RAA457xxx
RAA458xxx

Renesas Wireless Charging Solution ICs

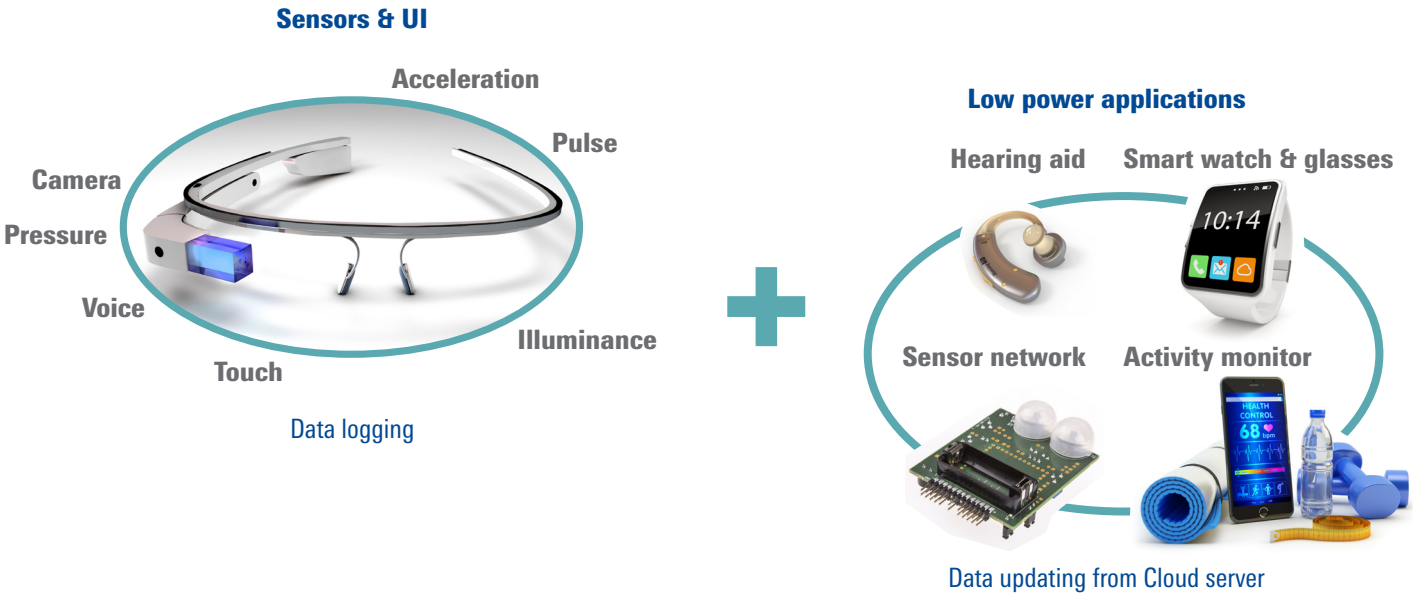
BIG IDEAS
FOR EVERY SPACE

2017.02

RAA457XXX & RAA458XXX

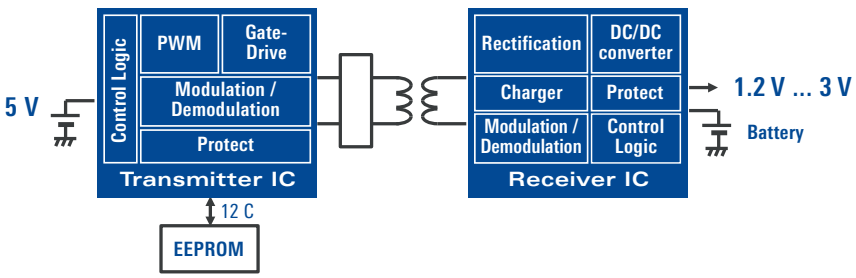
RENESAS WIRELESS CHARGING SOLUTION ICS

Wearable applications are increasingly adding features and capabilities to the system design making it more and more difficult to efficiently create a solution using a primary cell due to its impact to the size of the application and the consideration for enabling the user to switch batteries easily. To support the growing movement towards the use of secondary cells, Renesas Electronics has developed a Wireless Charging solution consisting of the efficient RAA458xxx transmitter and the highly-integrated all-in-one RAA457xxx wireless power receiver IC. Together these ICs enable the development of a compact, dust- and waterproof wearable devices.

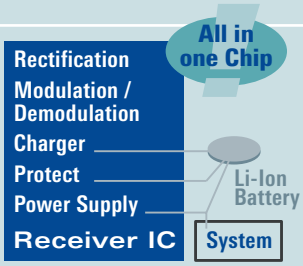
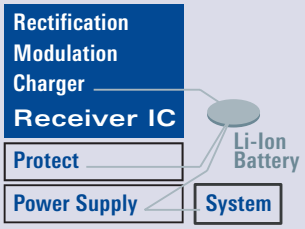
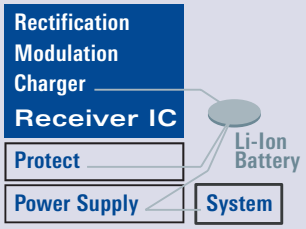


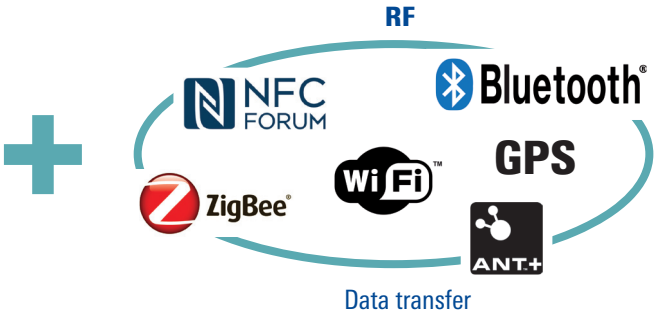
The system solution using the Renesas Wireless Charging ICs provides the following benefits to the developer:

- Wireless charging for Li-ion battery with automatic transmitting power control
- All in one receiver including battery protection and DC power supply for system resulting in receiver systems with sizes of ~ 10 mm diameter including coil
- Intelligent transmitter with fine power control and various error detection capabilities for safety
- Included wireless data transfer for command and control



RAA457xxx / RAA458xxx vs. COMPETING RECEIVERS

		RENESAS	Maker A	Maker B
Receiver	Wireless Power Receiver	All in one Chip 3.25 x 2.8 mm²	3.04 x 1.91 mm²	3.06 x 2.89 mm²
	Li-Ion Battery Charger			
	Battery Protection		External Protect IC (*1) 1.5 x 1.5 mm²	External Protect IC (*1) 1.5 x 1.5 mm²
	System Power Supply		External Stepdown DC/DC (*2) 3.0 x 2.6 mm² (Included Inductor)	External Stepdown DC/DC (*2) 3.0 x 2.6 mm² (Included Inductor
	Receiver System			



KEY FEATURES

RAA457xxx Receiver IC

- Support 1 cell Li-ion battery
- Charging voltage: 4.05 V, 4.20 V, 4.35 V
- Charging current: up to 70 mA
- DC/DC ouput voltage: 1.2 V, 1.5 V, 1.8V, 3.0 V
- DC/DC output current: up to 100 mA
- Automatic transmitting power control depending on charging current
- DC Power Supply to application system by high efficiency DC/DC converter (80% @ 1 mA load, 1.2 V)
- Battery Protection, Low Battery Voltage Detection
- Monitoring rectified output voltage and battery voltage by 12-bit AD converter
- Package: 41-pin WLBGA

RAA458xxx Transmitter IC

- Gate drive control for bridge circuit
- IC supply Voltage: 4.4 V – 5.25 V
- IC supply current: 5 mA
- Clock frequency: 8 MHz
- Automatic transmitting power control depending on charging current
- Half-Bridge and Full-Bridge are selectable
- OCP, THM protection, Differential Power Error Detection between TX & RX
- Automatic register setting for TX & RX from EEPROM
- Input voltage, current & temperature monitoring by 12-bit A/D
- Package: 40-pin UQFN

Before purchasing or using any Renesas Electronics products listed herein, please refer to the latest product manual and/or data sheet in advance.

Renesas Electronics Europe

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