

Shorten Battery Management System Development Time

# Battery Management System Reference Design

BMS (Battery Management System) uses RH850 MCU and ISL78714 analog IC

## Features

**BMS reference design kit, can support up to 70 cells**

- Provides near turn-key reference design for 70 cells with CAN, LIN, UART, GUI, and low-level drivers for RH850 peripherals and ISL78714

**Advanced Analog Design Technology**

- Monitors up to 14 cells/IC with  $< \pm 2$  mV measurement accuracy
- Achieves 15-year board-level accuracy (long term drift) of  $< \pm 6$  mV @  $\pm 6\sigma$

**Industry-leading Renesas MCU Technology**

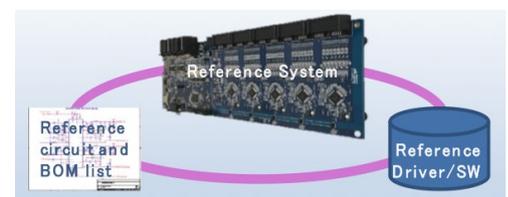
- Provides a safe and secure solution with multiple safety features
- Integrates high performance and cost effective MCUs

## Solutions

- Maximize battery cell life and driving range of HEV/EV by balancing all cell voltages simultaneously with high-precision measurement of each cell voltage and temperature.
- BMS reference design includes simultaneous balancing up to 70 battery cells, boot-up by CAN and UART and retrieving log data. The reference design makes it easy to shorten development period of hardware.
- Reference software also makes it easy to port software to the RH850 MCU, scale to any battery pack size and shorten development time.



### Accelerate Verifications



### Reduce R&D Effort and Time



# Inductive Position Sensor for Motor Commutation

# IPS25XX Seamless Resolver Replacement

A new era in motor commutation

## Feature

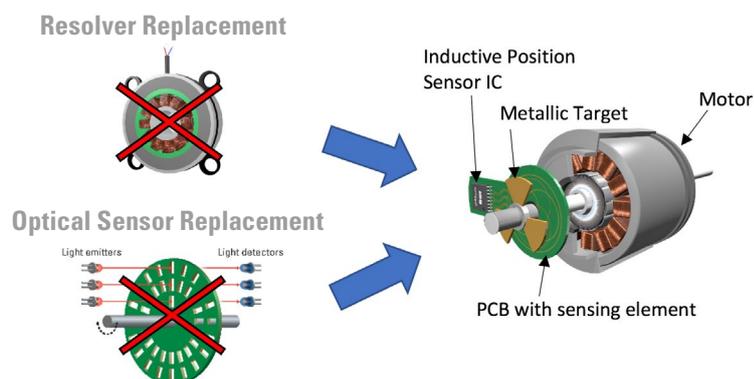
Reduce board space with increased flexibility and performance

- Sine/Cosine demodulated output interface
- Rotational speed up to 600k (electrical) rpm
- Low propagation delay < 5  $\mu$ s
- Extremely cost effective
- Much thinner and lighter than resolvers
- Totally stray field immune to guarantee the best motor integration
- Flexible to be designed around the motor
- Automotive AEC-Q100 Grade-0 Designed & Qualified

## Solution

- Contactless for no wear, ultra-high durability and robust against dust and vibration
- Ultra-thin and ultra-light using coils integrated onto the PCB and a metallic target
- Single technology for different motions, linear, rotary, arc, low and high speed

## Inductive Position Sensor for Motor Commutation



Radar transceiver enables with 4D\* non-contact sensing for Automotive

# Automotive Radar Transceiver (MMIC\*\*) – RAA2702XX

## Feature

High performance transceiver with best Noise Figure, Linearity and Sensitivity

- Ultra Wideband Radar in 76 – 81 GHz band with 4 Tx and 4 Rx
- High performance MMIC with best Noise Figure, 4 GHz Bandwidth, Linearity and Sensitivity
- Provides Better Safety through real-time high resolution 4D\* Imaging
- Suitable for Ultra short (<1 m) to Very long Range (>300 m) Sensing
- Small size eWLB\*\*\* package (7.6x5.6x0.9 mm)

\*4D : 3D + Velocity    \*\*MMIC : Monolithic Microwave Integrated Circuit    \*\*\*eWLB : embedded Wafer Level Ball grid array

## Solution

- SoC, Transceiver, PMIC and Timing IC for RADAR solution
- Industry-leading low-noise transceiver contributing to high accuracy
- Quick launching with Steradian Semi
- One-stop solution and combo proposal with Renesas SoC and PMIC products
- Scalable solution by cascade connection

## RADAR Transceiver Solution

