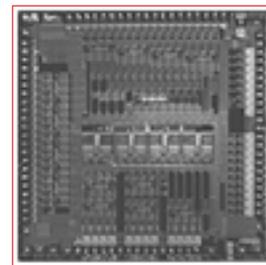




BCM8701 PRODUCT Brief



SERIAL 10 GIGABIT ETHERNET TRANSCEIVER WITH XAUI INTERFACE

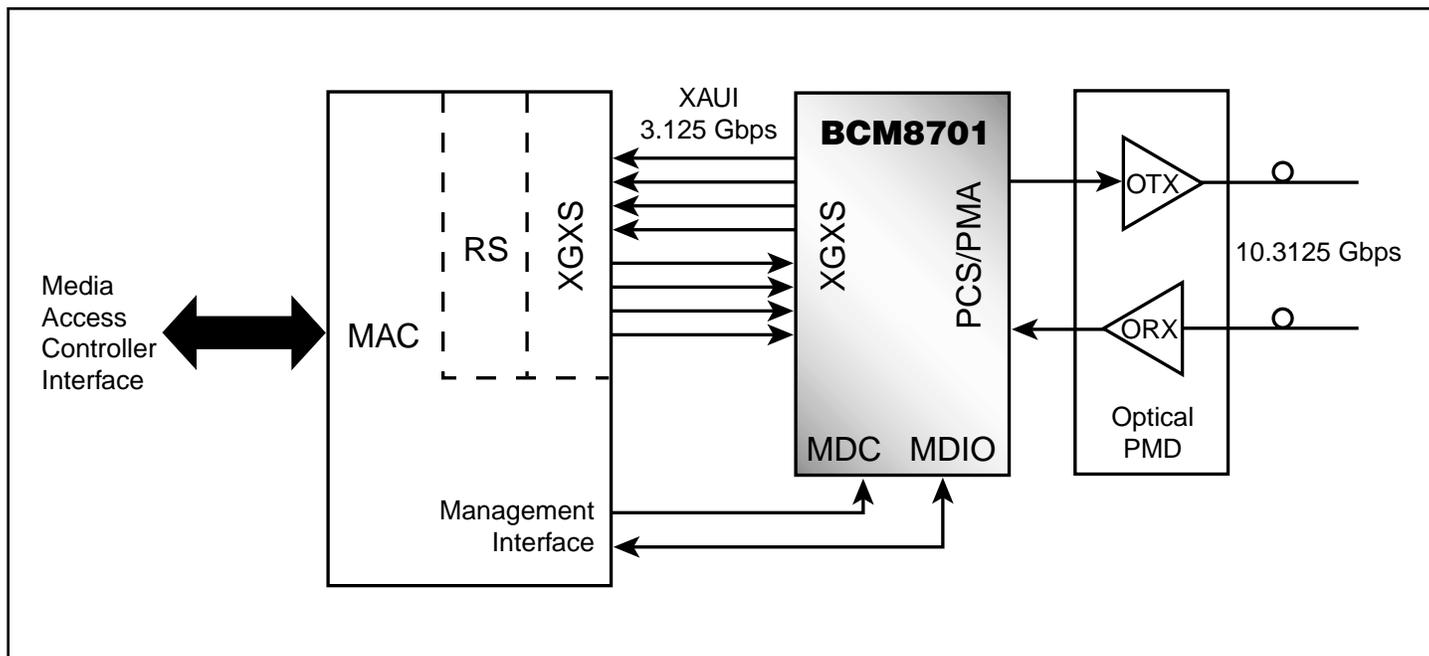
BCM8701 FEATURES

- IEEE 802.3ae compliant, 10.3125, Gbps, serial Ethernet transceiver (LAN PHY)
- Fully integrated CMU, CDR, and SERDES
- PMD interface with serial 10.3125 Gbps CML
- PSC 64B/66B scrambler/descrambler
- XGXS 8B/10B error detection ENDEC
- XAUI link synchronization/deskew
- Four-lane, 3.125-Gbps XAUI interface
- Loss-of-signal detection
- Loopback modes
- 802.3 Clause 33 Management Interface with Extended Indirect Address Register access
- Built-in self-test (BIST)
- Power supplies: Core, LVPECL, CML, and XAUI at 1.8V, and CMOS at 1.8 or 3.3V

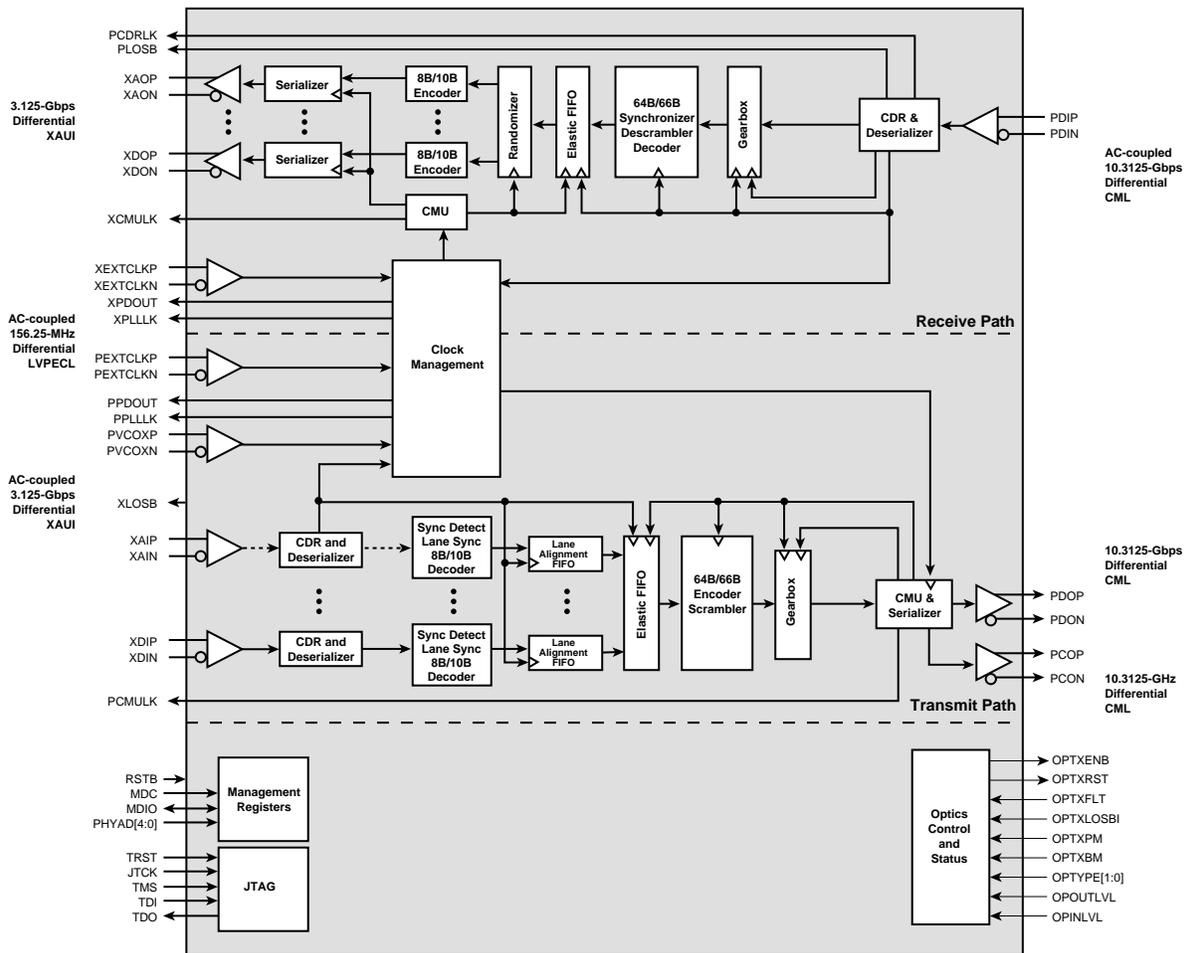
SUMMARY OF BENEFITS

- Low power consumption eliminates external heat sinks, fans for system airflow, and expensive high-current power supplies.
- Reduces design cycle and time to market.
- Uses the most effective silicon economy of scale for CMOS-based devices.
- Target applications:
 - LAN/WAN switches
 - Switch/router backbone
 - Hubs and repeaters
 - Network interface cards (NICs)
 - Test equipment

Application Block Diagram



Block Diagram



The **BCM8701** Ethernet LAN PHY is a fully integrated serialization/deserialization (10.3125 Gbps) interface device performing the extension functions for a 10.3125 Gbps serial Ethernet Reconciliation Sublayer (RS) interface. The XGXS, PCS, and PMA functions include 8B/10B coding, 64B/66B coding, SERDES, Clock Multiplication Unit (CMU), and Clock and Data Recovery (CDR).

On-chip clock synthesis is performed by the high-frequency, low-jitter, phase-locked loops for the PMD and XAUI output retimers. Individual PMD and XAUI clock recovery are performed on the device by synchronizing the on-chip VCOs directly to

their respective incoming data streams. Elastic buffers allow the XAUI and PMD interfaces to operate in either a synchronous or an asynchronous configuration. An external 156.25-MHz VCXO is required for synchronous mode operation or for asynchronous mode with clock cleanup.

The **BCM8701** is packaged in a 19 x 19 x 1.86 mm BGA with a 1 mm ball pitch.

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8701-PB01-R-8.24.01

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