BROADCOM®
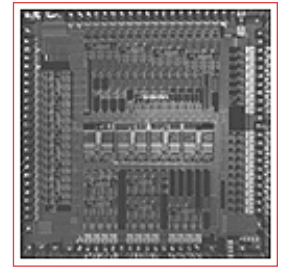
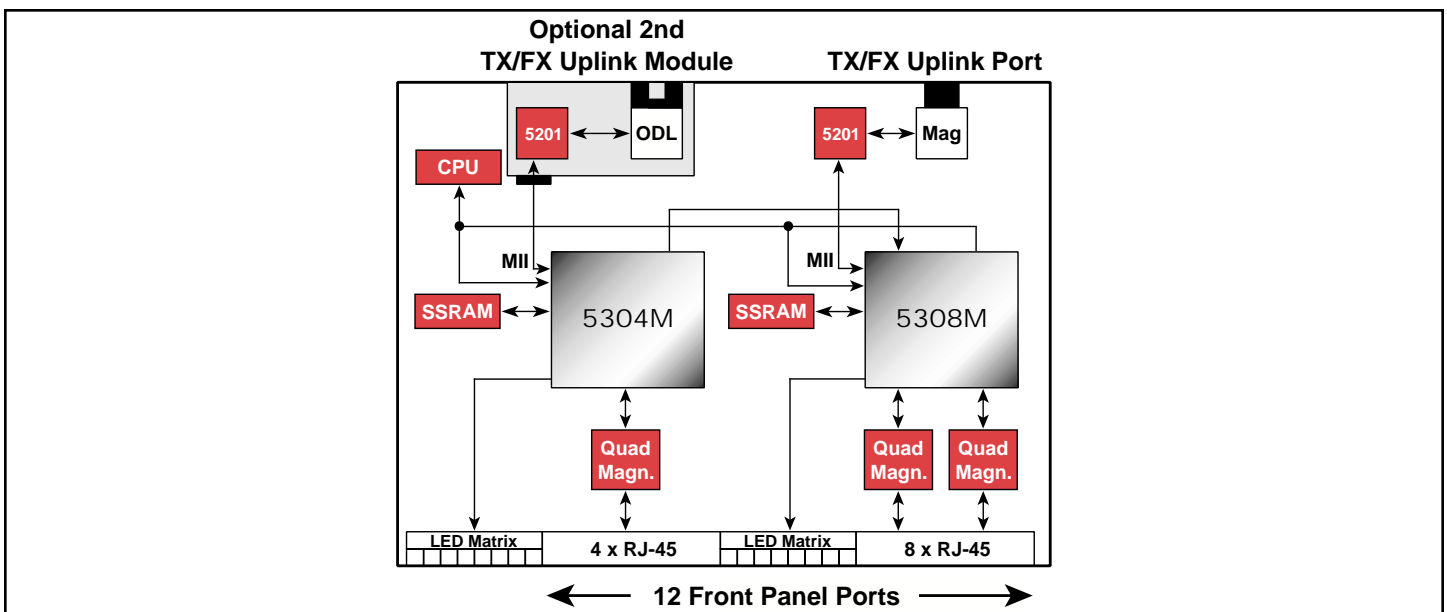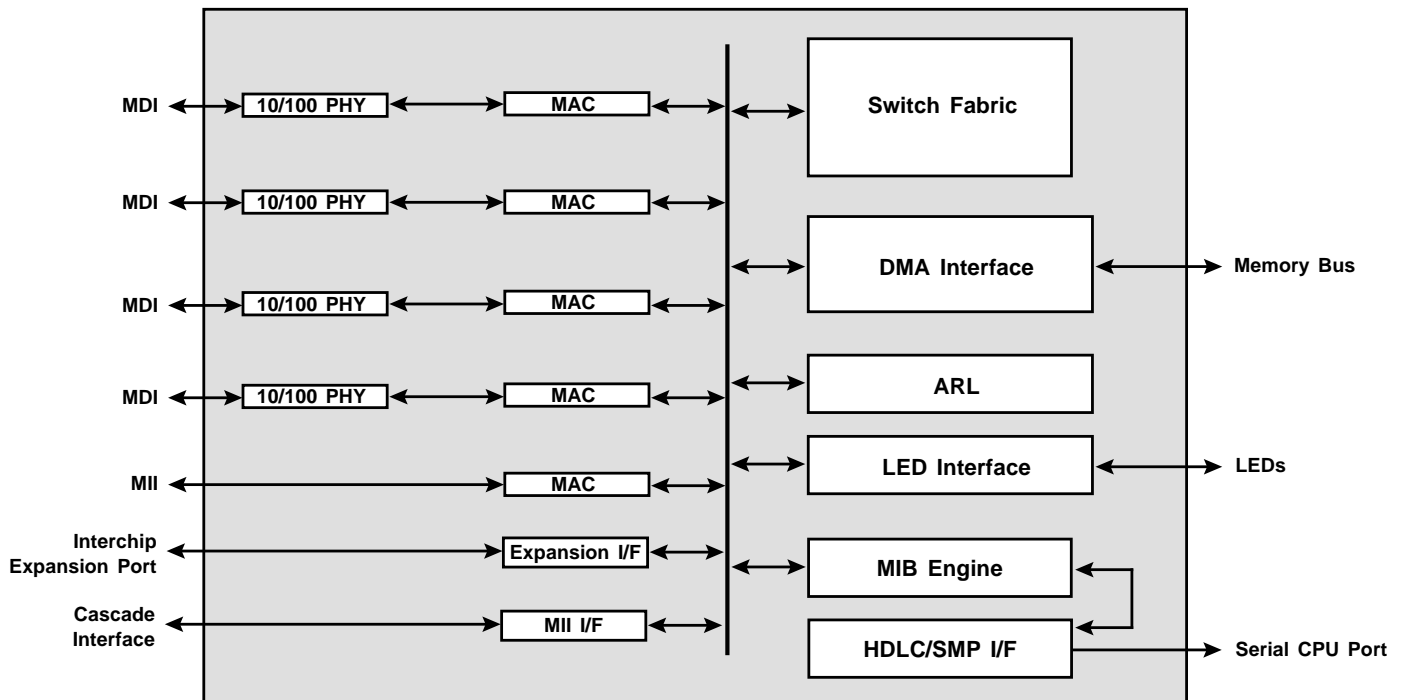# BCM5304M 5-PORT MANAGED 10/100BASE-T/TX SWITCH

BCM5304M FEATURES

- 5-Port 10/100 Switch Integrating the MACs, Switching Fabric and 4 Transceivers into a Single Chip
- Supports Full-Wire Speed, Full-Duplex Traffic on Every Port Simultaneously
- Cascadable up to 12 Ports, with a BCM5308M
- Serial Management Port (SMP) Provided for CPU
- Hardware support for SNMP, RMON, and Spanning Tree
- On Board 32/64-Bit Counters Support Popular MIBs
- Glueless Interface to Low-Cost 256k Bytes or 512k Bytes SSRAM, Configurable to use a Single 64k x 32 Device
- 5.2 Gb/s Memory Bandwidth Provided per Device
- MII Connection for External Phy (FX or TX)
- 2.6 Gb/s Expansion Port Cascades up to 3 Devices in a Daisy-Chain Configuration
- Flow Control: Full-Duplex (802.3x) and Half-Duplex Options Supported
- Direct LED Interface Provides Status on each Port
- Low-Power 3.3V Design in .35μ CMOS Technology
- 352-Pin TBGA Package

SUMMARY OF BENEFITS

- World's most integrated 10/100 managed switch
- Lowest cost solution for SOHO and entry-level corporate applications
- Smallest form factor (reduces board space by 50%)
- Scalable architecture supports 4 to 12 port densities
- Fifth port supports any external Ethernet MII transceiver
- Eliminates cost of external LED latches and drivers
- Robust and field-proven Digi-Φ™ based 10/100 transceivers
- Substantially simplifies board and system design
  - Integrated transceivers eliminate pin-intensive media Independent Interface (MII)
  - Internal PLL generates all system clocks from a single 25 MHz source
- Fully manageable with external CPU
- Basic management statistics can be gathered and reported with only a very low-cost microcontroller

12-Port Managed Switch Using SMP & 100 Mb/s Uplink Interface

The Broadcom® **BCM5304M** is a five-port 10/100BASE-T/TX integrated switch targeted at cost-sensitive Fast Ethernet managed switch systems, SOHO routers and VoIP Telephony Systems. The device contains four 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 **BCM5304M** device provides a highly integrated solution. It combines all of the functions of a high-performance switch system including transceivers, media access controllers, address management, MIB statistic gathering/reporting, 802.1D

Spanning Tree Protocol support, and a non-blocking switch controller into a single monolithic 0.35µ CMOS device. It 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 **BCM5304M** is designed with Broadcom's industry-proven, DSP-based 10/100 transceiver technology. The use of digital technology in the **BCM5304M** design results in robust performance over a broad range of operating conditions, and mitigates problems inherent to mixed-signal implementations, such as analog offset and on-chip noise.

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