NXP Makes High-Performance Integrated Module Available to Accelerate Development of Solid-State RF Cooking Appliances

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New plug-and-play, solid-state RF cooking module helps reduce time-to-market for appliance OEMs with easy-to-use design for intelligent cooking

NXP Semiconductors today announced new solid state RF cooking modules to accompany its popular RF cooking components portfolio. The new module is designed to help engineers rapidly build innovative RF cooking appliances that can achieve a better way of highly efficient, uniform heating, adaptability and consistency of the cooking process than conventional radiant or convection methods.

This new RF cooking module offering includes NXP's MKW40Z Kinetis microcontroller (MCU) with a 2.4 GHz RF signal generator, MMG3014 InGap HBT pre-driver, LDMOS MHT1008 driver and MHT1004 final stage amplifier into a single, integrated closed-loop module. Flexible software API commands are provided to simplify cooking appliance control system programming to enable new cooking features and capabilities.

The solid-state RF cooking module is a trusted development platform for cooking appliances that goes beyond simple device evaluation to supplement OEM engineering expertise. It features a comprehensive embedded design that allows appliance developers to easily transition to high-volume manufacturing of solid-state heating solutions.

Equipping manufacturers with RF cooking reference modules is crucial for this emerging appliance market. Demand is increasing for intelligent, secure, connected cooking appliances that will help tie together e-commerce food sourcing and end-point consumer use. This growth in demand can be attributed to consumer preference for convenient food preparation, but with higher quality and nutrition.

Solid-state RF cooking module features

The RF development module provides an inexpensive entry point that allows appliance designers to quickly and easily build tailored application prototypes that have best-in-class RF output power, efficiency, and gain.

The RF cooking module features include:

Fully functional, manufacture-ready design

220 to 250 W RF output power at 2.45 GHz

Operation from 24 to 32 V at 18 A maximum

Greater than 60% efficiency

Communications interfaces (I2C, SPI or UART)

Compact size: approximately 75 x 95 x 30 mm

Comprehensive sensing including measurement of forward and reflected power, current, voltage, and temperature

Coordinated power, phase, and frequency control

Even, distributed EM field

Flexible API interface to appliance control systems

Hardware-based monitoring and safety fault/shutdown

Scalable RF power modules (250 W to 1 kW)

The RF module enables support for the full range of NXP RF cooking components including the MMG3014 pre-driver, MHT1008 driver, and MHT1004 final stage devices.

Availability

Alpha module samples are now available. Beta module samples are expected by Q3 2016. Module production is expected by Q4 2016. For pricing or additional information, please contact your local NXP sales office or NXP approved distributor. Technical documentation, firmware and schematics for solid-state RF cooking modules are available at www.NXP.com/RFcooking.