Press Release

12th December 2022

Yamaichi Develops OSFP-VLC, the First VLC (Vertical Line Card) Platform Compatible Connector in the Market

Yamaichi Electronics has developed OSFP-VLC, a vertical version of the Octal Small Form Factor Pluggable connector (OSFP*[1]) that is compatible to the Vertical Line Card (VLC) platform which was presented by Nubis Communications at ECOC 2022 in Basel, Switzerland*[2]. The OSFP-VLC connector system will debut at DesignCon 2023 (January 31 through February 02) in Santa Clara, California.

VLC is an architecture that was recently proposed to the industry. It allows higher transmission speed with higher density by a vertical line card which is mounting vertical I/O connectors and ASIC*[3] side by side to shorten the signal trace distance within 3” to 4”, all while taking advantage of the existing mature technology (module, board assembly process and signal transmission technology) in the market.

As the PCB line length can be shortened in comparison to the conventional Horizontal Line Card solution (HLC), 112G transmission can be achieved with current cost. In addition, vertical line card placement will decrease the number of necessary boards, as well as make room for a cooling space which leads to much lower power consumption and increased cooling efficiency.

Background

As 5G technology, big data, AI and IoT become more prevalent, fast and reliable connection to process extremely large amount

of data in the cloud is becoming increasingly important. On the other hand, cost reduction is becoming crucial for data centres since maintaining physical space as well as air conditioning and power supply for the system is a huge burden.

On top of all this, increasing numbers of data centres and the power consumption that follows have a concerning impact to the environment.

While there have been several proposals from the industry to realise higher transmission speed and density to upgrade data centre devices from 112G to 224G, all proposals required new technology which leads to an increased production cost.

Given the situation above, Yamaichi Electronics and Nubis Communications have decided to provide a new solution to the market based on VLC architecture, a new architecture that places OSFP connectors vertical to the line card, allowing existing mature technology (module, mounting and signal transmission technology) to achieve higher signal density and speed while maintaining low cost, as well as highly efficient cooling structure for lower power consumption.

Advantages

- Shortened trace length to ASIC allows for a higher data transmission speed with existing technology only
- Placing the line cards vertically creates room within the system which allows implementing a highly efficient cooling structure
- Lower power consumption by highly efficient cooling system
- Lower cost by eliminating cables and needing fewer boards

- Can utilise other I/O interface types

Target applications

- Server, router and switches for data centres
- Optical transceiver device
- Supercomputers

*1Octal Small Form Factor Pluggable: A standard for optical transceivers that connect optical fibres to communications equipment

*2ECOC 2022 Basel Switzerland: https://www.ecoc2022.org

*3 A general term for integrated circuits (application-specific integrated circuit), a type of electronic component that integrates circuits with multiple functions for a specific purpose

About Yamaichi Electronics

Yamaichi Electronics is a market leader for Test & Burn-In sockets, connectors and connection systems. Their reliability and functional dependability are essential for the success of the overall project. Yamaichi Electronics established themselves on the world market very quickly as a manufacturer of high quality, reliable components for demanding applications in various markets and applications: semiconductor, industrial automation, automotive, data networking, measurement & testing, medical, mobile computing, embedded computing, and others.

Yamaichi Electronics Deutschland GmbH
Concorpark, Bahnhofstr. 20, 85609 Aschheim-Dornach, Germany
Tel. +49 (0)89 – 4 51 09-0
Fax: +49 (0)89 – 4 51 09-110
info-de@yamaichi.eu
www.yamaichi.eu