

MULTI-RATE 10 Gbps 16:1 MUX WITH CLOCK GENERATION

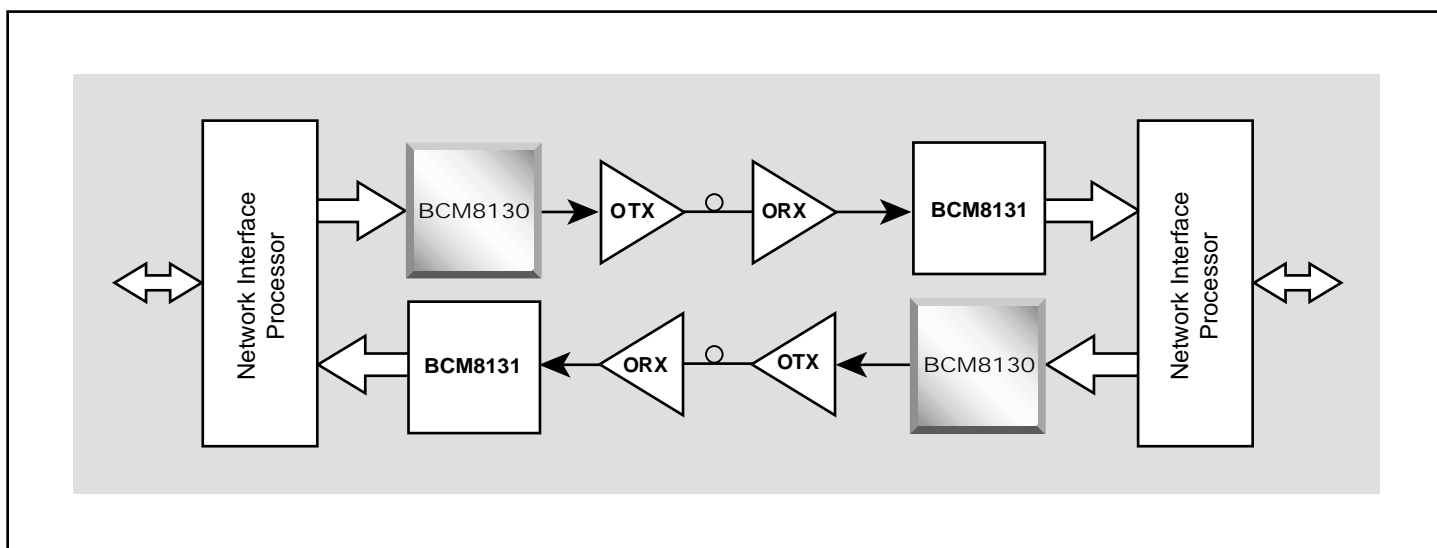
BCM8130 FEATURES

- Fully integrated multi-rate clock multiplication unit (CMU) and multiplexer (MUX)
- Support for multiple rates — OC-192: 9.953 Gbps, OC-192 FEC: 10.664 and 10.709 Gbps, 10G Ethernet: 10.3125 Gbps
- 16:1 multiplexer with LVDS parallel data and clock inputs
- On-chip 16 x 10 FIFO eliminates system timing issues
- Lock detect
- Core power supply: 1.8V
- I/O power supply: CML, LVDS and LVPECL at 1.8V and CMOS at 1.8 or 3.3V
- Power consumption: 580 mW typical @ 1.8V
- Standard CMOS fabrication process
- 15 x 15 mm, 120-pin BGA package

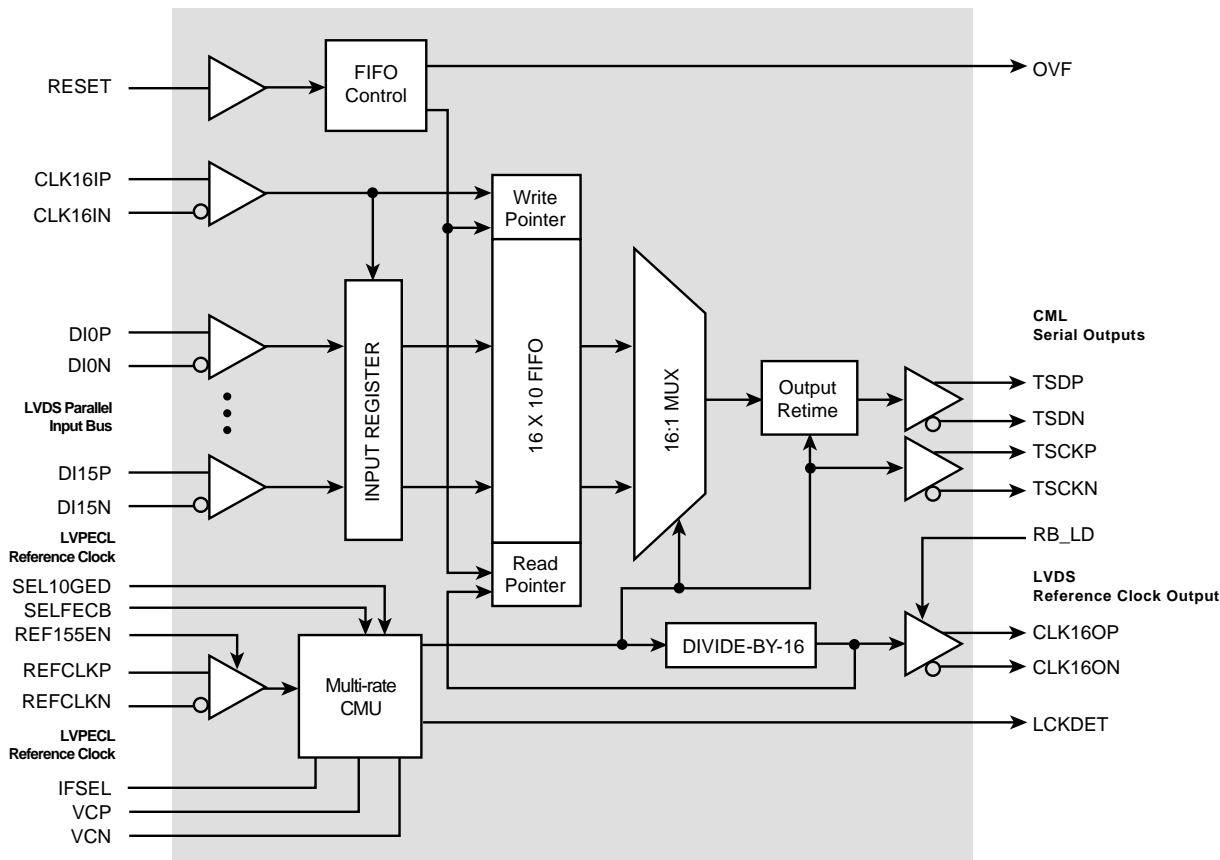
SUMMARY OF BENEFITS

- Compliant with Optical Internetworking Forum (OIF), Telcordia, ITU-T, and IEEE 802.3ae industry standards.
- Reduces design cycle and time to market.
- High level of integration allows for higher port density solutions.
- CMOS-based device uses the most effective silicon economy of scale.
- Low-power consumption eliminates the need for external cooling sources.
- Target applications:
 - Ethernet transmission equipment
 - Optical modules
 - ADD/DROP multiplexers
 - Digital cross-connects
 - ATM switch backbones
 - Test equipment
 - Switch router backbones
 - Hubs and repeaters
 - Network Interface Cards (NIC)

Application Block Diagram



Block Diagram



The **BCM8130** is a fully integrated multi-rate SONET/SDH/10GE transmitter operating at OC-192/STM-64 (9.953 Gbps), 10-Gigabit Ethernet (10.3125 Gbps), and FEC (Forward Error Correction) data rates (10.664 and 10.790 Gbps) with serializer, and CMU. 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 **BCM8130** 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 **BCM8130** provides a CML serial output clock to retime the data at the optical interface.

The major transmitter functions are:

- Configurable multi-rate CMU and data rates
- CML transmit serial data output
- 16-bit parallel LVDS input
- Selectable reference clock frequencies
- Parallel-to-serial conversion
- Elastic buffering FIFO with overflow indicator
- Lock detect

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