LIN SMART ULTRASONIC PARKING ASSIST
PRODUCTION DATA - SEP 03, 2012

RoHS
compliant

Features

► Stand-alone Ultrasonic Park Assist Solution
► Includes Driver for Ultrasonic Transducer
► Programmable Transducer Power
► Programmable Receiver Sensitivity
► EEPROM Storage of Calibration Values
► Digital Filtering and Signal Processing
► Adjustable Burst Length and Filter Bandwidth
► Low Noise Down to 0.5µVRMS
► Internal Oscillator
► LIN 2.1 Interface with Auto-Addressing
► Short/Long Distance Range Modes
► 8bit CPU with 16MHz Clock
► 8KByte Customer FLASH or ROM
► Integrated Elmos BootManager™
► 512Byte RAM
► Fast Calibration Data Exchange via LIN

FLASH	ROM*	LIN Auto-addressing	Range Extension
E524.11	E524.21		
E524.12	E524.22	X	
E524.13	E524.23		X
E524.14	E524.24	X	X

*Contact factory for more information

Applications

► Ultrasonic Park Assist Systems (USPA)
► Blind Spot Detection
► Industrial Distance Measuring
► Robotics

General Description

The E524.xx with integrated microcontroller offer ultrasonic range detection with minimum component count. A single ultrasonic transducer with a center tapped transformer is directly driven with programmable 30kHz to 80kHz bursts. Supported transducers allow distance measuring from 15cm to 4m and beyond in extended range mode.

The received echo signal is amplified and converted by an ADC. Digital filtering achieves excellent tracking with the sending frequency without external components or trimming. Optional temperature compensation is available through GPIO pins.

An onboard EEPROM stores processed values of the oscillator/sending frequency, transmitted power and receiver sensitivity. Communication to an ECU is via a single-wire bus compatible with LIN 2.1. For ease of use, a System ROM is pre-programmed with the Elmos BootManager™ and application support routines. Available software examples cover threshold-based echo detection, a basic LIN stack and a complete USPA application example
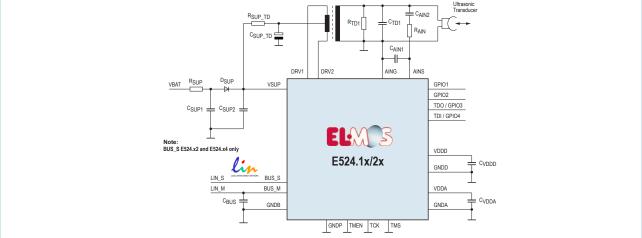
All ICs contain EEPROM. Options include FLASH or ROM, LIN Auto-addressing and Range Extension.

Ordering Information

Product ID	Temp Range	Package
E524.xx	-40°C to +105°C	QFN20L5

Note: "xx" refers to available options such as FLASH, ROM, LIN and Range Extension

Typical Applications Circuit

ELMOS Semiconductor AG reserves the right to change the detail specifications as may be required to permit improvements in the design of its products.

ELMOS Support 09/2012

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