



BCM5400 100/1000BASE-T GIGABIT ETHERNET TRANSCEIVER

BCM5400 FEATURES

- The Broadcom® BCM5400 is a fully integrated 100BASE-TX/1000BASE-T Gigabit Ethernet transceiver
 - IEEE 802.3u and 802.3ab compliant
- Glueless interface to an external 10BASE-T transceiver for 10/100/1000BASE-T applications
- Digital Signal Processor (DSP) based system, including digital adaptive equalizers, echo and crosstalk cancellers, encoders and decoders
- Link quality monitor
- Advanced power management
- Automatic detection and correction of pair swaps, pair skew, and pair polarity
- Automatic MDI crossover
- Auto-negotiation with next page support
- On-chip transmit wave shaping eliminates external filters
- Internal 1000BASE-T hybrids simplifies external magnetics
- GMII and 10-bit interface (TBI) interfaces to the media access controller
 - Works with any existing GB Fiber ASICs
- 125 MHz low jitter clock generator
- Support for jumbo packets up to 9 KB
- JTAG test interface
- 3.3V/2.5V CMOS with 5V tolerant I/Os
- 256-pin TBGA

SUMMARY OF BENEFITS

- Highly robust 100/1000BASE-T transceiver designed to operate on existing CAT 5 cable plants.
- Supports 10/100/1000BASE-T applications via external 10BASE-T transceiver.
- Ability to dynamically sense and adapt to changes in channel conditions of the cable plant.
- Allows early identification of network problems through continual monitoring of link quality.
- Reduced power through intelligent power management techniques.
- Automatically corrects common installation and configuration mistakes with twisted-pair wiring.
- Works with any existing ASICs and MACs that support either an industry standard 10-bit interface, or IEEE 802.3z standard GMII interface.
- Maximizes network throughput with support for oversized (jumbo) packets.
- Internal 125 MHz clock generator eliminates external clock circuit for MAC/ASIC.
- Works with low-cost transformers available from multiple suppliers.
- Flexible and programmable LED support.

Complete 10/100/1000BASE-T Solution Diagram

