

Press Release

November 07, 2016

Innovations from Schweizer and Infineon make Matrix LED headlights more compact and affordable

Schramberg, November 07, 2016 – Matrix LED headlights are now common in premium vehicles because thanks to their excellent road illumination they prevent accidents in twilight or dark and increase driving comfort. Together with Infineon Technologies AG, Schweizer Electronic AG presents innovations for this application at electronica in Munich (08 - 11 November 2016). The innovations help to reduce space and costs and thus support a greater market penetration of the so-called ADB (Advanced Driving Beam) headlights in the automotive market.

The ADB headlight demonstrator displayed at the Schweizer booth 341 in Hall B4 uses the company's Inlay Board technology, which is already being employed in series production for other automotive applications and will now be used for the first time in a Matrix LED headlight from 2017 onwards. With regard to this technology, Dirk Gennermann, Head of Product Marketing at Schweizer says: "The demands on the assembly and connection technology are increasing for future LED headlights as new smaller LED designs lead to a power loss densities of 5 W/mm² and greater while simultaneously achieving a high luminous efficacy. New PCB technologies are required for heat dissipation of this type of LEDs."

Inlay technology in detail

A copper inlay having a thickness of 1.0 mm is embedded in the PCB and attached to the top and bottom sides of the PCB by hundreds of copper-filled laser vias. The virtually dimple-free filling of holes with copper enables the soldering of LEDs with lowest tolerance requirements directly on the via field. Depending on the thickness and the number of vias, the PCB can have a thermal resistance of down to a minimum of 0.1K/W.

At the same time, the inlay board provides the option of also integrating the complete electronic control for the LED matrix on the PCB in an area having four or more copper layers.

Press release 07.11.2016 – Innovations from Schweizer and Infineon make Matrix LED headlights more compact and cheaper

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The FR4 Flex technology, which separates logic and power area of the printed circuit board, allows the high-power LEDs to be aligned at an optimal angle to the electronic control to make the best possible use of the small space in the headlight.

The new variant of the Inlay Board technology now also supports novel LED types in chip-scale packages, which due to lack of space do not have electrically insulated heat sinks. The demonstrator presented has been jointly developed with Infineon Technologies AG. Infineon's LED driver LITIX™ Power Flex enables the flexible scaling of high-current LEDs in a matrix architecture having four to 24 segments. Using LITIX and the Inlay Board technology facilitates the reduction of the PCB space for the LED matrix electronics by up to 50 per cent; components, plugs and connectors required until now are eliminated.

Further information on Schweizer and Infineon at electronica is available at the Schweizer Electronic AG stand 341 in Hall B4, at Infineon's stand 506 in Hall A5 or under www.infineon.com/electronica.

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