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HiLight Semiconductor announces the World's first pure CMOS 5-in-1 'Combo' IC (HLC10P0) for Symmetric 10G-PON ONU applications, available for production

HiLight Semiconductor are pleased to announce the production availability of the HLC10P0 5-in-1 transceiver IC for use in symmetric 10G-PON BOSA-on-Board (BoB) and SFP+ module applications. Combining HiLight's CMOS HLR10G1 TIA with the new HLC10P0 provides a complete CMOS chipset solution for 10G-PON applications.

The HLC10P0 PON ONU 'Combo' IC is designed in pure CMOS and has highly integrated 5-in-1 functionality with the following features: 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 HLC10P0 is fully pin-compatible with HiLight's production released HLC10P1 for asymmetric 10G-PON.

HiLight will be demonstrating the HLC10P0 in an ONU BoB reference design at CIOE 2018, Shenzhen, China. The demonstration showcases a complete ONU BoB reference design comprising HiLight's pure CMOS chipset of the HLC10P0 and HLR10G1, with the whole design consuming a class leading power consumption of <750 mW @ 3.3V.

"10G-PON optics and equipment are shipping today and being deployed by operators around the globe. Technology innovations are lowering the costs of next-gen PON optics dramatically, particularly 10G symmetrical." commented Julie Kunstler, Principal Analyst at Ovum "Consequently, we are showing a strong ramp in 10G-PON and, by 2023, next-gen optics will account for more than 80% of total PON optics revenues."

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 $\pm 1\text{dB}$ across temperature with negligible additional power consumption and typical receiver sensitivity of better than -32dBm @ BER $1\text{E}-3$.”

Dr Jess Brown, VP Sales, added “With the addition of the HLC10P0, HiLight can now supply customers with pure CMOS 10G Symmetric and Asymmetric ONU pin-compatible chipsets to cover the entire PON market, include BOSA-on-Board and SFP+. 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. In addition, it could be possible to provide customised firmware solutions for customers who require it.”

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.