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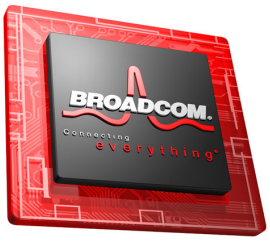
BCM5248 PRODUCT Brief



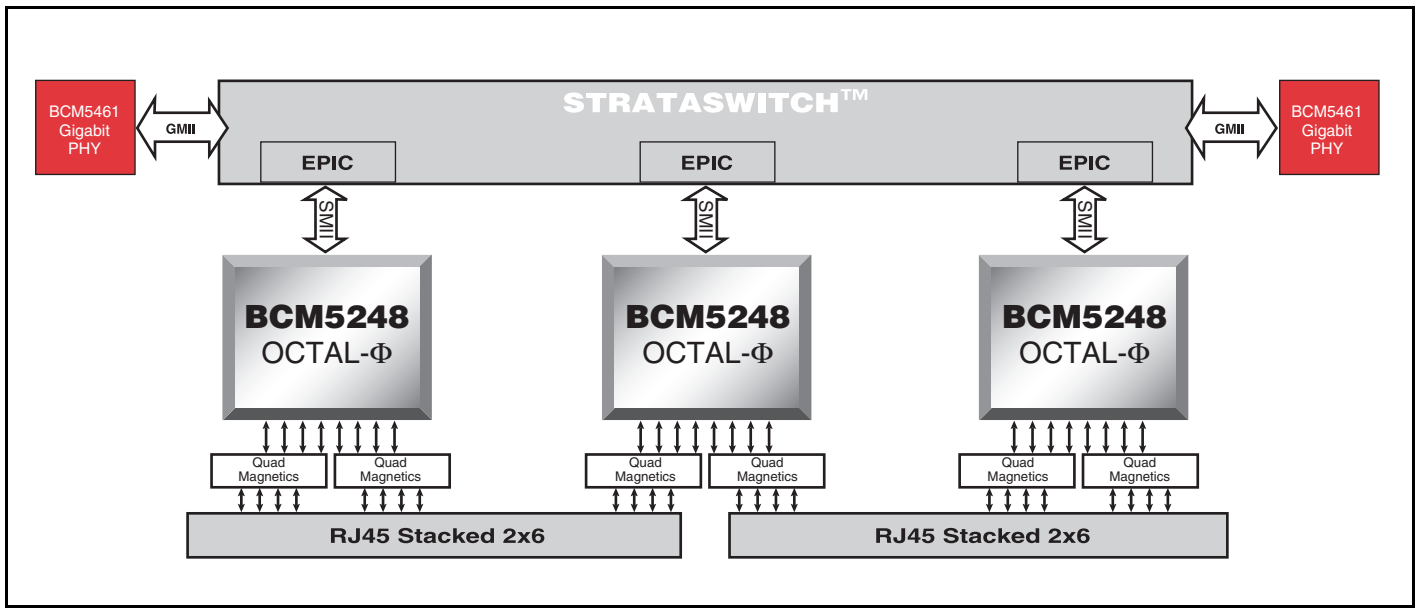
10/100BASE-TX OCTAL-Φ™ TRANSCEIVER

FEATURES

- Eight-port 10BASE-T / 100BASE-TX / 100BASE-FX transceiver
- Cable Auto-Check™ diagnoses and pinpoints cable faults
- HP Auto-MDIX automatically uncrosses cable pairs
- Advanced cable diagnostics reduce support calls and lower cost of ownership
- Optimized for use with Broadcom's StrataSwitch ™ Family
- Cost-effective process technology: 0.18u CMOS
- Serial Media Independent Interface (SMII) and Source Synchronous SMII (SSSMII)
- Fully programmable LED drivers and serial LED output
- Low power: 200mW per Port
- Low voltage core: 1.8V
- QFP or BGA package options
- Most widely deployed and reliable PHY architecture: Over half a billion Digi-PHY™ ports shipped

SUMMARY OF BENEFITS

- Target usage: Fast Ethernet switches.
- Lower power per port: < 2 milliwatts per port.
- Smallest footprint per port available.
- Measures 14 mm x 20 mm for eight ports.
- Single-chip device contains eight independent Fast Ethernet transceivers.
- Performs all physical layer interface functions for 100BASE-TX full-duplex or half-duplex Ethernet on Category 5 unshielded twisted-pair (UTP) cable, 10BASE-T full or half-duplex Ethernet on Category 3, 4, or 5 UTP cable, and 100BASE-FX full-duplex or half-duplex on fiber optic cable.
- Compliant with IEEE 802.3 standard.
- IEEE 1149.1 (JTAG) scan chain support.
- Fully customizable LED functions. Up to 8 LED signals per port.



24-Port 10/100BASE-T Ethernet Switch Example

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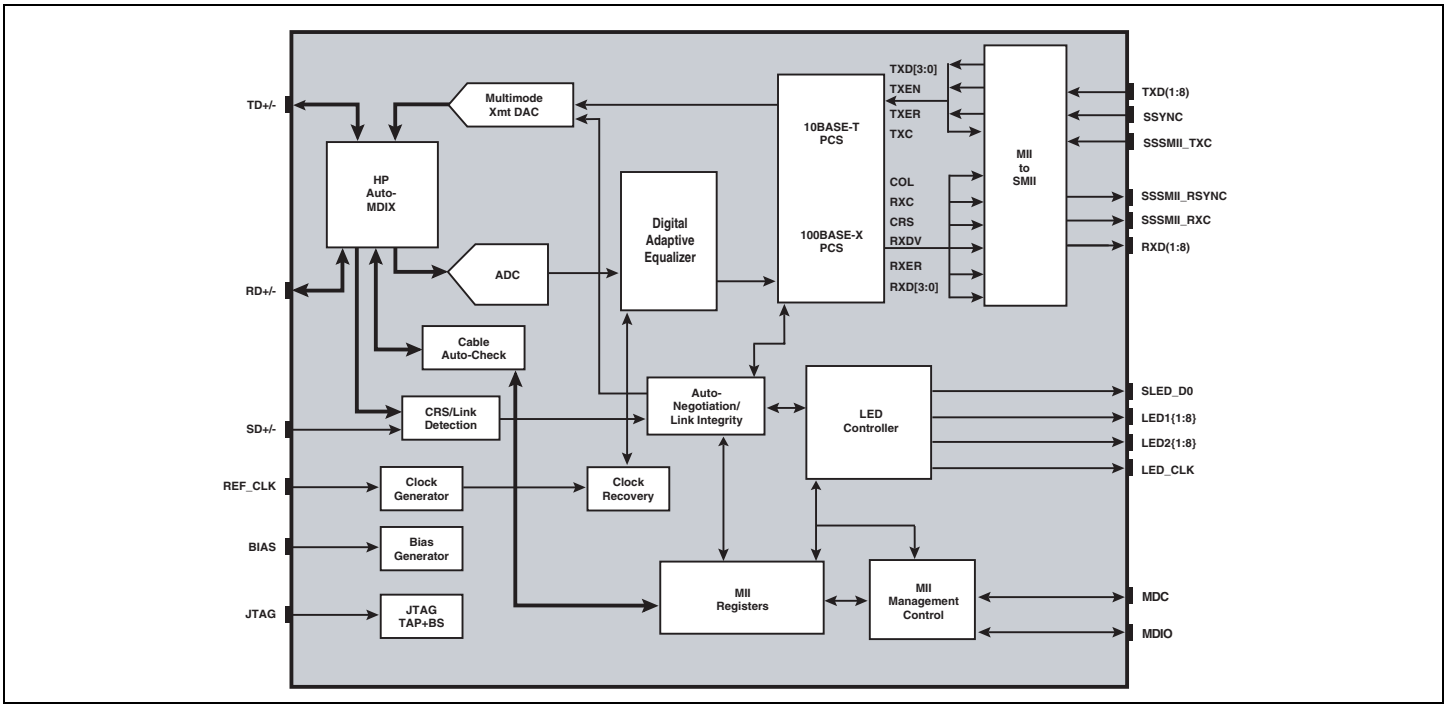
OVERVIEW



The Broadcom BCM5248 is a single-chip device containing eight independent Fast Ethernet transceivers. Each performs all the physical layer functions for 100BASE-TX full- or half-duplex Ethernet on Category 5 UTP cable and 10BASE-T full- or half-duplex Ethernet on Category 3, 4, or 5 UTP cable. The BCM5248 chip performs encoding and decoding, clock and data recovery, digital adaptive equalization, line transmission, carrier sense and link integrity monitoring, auto-negotiation and SMII/SSSMII management functions. The BCM5248 is compliant with the IEEE 802.3 standard.

The BCM5248 offers alternative connection to fiber optic modules for 100BASE-FX operation. The Enhanced FX mode allows 100BASE-FX operation without the use of Signal Detect pins. The standard FX mode allows 100BASE-FX operation with modules that require the PHY to use Signal Detect inputs to disable receive data in the absence of a received optical signal.

The BCM5248 can be connected to a switch controller through the SMII or SSSMII on one side and to the network media on the other side through isolation transformers. The BCM5238 operates from 1.8 and 2.5V/3.3V power supplies; the I/O operates at either 2.5V or 3.3V.

The BCM5248 contains an advanced cable diagnostic capability to detect shorts or opens in a UTP cable, and the distance to the fault, allowing system administrators to quickly determine the source of a fault. Additionally, the BCM5248 can detect the length of a good, operating link, which allows mapping of an entire physical cable plant.

The BCM5248 includes support for HP Auto-MDIX, which enables the transceiver to automatically detect and correct miswired cable. With the HP Auto-MDIX feature, all ports on a switch can be connected to any other 10/100 port on any switch, hub, or network interface card, using crossover or straight-through cables interchangeably. This makes installation, debugging, and maintenance of the network simpler and less expensive to the end user.

In addition to two fully programmable LED driver pins per port, the BCM5248 also supports a serial LED driver output that can be used to drive up to eight LEDs per port, to indicate the status of link, speed, duplex, transmit or receive activity, or arbitrary functions programmed by the user. The BCM5248 is offered in a 128 PQFP and a 256-ball BGA package.

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