E909.06 HALIOS® 2-Inch-Slider

This HALIOS® demonstrator shows basic gestures combined with a high resolution air slider. Just move your finger in the air and get a real rapid feedback value with a resolution of more than 1000 digits. Also wipe and tap gestures are implemented as HALIOS® standard functions.

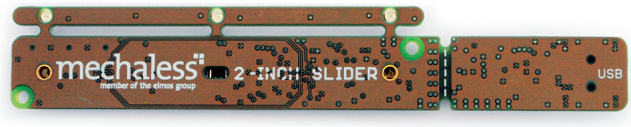

Figure 1. E909.06 HALIOS® 2-Inch-Slider

Advantages of a HALIOS® based Input System

- larger detection range compared to other optical sensor solutions
  - up to 40 cm detection range
  - up to 25 cm gesture detection
- detection of the direction of movements in two dimensions (x and z)
- high speed (real time feedback)
- high robustness against humidity, ambient and extrinsic light and also temperature influences
- constant functionality while ambient light changes
- low power consumption (especially compared to other optical sensor systems)
- low solution cost (e.g. compared with camera based solutions)
- optimized component cost (only 2 IR transmitter LEDs, 1 compensator LED and 1 photo diode)

The functionality is realized by using the HALIOS® standard IC E909.06 from Elmos. The major advantage of this demonstrator is that it only consists of a PCB and its electrical assemblies. There is no need for additional mechanics or optics.

Implemented Gestures

- Awareness
- Continuous Proximity
- Air Slider with a high resolution of at least 1000 digits
- 3 independent Feedback-Zones (left, middle, right sector)
- Wipe Gesture detection in one dimension (e.g. x-dimension)
- Time Select
- Double Tap Gesture

Dimension

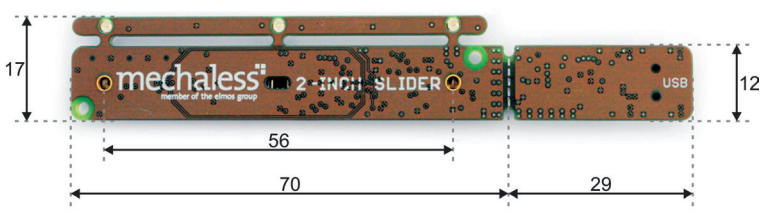

Figure 2. Top view – dimensions

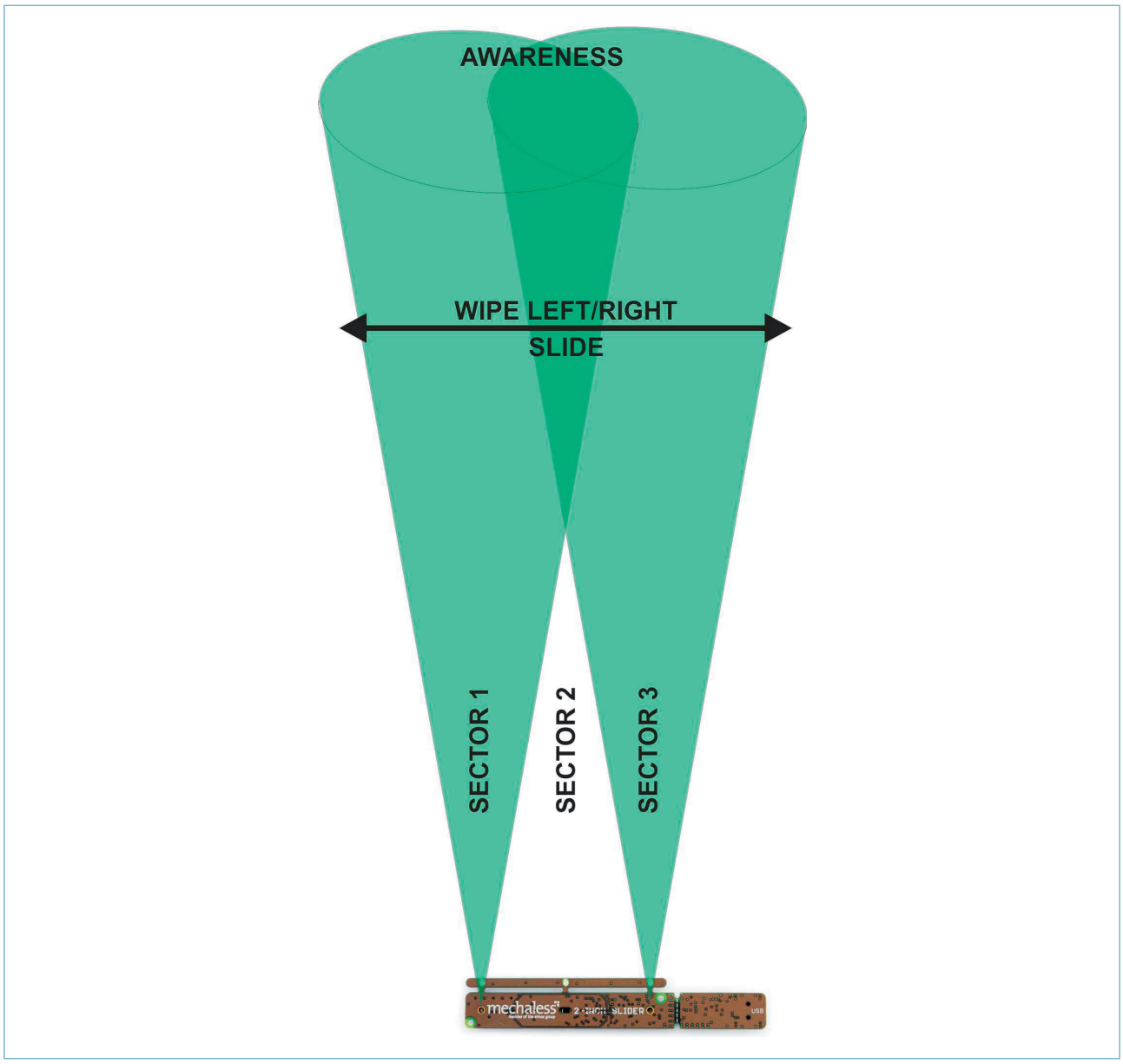

Figure 3. IR-beams and functionality

Default Functionality – added Value

- easy evaluation of the existing functions
- no mechanics, no optics
- PCB is ready to be integrated in an existing solution
- connect the PCB to your own application
  - via I2C slave
  - via SPI master
  - via USB (interface on board)
- capability for fast integration of the gestures in your own application due to gesture SW library

The E909.06 HALIOS® 2-Inch-Slider as Standalone Solution

The 2-Inch-Slider board is ready to be used as a standalone solution connected via USB as a power supply. It shows each gesture by controlling the three green indicator LEDs. The required gestures can be selected in the corresponding Windows tool called *Gesture Debugger*.

- *Awareness*: The indicator LED in the center turns on if the object is located within the sensor detection range.
- *Proximity*: The PWM output of E909.06 dims the indicator LED in the center. The closer the hand to the sensor the brighter the illumination of the LED.
- *Air Slider*: Moving an object, e.g. finger or hand, in the air above the sensor area represents a slider value. This value can be visualized via a PWM signal on the indicator LEDs if *Sector Select* is activated.
- *Sector Select*: The corresponding LED shows the sector in which the object is located (left, middle, right).
  Also the position is visualized via a PWM signal.
- *Wipe*: The corresponding outer LED (left or right) flashes after wiping. If Sector Select is activated the LEDs in the direction of the wipe are switched on and off in a sequence.
- *Time Select*: The indicator LEDs flash once.
- *Double Tap*: The indicator LEDs flash twice.

Interface and Connectors

The board operates with a 5V power supply. Supply can be established via USB plug, the soldering pads or the ZIF connector. All functions can be activated in the corresponding Windows tool called *Gesture Debugger*. This software can be downloaded at www.mechaless.com/download.

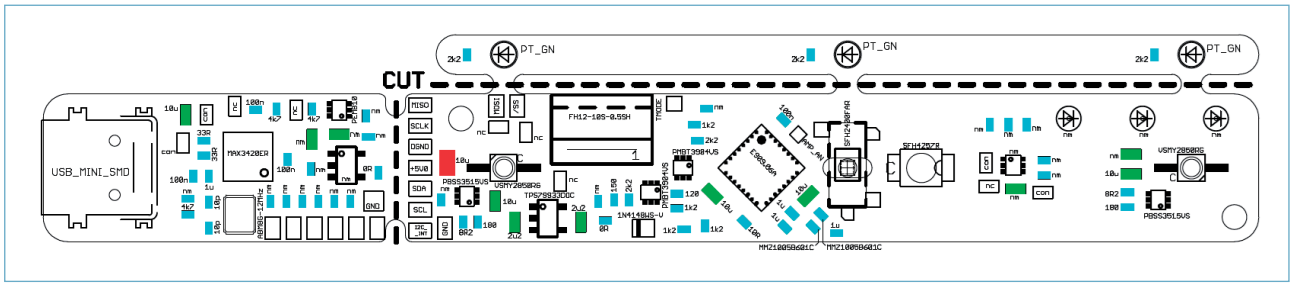

Figure 4. Component view

Easy Evaluation on PC with our free Tools

- HACo tool for unique sensor and signal analysis
- Gesture Debugger for quick gesture evaluation
- Gesture Debugger Template to design individual user applications by using pre-configured gesture events or code your own gestures based on the raw sensor signals

– all related documents such as schematics, PCB and BOM can be found on www.mechaless.com –

www.halios.de

Usage Restrictions

Elmos Semiconductor AG provide the E909.06 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.

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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