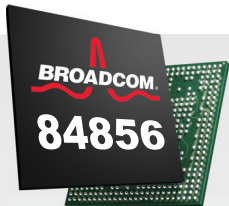




10GE PHYS FOR TRANSMISSION OVER TWISTED PAIR

BCM84856

Dual-Port 10GBASE-T Transceiver



- The BCM84856 offers lower power with a 28 nm 10GBASE-T device.
- The small 17 mm x 17 mm package size reduces the footprint for 10GBASE-T, ideal for servers and networking uplink modules.
- Energy Efficient Ethernet™ (EEE) provides significant power reduction with AutogrEEEn®, enabling EEE with legacy MACs.
- IEEE 1588 Precision Time Protocol (PTP) provides precise and accurate synchronization of nodes in the network.
- KR/XFI interface simplifies MAC interface for complex channels.

OVERVIEW

The Broadcom® BCM84856 is a complete dual-port 100BASE-TX, 1000BASE-T, and 10GBASE-T solution operating at 100m over CAT6A UTP cable. The BCM84856 is in a compact 17 mm x 17 mm BGA package. Optional Adaptive Voltage Scaling (AVS) delivers a low-power solution while enabling a low-cost implementation. The BCM84856 has a highly advanced digital signal processor-based architecture allowing robust operation over worst case channels.

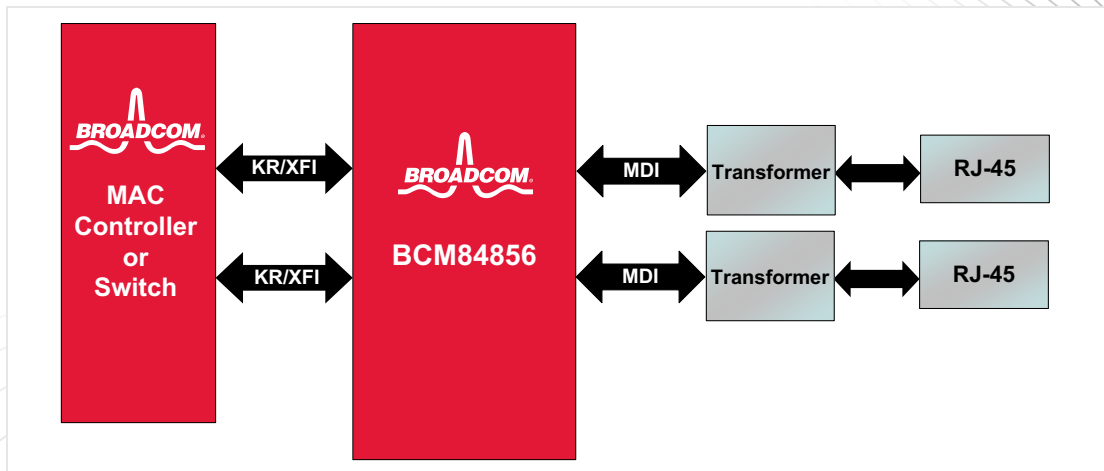
FEATURES

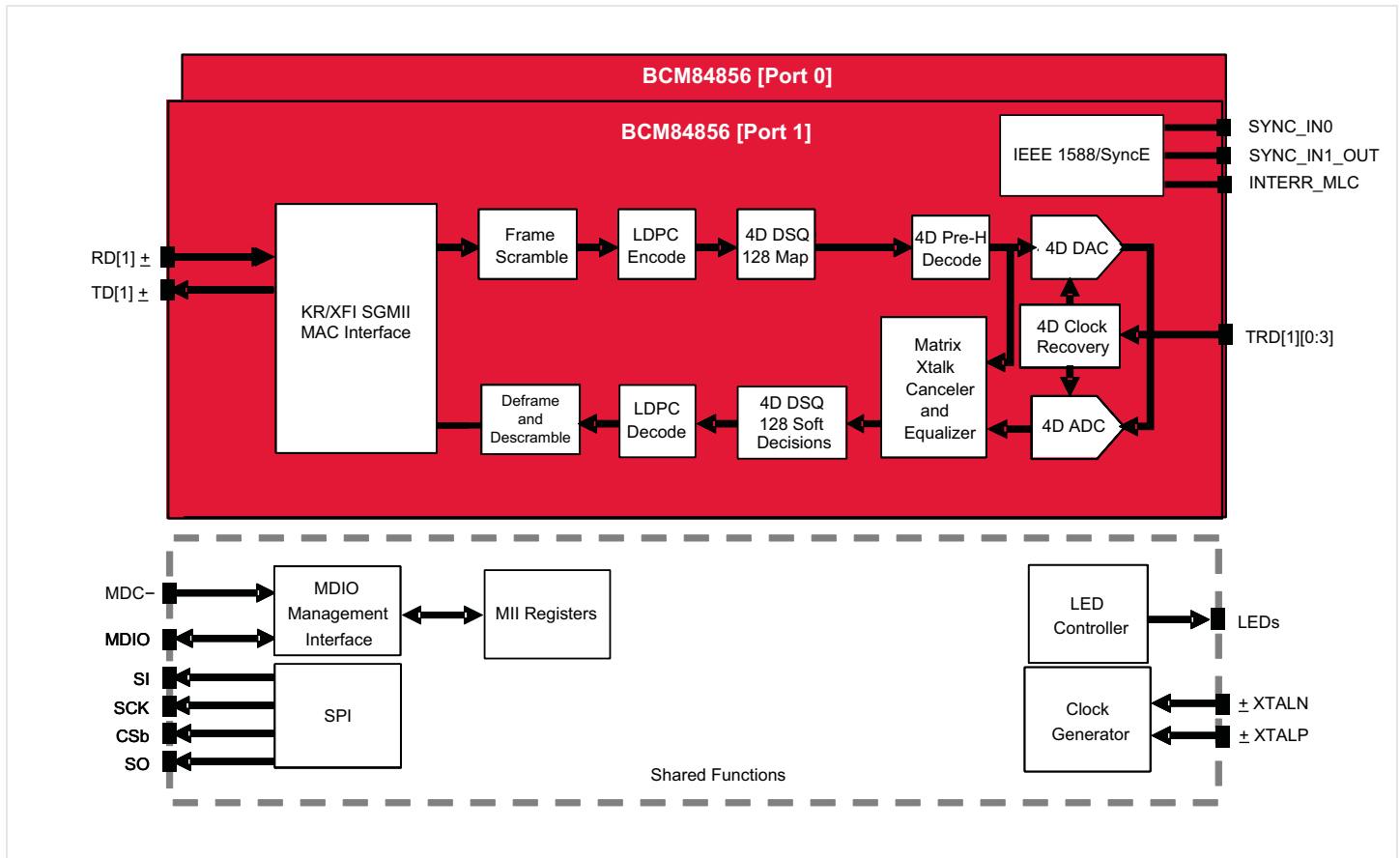
- Highly integrated two-port 10GBASE-T Ethernet transceiver.
- Supports multiple speeds: 10GBASE-T, 1000BASE-T, and 100BASE-TX.
- Supports EEE on at 10GBASE-T, 1000BASE-T, and 100BASE-TX data rates.
- KR/XFI and SGMII MAC interface.
- Compliant with IEEE 802.3™, IEEE 802.3an, IEEE 802.3ab, IEEE 802.3u, and IEEE 802.3az standards.
- AutogrEEEn® permits legacy MACs to enjoy the power savings of Energy Efficient Ethernet™ (EEE) in periods of reduced link utilization.
- AVS for creation of local DVdd supply.
- IEEE standard 1588-2008 (version 2) support.
- Synchronous Ethernet support.

- Cable plant diagnostics.
- 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.
- Extensive selection of both line and network side loopbacks.
- 256-pin FBGA 17 mm x 17 mm package.

BENEFITS

- Robust operation over 100m CAT6A cables with industry-standard four-pair magnetics.
- Auto-negotiation lowers systems administration cost.
- Simplifies system and board design:
 - Reduces PCB space.
 - Lowers system bill of materials (BOM).
- AVS enables lower power with ability to lower implementation cost.
- EEE delivers lower power.
- IEEE standard interoperability: 100 Mbps, 1000 Mbps, and 10 Gbps.
- Cable diagnostics identifies cable plant condition to immediately trace cabling issues.
- 1588v2 with one-step timestamp insertion provides high accuracy timing.





Block Diagram

The BCM84856 dual-port PHY enables customers to design dual-port PCIe™ adapters and 10GBASE-T modules in switching applications. The BCM84856 is a 28 nm device that adds important features such as EEE and AVS which can drive down implementation cost and power.

The MAC interface for the BCM84856 is capable of operating either as a KR or a

XFI I/O. The 10GBASE-T KR interface supports both Clauses 72 and 73. Support for Energy Efficient Ethernet is provided both through LPI commands over the XFI interface and via the AutogrEEEn feature. EEE is supported for all three speeds: 10GbE, 1GbE, and 100 Mbps. Support for 1588v2 in the BCM84856 is part of Broadcom's broad offering of PTP devices.

The BCM984856_EVAL is available, providing a reference design platform suitable for evaluation of the device. Other support information includes a design guide.

Contact your Broadcom sales representative for more information.

ORDERING INFORMATION

256-pin FBGA (RoHS-compliant)

Part Number

BCM84856A0KFSBG



For more information, visit:
go.broadcom.com/BCM84856

ABOUT BROADCOM

Broadcom Corporation (NASDAQ: BRCM), a FORTUNE 500® company, is a global leader and innovator in semiconductor solutions for wired and wireless communications. Broadcom® products seamlessly deliver voice, video, data, and multimedia connectivity in the home, office, and mobile environments. With the industry's broadest portfolio of state-of-the-art system-on-a-chip and embedded software solutions, Broadcom is changing the world by Connecting everything®. For more information, go to www.broadcom.com.

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