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HiLight Semiconductor to demonstrate pure CMOS 10G-PON and SFP+ Datacom chipset reference designs alongside 100G integrated receiver at CIOE 2018

HiLight Semiconductor will be at CIOE 2018 in Shenzhen to showcase multiple new CMOS optical PMD product lines for volume applications up to 100G. The following products and reference designs will be demonstrated live to customers that arrange a meeting during the CIOE show:

- A 10G-PON Symmetric BOSA-on-Board reference design comprising the HLC10P0 symmetric PON 'Combo' IC interfaced with a BOSA using HiLight's HLR10G1 APD TIA. The complete reference design consumes a class leading 750 mW due to the chipset being designed in pure CMOS.
- A complete CMOS 12G SFP+ SR reference design solution, using the HLC12V0 'Combo' IC, for Datacom transceiver and AOC applications offering significant BOM cost savings and a typical total operating power of 600 mW.
- A Quad 25G receiver with integrated CDRs in pure CMOS. The quad receiver IC forms part of a complete CMOS chipset solution for 100G QSFP28 being developed by HiLight for next generation, low power, low cost 100G optical links.

The HLC10P0 PON ONU 'Combo' IC is designed in pure CMOS and has highly integrated 5-in-1 functionality: limiting amplifier receiver; burst-mode transmitter; patented laser dual-loop power and extinction ratio control; PWM APD bias controller and an 8051 microcontroller with embedded firmware providing digital diagnostic monitoring. With a laser bias capability of 115mA it is suitable for DML based NG-PON2 designs as well as 10G-EPON and XGS-PON.

The laser driver output stage has sufficient operating headroom so that it does not require any external DC-DC converter to boost the laser supply voltage to operate at 10G unlike some other available solutions.

The HLC12V0 SR Datacom 'Combo' IC highly integrated 4-in-1 functionality features are: 12G limiting amplifier receiver; 12G VCSEL transmitter; integrated 8051 microcontroller and non-volatile memory with embedded firmware providing digital diagnostic monitoring. This is the first time all of these functions have been combined together in a single CMOS transceiver IC for SFP+ SR and AOC applications. When used with HiLight's HLR10G0 CMOS transimpedance amplifier customers can realise a complete SFP+ SR transceiver or AOC which offers significant BOM cost savings, enhanced performance and the lowest operating power in the market.

HiLight will shortly make available the HLC12L0 LR 'Combo' IC with 5-in1 integrated functionality alongside a complete SFP+ LR reference design with typical power consumption of 700mW. Interested customers should contact their HiLight sales representative.

Christian Rookes, VP Marketing at HiLight, commented "HiLight's symmetric HLC10P0 BoB reference design demonstrates market leading performance, including a low power CMOS 10G burst laser driver that can automatically control transmitter extinction ratio to within ± 1 dB across temperature with negligible additional power consumption. Typical receiver sensitivity is better than -32dBm @ BER 1E-3." Christian added "In addition to the 10G-PON chipset and HLC12V0 Combo IC for VCSEL applications, HiLight is releasing the HLC12L0 Combo IC for SFP+ LR/CPRI directly modulated laser applications. With HiLight's existing portfolio of TIAs, we can now provide complete 10G Datacom chipsets and, with our forthcoming 100G Datacom chipset, we can meet the need for reduced power consumption and lower BOM costs as volume demand continues to grow in Asian markets and specifically for China's vast mega-datacentres requirements."

Jess Brown, VP Sales, commented "With the addition of the HLC10P0, HiLight can now supply customers with pure CMOS 10G Symmetric and Asymmetric ONU chipsets to cover the entire PON market, include BOSA-on-Board and SFP+ modules. Using HiLight's CMOS products will enable our customers to drastically lower power, reduce BOM cost, whilst future-proofing their designs due to the flexibility of the integrated MCU." He added, "The HLC12V0 SFP+ SR reference design is already sampling to key customers and we are excited to announce the production availability of the HLC12V0 to provide a complete CMOS chipset to customers. The forthcoming availability of our HLC12L0 SFP+ LR reference design means our customers will be able to make use of our ever growing competitive portfolio of Datacom products to develop cost competitive, high performing, low power solutions."

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.

At the time of writing the company has already sold over 60 Million ICs into the fiber based PON, Datacentre and Networking markets.

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