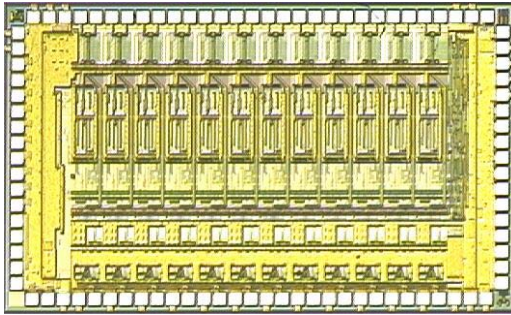


October 2005



### 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.

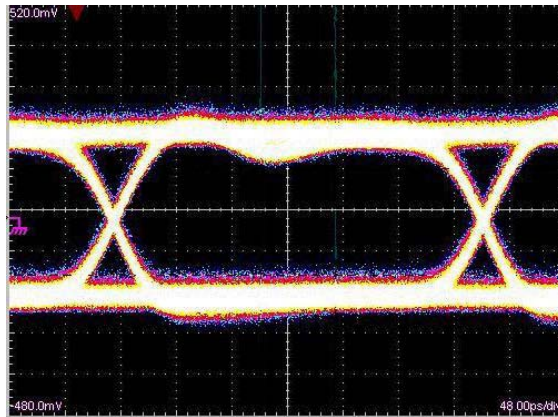
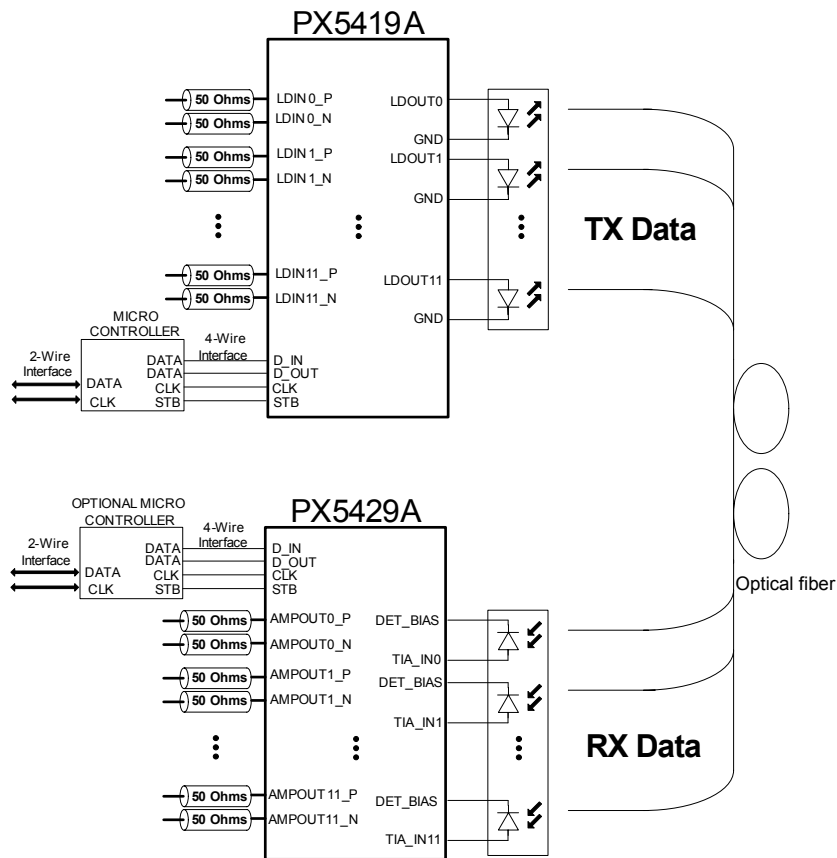


Figure 2: Application block diagram utilizing the PX5419A VCSEL driver and the PX5429A optical receiver





**For more information about all Zarlink products  
visit our Web Site at  
[www.zarlink.com](http://www.zarlink.com)**

Information relating to products and services furnished herein by Zarlink Semiconductor Inc. or its subsidiaries (collectively "Zarlink") is believed to be reliable. However, Zarlink assumes no liability for errors that may appear in this publication, or for liability otherwise arising from the application or use of any such information, product or service or for any infringement of patents or other intellectual property rights owned by third parties which may result from such application or use. Neither the supply of such information or purchase of product or service conveys any license, either express or implied, under patents or other intellectual property rights owned by Zarlink or licensed from third parties by Zarlink, whatsoever. Purchasers of products are also hereby notified that the use of product in certain ways or in combination with Zarlink, or non-Zarlink furnished goods or services may infringe patents or other intellectual property rights owned by Zarlink.

This publication is issued to provide information only and (unless agreed by Zarlink in writing) may not be used, applied or reproduced for any purpose nor form part of any order or contract nor to be regarded as a representation relating to the products or services concerned. The products, their specifications, services and other information appearing in this publication are subject to change by Zarlink without notice. No warranty or guarantee express or implied is made regarding the capability, performance or suitability of any product or service. Information concerning possible methods of use is provided as a guide only and does not constitute any guarantee that such methods of use will be satisfactory in a specific piece of equipment. It is the user's responsibility to fully determine the performance and suitability of any equipment using such information and to ensure that any publication or data used is up to date and has not been superseded. Manufacturing does not necessarily include testing of all functions or parameters. These products are not suitable for use in any medical products whose failure to perform may result in significant injury or death to the user. All products and materials are sold and services provided subject to Zarlink's conditions of sale which are available on request.

Purchase of Zarlink's I<sup>2</sup>C components conveys a licence under the Philips I<sup>2</sup>C Patent rights to use these components in and I<sup>2</sup>C System, provided that the system conforms to the I<sup>2</sup>C Standard Specification as defined by Philips.

Zarlink, ZL and the Zarlink Semiconductor logo are trademarks of Zarlink Semiconductor Inc.

Copyright Zarlink Semiconductor Inc. All Rights Reserved.

**TECHNICAL DOCUMENTATION - NOT FOR RESALE**

---