Point2 Technology Introduces Low Power 400G Active Electrical Cable for Data Centers and High-Performance Computing

More Cost Effective, Lower Power than Active Optical Cables (AOC) and Greater Reach, Lower Weight and Size Versus Passive Copper Cables (PCC)

San Jose, Calif., June 7, 2021 – Point2 Technology, a leading provider of high performance, low power connectivity solutions for Cloud and 5G infrastructure, today introduced its first 400GBASE-SR4 Active Electrical Cable (AEC) for use in Distributed Disaggregated Chassis (DDC) employed in data centers and high-performance computer (HPC) systems. The new PT-QD20132 employs Point2's C-Tube^{TM} AEC and is built on a vertically-developed PAM4 SoC in a rugged cable assembly that delivers performance equivalent to active optical fiber cables (AOC) for rack and mid-tier interconnect. It is far more affordable, has greater reach, and lower power consumption than other passive copper cable (PCC) solutions. Point2 has partnered with other Tier 1 module manufacturers to deliver the PAM SoC and an extensive reference design so C-Tube can be sourced from multiple suppliers, making it a more ubiquitous alternative to single source solutions.

"Point2 has been developing industry leading, low-power, high-speed connectivity solutions for the past three years to respond to cloud customers' high capacity and affordable connectivity requirements," said Sean Park, CEO of Point2. "With the introduction of our C-Tube 400G AEC we offer customers a low cost,high-performance alternative to expensive AOCs and performance-limited DACs to proliferate 400G disaggregated chassis configurations at hyperscalers and service providers".

Active electrical cables have distinct advantages over their passive direct attach copper (DAC) and active optical cable (AOC) counterparts for short-reach applications. They achieve up to five times the reach in very high-speed applications such as Base-SR4 400G, which can reduce cable weight by up to 80% while reducing cable size by 50%. They also consume about 75% less power than optical fiber cables and are more affordable. As a result, AECs have become widely adopted by data centers and HPC systems, especially when the DDC architecture is used. The PT-QD20132 is designed to exploit the benefits of AEC to unlock the full capabilities of 400GBASE-SR4.

The hot-pluggable PT-QD20132 accepts eight lanes of 53.125 Gb/s PAM4-modulated signals in each direction over a length of 7 m for an aggregated data rate of 425 Gb/s and has excellent bit-error rate performance of 10^{-8} or less. It can easily replace existing AOC assemblies as it has the same standard QSFP56-DD form factor and can replace bulky 400G QSFP56 DAC copper cables as well. The PT-QD20132 consumes just 4.5 W per cable end at 3.3 VDC and has a bend radius is 3 cm. The PAM4 SoC in the PT-QD20132 has embedded clock and data recovery (CDR) functionality and employs low-power, high-performance digital signal processing to compensate for the effects of intersymbol interference.

Unlike other AEC Ethernet solutions that do not include self-test capability, the PT-QD20132 has an integrated MCU that provides access to Digital Diagnostic Monitoring (DMM) via the 2-wire QSFP management interface. This enables eye monitoring, PRBS pattern generation and checking, user-defined pattern generation, DC offset and phase calibration, eye and equalizer calibration, and loss of signal detection, without the need for external circuits. In addition, customization firmware can be downloaded to the PT-QD20132 to satisfy the needs of specific applications.

Availability

The PT-QD20132 is available in lengths of 3, 5, and 7 m terminated in 76-pin edge connectors. It is sampling now and expected to be in production by Q2 2022. Module manufacturers are encouraged to contact Point2 Technology for information about how to integrate the company's PAM4 SoC into their products.

About Point2 Technology

Point2 Technology, headquartered in San Jose, Calif., designs and manufactures low-power, high-speed, point-to-point interconnect and range enhancement solutions designed to meet the bandwidth requirements of cloud-based data centers at 5G infrastructure. For more information, please contact Point 2 at info@point2tech.com or www.point2tech.com.