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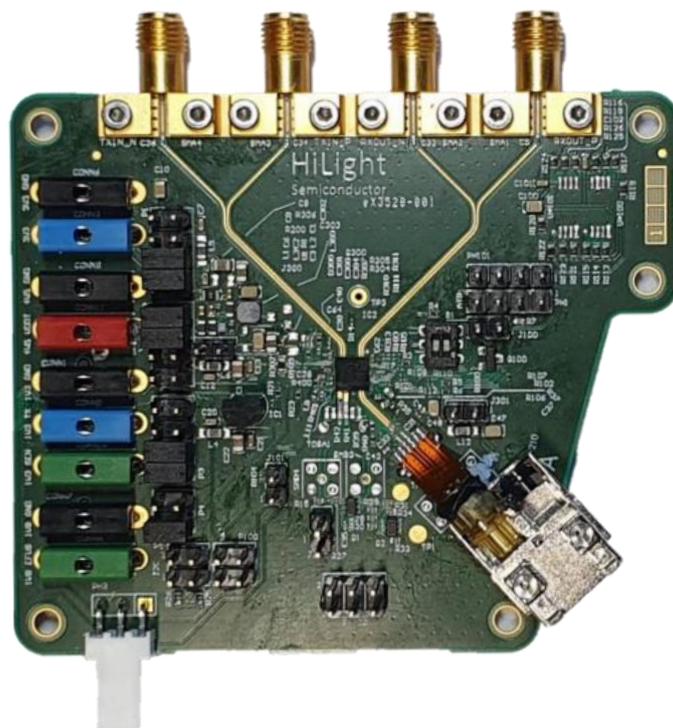
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## **HiLight Semiconductor announces demonstration of the HLC28L0 25 Gbps Transceiver CMOS ‘Combo’ IC to lead customers**

HiLight Semiconductor, a world leader in CMOS integrated circuit chips for optical communications, today announced the demonstration to customers of an advanced Evaluation Kit using HiLight’s highly integrated CMOS transceiver ‘Combo’ IC for 25 Gbps DML applications such as 25GbE LR and 24G CPRI 300m~10km wireless fronthaul.

The evaluation kit comprises HiLight’s HLC28L0 25G DML transceiver ‘Combo’ IC with an optical ROSA containing HiLight’s HLR25G0 25Gbps TIA. Both ICs are fabricated in fine geometry pure CMOS. Using the evaluation kit HiLight was able to demonstrate excellent receiver sensitivity performance of -17dBm (BER 5E-5) for wireless fronthaul applications.

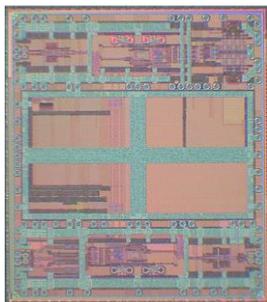


**HiLight’s 25Gbps receiver optical evaluation kit for 25G SFP28 applications**

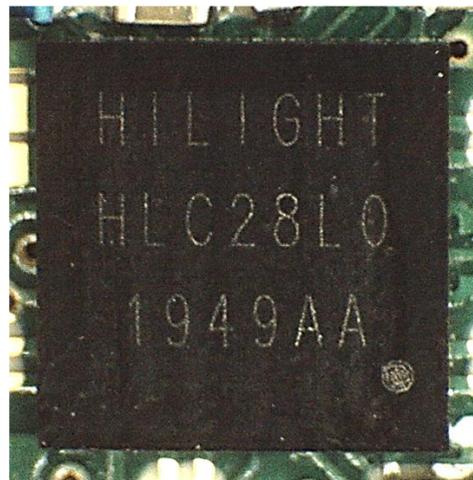
The HLC28L0 is a highly integrated 25 Gbps Laser Driver & Limiting Amplifier with dual CDRs and integrated microcontroller packaged in a CSP BGA. The CMOS DML laser driver is intended for DC-coupling to FP and DFB lasers and is capable of delivering 70mA bias and 80mA modulation currents combined on-chip into the laser TOSA. The transmitter input features an adaptive CTLE stage with 10 dB range whilst the receiver output provides adjustable swing and de-emphasis compliant to 25GAUI SFP28 interfaces.

The dual CDRs re-time from 24Gbps to 28Gbps and feature auto rate detect and auto bypass functions. Both electrical side and optical side re-timed loopback functions are provided for CPRI fronthaul applications.

The HLC28L0 is designed and fabricated on a high-volume fine geometry bulk CMOS process and based entirely on HiLight's own internally developed CDR and high-speed receiver and driver IP. Incorporating a microcontroller core and on-chip memory the HLC28L0 provides SFF-8472 compliant digital control and monitoring – IP that has already been proven and deployed in high volume in HiLight's range of 10Gbps Datacom and PON transceiver products. At the user's option, external MCUs are also supported.



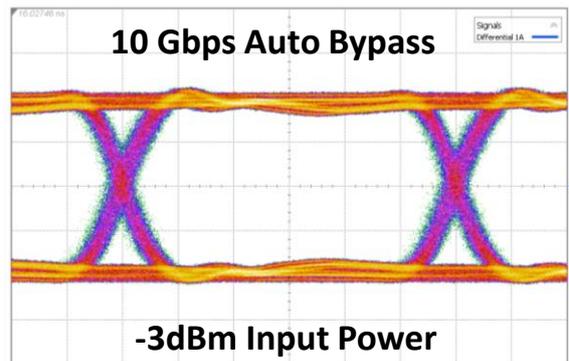
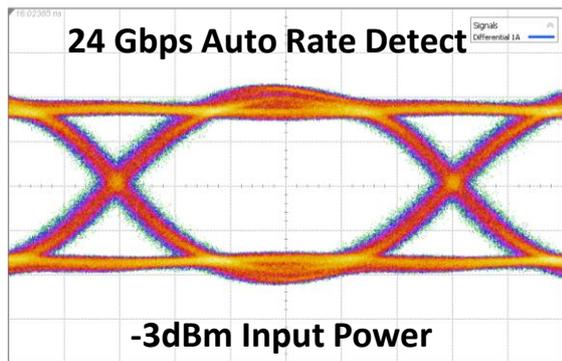
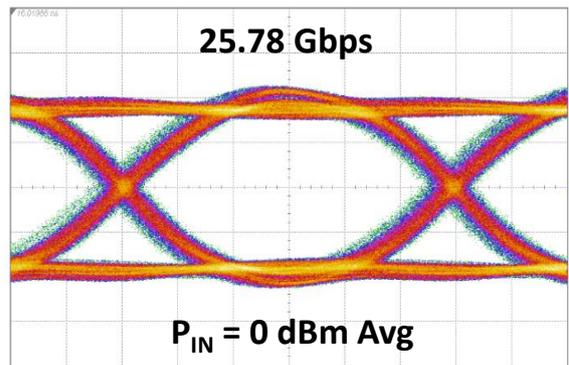
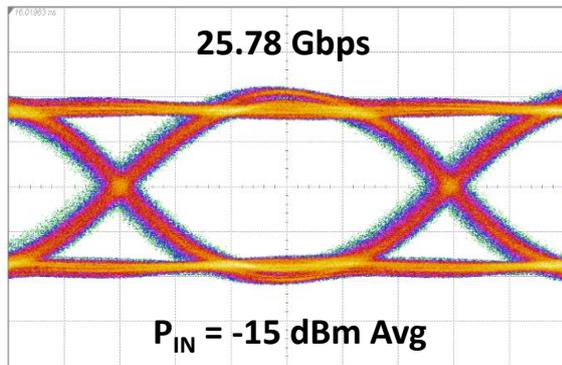
**HLC28L0 CMOS die**



**HLC28L0 in CSP BGA package**

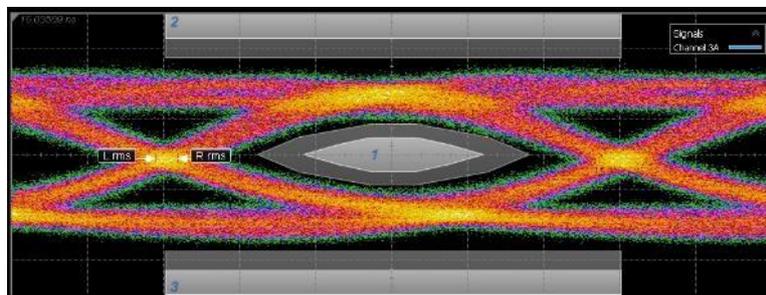
Operating over full industrial temperature ranges, the HLC28L0 is packaged in a 4mm x 4mm BGA CSP for directly mounting on an SFP28 PCB and interfacing into a flex PCB based TOSA and ROSA. A single 3.3v supply is required as the Combo includes on chip DC-DC converters for the power-saving low voltage digital supply plus the higher voltage Laser supply.

HiLight is demonstrating the complete optical receive path in an optical evaluation kit containing the HLC28L0 transceiver IC and a ROSA containing the HLR25G0 25 Gbps CMOS TIA. Example results are shown below and indicate excellent performance is achieved from 10Gbps up to 25.78 Gbps using the CMOS CDR re-timer and bypass functions in combination with the HLR25G0 optical front-end.



**HLC28L0 Receiver CDR retiming and bypass demonstration**

The HLR25G0 TIA for PDs and HLR25G1 TIA for APDs are already in volume production. The HLC28L0 25Gbps DML Combo IC will be available in Q2 next year and HiLight will also offer a VCSEL driver variant product for 25Gbps SR multi-mode fiber applications.



**Preliminary 25Gbps VCSEL transmitter eye with 34% MM**

Christian Rookes, VP Marketing at HiLight, commented “We’re excited to be able to sample final-form product into customer hands to evaluate the high-speed performance of our 25G Combo IC. This validates HiLight’s CMOS approach to 25Gbps PMD ICs for optical transceivers and we look forward to bringing CMOS costs to volume production next year.”

“HiLight’s fully integrated, single-chip solution for SFP28 modules will be the world’s first in mass production in pure CMOS. For customers this means a significant step down in cost and power consumption, without compromising on performance Vs SiGe based solutions” stated Dr Jess Brown, VP Sales at HiLight.

Interested customers should contact their local sales representative for further information.

**About HiLight Semiconductor Limited:**

HiLight Semiconductor Ltd. is a Venture Capital backed, Fabless chip company, founded in 2012 by veterans of several previous start-ups. Specialising in deep sub-micron CMOS, the company designs and supplies the world's highest performance PMD and PHY ICs for high speed fiber-optics based communications and networking/Datacentre applications.

The company has already shipped over 80 Million ICs to date.

HiLight is headquartered in Southampton, UK, with design offices in Bristol UK and sales and local technical support offices in China (Shenzhen, Wuhan, Shanghai, Chengdu), Taipei and Japan.