

Preview ATZelextronik 10.2020

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HANSEN REPORT

As a source for technology and business trends in the global automotive electronics industry, Paul Hansen highlights current industry topics within the framework of ATZelextronik and ATZelextronics worldwide.

COVER STORY | HIGH-VOLTAGE AND 48-VOLT SYSTEMS

Supercapacitors for safe and efficient electrical on-board networks

Rising transient loads and the increasing need for high cycle rates and redundant protection require new ways of storing energy in the vehicle electrical system. Supercapacitors can be a supplement to existing conventional solutions with batteries: This offers both cost and technical advantages for applications such as recuperation or stand-alone systems within the 48 V vehicle electrical system.

Interview

Sebastian Pohlmann, Skeleton Technologies "Ultra capacitors come out of the niche"

Charging solutions for electric vehicles

The availability of a fast DC charging infrastructure is an essential criterion for the success of battery-powered electric vehicles: otherwise BEVs will be limited to use for shorter distances. The prerequisites, such as the specification of charging devices and connectors, have been created. In addition, semiconductor solutions from silicon power devices to SiC variants are available, which can also be used well at higher switching frequencies.

DEVELOPMENT | SENSOR TECHNOLOGY

Radar sensors with higher power

While the fifth generation of radar sensors is in worldwide production at Continental, development of the sixth generation is already underway. Initially, work is concentrating on designs for the task of 360° field detection with ranges of well over 100 m - and thus the further development of short-range to surround radar. This and the following long-range radar versions will benefit from new technology and further enhanced performance features.

Acoustic intelligence for the vehicle

The acquisition and processing of acoustic information in the vehicle is becoming increasingly important. Potential is seen in the detection of safety-relevant ambient noise, system monitoring and the implementation of comfort functions. Basic research is still needed to develop the functionality, but the innovation potential is great.

LIGHTING TECHNOLOGY

Software controlled light

Manufacturers have the claim to equip each new generation of vehicles with new and high-quality technologies - which increases the effort in electronics and software development. In order to comply with the rules of the car manufacturer initiative Spice, suppliers should make their software development agile within the Spice framework.

Dates

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IN FOCUS

Corona, emissions and the combustion engine

The corona pandemic is a unique experimental field - not only for scientists, but also for environmental and transport policy-makers. After all, freight and individual traffic slumped dramatically and traffic peaks were halved. The air pollution caused by carbon dioxide, nitrogen oxides and particulate matter, it is quite reasonable to assume, should have been reduced as well. But this cannot be clearly proven for nitrogen oxides and particulate matter.

DEVELOPMENT | AUTONOMOUS DRIVING

Innovative testing

The Spider was developed as a mobile hardware-in-the-loop platform. As a freely programmable, self-propelled robot, it enables automated testing and comprehensive system evaluation for future automated vehicles. Sensors and recognition systems, vehicle software and control algorithms can already be tested under real conditions during the development phase.

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