Ultrasonic Ranging ICs

elmos

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.

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

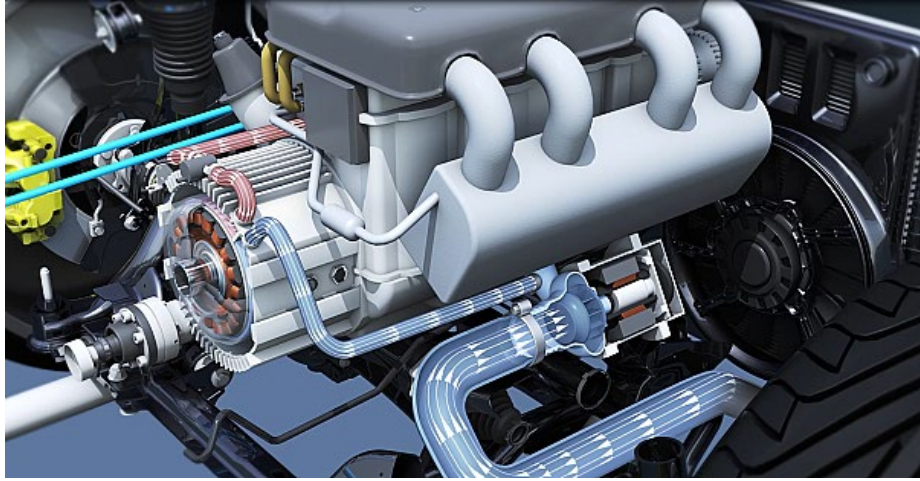
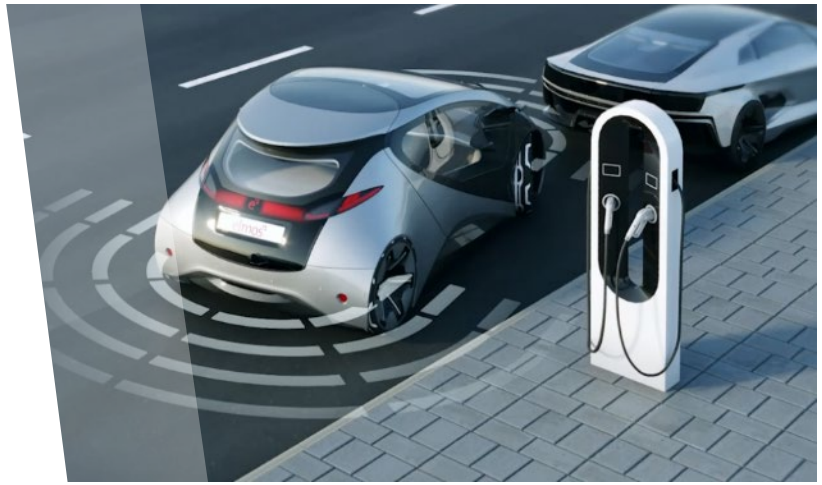
1,200 employees

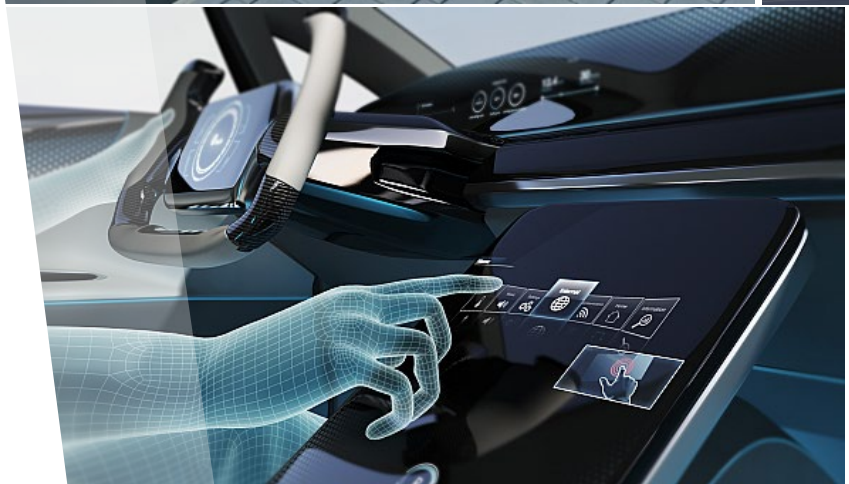
thereof 350+ product developers & engineers

WE ARE LOCATED ALL OVER THE WORLD

PRODUCT SEGMENTS

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



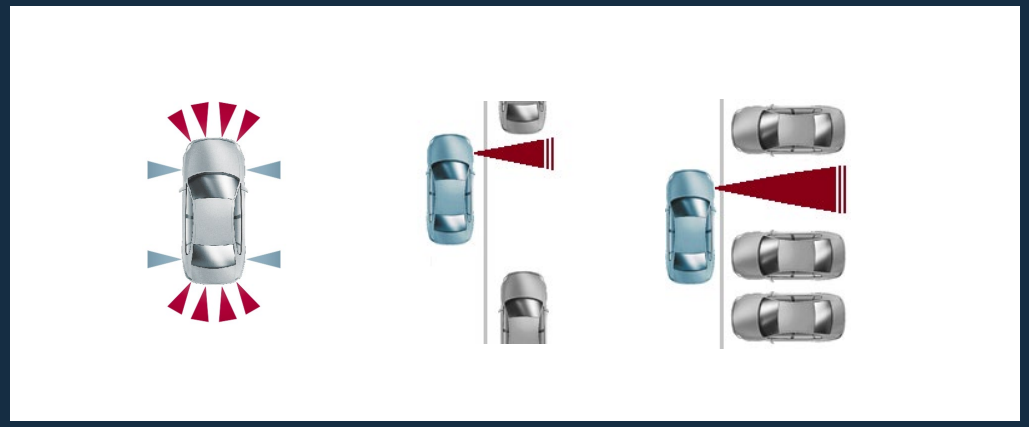

PRODUCT SEGMENT » ULTRASONIC RANGING

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

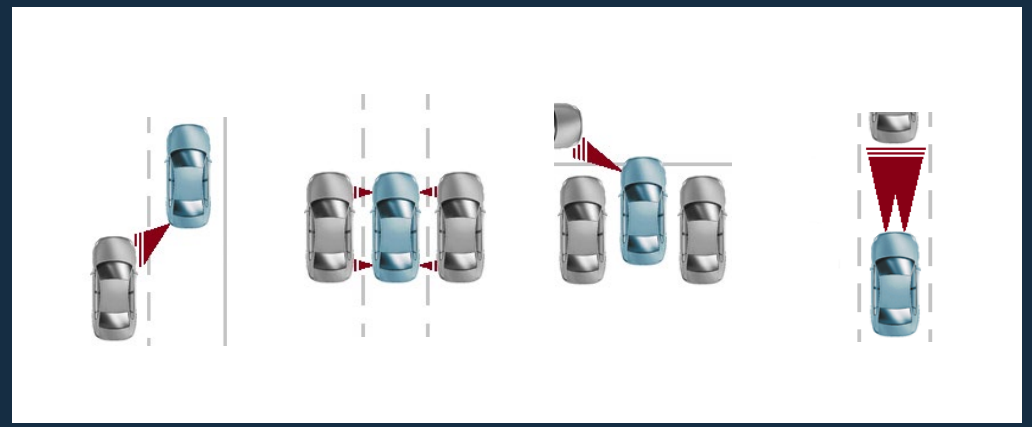
ENABLING ULTRASONIC RANGING SENSOR APPLICATIONS

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



PARK ASSIST

- „Standard“ Parking
  with accoustic 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

ULTRASONIC SENSOR IC

Standardized fast communication interface

Flexible high speed DSI3

- High bandwidth und 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

ULTRASONIC SENSOR IC

Maximum flexibility and efficiency

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

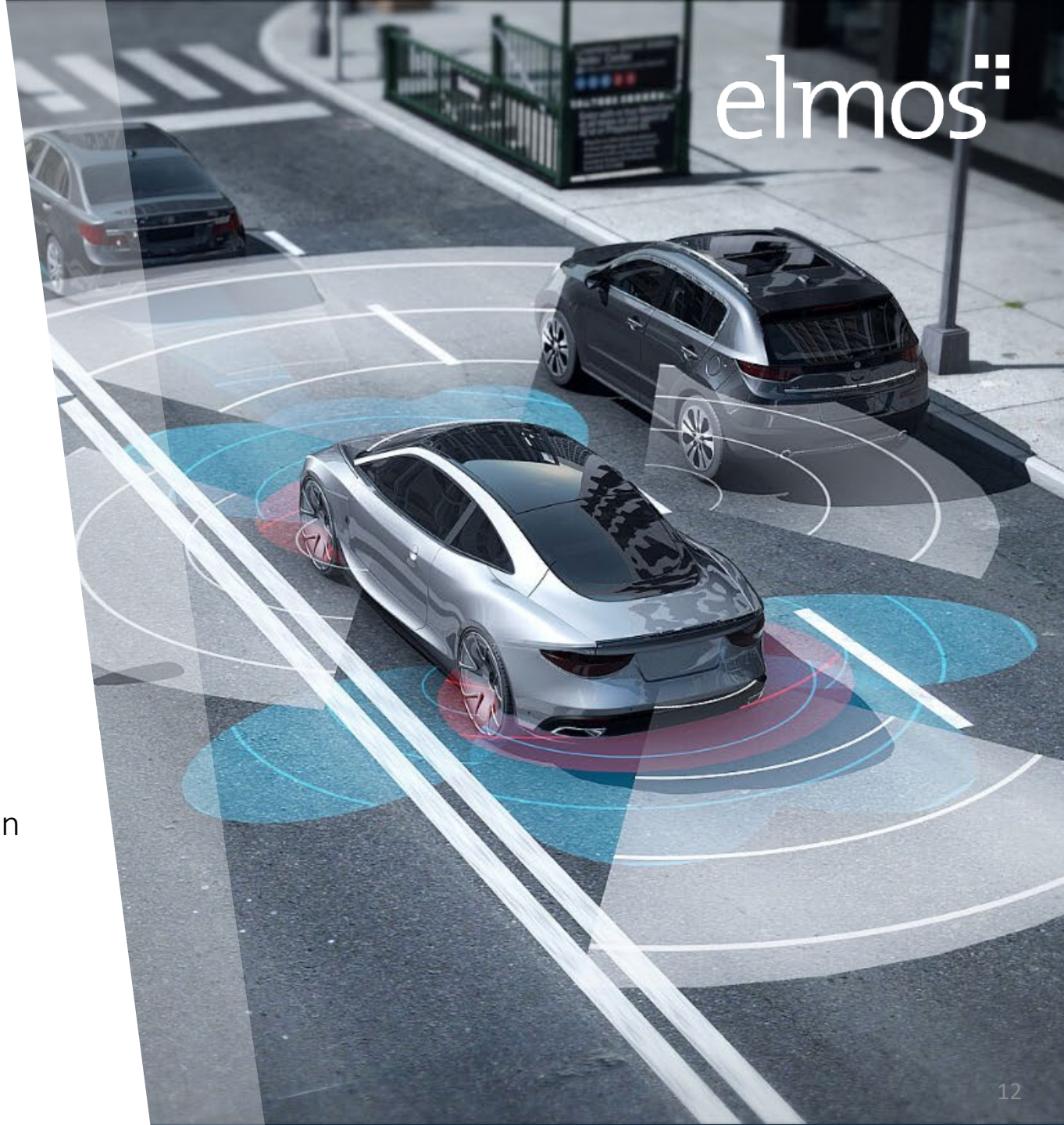
- Embedded 32-bit Arm® microcontrollers
- Up to 64 kB re-programmable flash memory
- SysROM with predefined functions:
  Boot loader, DSI3 driver, signal path check,...

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

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Innovation Matters

DISCLAIMER

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