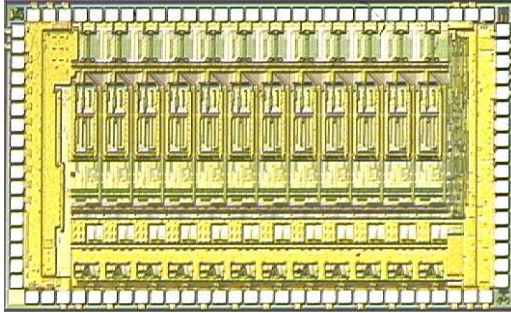


October 2005



Features

- 12x3.6 Gb/s VCSEL Driver
- Single +3.3V supply dissipating 100 mW per channel
- Serial digital interface for global and individual channel control
- Individual channel control for enable, modulation and bias current
- On-chip adjustable VCSEL temperature compensation
- Analog control input for closed-loop optical power optimization
- VCSEL open/short detection with autonomous fault handling
- 250-micron channel pitch matches optical ribbon fiber and array VCSELs
- Differential CML and LVPECL compatible inputs with on-chip termination
- ACJTAG boundary scan testability

Applications

- SNAP12 MSA
- OC-768 VSR parallel optics
- Proprietary 40 Gb/s intra-system parallel optics
- Infiniband™ 12X parallel optics PMD

Description

The growing use of the Internet has created increasingly higher demand for multi-Gb/s I/O performance. The demand for 100 Gb/s+ WAN bandwidth fuels the growth of short-reach 40 Gb/s infrastructures within high-end telco and datacom routers, switches, servers and other proprietary chassis-to-chassis links.

The Zarlink PX5419A 12X3 Gb/s VCSEL Driver* with ACJTAG is a twelve-channel VCSEL driver designed for various 12x3 Gb/s parallel PMD applications. It consists of a DC-coupled amplifier with selectable modulation and bias currents optimized for driving commercially available, common cathode VCSELs from a single +3.3 V supply.

Individual channel settings are used to control the modulation and bias current and their temperature coefficients, allowing the optical output power and extinction ratio to be optimized. Data controlling the Primarion PX5419A VCSEL Driver settings is loaded by a simple four-wire CMOS serial interface that features read/write capabilities.

The Primarion PX5419A Driver provides full ACJTAG support for boundary scan testability, allowing either AC or DC module connectivity validation and systems test.

Figure 1: Zarlink PX5419A IC driving a commercially-available VCSEL at 3 Gb/s with a PRBS23 pattern.

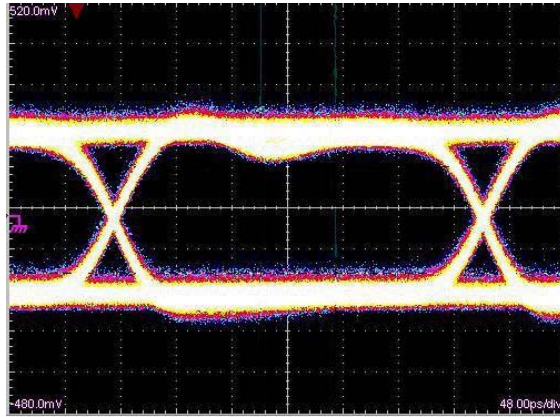
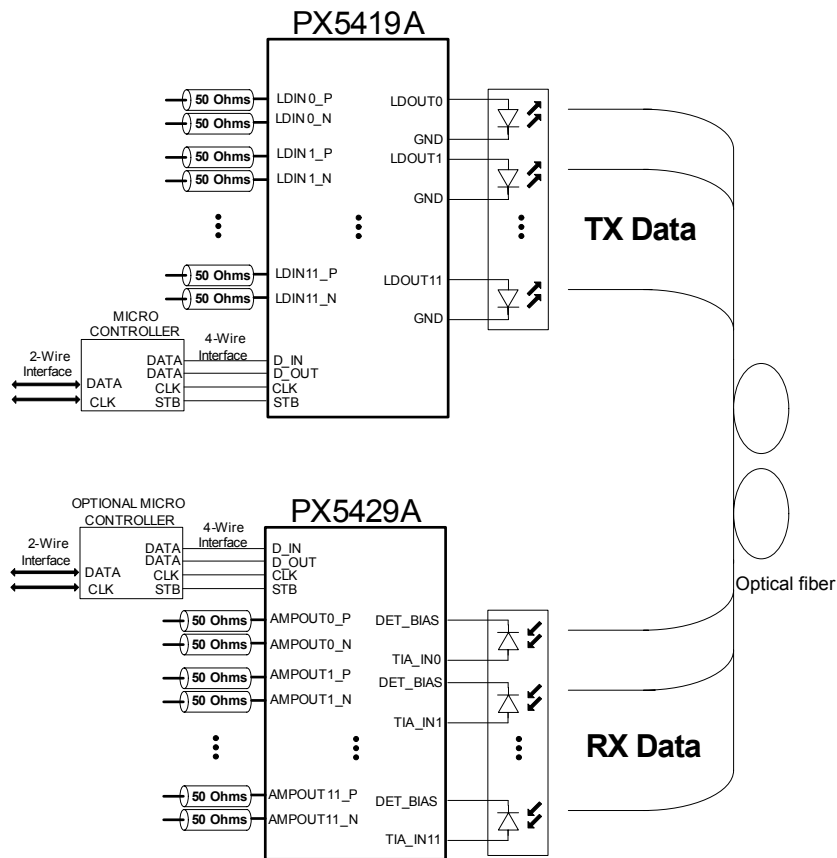


Figure 2: Application block diagram utilizing the PX5419A VCSEL driver and the PX5429A optical receiver





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