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Microchip Technology Releases Qi® v2.0 Standards-Compliant dsPIC33-Based Reference Design

Wireless dual-pad charging design supports both Extended Power Profile and Magnetic Power Profile with a single controller

CHANDLER, Ariz., March 21, 2024 (GLOBE NEWSWIRE) -- As major charger manufacturers, including those in the automotive industry, are working to implement Qi® v2.0 (Qi2) standards, Microchip Technology **(Nasdaq: MCHP)** has released a **Qi 2.0 dual-pad wireless power transmitter reference design**. Powered by a single dsPIC33 Digital Signal Controller (DSC), the Qi2 reference design offers efficient control for optimized performance. A key feature of the new Qi2 standard, recently released by the Wireless Power Consortium (WPC), is the introduction of a Magnetic Power Profile (MPP) with support for magnetic alignment between the transmitter and the receiver. The DSC's flexible software architecture enables the support of a combination of MPP and Extended Power Profile (EPP) of Qi 2.0 with one controller.

Utilizing the Qi2 reference design helps minimize customer risk in certifying their final product, which is required to pass through the Qi certification process. As it integrates several of Microchip's automotive-qualified parts, the dual-pad charger also meets automotive standards for reliability and safety. The automotive-grade hardware and software solution enables easier automotive integration with support for AUTomotive Open System Architecture (AUTOSAR®) and AUTOSAR Microcontroller Abstraction Layer Architecture (MCALs), functional safety and more. An integrated CryptoAuthentication™ IC provides security to meet the stringent authentication requirement of Qi standards.

"The dual-pad reference design provides manufacturers of automotive charger modules with the flexibility and programmability to optimize MPP Power Loss Accounting (MPLA) and Q-Based Foreign Object Detection (Q-FOD) and minimize time to certification. It also allows for the seamless integration into the automotive environment," said Joe Thomsen, vice president of Microchip's digital signal controllers business unit. "The automotive-grade design and full range of hardware and software support help our customers optimize their end solutions and decrease time to market."

As part of the reference design, Microchip can deliver design files and software designed to create an easy design experience and first-pass success. The design includes the dsPIC33 DSC and a TA100/TA010 Trust Anchor secure storage subsystem provisioned by Microchip as a licensed Wireless Power Consortium (WPC) Manufacturer Certificate Authority. Additionally, the design also includes Microchip's ATA6563 CAN transceiver, MCP14700 gate drivers and MCP16331 and MCP1755 regulators.

Key features:

- Dual-pad transmitter supporting Qi 2.0
- MPLA and Q-FOD
- Thermal power foldback and shutdown
- Transmitter based on fixed-frequency topology control to optimize EMI/EMC performance
- Easy integration into automotive environments with CAN FD hardware/software
- dsPIC33 capable of integrating Near Field Communication (NFC) for card detection/protection and communication
- UART-USB communication and GUI for advanced reporting/debugging of data packets
- Hardware reconfigurable and capable of supporting most transmitter topologies

For more information or to request a demonstration or design files contact a Microchip sales representative, authorized worldwide distributor or visit Microchip's Purchasing and Client Services website, **www.microchipdirect.com**.

Resources
High-res images available through Flickr or editorial contact (feel free to publish):

- Application Image: **https://www.flickr.com/photos/microchiptechnology/53574137150/sizes/o/**
- Block Diagram: **https://www.flickr.com/photos/microchiptechnology/53574023924/sizes/l/**

About Microchip Technology:
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