

September 12, 2012

**Product Specifications of the NFC Microcontroller (MCU) RF20, the Power Transmitter IC R2A45801, and the Power Receiver IC R2A45701**

**Specifications of RF20 NFC MCU**

Item	Specifications
Part Name	RF20
Part Number*	RS46N1XXXBG
Voltage Range	Main power supply: 2.5 to 3.3 V, I/F voltage: 1.65 to 3.3 V
Maximum Operating Frequency	27.12 MHz
Operating Temperature	-20 to +75°C
Supported NFC Modes	<ul style="list-style-type: none"> <li>• Reader/writer mode</li> <li>• Card emulation mode (with SWP SIM card)</li> <li>• P2P mode</li> </ul>
Host Interface	I2C, UART
HCI (Host Controller Interface)	ETSI TS 102 622
SWP	ETSI TS 102 613
Contactless Protocol	<ul style="list-style-type: none"> <li>• ISO/IEC 14443: Type A/B</li> <li>• ISO/IEC 15693 (Vicinity coupling device)</li> <li>• ISO/IEC 18092: NFC-IP1 (Passive mode only)</li> <li>• NFC Forum Digital Protocol</li> </ul>
Package	64-pin BGA (5.0 mm × 5.0 mm × 0.85 mm (t))

\*: "XXX" is ROM code.

### Specifications of Transmitter IC R2A45801

Item	Specifications
Part Name	R2A45801
Input Voltage	12 V to 22 V
Operating Temperature	-20 to +85°C
Functions	<ul style="list-style-type: none"><li>• Switching regulator 1 (0.5 to 18 V. Upper limit is defined input voltage.)</li><li>• Switching regulator 2 (5 V)</li><li>• Switching regulator 3 (3.3 V)</li><li>• Power supply for NFC controller (1.8 V/3.0 V)</li><li>• Thermal shutdown</li><li>• Voltage, current monitor</li><li>• External temperature monitoring (2 channels)</li></ul>
Package	64-pin HTQFP (12.0 mm × 12.0 mm × 1.2 mm (t))

### Specifications of Receiver IC R2A45701

Item	Specifications
Part Name	R2A45701
Input Voltage	Max. 20 V (Wireless mode) / Max. 7 V (AC adapter mode) / Max. 5.25 V (USB charging mode) / Max. 4.2 V (Battery operation mode)
Operating Temperature	-20 to +85°C
Functions	<ul style="list-style-type: none"><li>• Step-down DC-DC converter</li><li>• Auto-distribution of system current and charge current</li><li>• Power supply for NFC controller (1.8 V/3.0 V)</li><li>• Battery charging control</li><li>• USB detection</li><li>• I2C interface</li><li>• Thermal shutdown</li></ul>
Package	48-pin WLPGA (4.0 mm × 4.2 mm × 0.43 mm (t))