

## 9.953-Gbps INTEGRATED LOW POWER SONET/SDH TRANSMITTER

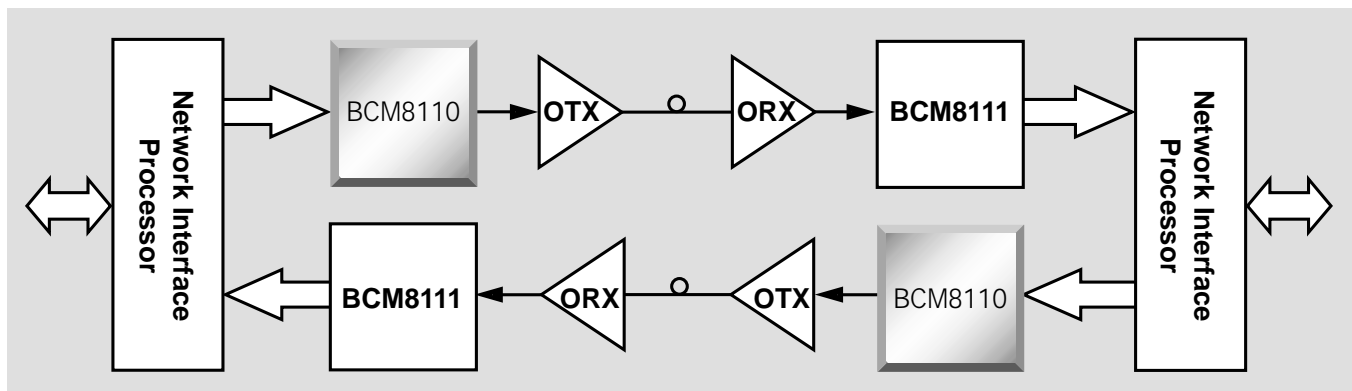
### BCM8110 FEATURES

- 9.953-Gbps SONET/SDH transmitter
- Fully integrated serializer/multiplexer (MUX) with clock multiplication unit (CMU)
- 16:1 MUX with LVDS 622.08-Mbps data inputs
- On-chip  $16 \times 9$  FIFO to eliminate system timing issues
- Lock detect
- Core power supply: 1.8V
- I/O power supply: 1.8V or 3.3V
- Power consumption: 450 mW typical @ 1.8V
- Standard CMOS fabrication process
- 120-pin,  $15 \times 15$  mm BGA package

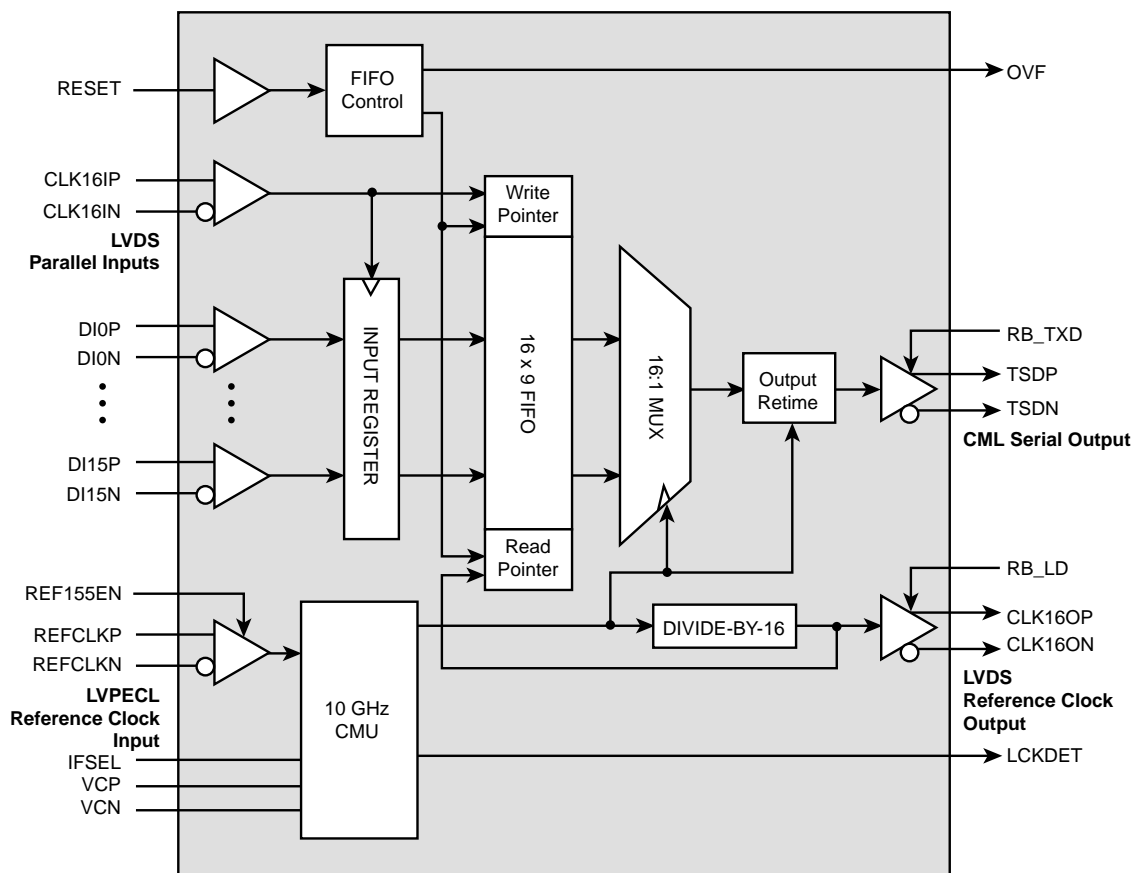
### SUMMARY OF BENEFITS

- Compliant with industry standards such as: Optical Internetworking Forum (OIF), Telcordia, ANSI, IEEE802.3ae, and ITU-T specifications.
- Reduces design cycle and time to market.
- Low power consumption eliminates the need for external heat sinks on the chip and fans for system airflow.
- High level of integration allows for higher port density solutions.
- CMOS-based device takes advantage of the most effective silicon economy of scale.
- Target applications:
  - Transmission equipment
  - Optical modules
  - Test equipment
  - ADD/DROP multiplexers
  - Digital cross-connects
  - ATM switch backbones
  - Terabit routers
  - Edge routers
  - Network interface card (NIC)
  - Hubs and repeaters

Application Block Diagram



# Block Diagram



The **BCM8110** is a fully integrated SONET/SDH transmitter operating at data rate of 9.953 Gbps with serializer, Clock Multiplication Unit (CMU), and Loss-of-Signal (LOS) detection circuitry. The low-jitter LVDS interface and the onboard low-jitter PLL meets Optical Internetworking Forum (OIF), IEEE 802.3ae, Telcordia, ANSI, and ITU-T jitter standards.

The **BCM8110** reference clock input frequency is user-selectable to the line rate divided by either 16 or 64. A 9-word FIFO decouples the parallel input timing domain from the serial output timing domain.

The **BCM8110** transmitter implements transmit functions for SONET/SDH 9.953-Gbps equipment. The major functions of the chip are:

- 9.95328-Gbps transmit serial data output
- 9.95328-GHz CMU
- 622.08-Mbps 16-bit, LVDS transmit parallel data input
- Elastic buffering FIFO with overflow indicator
- Parallel-to-serial conversion
- Lock detect

**Broadcom**®, the pulse logo® and **Connecting Everything**™ are trademarks of Broadcom Corporation and/or its subsidiaries in the United States and certain other countries. All other trademarks are the property of their respective owners.

Connecting  
everything™



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

© 2002 by BROADCOM CORPORATION. All rights reserved.

8110-PB03-R-2.28.02

Phone: 949-450-8700  
FAX: 949-450-8710  
Email: [info@broadcom.com](mailto:info@broadcom.com)  
Web: [www.broadcom.com](http://www.broadcom.com)