

CONNEXUS | 2026
black sea tech forum

Chips for the Future
Renesas



Why?

- Do you want to feel safe when you work with robots?
- Is it important to you, that your engineers design the product on time with reliable supply chain?
- Have you imagined what will it be if you can see in the future and know when exactly is the right time for maintenance?
- Is your company willing to pay much more for the right solutions?

Connecting ideas, Creating impact

Agenda

Japan & Bulgaria

Yogurt, Sushi and much more

4
minutes

It is all about sensing

Smart ICs and algorithms

4
minutes

Practical Solutions

Make our life easier

2
minutes



Not just Yogurt and Sushi

Bulgaria & Japan

CONNEXUS



Yogurt

Rose oil

Wine



Samurai

Sushi

Technology

CONNEXUS

RENESAS

Who we are

Nº2 Automotive
microcontrollers
supplier worldwide

We empowers a safer,
smarter and more
sustainable future where
technology helps make our



Headquarters
Tokyo, Japan



Approx. 22,000
employees



Operating in
30+ countries



1318.5 billion yen
8.3 billion USD revenue in 2025



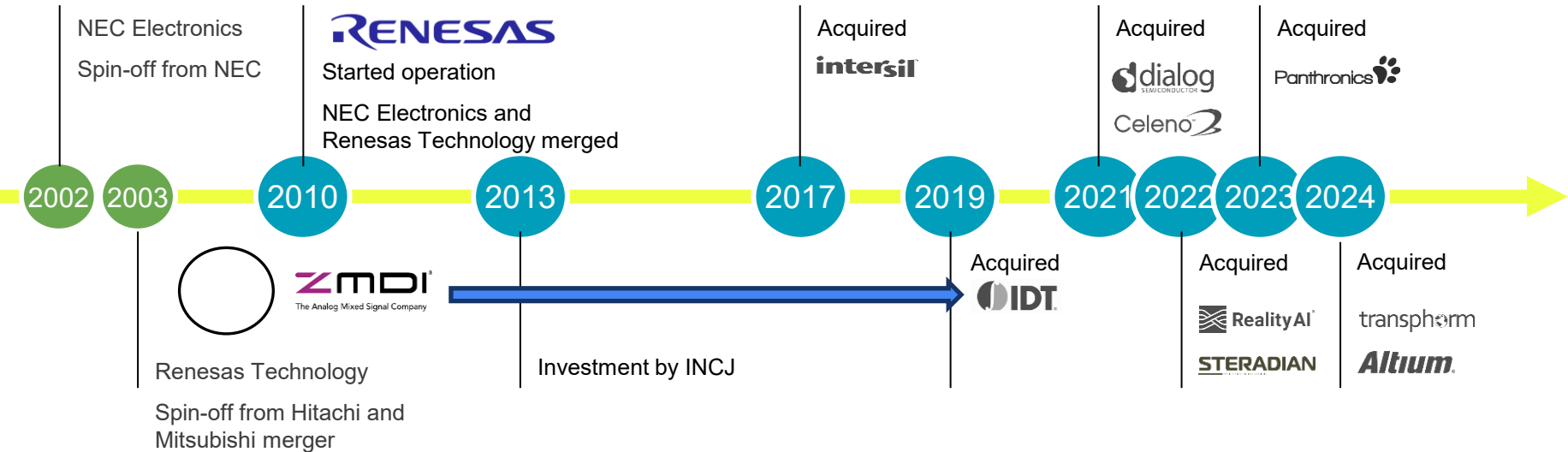
Approx. 20,000
patents & pending applications

Since 2002

Our History



- Started from Hitachi, Mitsubishi and NEC.



Two capitals

Bulgarian offices

- Varna – the maritime capital of Bulgaria



CONNEXUS

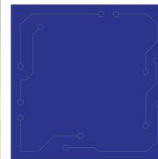
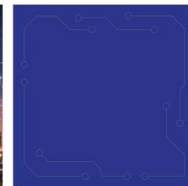
- Sofia – the official capital of the country



Make Our Lives Easier
Our Purpose

CONNEXUS

TO MAKE OUR LIVES EASIER
by complementing human capabilities



Safer, healthier, greener, and smarter world

Solution Offerings

CONNEXUS

- Our mission is to develop a safer, healthier, greener, and smarter world by providing intelligence to our four focus growth segments:



Automotive

Highly reliable vehicle control,
safe and secure
autonomous driving,
Eco-friendly electric vehicles



Industrial

Lean, flexible and
smart industry



Infrastructure

Robust infrastructure,
enabling
safety and efficiency



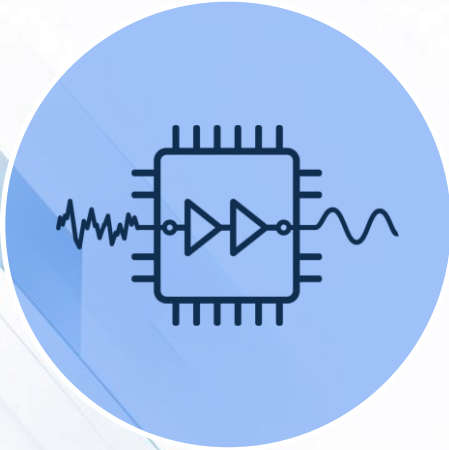
IoT

Comfortable, safe and
healthy lifestyles
through IoT

It Is All About Sensing



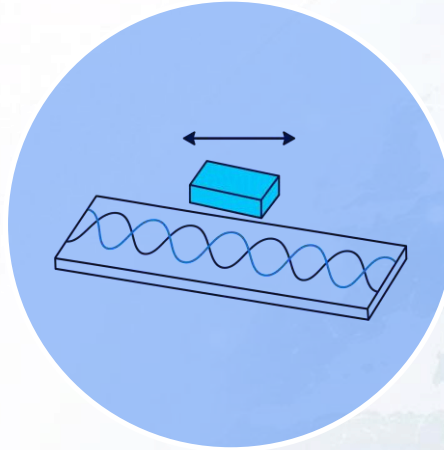
It is all about sensing



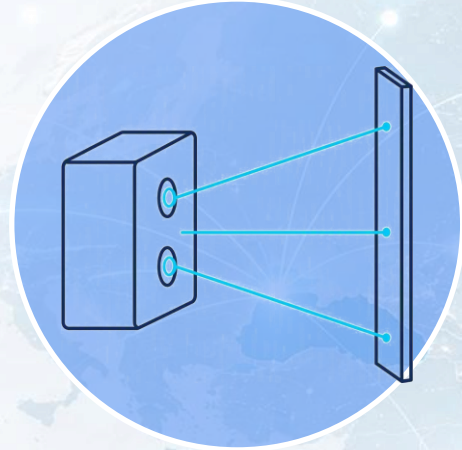
**Sensor Signal
Conditioning**



**Impedance
Sensing**



**Inductive Position
Sensing**

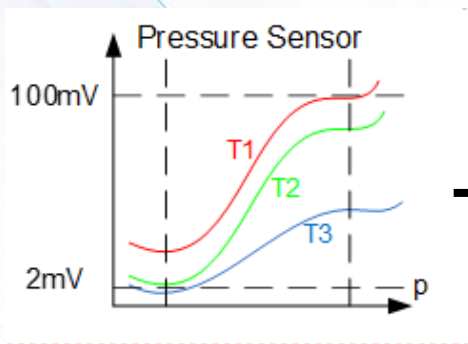
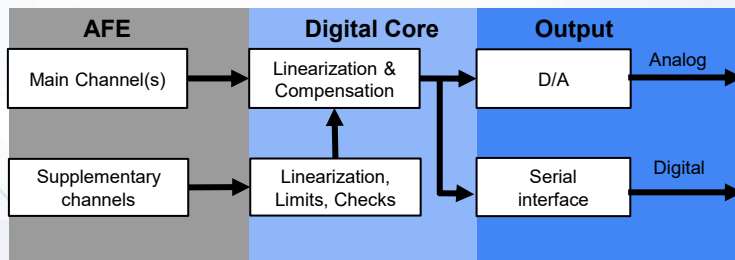
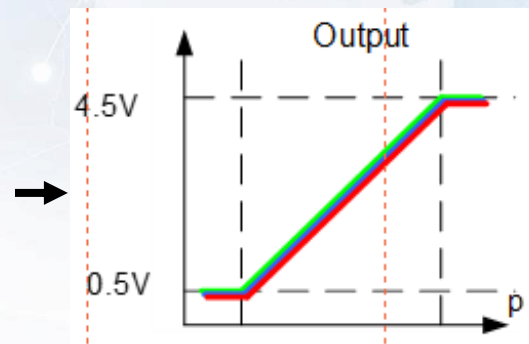


LIDAR

From analog world to digital

Sensor Signal Conditioner

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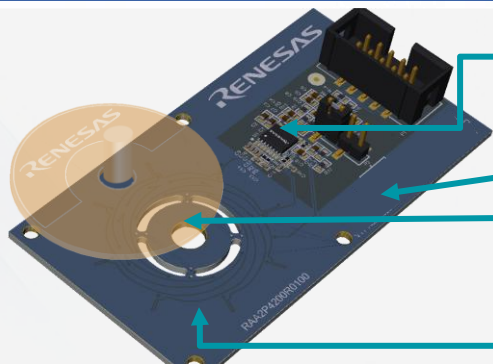


Basic working principle for rotary and linear sensing



Inductive Position Sensing

ROTARY POSITION SENSING



Renesas IC Inductive
Position Sensor

Customized PCB
design

Target

Inductance realized as
a coil, designed as part
of the PCB design.

LINEAR POSITION SENSING



Cost Effective Lowest BOM

Magnet Free Technology

Durable in Harsh Environment

Tolerant to Misalignment

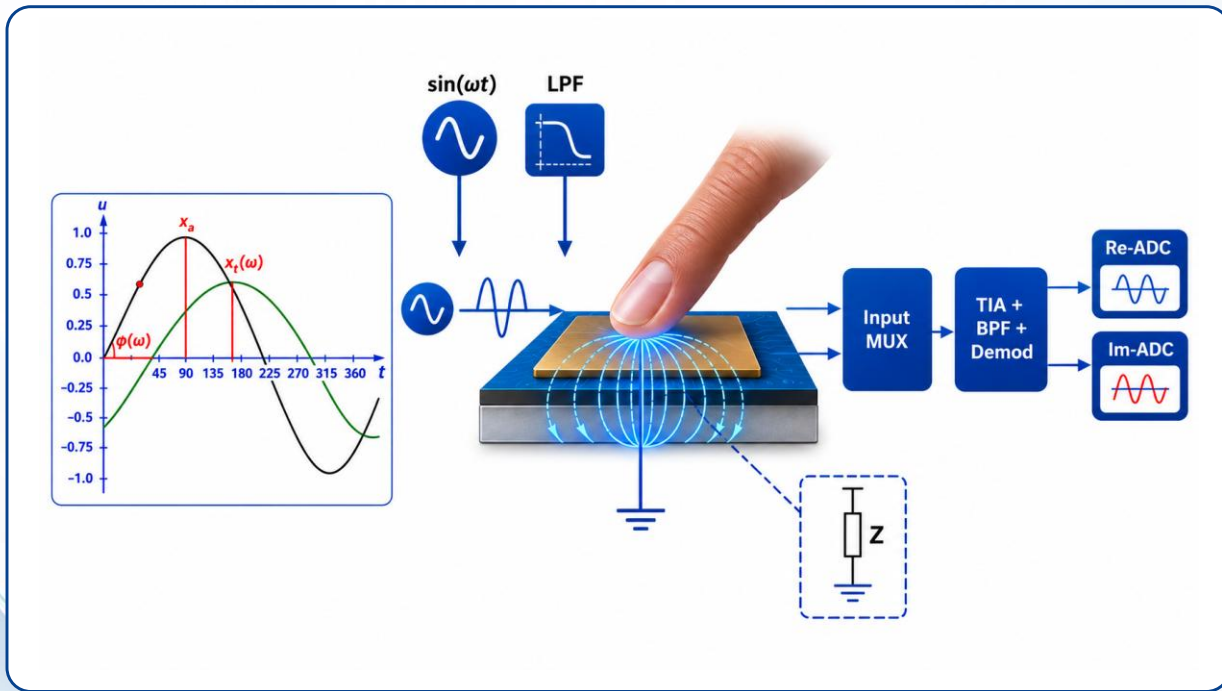
High accuracy and resolution

Total Stray-field Immunity

How it works

Impedance sensing

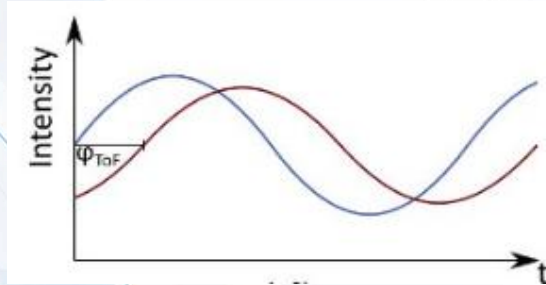
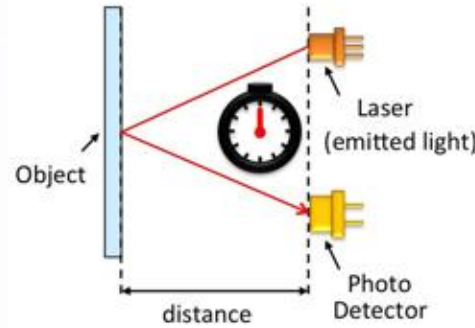
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Accurate, Flexible And Scalable Impedance Sensing Interface For Robust & Reliable Human Touch Detection

LIDAR

- Measuring the distance of the detected objects
- Running on Time of Flight (ToF) principle of light pulses reflected by one or more objects



Solutions



Humanoids and Cobots



LiDAR SLAM
(Simultaneous
Localization And
Mapping)
(1-2x)

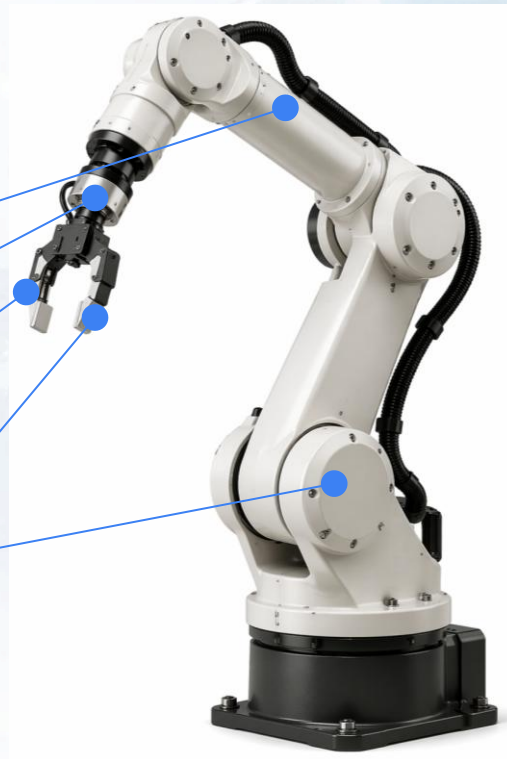
Impedance (Touch)
Sensors (2-4x)

Torque Sensors
(SSCs) (6x)

Force Sensors
(SSCs) (2-6x)

Position Sensors
(+30x)

Pressure Sensors
(SSCs) (2x)



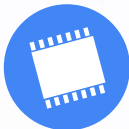
Renesas sensing at a glance

CONNEXUS

Renesas - First choice for SENSORS



- ❑ **Best in Class customer support**
- ❑ **Exceptional Functional Safety**



- ❑ **Broadest portfolio**
- ❑ **Best accuracy, resolution, and adaptability**



- ❑ **Operational excellence track record with:**
 - ❑ **>200Mio sensors per year**
 - ❑ **Superior**

We make our life easier!

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Manager Application Engineering
Analog & Mixed Signal Product Group
Sensors Division

Renesas Electronics Corporation

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