



NXP Cell Controller Enhances Battery Management Reference Platform for Next Generation Electric Vehicles

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MUNICH, Germany, Nov. 07, 2018 (GLOBE NEWSWIRE) -- NXP Semiconductors N.V. (NASDAQ: NXPI), the world's largest supplier of automotive semiconductors¹, has announced a new Battery Cell Controller portfolio suitable for a wide range of automotive Battery Management Systems. Designed to deliver industry leading measurement accuracy and flexible embedded functional safety mechanisms, the portfolio's benefits also enhance NXP's platform approach to power control. The new Battery Cell Controllers combined with NXP's comprehensive portfolio of world-class automotive microcontrollers (MCUs), power management system basis chips (SBCs), and communication transceivers provide readily useable reference design platforms for controlling high-capacity energy storage in modern Electric Vehicles. The platforms are designed to help carmakers deliver the next generation of hybrid and electric vehicles with greater speed and less development risk.

The energy required to power the main traction motors in Electric Vehicles is stored in high- performance batteries made up of many individual Lithium-Ion cells. The accurate measurement and management of each of these cells is critical to the safety and dependability of the complete battery pack. Battery Management Systems are designed to monitor the critical state-of-charge, state-of-health and battery temperature of the individual cells, while precisely measuring currents into and out of the battery pack.

NXP's new Battery Cell Controller ICs pair with NXP's full portfolio of functional safety System Basis Chips and Microcontrollers to enable scalable Battery Management Solutions based on their industry leading precision, robust communication and advanced functional safety up to ASIL-D.

The new Battery Cell Controllers (MC33771B and MC33772B) advance the state-of-the-art in measurement capability and functional integration.

- Converts cell measurements of a 96-cell high voltage battery within < 546 us, and communicate data to the pack controller within 4.1ms with typical accuracies of +/-0.8mV after soldering over voltage, temperature, and lifetime.
- Enables highly accurate cell impedance calculations for state-of-health monitoring using unique synchronized current sensing.
- Integrates 0.8 Ohm MOSFETs with dedicated timers for each cell for effective and simultaneous charge-balancing of each cell
- Provides embedded functional safety mechanisms and diagnostics to effectively support highest functional safety goals.

"Volkswagen is working hard to address the increasingly demanding performance and functional safety requirements in the next generation of battery management systems," said Dr. Michal Bruna – Manager PEP Electronics and Testing by Volkswagen Kompetenz Center Elektromobilität. "We undertook an extended evaluation process to approve NXP's MC33771B Battery Cell Controller for our future system. We trust NXP's leadership & innovation to enable us to realize these important goals towards a green and safe society."

More than a dozen automotive Tier-1 customers have adopted NXP's Battery Management Solutions globally for use in production and are currently in development with multiple carmakers. The implementations span multiple applications including economical battery management of 14V batteries, highly integrated 48V systems for Mild-Hybrid vehicles and high voltage battery stacks and junction boxes with up to 96 cells for 200 to 800 V Hybrid and Pure Electric vehicles.

Notes

¹ Source: Strategy Analytics 2017

About NXP Semiconductors

NXP Semiconductors N.V. (NASDAQ:NXPI) enables secure connections and infrastructure for a smarter world, advancing solutions that make lives easier, better and safer. As the world leader in secure connectivity solutions for embedded applications, NXP is driving innovation in the secure connected vehicle, end-to-end security & privacy and smart connected solutions markets. Built on more than 60 years of combined experience and expertise, the company has over 30,000 employees in more than 30 countries and posted revenue of \$9.26 billion in 2017. Find out more at www.nxp.com

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