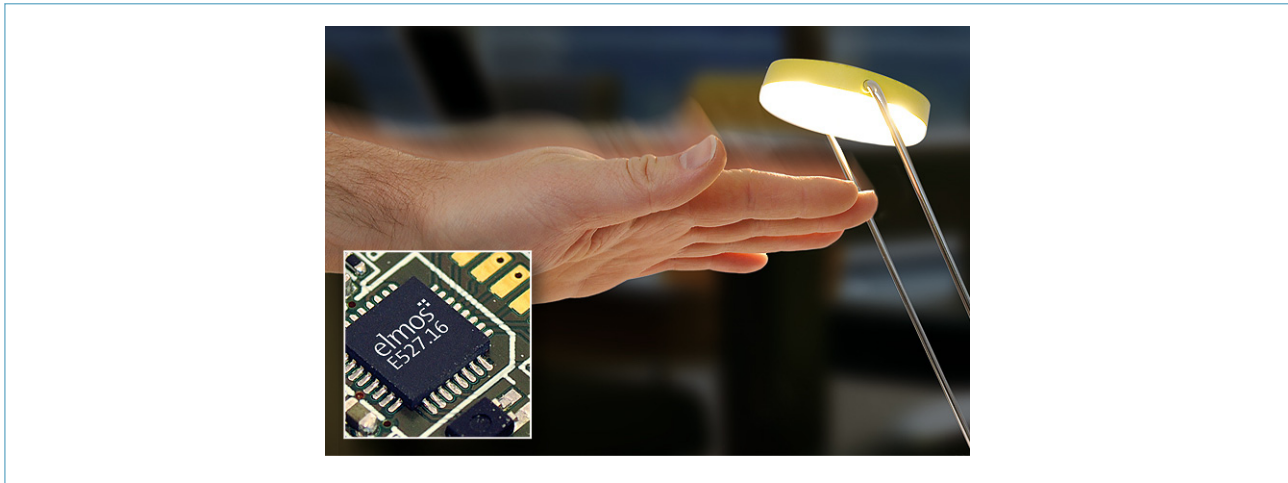


Functional Description E527.16 Reference Design

The Elmos IC E527.16 is a fully functional gesture control solution for all types of lamps and additional innovative products. The complete functionality of the HMI, starting from the gesture recognition up to the controlling of the illumination is implemented and merged together. Alternative settings allow a customized solution for individual concepts and innovative products.



The following gestures will be recognized:

- **Awareness** – An object (e.g. a hand) enters the de-tection zone.
- **Wipe** – A movement horizontal to the sensor surface with a certain speed.
- **Tap** – A quick movement in the direction of the sensor back and forth similar to pushing a virtual button in the air.
- **Proximity** – A movement with continues speed in direction to or from the sensor.
- **Time Select** – Hover in the detection range for a certain time.

The following states are possible:

- **On/Off** – The lamp shines with 100% brightness (on) or with 0% (off).
- **Dimming** – The lamp shines with a brightness in between 0% and 100%. Step size is 0.4%.
- **Acknowledge** – Indication of a status change by a variation of the brightness. If the brightness is < 50% it will increased by 30% if it is > 50% it will decreased by 30%.

NOV 18, 2013



The control concept is based on three main procedures:

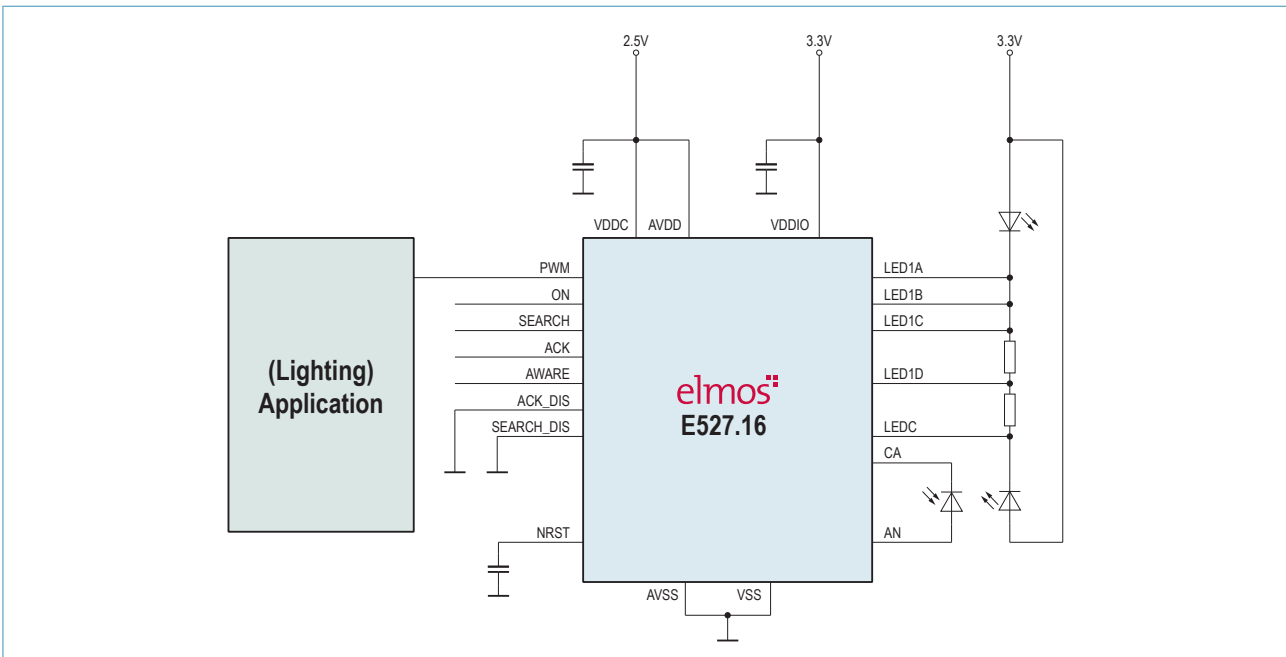
- 1. Search Light:** If the lamp is off and an object enters the detection range the lamp illuminates with a brightness of 25%. As soon as the object leaves the detection zone or it stays there $> 3s$ the lamp is turned off. In the case the lamp is on, *Awareness* is notified but there is no further reaction from the lamp. This indicates to the customer *I am ready* and helps to get a feeling of the detection zone. Also it provides the possibility to have a glimpse at the surrounding area. This operation can be switched off if not required.
- 2. Switching On and Off:** A quick *wipe* gesture from left to right (or opposite) in the detection range of the sensor (range up to 25cm) switches the light on (100%) or off (0%). Between two *wipes* the detection range of the sensor must be left.
The same reaction can also be triggered by a so-called tap (tap = A short "pressure" on a virtual switch in the air).
- 3. Dimming:** Once the lamp is switch on it can be adjusted to any desired brightness. With the *time select* gesture the status *dimming* will be entered and confirmed by an *Acknowledge*.
Now the brightness of the lamp follows the hand. The closer the hand the brighter the lamp illuminates and the farther away the dimmer it will be. Leaving the detection zone for a certain time during dimming will stop the procedure and the previous brightness before the *Time Select* will be set. The dimming procedure is ended by a second *Time Select* and will be confirmed again by an *Acknowledge*. That brightness will be kept until the lamp is switched off or a dimming procedure is started again.
Before starting the next procedure the detection zone has to be left. The confirmation via the *Acknowledge* can be switched off.

NOV 18, 2013

Overall this represents a state of the art gesture controlled input device. Field-tested, reliable, suitable for many products and optimized to be implemented in lamps, the E527.16 opens the door to a new intuitive user interface – all of this under the same conditions as a standard switch.



The advanced ready-to-use functions are displayed clearly with the E527.16 Reference Design (Elmos article no. RD 1210001).



Watch short video of our plug and play reference board on YouTube: <http://youtu.be/r1sdpcDvagM>

For more IC-related information please visit www.elmos.com (link products).



www.halios.de

NOV 18, 2013

Usage Restrictions

Elmos Semiconductor AG provide the E527.16 Demonstration Board simply and solely for IC evaluation purposes in laboratory. The Kit or any part of the Kit must not be used for other purposes or within non laboratory environments. Especially the use or the integration in production systems, appliances or other installations is prohibited.

The pcb's are delivered to customer are for the temporary purpose of testing, evaluation and development of the Elmos IC's only. Elmos will not assume any liability for additional applications of the pcb.

Disclaimer

Elmos Semiconductor AG shall not be liable for any damages arising out of defects resulting from (1) delivered hardware or software, (2) non observance of instructions contained in this document, or (3) misuse, abuse, use under abnormal conditions or alteration by anyone other than Elmos Semiconductor AG. To the extend permitted by law Elmos Semiconductor AG hereby expressly disclaims and user expressly waives any and all warranties of merchantability and of fitness for a particular purpose, statutory warranty of non-infringement and any other warranty or product liability that may arise by reason of usage of trade, custom or course of dealing.

Elmos Semiconductor AG – Headquarters
Heinrich-Hertz-Str. 1 | 44227 Dortmund | Germany
Phone +49 (0) 231-75 49-100 | Fax +49 (0) 231-75 49-159
sales-germany@elmos.com | www.elmos.com

Note Elmos Semiconductor AG (below Elmos) reserves the right to make changes to the product contained in this publication without notice. Elmos assumes no responsibility for the use of any circuits described herein, conveys no licence under any patent or other right, and makes no representation that the circuits are free of patent infringement. While the information in this publication has been checked, no responsibility, however, is assumed for inaccuracies. Elmos does not recommend the use of any of its products in life support applications where the failure or malfunction of the product can reasonably be expected to cause failure of a life-support system or to significantly affect its safety or effectiveness. Products are not authorized for use in such applications.

Copyright © 2013 Elmos. Reproduction, in part or whole, without the prior written consent of Elmos, is prohibited.