Renesas Electronics Corporation has developed a near field communication (NFC) wireless charging system to eliminate the power cable for charging and increase efficiency of those systems. Renesas supplies the essential components needed to build a system: the NFC microcontroller (MCU) RF20, the power transmitter IC R2A45801, and the power receiver IC R2A45701. Renesas also provides the total kit including peripheral general-purpose devices (e.g. power semiconductor devices) as a system solution.

The Renesas NFC wireless charging technology widens the charging area to about 10 cm. It incorporates the technology of the existing NFC MCU, and utilizes the NFC antenna to implement a wireless charging system that uses a single RX antenna for NFC communication and receiving power, thereby improving reliability while reducing the bill of material of a receiver design. To make it easier for developers to incorporate this system into their mobile devices, Renesas developed the NFC MCU, the power receiver IC, and the power transmitter IC built around the company's power technology. These new products are the main components necessary to implement a wireless charging system and are supplied as a total solution kit.

Key Features

- Power transmission and data reception via a single antenna with NFC
- Expansion of charging area with NFC

The exclusive technology employing NFC makes it possible...
to widen the charging area to about 10 cm, making it possible to build a wireless charging system relatively unaffected by positioning deviation. The flexibility in mobile handset power receiver positioning allows more flexible design for handsets and power transmitters.

- Ability to build wireless charging systems with a high level of safety NFC supports bi-directional intercommunication, so it is possible to verify (determine) whether a device can be charged before the supply of power begins. This increases the safety of the wireless charging.
- A single NFC MCU for both wireless charging and conventional contactless smart card applications Based on the NFC standard, the system supports not only wireless power supplies but also existing contactless smart card applications. This enables the designing of more compact mobile handsets.

Samples of the NFC MCU RF20, power transmitter IC R2A45801 and receiver IC R2A45701 will be available in November 2012.

More information

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