

10GE 16:1 MULTIPLEXER WITH CLOCK GENERATION

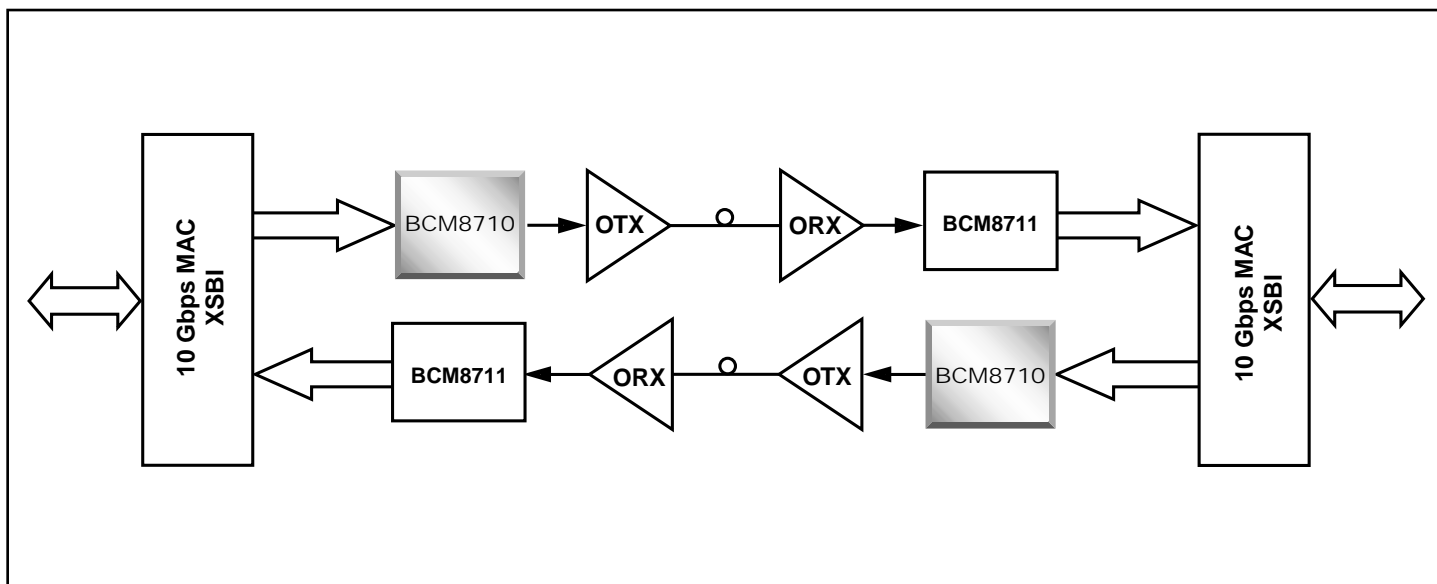
BCM8710 FEATURES

- IEEE 802.3ae 10.3125-Gbps Ethernet serializer, clock multiplication unit (CMU), and multiplexer (MUX)
- 16:1 serializer with LVDS parallel clock and data inputs
- On-chip 16 x 10 FIFO eliminates system timing issues
- 10.3125-Gbps serial output data and clock
- Lock detect
- Core power supply: 1.8V
- I/O power supplies: CML, LVDS and LVPECL at 1.8V, CMOS at 1.8V or 3.3V
- Power consumption: 580 mW typical @ 1.8V
- Standard CMOS fabrication process
- 15 × 15 mm, 120-pin BGA package

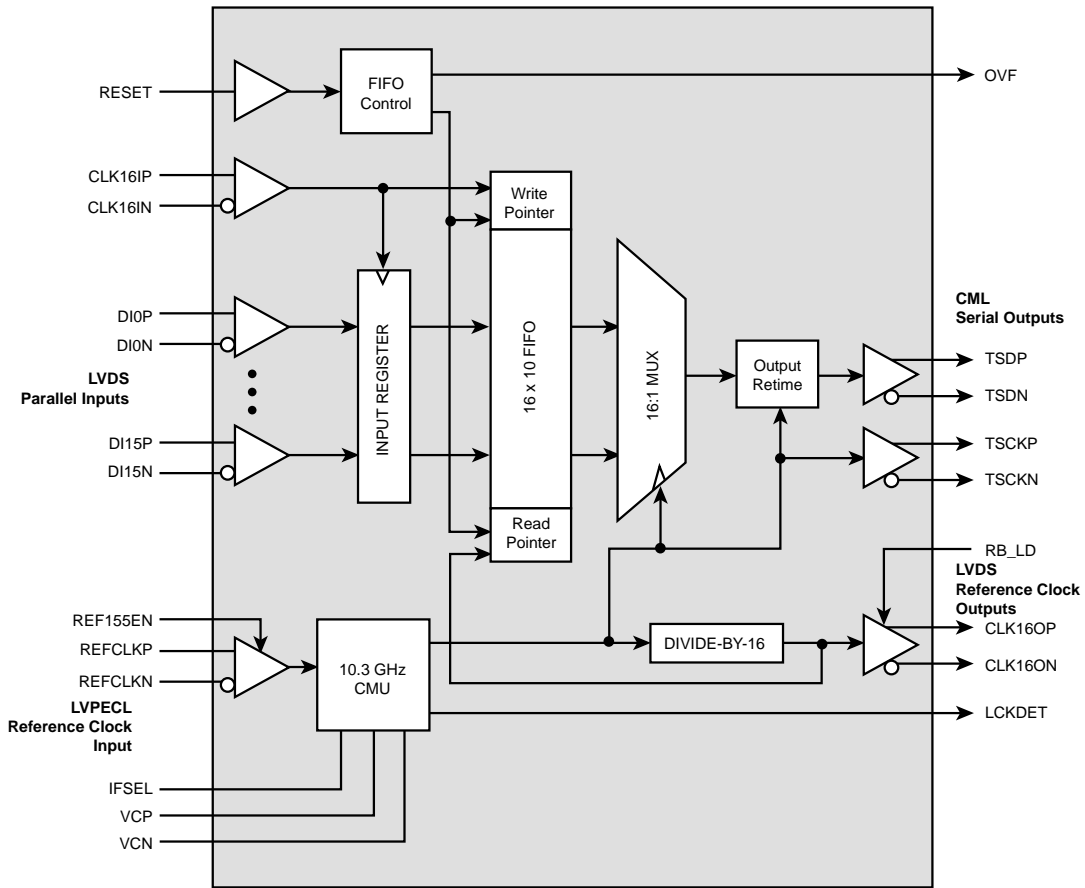
SUMMARY OF BENEFITS

- Compliant with the Optical Internetworking Forum (OIF), Telcordia, ITU-T, and IEEE 802.3ae industry standards.
- Low power consumption eliminates external heat sinks, fans for system airflow, and expensive high current power supplies.
- Reduces design cycle and time to market.
- CMOS-based device uses the most effective silicon economy of scale.
- Target applications:
 - Transmission equipment
 - Optical modules
 - Hubs and repeaters
 - Network Interface Cards (NICs)
 - Test equipment
 - ADD/DROP multiplexers
 - Digital cross-connects
 - ATM switch backbones
 - Terabit routers
 - Edge routers

Application Block Diagram



Block Diagram



The **BCM8710** is a fully integrated 10GE transmitter operating at 10.3125 Gbps with serializer and CMU. The low-jitter LVDS interface and the onboard low-jitter phase-locked loop (PLL) meets Optical Internetworking Forum (OIF), IEEE 802.3ae, Telcordia, ANSI, and ITU-T jitter standards.

The **BCM8710** reference clock input frequency is user-selectable to the line rate divided by either 16 or 64. A 10-word FIFO decouples the parallel input timing domain from the serial output timing domain. The **BCM8710** provides a CML serial output clock to retime the data at the optical interface.

Major transmitter functions are:

- 16-bit, LVDS parallel input
- Elastic buffering FIFO with overflow indicator
- 10.3125-GHz CMU
- 10.3125-Gbps CML transmit serial data output
- Parallel-to-serial conversion
- Selectable reference clock frequency
- Lock detect

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BROADCOM CORPORATION
16215 Alton Parkway, P.O. Box 57013
Irvine, California 92619-7013

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Phone: 949-450-8700
FAX: 949-450-8710
Email: info@broadcom.com
Web: www.broadcom.com