

# Modular ToF Kit

ToF Sensor and Light Modules

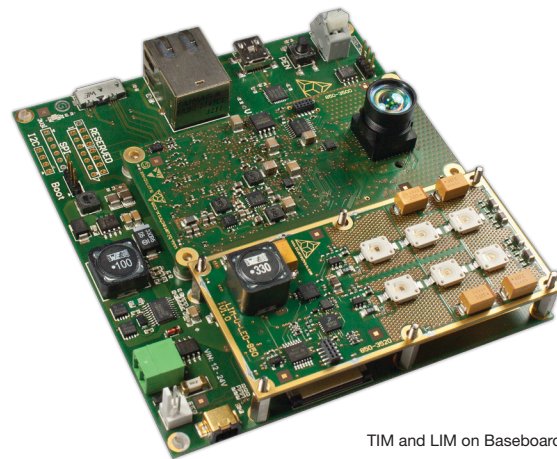


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The modular ToF Kit is a very new building blocks system. It guarantees the maximum flexibility and builds the basis for your customer specific ToF solution.

Time of Flight Image Sensor Modules (*short TIM*) vary in size, supported sensor, aperture angle and integrated functionality. Light Modules (*short LIM*) differ in size, supported technology (LED, LASER), aperture angle and number of LEDs.

Both modules are designed by an appropriate standard which specifies various form factors, a fixed pin-out and the connectors. Customized baseboards can be manufactured upon request or you can use our upcoming ToF Kit Development Board for your own evaluation.



TIM and LIM on Baseboard

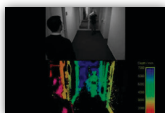
## Applications



- » Automation and Control
  - » Range Measurements
  - » Goods Counting



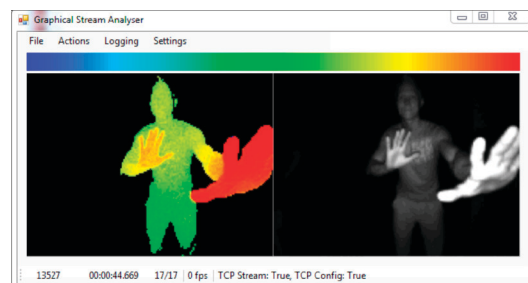
- » Robotics
  - » 3D Safety Area
  - » Map Building
  - » Navigation
  - » Obstacle detection



- » Gesture Recognition
  - » Touch less Control
  - » Gaming Industry
  - » HMI for Industrial Robots
- » Building Automation
  - » Security Appliances
  - » People Counting
  - » Safety Access Control

## Highlights

- » 3D depth sensor PMD ToF technology
- » Modularity – Create your own solution
- » Various LED Modules available
- » Choose from several aperture angles (TIM and LIM)
- » Select your required interfaces on your custom base board



ToF distance and greyscale information

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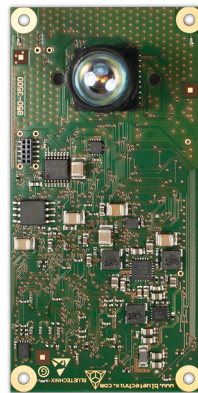


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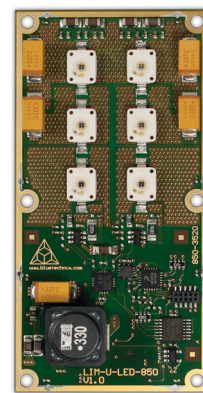
## TIM Feature Overview

<b>FORM FACTOR</b>	Micro ( $\mu$ ) 80 x 40 mm
<b>SENSOR</b>	PMD PhotonICs® 19k-S3
<b>PIXEL</b>	160 x 120
<b>APERTURE ANGLE</b>	30 / 60 / 90 °
<b>DEPTH DATA CALC ON MODULE</b>	Yes
<b>FPS</b>	up to 70*
<b>INTERFACES</b>	UART, SPI, USB2.0, I <sup>2</sup> C, ISM
<b>GPIO</b>	3
<b>POWER SUPPLY</b>	5 V <sub>DC</sub> @ 450 mA
<b>TEMPERATURE RANGE</b>	Industrial -40 to +85 °C

\*FPS & Range depends on integration time, ambient temperature and software configuration



TIM-UP-19k-S3-Spartan-6



LIM-U-LED-850-6

## LIM Feature Overview

<b>FORM FACTOR</b>	Micro ( $\mu$ ) 80 x 40 mm
<b>LED TYPE</b>	IR 850 nm
<b># LED</b>	3 / 6
<b>APERTURE ANGLE</b>	30 / 60 / 90 °
<b>INTERFACES</b>	OWIRE, LVDS
<b>MODULATION FREQUENCY</b>	up to 30 MHz
<b>POWER CON-SUMPTION</b>	60 W max. 10 - 30 V <sub>DC</sub>
<b>TEMPERATURE RANGE</b>	Industrial -40 to +85 °C
<b>COOLING</b>	Passive required

## Customization

The ToF Kit is focused on modularity. Individual base boards with your required interfaces can easily be implemented.

Bluetechnix as one of the leading ToF experts ensures with this unique ToF Kit a new and very efficient way to build up customized depth sensing systems rapidly.

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