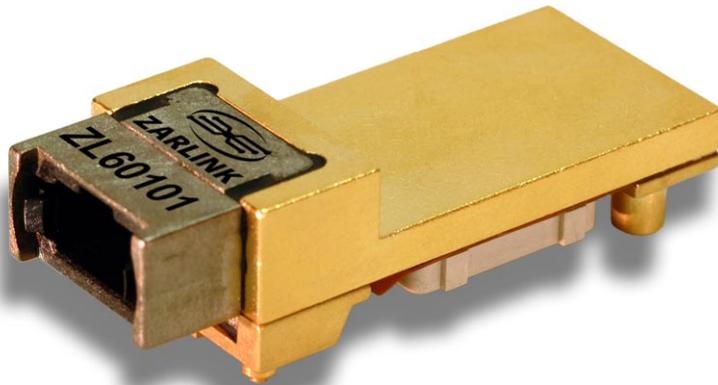


## PRODUCT PREVIEW

Zarlink's 12-channel PFOMs (parallel fiber optic modules) provide high data throughput and VSR (very short-reach) interconnection for large capacity switches, routers and data transport equipment. The combination of data rate and link length, as well as simplified cable management and system installation provides significant advantages over copper. Coupled with multi-mode 12-channel ribbon cables using MPO/MTP® connectors, the ZL60101 and ZL60102 transmitter/receiver pair forms a complete parallel fiber link capable of up to 32 Gbps data rate.

Designed using 850 nm high-reliability VCSEL and PIN arrays, and Zarlink's patented optical self-alignment technology, the ZL60101 and ZL60102 provide high bandwidth, reliable links. The modules are pluggable, each fitted with an industry-standard MegArray® BGA connector, which provides ease of assembly on the host board and enables provisioning of bandwidth on demand.



### Applications

- Terabit routers
- Switches and cross-connects
- Proprietary backplanes
- InfiniBand® connections
- OC-192 VSR interconnects
- Rack-to-rack, shelf-to-shelf, board-to-board
- Board-to-optical backplane interconnects
- Industrial and military applications

### Packaging and Availability

- 100-pin BGA MegArray® connector and MPO/MTP® optical connector
- Available now in production quantities

### High-Bandwidth, Reliable Links

- Each of the 12 channels operates up to 2.72 Gbps for a maximum throughput of 32.4 Gbps
- Data rate of 2.72 Gbps allows OC-48 data rate with overhead for forward error correction
- Effective transmission range of 300 meters at 2.5 Gbps
- Channel bit error rate of better than  $10^{-12}$  ensures high data integrity
- Electrical interface is differential CML (Current-Mode-Logic)
- Third generation in-house VCSEL technology
- Excellent reliability and module lifetime of over 15 years

### Ease of Assembly

Each module is electrically pluggable, using an industry-standard 100-pin BGA MegArray® connector mounted underneath the module. This feature provides ease of assembly on the host board and enables provisioning of bandwidth on demand.

### Low Power

Typical power dissipation of 1.2 W per module (100 mW per channel), driven by a single 3.3 V supply.

### Eye Safety

TÜV certified as a Class 1M Laser product in accordance with IEC 60825-1.

### Evaluation Kit

The ZLE60100 evaluation kit is designed for high-speed evaluation of the ZL60101 and ZL60102. The kit consists of one transmitter evaluation board, one receiver evaluation board, and an optical test fiber ribbon cable. Each evaluation board is fitted with a MegArray®, socket where the optical module can be plugged in. SMA connectors are provided for the differential AC-coupled high-speed CML I/O interface.

### Customer Support

The ZL60101 and ZL60102 are supported by Zarlink's network of in-house field application and design engineers.

# ZL60101/2 PARALLEL FIBER OPTIC MODULES

## APPLICATION

### Serial Optical Backplane

PFOMs are the optimum method for VSR interconnection, where the combination of data rate and link length precludes the use of copper. In these systems, including large capacity switches and routers, parallel fiber modules support board density, bandwidth and distance requirements, while reducing cost and complexity.

The diagram below shows a serial optical backplane application, typical of those implemented in terabit-class switches and routers. In this system, the transmit and receive modules form a very high bandwidth interconnect over parallel fibers between the I/O boards and the switch fabric board.

Compared to alternative solutions, which include 2.5 Gbps Small Form Factor Pluggable (SFP) transceiver modules.

Zarlink's parallel fiber modules provide a six time increased efficiency in board space occupancy, a two times reduction in power consumption, and a substantial cost reduction.

Lower cost is achieved in part through the use of Zarlink's patented optical alignment technology, which allows VCSEL or PIN diode arrays to be mounted and aligned without active alignment or the use of waveguides. During assembly, the devices self-align to the pitch of the fibers, and guide pins position the MPO/MTP<sup>®</sup> connector precisely over the assembly. This ensures excellent optical coupling to all 12 fibers, while easing the manufacturing process and reducing associated cost.

