

Ultrasonic Ranging ICs

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EXPERTS FOR AUTOMOTIVE ICs

We have a broad expertise in analog mixed-signal integrated circuit design.

We deeply understand our customers application needs to create real system innovation.

We are a global player for automotive ASSPs and ASICs. We offer worldwide sales and application support.



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CORPORATE KEY FACTS

~7 Elmos ICs

on average in every new car

6 product segments

Motor Control, Lighting, Safety/Power/Custom ICs,
Ranging, Optical, Sensor ICs

15 locations worldwide

incl. 6 R&D centers, HQ located in Dortmund, Germany

~40 years of experience

in analog mixed signal IC solutions

1,200 employees

thereof 350+ product developers & engineers

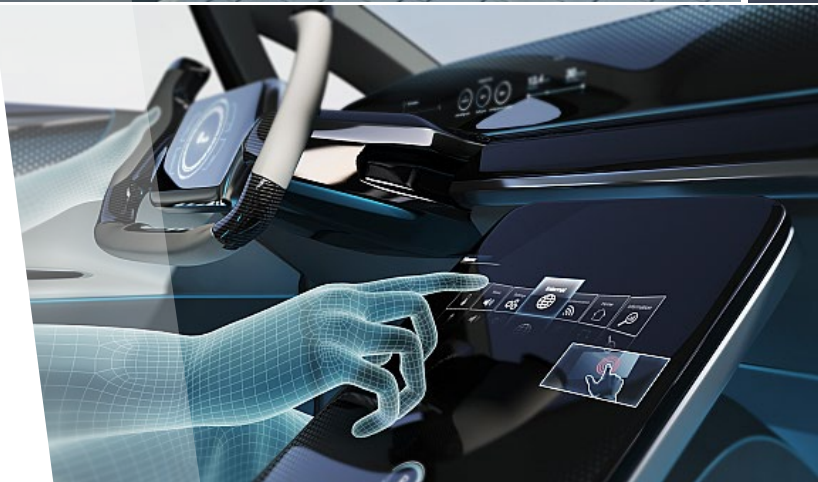
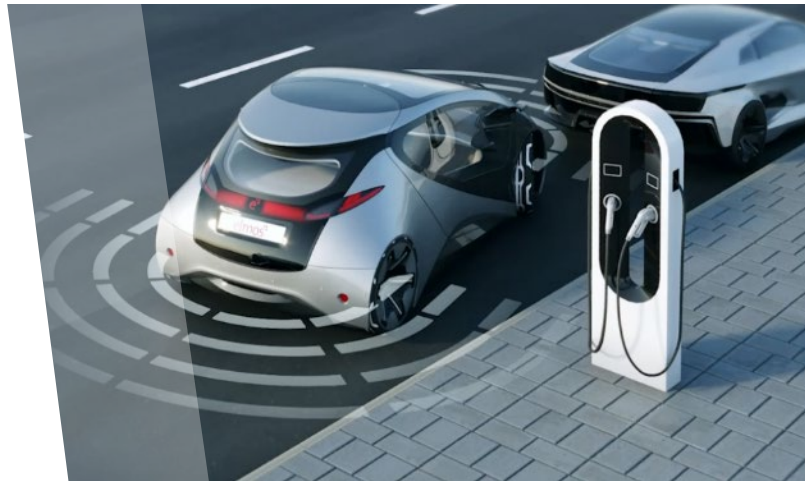
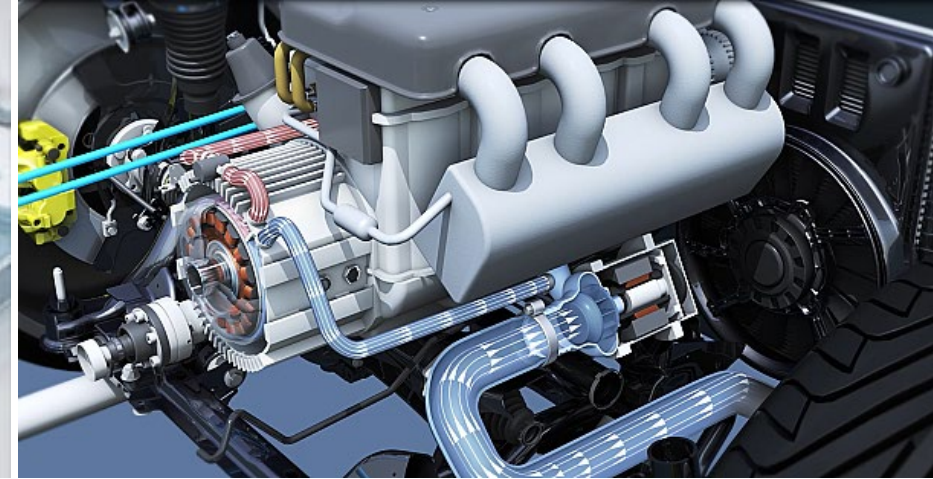


WE ARE LOCATED ALL OVER THE WORLD



PRODUCT SEGMENTS

- RANGING
- OPTICAL
- SENSOR ICs
- MOTOR CONTROL
- LIGHTING
- SAFETY, POWER & CUSTOM ICs

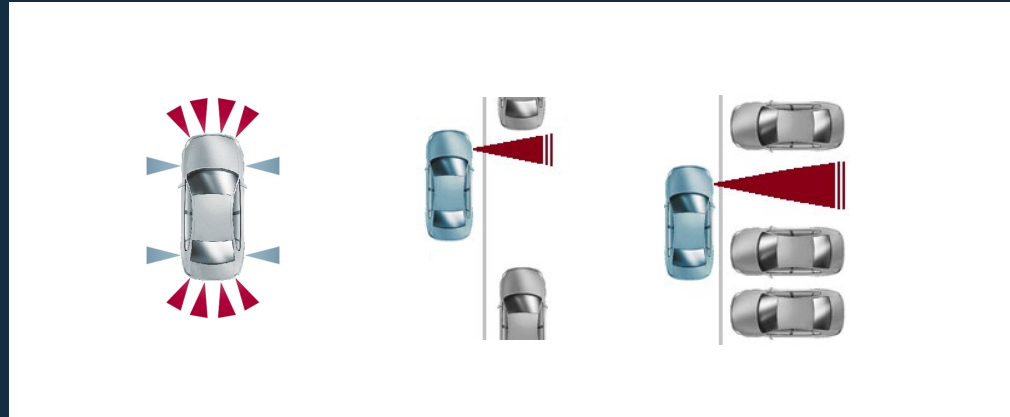


IC SOLUTIONS FOR ASSISTED AND AUTONOMOUS DRIVING

- Global market leader in ultrasonic ICs
- More than 1.5 billion ranging ICs in the field
- Broad ASSP product portfolio
- From most affordable (Direct Drive) to highest performance (ADAS applications)
- Enabling object localization, level- and flow-metering
- Several ultrasonic master ICs support future system architectures

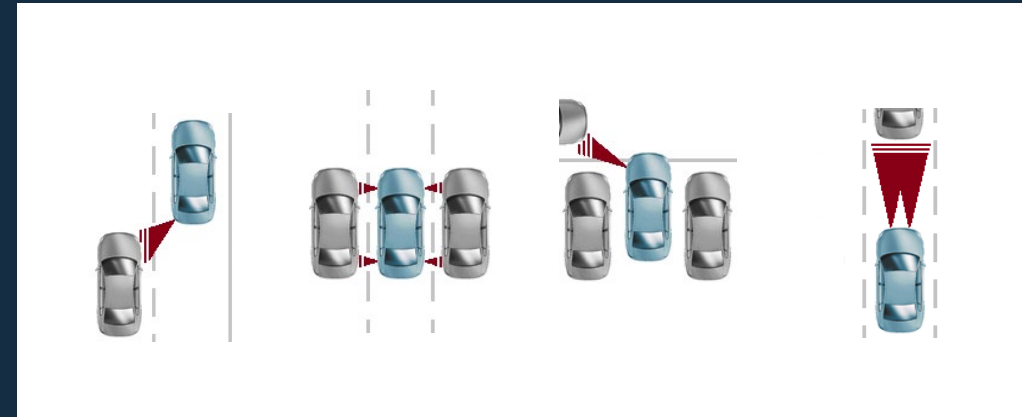
ENABLING ULTRASONIC RANGING SENSOR APPLICATIONS

Elmos ultrasonic ranging ICs for low, mid and high end applications



PARK ASSIST

- **„Standard“ Parking**
with acoustic signal for front and rear
- **Automatic Parking**
including the detection of available side and parallel parking slots while driving



SAFETY WARNING

- **Blind Spot Detection** for close range
- **Side Distance Warning**
- **Cross Traffic Emergency Brake** when backing out
- **Pre-Crash Warning / Low Speed Emergency Breaking** when driving inner city

ULTRASONIC SENSOR IC

Best ultrasonic measurement performance

Long range and ultra short distances
from 0.1 to 6 meters

- Advanced analog & digital signal processing
- Robust ultrasound coding
- Adaptive thresholds
- Precise Echo Peak Detection (EPD)
- Noise suppression features for higher robustness
- Near field data evaluation for close proximity detection (NFD)



ULTRASONIC SENSOR IC

Variety of integrated diagnosis functions

Extensive diagnostic functions for
IC, external components, transducer and communication

- Ringing time and frequency
- Transducer impedance
- IC temperature and different IC voltages

The Elmos logo is displayed in a dark red, lowercase sans-serif font. The letter 'o' is stylized with a small square dot above it. The background of the slide features a futuristic, sleek silver car with blue light trails around it, set against a bright, modern interior with large windows.

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ULTRASONIC SENSOR IC

Standardized fast communication interface

Flexible high speed DSI3

- High bandwidth and low latency with up to 444 kbit/s data rate enables high payload data transfer
- Data collection mode reduces latency to a minimum for fast system reaction times
- Supports bus and pt-to-pt topology

The Elmos logo is displayed in a dark red, lowercase, sans-serif font. It is positioned in the upper right corner of the slide, partially overlapping the top edge of the car illustration. The background of the slide features a stylized, futuristic car in white and blue, with blue concentric circles around it representing sensor range or data flow. The overall aesthetic is clean and modern, with a light blue and white color palette.

ULTRASONIC SENSOR IC

Maximum flexibility and efficiency

Shorter development times and easy software adaptations for customer applications benefitting from

- Embedded 32-bit Arm® microcontrollers
- Up to 64 kB re-programmable flash memory
- SysROM with predefined functions:
Boot loader, DSI3 driver, signal path check,...

The Elmos logo is positioned in the top right corner of the slide. It features the word "elmos" in a lowercase, sans-serif font, with a small registered trademark symbol (®) to the upper right of the letter 's'. The background of the slide is a 3D rendering of a blue truck and a silver car on a light-colored surface, with blue concentric circles representing the sensor's range around the truck.

ULTRASONIC SENSOR IC

Product options for cost reduction

Significantly reduce system cost and size

- **Direct Drive (LIN based)** with integrated driver stage directly excites a connected ultrasonic transducer eliminating the need for a transformer and other external components
- **ECU-less:** Simple Parking System without external ECU by using one sensor IC as a master. The last sensor in the chain can drive a speaker and/or display for acoustical and visual feedback
- **Auto Addressing:** No need for external circuits as sensors can automatically find their position in the chain

The Elmos logo is located in the top right corner of the slide. It consists of the word "elmos" in a lowercase, sans-serif font, followed by a small square icon containing four dots arranged in a 2x2 grid.

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Innovation Matters

DISCLAIMER

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