

Transceiver Photonic Platform



Optoscribe's unique 3D glass-based photonic integrated circuit platform is ideally suited for creating custom transceiver fiber coupling and attaching solutions designed to specifically address the challenges of individual transceiver architectures and configurations.

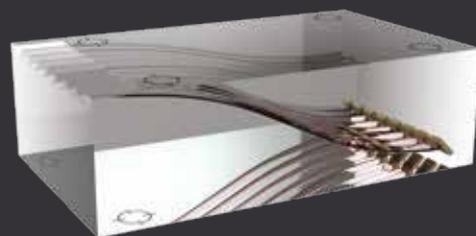
The datacom market is dominated by the explosive growth in cloud data centers mostly belonging to internet giants such as Amazon, Microsoft and Google.

This growth is required to meet consumer expectations of on-demand, high quality and real-time access to content via a multitude of applications across a wide range of devices such as smartphones, tablets, laptops, PCs and smart televisions. Data centers now represent >65% of the overall market for optical transceivers.

The combined requirements from data center operators for ever higher bandwidths, reduced footprints, increased integration and lower costs, demands new ways to address the classic challenges and constraints inherent in transceiver fiber coupling solutions.

Optoscribe's list of available platform components

- Single mode waveguides
- Multimode waveguides
- Mirrors for 90-degree light turn
- "V" grooves for accurate passive fiber alignment
- Fiducial markers for accurate and precise alignment to the fiber and transceiver platform.



Challenges with Optical Transceiver Assembly

It is widely accepted that the assembly of optics inside transceiver packages remains largely at best a semi-manual task not ideally suited to high volume product ramping.

The demands being exerted on transceiver manufacturers call for imaginative monolithic solutions to the fiber coupling challenge to facilitate high volume manufacturing while maintaining consistent, high quality finished product.

Transceivers, particularly those based on single mode fiber, are difficult and therefore expensive to assemble and package, dominating the overall cost of the final module. This is precisely what Optoscribe's glass-based 3D photonic integrated circuit platform is targeted at reducing assembly costs in optical transceiver manufacturing.

Customer benefits using Optoscribe's Transceiver Photonic Platform

Challenge	Optoscribe Feature	Benefit
Automated assembly suitability	Single, monolithic glass chip	Ideal for automated assembly porocesses e.g. pick and place
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Automated assembly suitability	Single, monolithic glass chip	Suitable for solder re-flow processes
Packaging constraints	3 dimensional waveguides	Flexible and precise 3D (height) alignment
Packaging constraints	Small, single component	Fits into the most challenging of packages
Packaging constraints	Customised specifically to package	Fits into the most challenging of packages
Reduce assembly & test times	Integrated "V" grooves with precision fiducial markers	Precise, passive alignment to fiber; automated vision based alignment
Thermal stability	Single, monolithic glass chip	Glass matched CTE for optimal performance
Alignment to VCSEL/PD arrays	Integrated 90 degree light turning mirrors	Precise, painless alignment & surface mounting
Alignment to grating couplers	Integrated 90 degree light turning mirrors	Precise, painless alignment & surface mounting

Optoscribe's unique 3D fiber coupling solutions can address challenges in a wide variety of transceivers including Silicon Photonics (SiPh), VCSEL and DFB based designs and coupling to a wide variety of standard fiber architectures including SMF and MMF.

The Optoscribe platform also supports advanced space division multiplexed transmission using multicore fiber (MCF) or few mode fiber (FMF).

Please configure your custom design using the Company's OptoFigurator™ on the website – www.optoscribe.com

For further information please contact us, details below



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