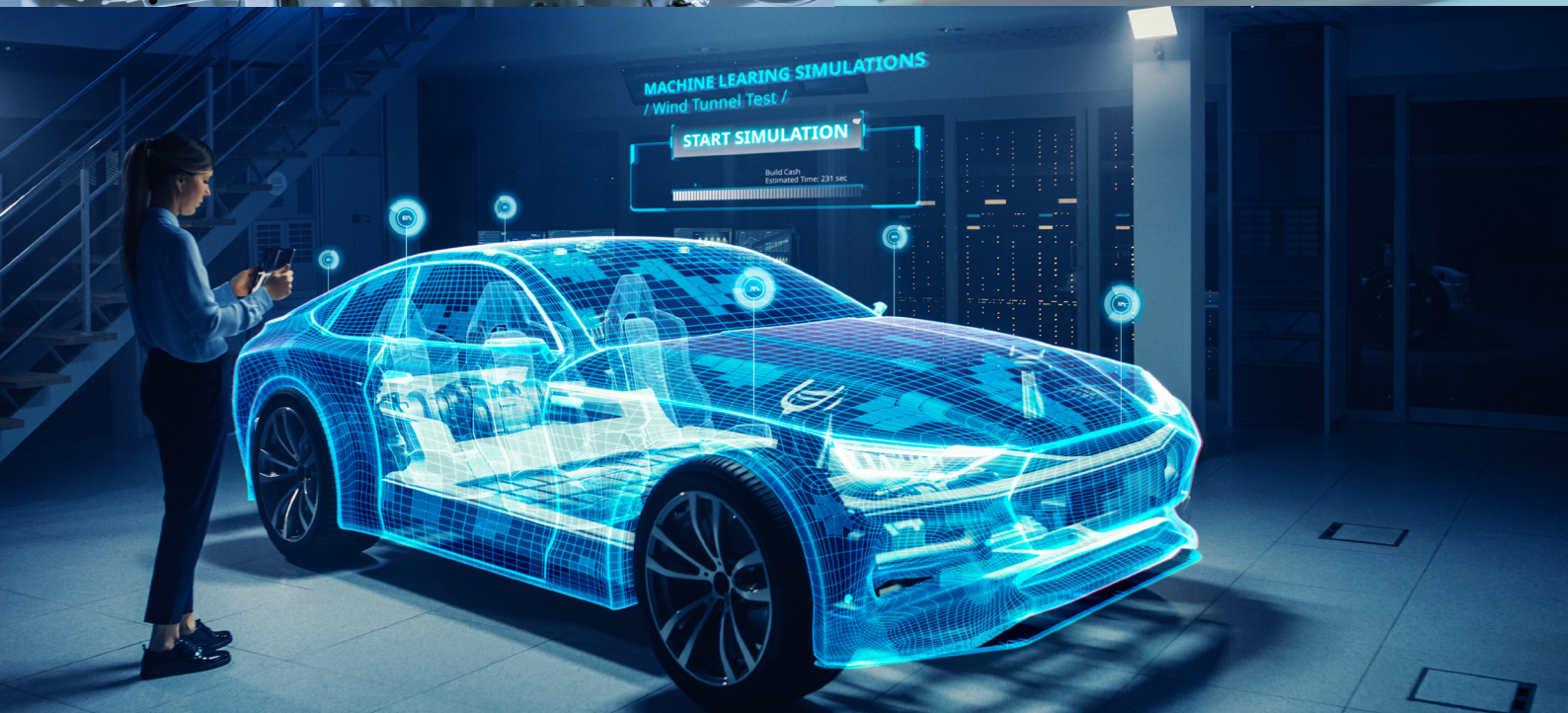
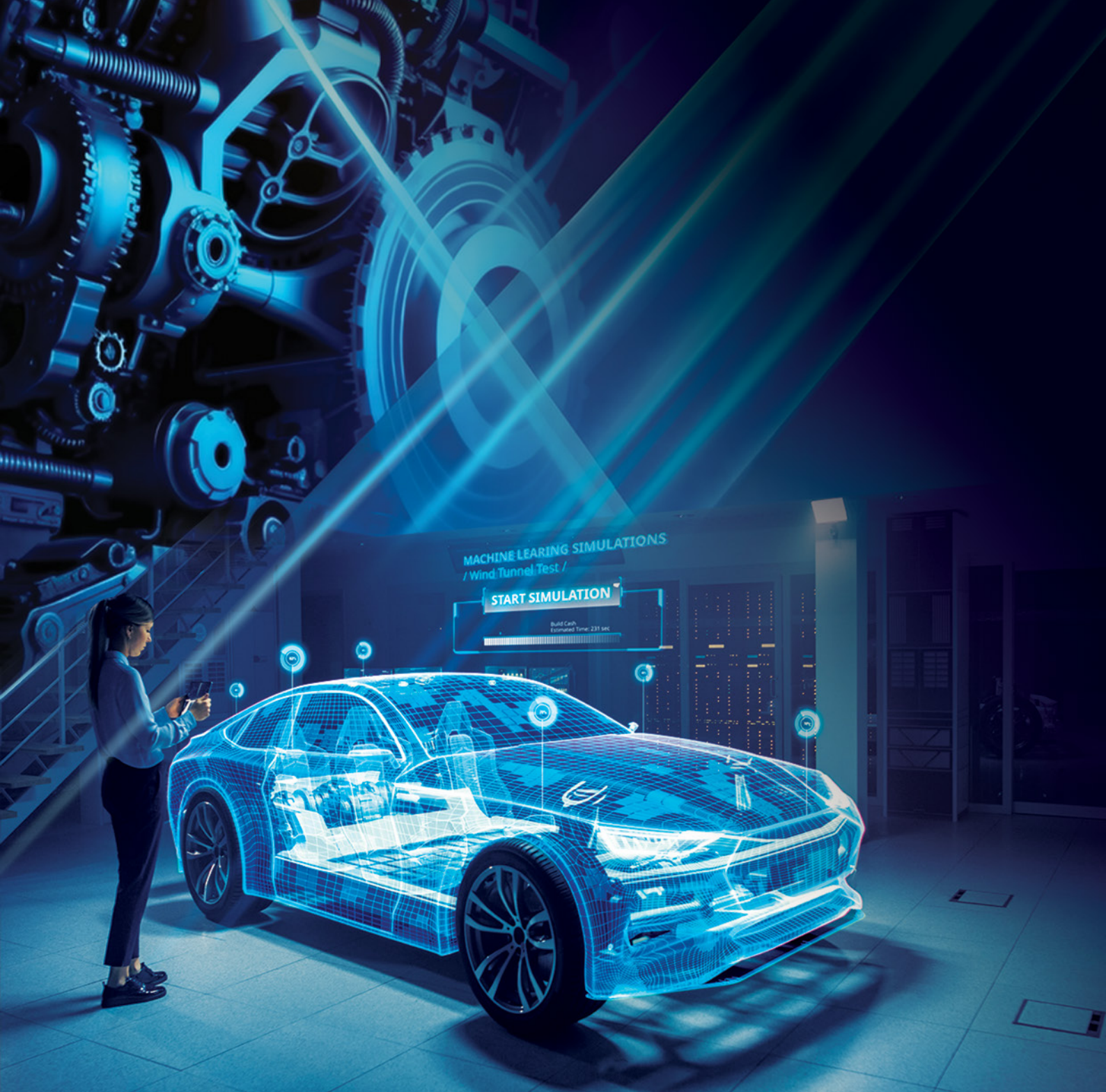


THE RAA2S426X FAMILY

AUTOMOTIVE SENSOR SIGNAL CONDITIONERS

Designed to provide high-precision signal conditioning for a wide range of automotive sensors





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PRODUCT PORTFOLIO

Introduction

The **RAA2S426x family** of automotive sensor signal conditioners, designed to provide high-precision signal conditioning for a wide range of automotive sensors. Our products are engineered to meet the demanding requirements of the automotive industry, providing accurate and reliable signal processing for safety-critical applications. The RAA2S426x family includes a range of products with varying levels of safety integrity and packaging options, making it easy to find the right solution for your specific needs.

- **Advanced ASIL-C and QM Compliance:** The RAA2S426x family meets rigorous automotive safety integrity level requirements, ensuring reliability in critical conditions.
- **Versatile Communication Interfaces:** Supports both SENT and I2C communication, providing flexibility for various design requirements.
- **Optimal Sensor Calibration:** Provides highly accurate amplification and conversion, enabling precise sensor calibration and data acquisition.

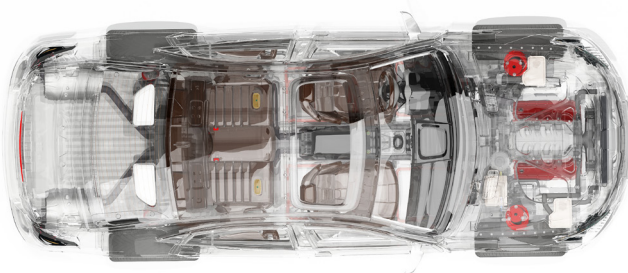
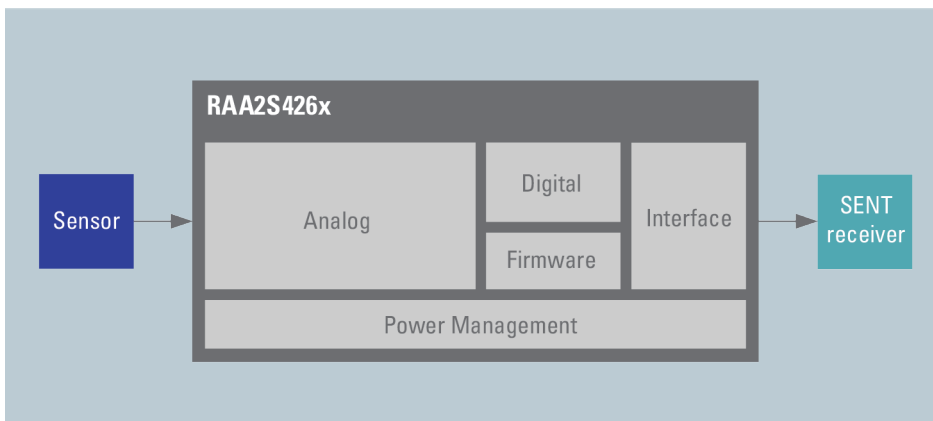
Core Applications for Sirius (RAA2S426xB Series)

The Sirius product line is tailored for automotive applications that require accurate signal conditioning of differential bridge sensor signals. The following domains are explicitly highlighted:

1. Transmission Systems, engine control
2. Heating, Ventilation, and Air Conditioning (HVAC), thermal management
3. Exhaust Gas Recirculation (EGR)
4. Braking Systems, brake-by-wire systems fuel cell technologies

These applications benefit from the product's ability to handle harsh environments and deliver reliable, high-fidelity sensor data.

■ Block Diagram



KEY PRODUCTS

RAA2S426x Family

RAA2S4261

Automotive sensor signal conditioner with SENT or I²C output, ASIL-C compliant, QFN20L package.

■ Output

- SENT or I²C

■ Package

- ASIL-C Qualified QFN20L



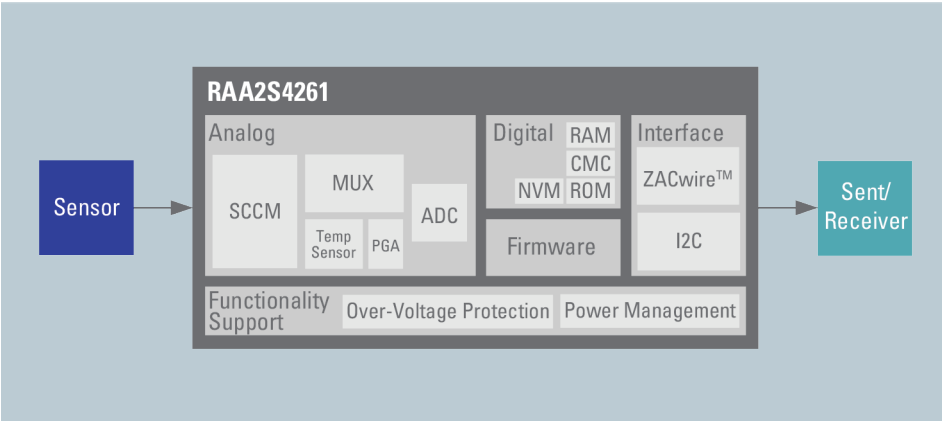
■ Distinguishing Features

- Versatile communication capabilities with enhanced diagnostic functions for robust operation

■ Benefits

- High-speed data transmission with enhanced system reliability, suitable for mission-critical applications

■ Block Diagram



RAA2S4262

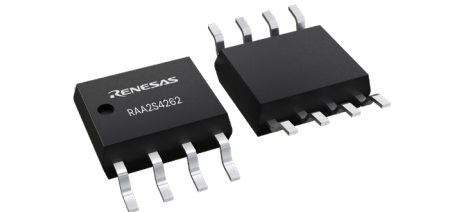
Automotive sensor signal conditioner with SENT output, ASIL-C compliant, SOP8 package.

■ Output

- SENT

■ Package

- ASIL-C Qualified SOP8



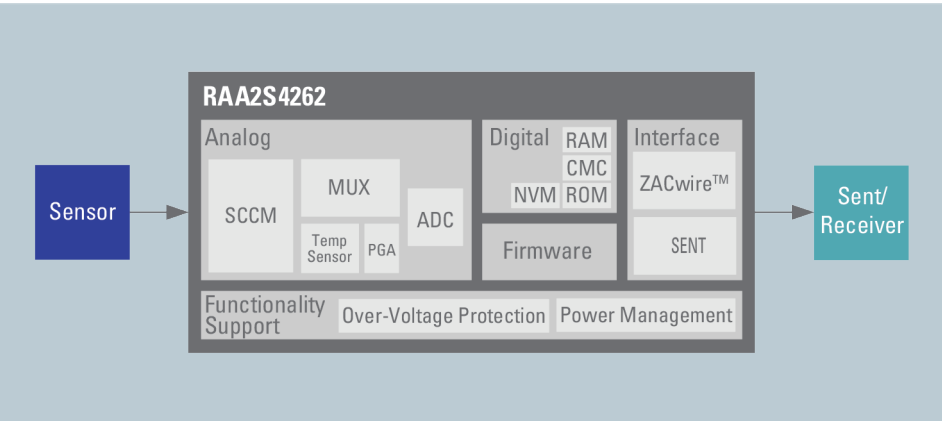
■ Distinguishing Features

- Compact design tailored for space-constrained solutions

■ Benefits

- Simplified design integration with high-precision signal conditioning for constrained applications

■ Block Diagram



RAA2S4263

Automotive sensor signal conditioner with SENT or I2C output, ASIL-C compliant, bare die.

■ Output

- SENT or I²C

■ Package

- ASIL-C Qualified Bare Die

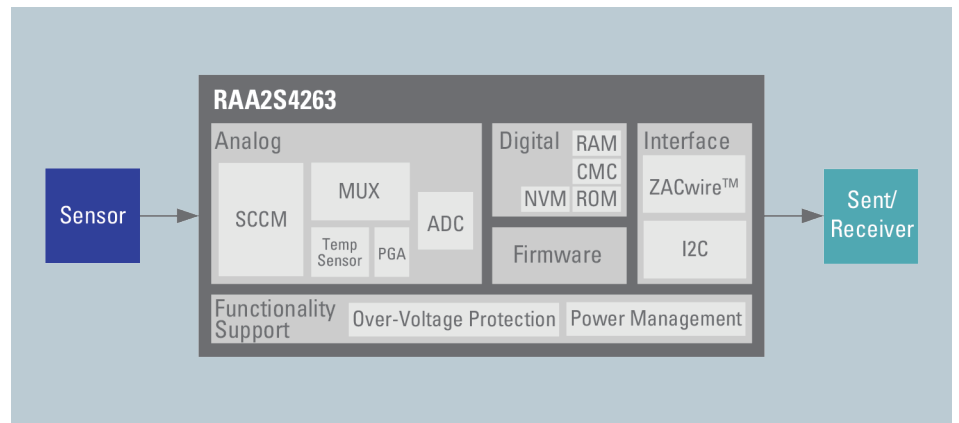
■ Distinguishing Features

- Bare die format for custom packaging needs

■ Benefits

- Maximum design flexibility with industry-leading signal accuracy for specialized applications

■ Block Diagram



RAA2S4264

Automotive sensor signal conditioner with SENT output, ASIL-C compliant, SOP8 package

■ Output

- SENT or I²C

■ Package

- QM Qualified QFN20L

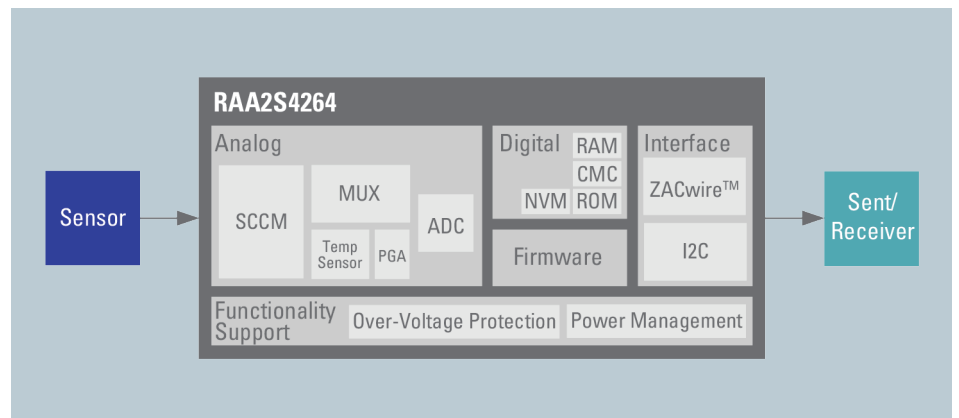
■ Distinguishing Features

- Combines robust reliability with flexible interface options for diverse automotive solutions

■ Benefits

- Ensures efficient and reliable performance in varied environmental conditions

■ Block Diagram



RAA2S4266

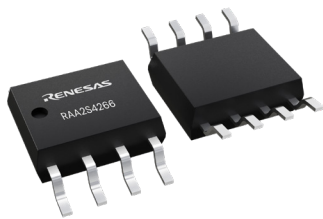
Automotive sensor signal conditioner with SENT output, QM compliant, SOP8 package

■ Output

- SENT

■ Package

- QM Qualified SOP8



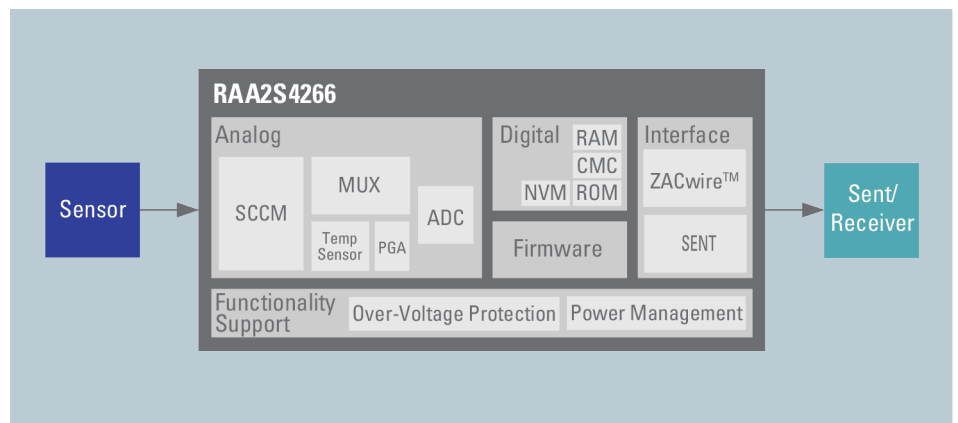
■ Distinguishing Features

- Designed for quick implementation with efficient data handling

■ Benefits

- Reduces development time while enhancing system performance and efficiency in mass production vehicles

■ Block Diagram



RAA2S4267

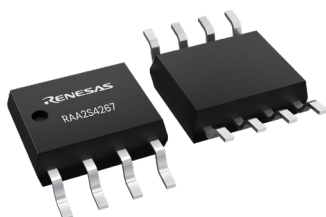
Automotive sensor signal conditioner with SENT output, QM compliant, SOP8 package (slow version)

■ Output

- SENT

■ Package

- QM Qualified SOP8
Slow variant



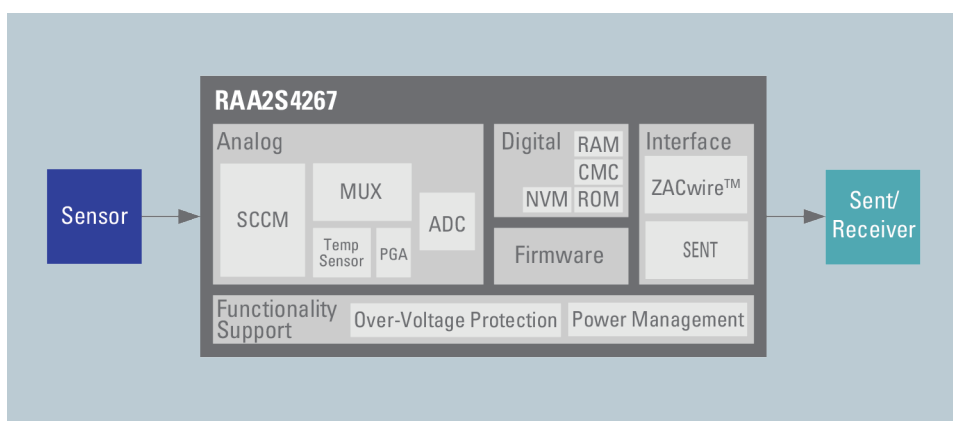
■ Distinguishing Features

- Optimized for low-speed data requirements

■ Benefits

- Perfect for non-critical applications where cost-efficiency and reliability are paramount

■ Block Diagram



RAA2S4268

Automotive sensor signal conditioner with SENT or I2C output, QM compliant, bare die.

■ Output

- SENT or I²C

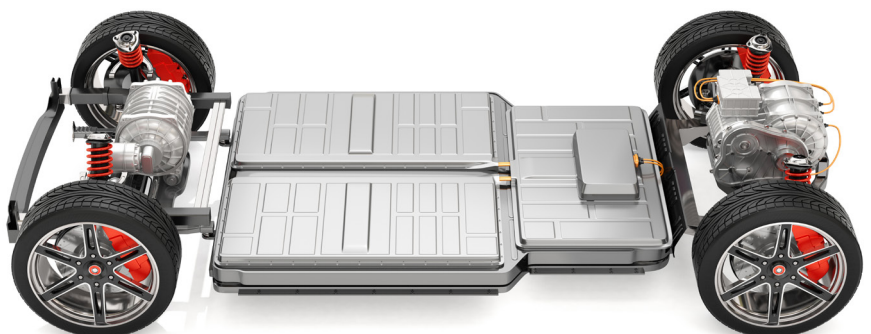
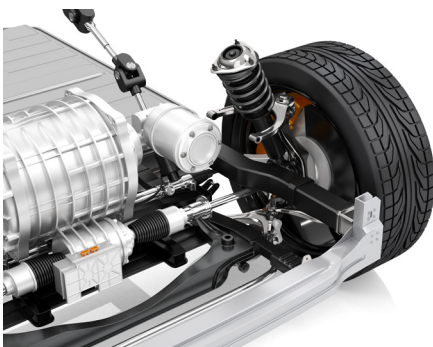
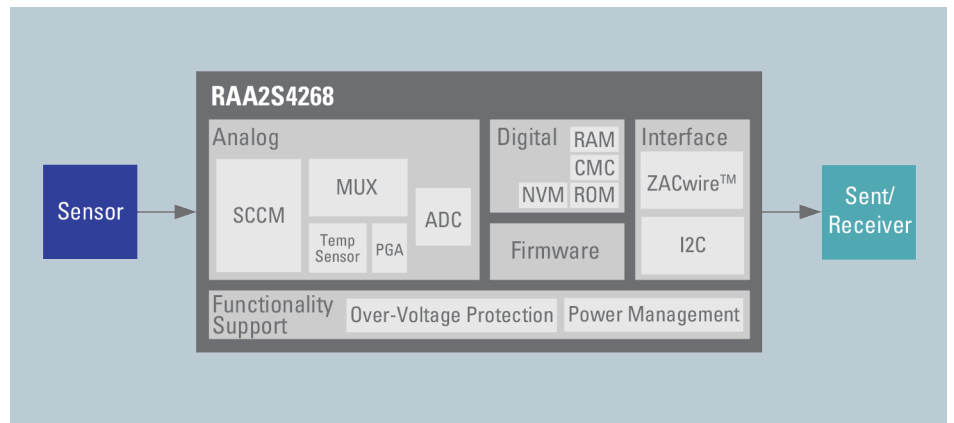
■ Package

- QM Qualified Bare Die

■ Distinguishing Features

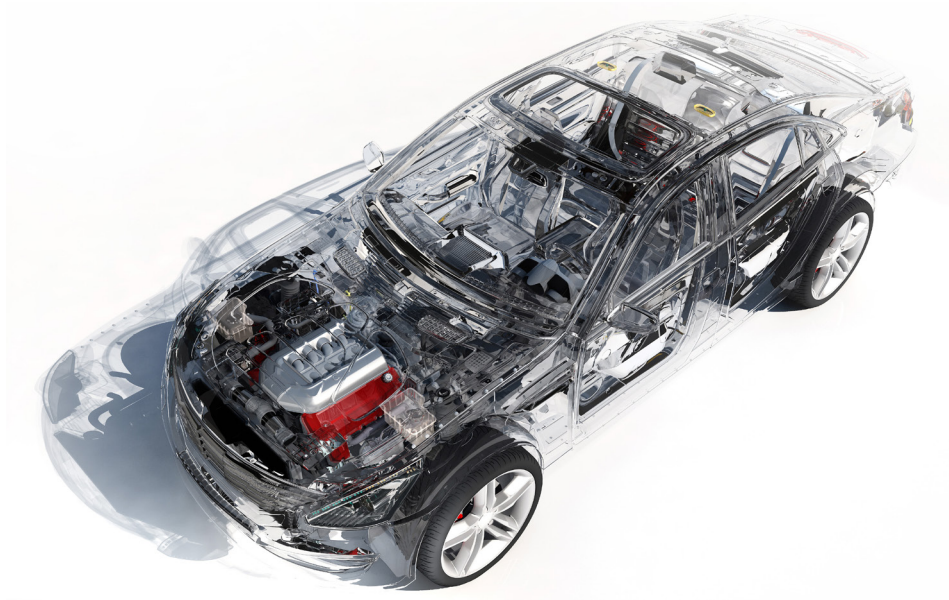
- Flexible integration for scalable designs

■ Block Diagram



APPLICATION SOLUTIONS

RAA2S426X



The RAA2S426x family is designed to provide high-performance signal conditioning for a wide range of automotive applications.

■ Reference Solution – System Benefits

- High accuracy and reliability for safety-critical applications
- Flexible output options for easy integration into various automotive systems
- Robust safety features, including ASIL-C compliance for certain products
- Compact packaging options for reduced board space

■ BOM List for Reference Design

- RAA2S426x family of sensor signal conditioners
- Renesas' RL78/G1A microcontroller for system control and processing
- Renesas' ISL71590SEH temperature sensor for accurate temperature measurement
- Other Renesas products, such as power management ICs and interface ICs, for a comprehensive system solution

By combining the RAA2S426x family with other Renesas products, customers can create a comprehensive system solution that meets the demanding requirements of the automotive industry.

Solving Key Challenges in Automotive Sensor Signal Conditioning

Our products are designed to address the key challenges faced by automotive manufacturers, including:

- High accuracy and reliability for safety-critical applications
- Flexible output options for easy integration into various automotive systems
- Robust safety features, including ASIL-C compliance for certain products
- Compact packaging options for reduced board space

By providing high-performance signal conditioning and robust safety features, the RAA2S426x family helps to enable the creation of safer, more reliable, and more efficient automotive systems.

MEMO

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