SAE International Publishes J2954™ Recommended Practice Enabling Wireless Charging to 11kW

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WARRENDALE, Pa. (PRWEB) November 29, 2017 -- SAE International published SAE J2954™ Recommended Practice (RP) providing the first worldwide specification for wireless power transfer for electric vehicles up to 11 kW power levels (WPT3). Following the previous Technical Information Report J2954, with power levels up to WPT 2 (7.7kW), 11kW wireless charging is a big step towards commercialization for electric vehicles.

The RP also provides a standardized test stand (first up to WPT 2) which enables both electric vehicle manufacturers and infrastructure companies a means for testing performance and validation of products and new developments. The J2954 standard test stand is based on the circular topology but also provides a way to demonstrate compatibility to other topologies such as the “double D” design.

The Recommended Practice establishes a new methodology using magnetic triangulation for vehicle alignment to assist manual as well as autonomous parking. Coupled with communications, SAE J2954 can assist EV drivers to seamlessly park their vehicles, establish payment and charge without customer interaction. Power transfer enables vehicle ground clearance up to 250mm (10 inches) with a side to side tolerance of +/- 100mm (+/-4 inches). The alignment method assists the driver to stay within the charging range - and autonomous vehicles with finding parking spots - even in weather like rain or snow.

The RP SAE J2954 provides EMF & EMC limits as well as test methodologies for conformance which have been vetted with the American Association of Medical Instrumentation, US FDA as well as internationally with CISPR B.

SAE International also published a technical paper with bench test results from the automobile and wireless charging suppliers measured at the US DOE’s Idaho National Labs and TDK. This test report confirmed that operation with both matched and unmatched coil topologies, as well as charging between different power ranges (3.7kW to 7.7kW), power transfer can be achieved at full power and with high efficiency up to 93% (grid to battery). Over the next year in 2018, the systems will be tested as well as in vehicles in the field for a final validation and thereafter the standard will be released.

“The SAE J2954 RP establishes the methodology for designs and testing of wireless power transfer for EVs up to 11kW,” stated Jesse Schneider, Chair of the SAE Wireless Power Transfer and Alignment Taskforce. “It does much more than that, by enabling an automated and seamless “charge-and-park” experience for the customer. Wireless power transfer using J2954 also gives the soon-to-be commercialized autonomous vehicle a way to align themselves and charge even during inclement weather automatically. Thus, it enables customers and taxi fleets a way to charge without the need for human interaction. This disruptive technology changes the game for EVs by removing the need for the customer to plug in - making the act of charging not about the plug, but parking in the right spot.”

The SAE J2954 Recommended Practice can be downloaded using the following link:

http://www.sae.org/technical/standards/J2954_201711

The SAE Technical Paper validating Wireless Power Transfer to WPT 2:
http://papers.sae.org/2017-01-2448/

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