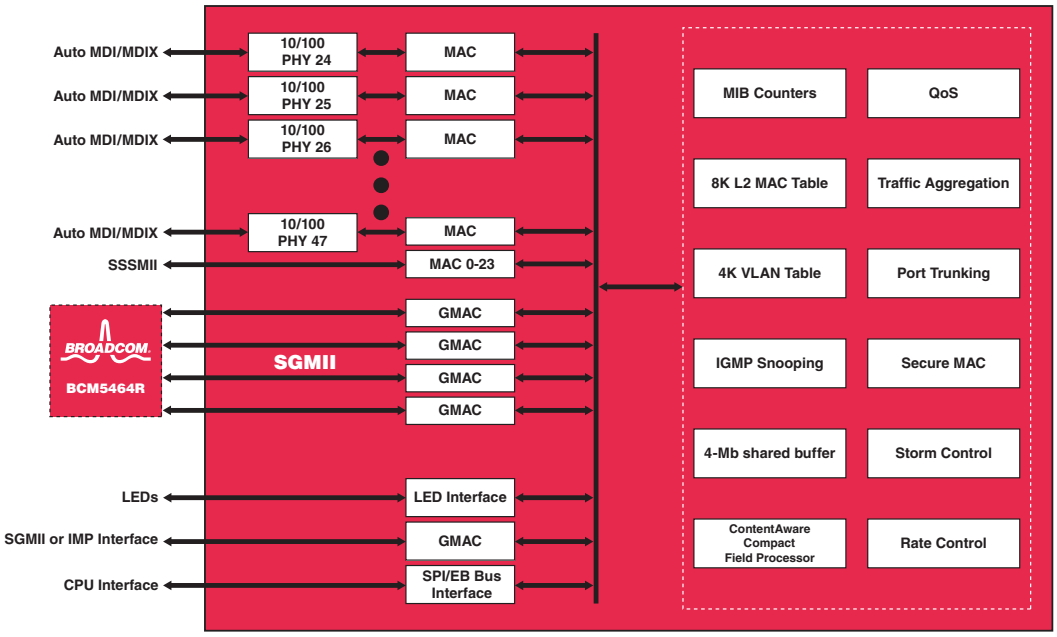
- The BCM5348M includes:
  - Twenty-four 10/100 transceivers for TX/FX
  - Forty-eight media access controllers
  - Five Gigabit media access controllers
  - Four megabit total of packet buffer and control memory
  - Nonblocking switch fabric supports up to 48 FE + 4 GbE ports
- Flexible TCAM-based ContentAware™ Classification technology for affordable security and Access Control List
- Double Tagging enables ISP applications.
- Enables a new generation of lower cost FE switches with the highest integration of enhanced L2+ features and maximum connectivity.
- Optimized for WebSuperSmart™ managed switch design.
- 802.1Q VLAN allows segmentation of network into smaller broadcast domains to preserve bandwidth and increase network security.
- Four flexible Class of Service (CoS) queues per port ensure the lowest latency to high-priority traffic. This enables the switch to support a wide variety of delay-sensitive video and audio multicast applications.
- IEEE 802.3ad link aggregation increases effective bandwidth and provides redundancy of a link.
- IEEE 802.1X Extensive Authentication Protocol over LAN (EAPOL) plus MAC address locking enhances network port security.
- Storm and Bandwidth/Rate Control provide better traffic profile management.
- Access to all internal registers through EB Bus, SPI, or MDC/MDIO interfaces.
- Hardware support for implementing SNMP and RMON.
- Low-power consumption and embedded regulators allow simple PCB design.

48-Port FE Switch for Small/Medium Businesses



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OVERVIEW



Functional Block Diagram

The BCM5348M is designed based on the field-proven industry leader ROBOswitch®. This device combines all the functions of a high-speed switch system including packet buffers, 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 specifications, including the MAC control PAUSE frame and auto-negotiation subsections, providing interoperability with all industry-standard Ethernet, Fast Ethernet, and Gigabit Ethernet devices.

The BCM5348M is the industry's first Ethernet to integrate forty-eight FE MACs and five GbE MACs and twenty-four full-duplex 10BASE-T/100BASE-TX/FX Fast Ethernet transceivers in a single chip. The BCM5348M also supports four SGMII interfaces, providing flexible 10/100/1000BASE-TX and fiber connectivity.

The BCM5348M supports advanced ContentAware processing via a Compact Field Processor (CFP). Up to four intelligent ContentAware processes are performed in parallel for every packet. This flexible engine uses TCAM-based architecture that allows wildcard capabilities. Furthermore, multiple actions can be performed per packet as a result of a match. Action examples include dropping, changing the forward port map, adding forward port, assigning the priority of a frame, etc. These advanced ContentAware processes are well-suited for both Access Control List and Security protection, for example, DoS prevention.

The BCM5348M supports double tagging, which provides additional level of classification. Double Tagging enables Service Provider to differentiate customer traffic.

The BCM5348M supports 8K MAC addresses, 4K VLAN addresses, and stores up to 256 multicast addresses including IP multicast. The BCM5348M also supports 802.1d Spanning Tree, 802.1s Multiple STP, 802.1w Rapid STP, and flexible ingress and egress checking rules for VLAN processing.

The BCM5348M supports up to four CoS queues per egress port – ideal for delay-sensitive multimedia applications. Traffic can be assigned to these CoS queues based on the port ID, the MAC address, the 802.1p priority field in Layer 2, the TOS field in IPv4, or the DiffServ field in IPv6 headers. Together with other advanced features, such as 802.1x EAPOL protocol filtering, port bandwidth/rate control, MAC address locking, and IGMP snooping at Layer 2 and Layer 3, the BCM5348M allows system vendors to build advanced L2+ switch systems for the multitenant/multidweller unit (MDU/MTU) markets.

The BCM5348M family of switches is optimized for WebSuperSmart and L2+ managed designs. The new level of integration brings L2 management to SMB switches at an affordable price. Single chip replaces the typical multichip solutions in the market today.

For Network Management, the BCM5348M includes 70+ on-chip MIB counters with snapshot capability to collect receive and transmit statistics from each port for supporting the Etherlike MIB, Bridge MIB, MIB II (interfaces) and the RMON MIB (Groups 1, 2, 3, and 9).

Product ordering information: BCM5348M (48 FE + 4 SGMII)

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