



Press Release

TRUMPF and KDPOF become strategic partners for automotive data communication solutions

TRUMPF Photonic Components and KDPOF working together for new wavelength standards in optical data communication within the automotive branch // Optical interconnects to become an indispensable part in future cars // The target is to bring to the market an integrated transceiver for multi-gigabit optical communications into automobile // 980nm wavelength VCSELs for greater robustness and service life

Ulm, September 06, 2022 – TRUMPF Photonic Components, a global leader in high-speed VCSEL and photodiode solutions for data communication and KDPOF, an expert in high-speed optical networking solutions based in Spain, have become strategic partners on automotive datacom solutions. Both companies pursue the goal of implementing state-of-the-art optical data communication standards and solutions for the automotive industry. Therefore, TRUMPF and KDPOF are combining their knowledge in the field of components and networks for optical data communication. “With our strategic partnership we are going one step further and aim to establish VCSEL and optical networks as an indispensable part in future cars. Having a supplier like TRUMPF as a partner in working groups enrich the discussion with deep manufacturing and design knowledge of VCSEL and photodiodes components,” explains Rubén Pérez-Aranda, CTO at KDPOF.

Autonomous driving cars benefit from VCSEL technology

Due to the push in the automotive branch towards autonomous driving, a large amount of data has to be processed in cars. Consequently, optical interconnects are required to manage the data flow, acting as a nervous system connecting sensors and electronic brains, while meeting tight electro-magnetic interference requirements. “After a long-term cooperation, it’s great to enter a strategic partnership with KDPOF now, combining our long-term expertise to shape the future of data communication within car networks,” says Joseph Pankert, VP Product Management at TRUMPF Photonic Components. “Our long-term studies have already proven that 980nm VCSELs can operate at much higher



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temperatures while maintaining excellent reliability. This is exactly what the automotive industry is demanding, and therefore we support the movement towards a new, long-wavelength standard”, Pankert adds.

The particularly demanding application in the automotive sector

Compared to datacenters, automotive applications require not only a much wider range of operating temperatures, ranging from minus 40 °C up to 125 °C, but also an interconnect length of even less than 40 meters. For superior robustness against wear-outs and random failures, 980nm VCSEL is recognized as the wavelength preferred to become the new standard. Next to performance characteristics, 980nm enters to existing OM3 fibers with only limited dispersion loss.

Official standard on its way

Both TRUMPF and KDPOF are participants in the IEEE P802.3cz task force. The current draft approved in IEEE 802.3 working group ballot for automotive optical multi-gigabit data transmission provides optical specifications that make use of reliable light sources based on proven longer wavelength technology. Driver assistance and autonomous vehicle operation will benefit from the equipment made of standardized components. “The automotive industry is a very demanding. The IEEE 802.3 standard is therefore focusing on highly reliable conditions that delivers a service life of 15 years and more”, says Pérez-Aranda.

Visit TRUMPF Photonic Components at ECOC 2022 in Basel, booth 473

TRUMPF and KDPOF will have a joint presentation on “980nm VCSELs: New standard in automotive” on September 21st at 03.15 pm at the market focus stage at ECOC

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State-of-the-art clean-room production at TRUMPF Photonic Components

TRUMPF manufactures its VCSELs and photodiodes in state-of-the-art clean-room facilities.



980nm VCSEL and photodiode solutions for greater robustness

980nm wavelength VCSEL to become the new standard in automotive. IEEE 802.3cz amendment is currently in working group ballot phase and expected to be released in June 2023.



Optical data communication is increasing in the automotive branch

With autonomous driving vehicles the amount of data within a car network is increasing. VCSEL and photodiodes support optical data communication applications.



Joseph Pankert, VP Product Management at TRUMPF Photonic Components



Rubén Pérez-Aranda, CTO at KDPOF

About TRUMPF Photonic Components

TRUMPF Photonic Components is a global technology leader, supplying VCSEL and photodiode solutions for consumer electronics, datacom, automotive, industrial sensing and heating markets. So far, more than two billion VCSEL chips and photodiodes have been shipped worldwide. The staff continues to drive its technological know-how, having been established for over 20 years now, to maintain its leadership position. The long-established technology was acquired by TRUMPF in 2019. The company has its



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headquarters in Ulm, Germany, with further sales locations in the Netherlands, China, Korea and the US.

TRUMPF Photonic Components belongs to the TRUMPF Group, a high-technology company that offers production solutions in the machine tool and laser sectors. TRUMPF is the world technological and market leader for machine tools used in flexible sheet metal processing, and also for industrial lasers and metal 3D printing. In the 2021/22 fiscal year, the company employed some 16,500 people and generated sales of about 4.2 billion euros (preliminary figures). With over 80 subsidiaries, the TRUMPF Group is represented in nearly every European country, in North America, South America and Asia. The company has production facilities in Germany, France, the United Kingdom, Italy, Austria, Switzerland, Poland, the Czech Republic, the United States, Mexico and China.

For more information about TRUMPF Photonic Components visit:

www.trumpf.com/s/VCSEL-solutions

About KDPOF

A fabless semiconductor supplier. KDPOF provides innovative high-speed optical networking for harsh environments. KDPOF made gigabit communications over step-index plastic optical fiber (SI-POF) a reality for the automotive industry. Founded in 2010 in Madrid, Spain, KDPOF offers their cost-effective technology as fully qualified automotive-grade ASSP. KDPOF's technology makes use of innovative digital adaptive algorithms to maximize the receiver's sensitivity, supporting high-yield and reliable optoelectronics production in low-cost bulk CMOS deep submicron nodes, thus supplying carmakers with low risk, low cost and short time-to-market. More information is available at www.kdpof.com

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