PROPHESEE EVALUATION KIT - 3D

UNLEASH THE POWER OF ULTRA HIGH- SPEED EVENT BASED DEPTH MEASUREMENT

PROPHESEE

EVK 3D

FEATURES

- Fast 3D Structured Light Event-Based Vision camera:
- Available in 3 baseline versions for Short/Medium/Long range
- Triangulation between projector and camera computed internally
- Streams point clouds up to 500Hz
- Embedded processing on Xilinx UltraScale+6EG chip
- Infrared (940nm) VCSEL projector
- Class 1 Certification Laser Device
  (IEC 60825-1:2014 / EN 60825-1:2014)
- Interface to a PC via USB3 connection
- Streams Depth Information (depth maps or point clouds)
- Trigger interface allows to synchronize via MCX Connectors Interface
- Slave / Master modes available
- Includes: 12V power supply, USB cable, Quickstart guide

EVALUATION KIT SOFTWARE

Metavision SDK EVK3D API:

- Device control and setup
- Configure processing pipeline
- Stream point cloud information
- Application development with point clouds

Metavision SDK Viewer Sample

- Simple example of API usage

EVK3D Explorer, a UI tool :

- Control device
- Visualize and save depth stream
- Export point clouds

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DESCRIPTION

The EVK3D built around the IMX636 Event Sensor performs active light triangulation from a VCSEL projector. All processing is performed on the Xilinx UltraScale+6EG to output 3D point clouds over USB3. Display, control and processing of the high-speed point cloud data is enabled by the downloadable Metavision software and other UI tools. The principal advantages of the Prophesee Structured Light technique that uses an embedded proprietary algorithm and processing is the unprecedented 500 point clouds per second. Factory calibrated to give a 3D depth error of <1.5% over the specified working range, defined by three separate baseline variants for short, medium and long ranges. EVS based structured light can bring high speed 3D measurement in industrial manufacturing, logistics, robotics, AMR, IoT, drones and many other application segments.

CHARACTERISTICS

GENERAL		
Sensor Resolution (px)		1280x720
Projector Number of dots		1152
Maximum Point Cloud Rate (Hz)		500
Average number of points per cloud		~5000
Field of Illumination (FOI)	Horizontal	80°
	Vertical	45°
Illuminator angular resolution	Horizontal (edge)	1.7°
	Horizontal (center)	1.4°
	Vertical (edge)	2.0°
	Vertical (center)	1.3°

RANGES	
Maximum Visible Range (Indoor)	4.5m
Maximum Visible Range (Outdoor 1.3kLux)	3.5m
Maximum Visible Range (Outdoor 90kLux)	1.2m
RMS Error at Max Geometrical depth	1.5%

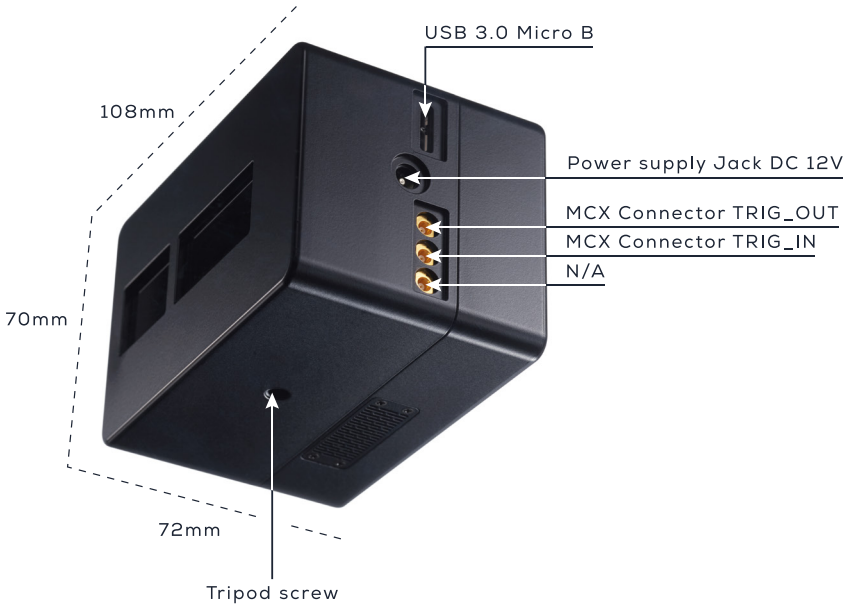
ELECTRICAL	
Power supply	12V
Power consumption (W)	FPGA alone 6.5W
	Full system (max) 7.7W
Interface (data output)	USB 3.0 (USB 3 microB)
Trigger In/Out conn.	MCX

APPLICATIONS

XR (slam)

LOGISTICS

AGV



VARIANT SPECIFIC CHARACTERISTICS					
	Baseline (mm)	Dimensions (mm)	Weight (g)	Min Working Depth (m)	Max Geometrical Depth (m)
Short Range Variant	30	108 x 70 x 72	555	0.25	0.65
Medium Range Variant	50	108 x 70 x 72	555	0.45	1.0
Long Range Variant	100	158 x 70 x 72	707	0.80	2.0

ORDERING CODES AND BRIEF DESCRIPTION

PEKI6363DSL030: IMX636 SHORT RANGE 3D STRUCTURED LIGHT EVALKIT - 30MM BASELINE
PEKI6363DSL050: IMX636 MEDIUM RANGE 3D STRUCTURED LIGHT EVALKIT - 50MM BASELINE
PEKI6363DSL0100: IMX636 LONG RANGE 3D STRUCTURED LIGHT EVALKIT - 100MM BASELINE