

# Broadcom BCM84834 Quad 10GBASE-T Transceiver

Connecting everything®



## FOUR-PORT 10GBASE-T TRANSCEIVER



### Highlights

- The BCM84834 is a new member of the Broadcom® 40 nm 10GBASE-T PHY family.
- Devices based on the 40 nm process offer an excellent long-term cost curve, enabling better cost reduction over time compared to legacy technologies.
- EEE provides significant power reduction with AutogrEEEn® delivering EEE for legacy MACs
- Optimized to enable switch, controller, and other general 10-Gigabit Ethernet (GbE) connectivity applications.
- Simplified systems design with only two supplies and with no external MDI components
- Broadcom enhanced cable diagnostics estimates cable length and detects cable or termination anomalies
- 1588 Precision Time Protocol (PTP) provides precise and accurate synchronization of nodes in the network

	BCM84834
Service Provider	●
OTN/PTN	●
Data Centers	●
Enterprise	●

● Supported ● Best Choice

### Overview

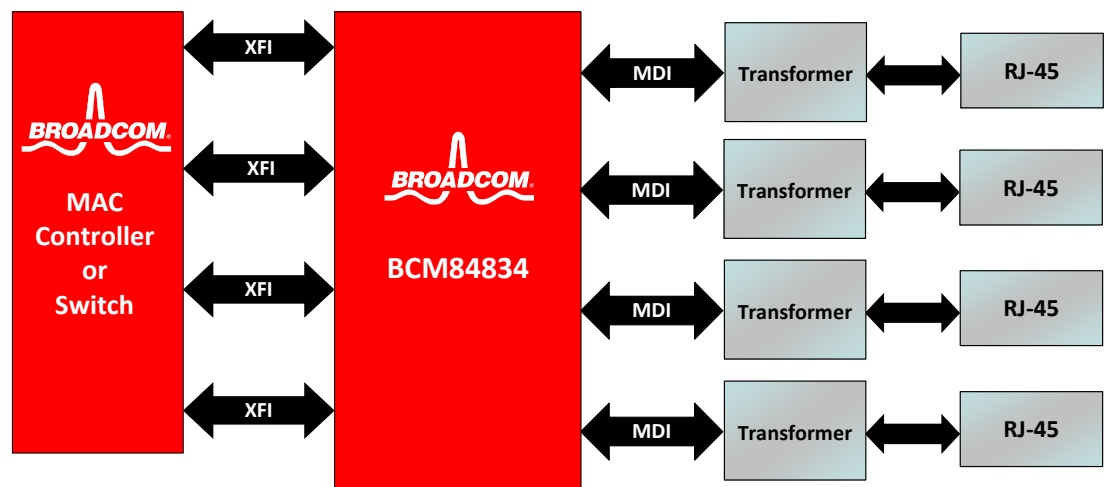
The Broadcom® BCM84834 is a complete quad 100BASE-TX, 1000BASE-T/10GBASE-T solution operating at 100m over CAT6a UTP cable. It is based on highly advanced digital signal processor architecture to enable robust operations over worst case UTP cables. The BCM84834 is a highly integrated solution combining enhanced analog front ends with digital adaptive equalizers, ADCs, phase-locked loops, line drivers, LDPC encoders and decoders, echo cancellers, crosstalk cancellers, and all required support circuitry.

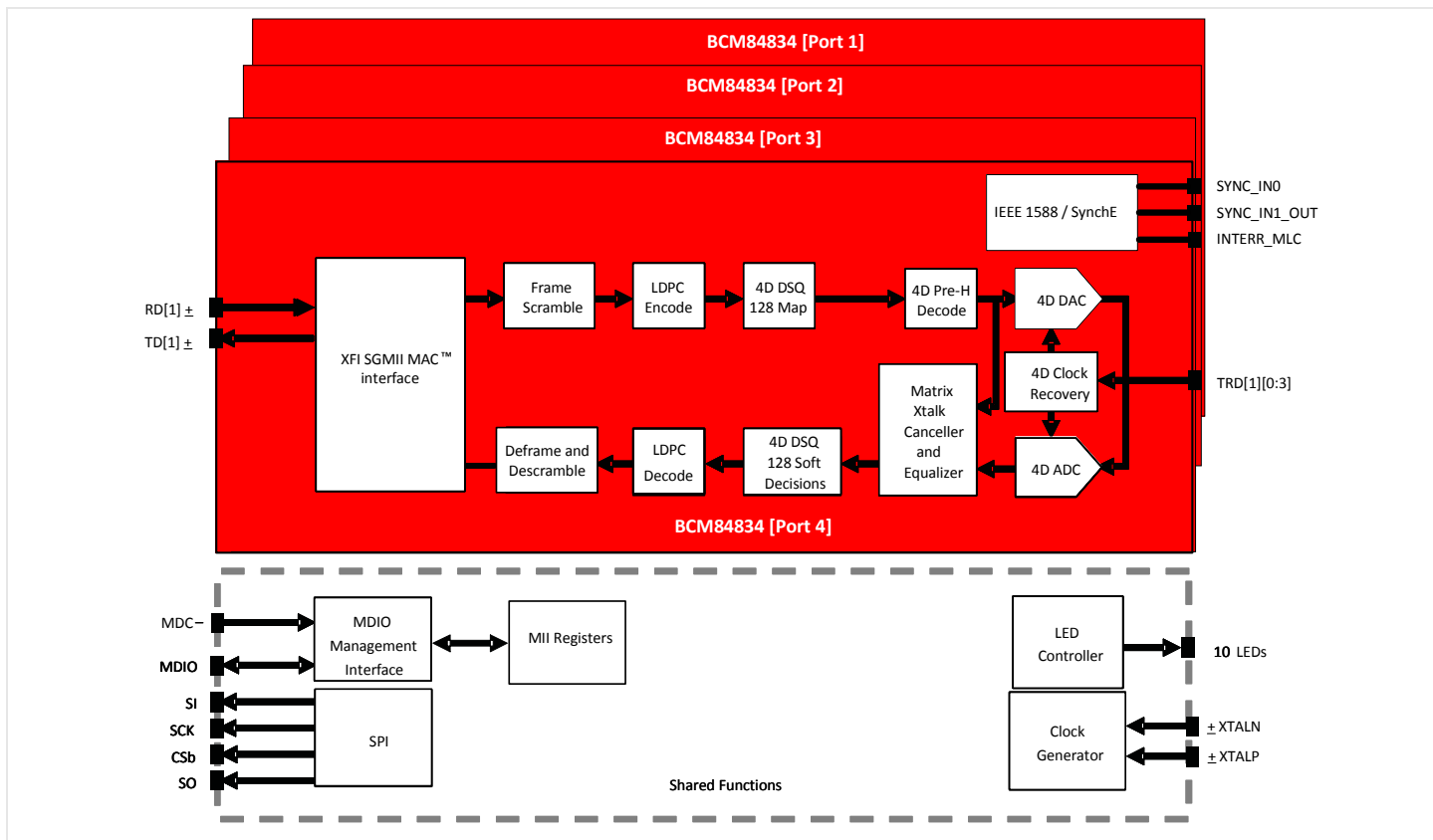
### Summary of Benefits

- Simplifies system and board design
  - Reduces PCB space.
  - Lowers system bill of materials (BOM)
- IEEE standard device interoperability: 100 Mbps, 1000 Mbps, and 10 Gbps.
- Compatible with standard Ethernet MACs.
- Cuts design constraints to meet EMI standards.
- Cable diagnostics identifies cable plant condition to immediately trace cabling issues.
- Operates with larger packets for increased-scale packet protocol support and efficiency.

### Features

- Highly integrated four-port 10GBASE-T Ethernet transceiver.
- Supports multiple speeds: 100BASE-TX and 1000BASE-T
- XFI and SGMII MAC interface options
- Compliant with IEEE 802.3™, IEEE 802.3an, IEEE 802.3ab, and IEEE 802.3u standards.
- AutogrEEEn permits legacy MACs to receive the power savings of EEE in periods of reduced link utilization.
- Synchronous Ethernet support
- Low electromagnetic interference (EMI) emissions
- Cable plant diagnostics
- IEEE standard 1588-2008 (version 2) support
- Detection and correction of pair-swaps (MDI crossover), pair skew, and pair polarity.
- Support for jumbo packets up to 18 KB.
- Super-Isolate mode to completely disable selected port.
- IEEE 1149.1 (JTAG) boundary scan
- Extensive selection of both line and network side loopbacks.
- 676-pin FBGA 27 mm x 27 mm package





**BCM84834 Block Diagram for Each Port**

Each BCM84834 port contains one XFI interface to connect to the MAC side. This quad port enables customers to design high-density Top of the Rack (ToR) switches and server NIC controllers for data center applications.

The 40 nm process offers the best performance, lowest cost, and lowest power consumption for 10-Gigabit copper applications and enables a highly integrated solution.

The BCM84834 incorporates various advanced features. A link quality indicator LED provides instant notification of

any problems with the wiring plant operating at the desired speed. These problems include physical wiring defects that the BCM84834 cannot automatically correct and channel conditions such as excessive cable length and return loss, crosstalk, echo, and noise.

**Ordering Information**

676-pin FBGA (RoHS-compliant)

**Part Number**

BCM84834B1KFEBG

**About Broadcom**

Broadcom Corporation is a major technology innovator and global leader in semiconductors for wired and wireless communications. Broadcom® products enable the delivery of voice, video, data and multimedia to and throughout the home, the office and the mobile environment. We provide the industry's broadest portfolio of state-of-the-art system-on-a-chip and software solutions to manufacturers of computing and networking equipment, digital entertainment and broadband access products, and mobile devices.

These solutions support our core mission: Connecting everything®.

Broadcom, one of the world's largest fabless communications semiconductor companies, with 2010 revenue of \$6.82 billion, holds more than 4,800 U.S. and 2,000 foreign patents, and has more than 7,800 additional pending patent applications, and one of the broadest intellectual property portfolios addressing both wired and wireless transmission of voice, video, data and multimedia.

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