

## Features

- ▶ Up to 4 emitters and 1 compensator
- ▶ Automatic calibration of all relevant values
- ▶ Optical principle with no mechanics
- ▶ SPI and I<sup>2</sup>C communication interfaces available
- ▶ 16 bit microcontroller with typ. 8 MHz
- ▶ 32 kByte Flash and 3 kByte SRAM memory
- ▶ Supply voltage range  
Core 2.25 V to 2.75 V / IO 1.50 V to 2.8 V
- ▶ 50 µA standby current
- ▶ 2.5 mA circuit operating current
- ▶ -40°C to + 85°C operating temperature
- ▶ MLPQ32L5 / MQFP44 package

## Applications

- ▶ Highly intuitive input devices (e.g. handheld devices, HMI steering wheel, 3D MMI's, etc.)
- ▶ in combination with suitable optics and additional software, real x, y, z coordinates ( 64 x 64 x 16 positions ) are possible
- ▶ Navigation keys rotary switches, sliders, proximity-sensors and optical switches are possible
- ▶ Multi-key applications for rough environmental conditions
- ▶ Far range (up to 3m) proximity & motion detection

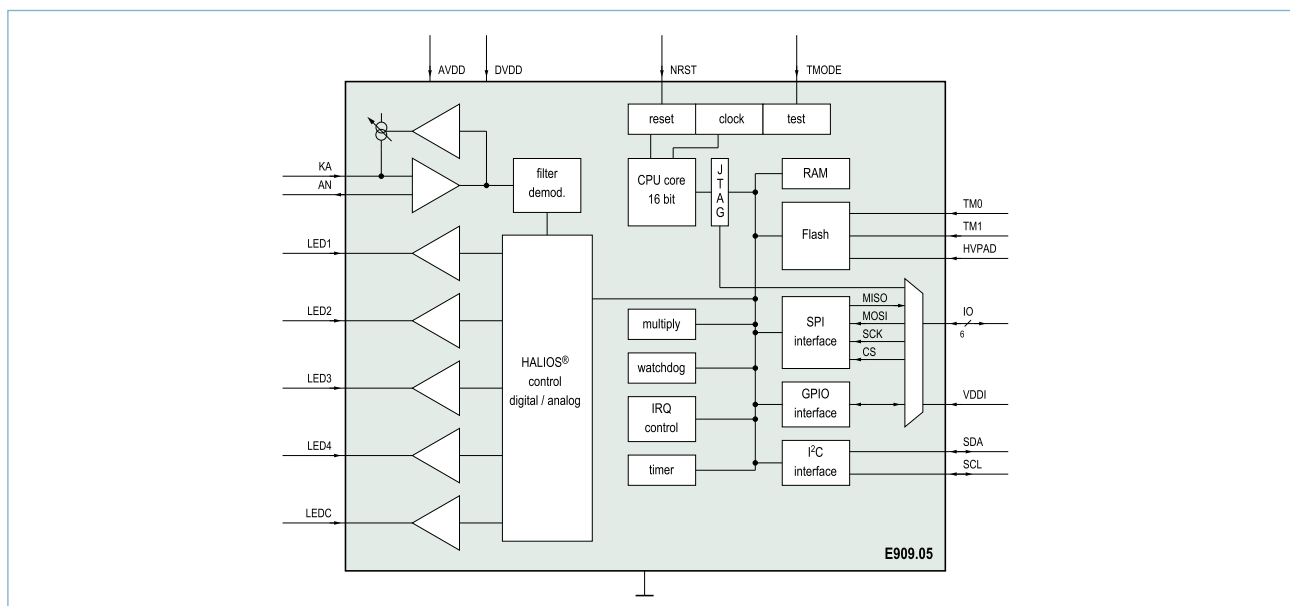
## Brief Functional Description

The HALIOS® multi-purpose optical sensor is based on an optical bridge which provides a non-mechanical detection of gestures (e.g. movement of a finger). The IC E909.05 prepares data from optical reflections of an object in front of the sensor using a system called HALIOS® (High Ambient Light Independent Optical System).

HALIOS® is highly efficient suppressing ambient light and also has an inherent self calibration capability to eliminate disturbances caused by housing reflections such as dirt.

New intuitive user interfaces are possible with this unique input device. All data are analyzed and evaluated internally with a high performance microprocessor and the data output can be easily customized.

HALIOS® devices can be applied behind closed surfaces so you are given the freedom of a very flexible design. HALIOS® firmware provides all necessary algorithms and software based filters; furthermore, the software is highly flexible and can be expanded for many applications.



**ELMOS Semiconductor AG – Headquarters**

Heinrich-Hertz-Str. 1 | 44227 Dortmund | Germany  
Phone +49 (0) 231-75 49-0 | Fax +49 (0) 231-75 49-149  
sales@elmos.de | www.elmos.de

**ELMOS Semiconductor AG – Munich Branch**

Am Gefluegelhof 12 | 85716 Unterschleissheim | Germany  
Phone +49 (0) 89- 318 370- 30 | Fax +49 (0) 89- 318 370- 31  
sales@elmos.de | www.elmos.de

**ELMOS Semiconductor AG – Stuttgart Branch**

Max-Eyth-Str. 35 | 71088 Holzgerlingen | Germany  
Phone +49 (0) 70 31- 63 19 91 | Fax +49 (0) 70 31- 63 19 97  
sales@elmos.de | www.elmos.de

**MECHALESS Systems GmbH | A MEMBER OF THE ELMOS GROUP**

Technologiepark Karlsruhe | Albert Nestler Str. 10 | 76131 Karlsruhe | Germany  
Phone +49 - 721 - 62698 - 00 | Fax +49 - 721 - 62698 - 11  
info@mechaless.com

**ELMOS North America, inc.**

32255 Northwestern Highway Suite 45 | Farmington Hills | MI 48334 | USA  
Phone +1- 248 865 32 00 | Fax +1- 248 865 3203  
sales-int@elmos.de | www.elmos.de

**ELMOS France S.A.**

64 bis rue Kléber | 92300 Levallois Perret | France  
Phone +33 (0) 1- 46 52 59 59 | Fax +33 (0) 1- 42 42 95 54  
sales-int@elmos.de | www.elmos.de

**ELMOS Representative in Japan – MUSASHINO Corporation**

Tohchiku Bldg. | 2-14-18 | Minato-ku | Tokyo 108-0023 | Japan  
Phone +81- 3 - 34 53 - 33 51 | Fax +81- 3 - 34 53 - 33 50  
info@musashinocorp.com

**ELMOS Distribution Line – Channel Microelectronic GmbH**

Alleenstr. 29/3 | 73730 Esslingen | Germany  
Phone +49 - 711 - 930 721 - 30 | Fax +49 - 711 - 930 721 - 40  
info@channel-microelectronic.de