BROADCOM®

C o n n e c t i n g
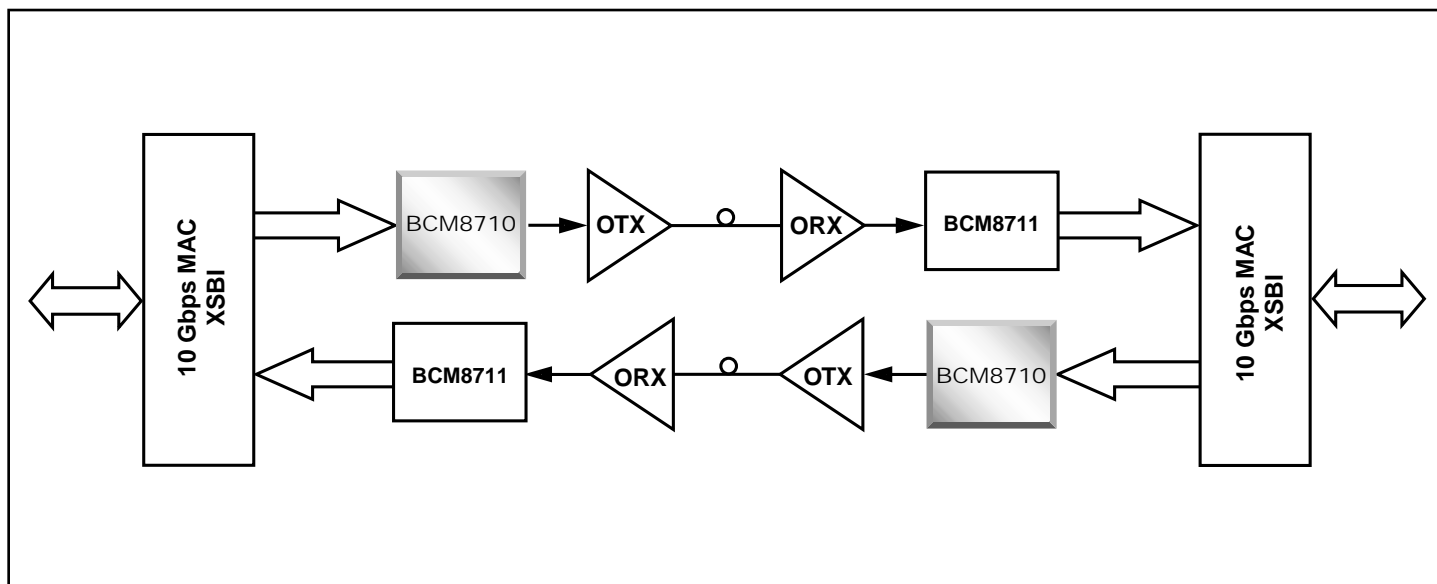e v e r y t h i n g ™

BCM8710
PRODUCT
Brief

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**
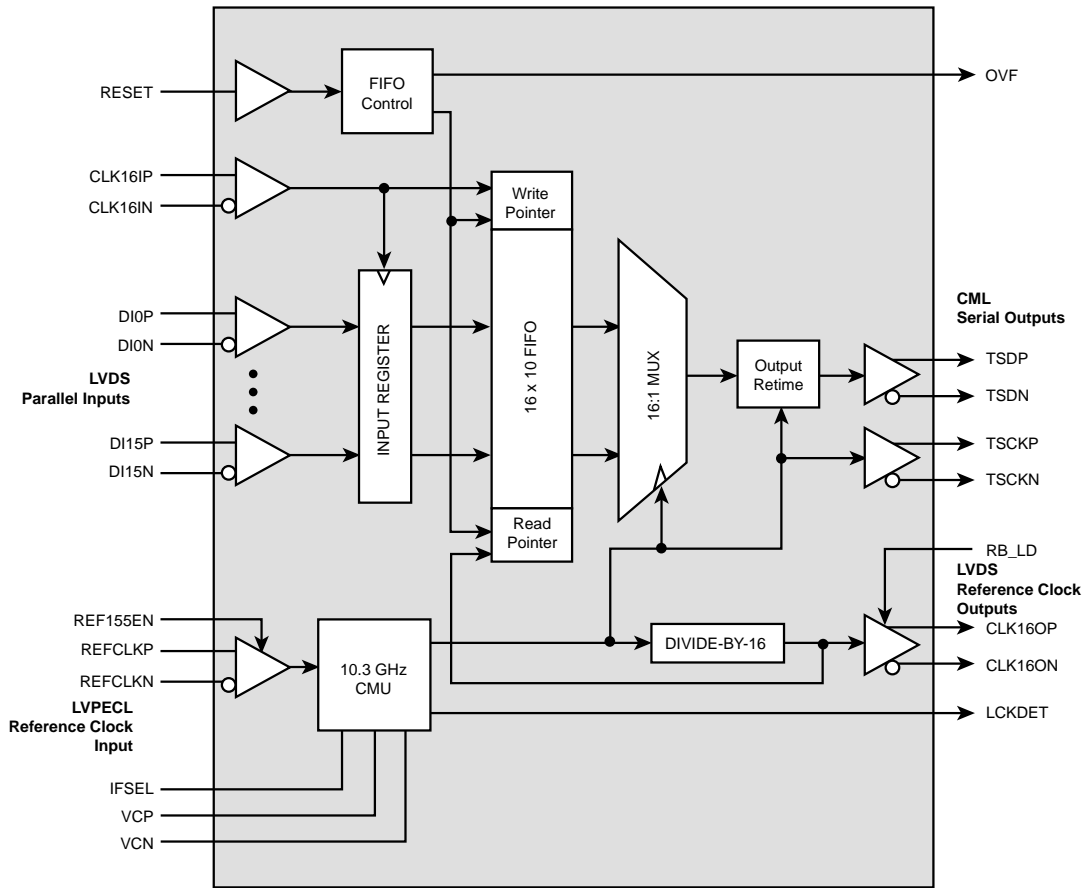- **15 × 15 mm, 120-pin BGA package**

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

Connecting
everything™

BROADCOM®

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