

3D VISION

Flash LiDAR for automation and robotics



Hardware development kit



SIMPLE

Full frame sensing
without scanning
Software defined
C++ / Python API
PCL streaming

Embedded Linux
ARM Cortex+ GPU
USB 3.0, 1 GB/s
LAN, CAN

ROBUST

Daylight (~60Klux)
Interference
suppression
Low latency (1ms)

Single photon
detection quality
statistics

SCALABLE

Detector: 2-38 Kpx
Optical power: 4-10W
Range: 0.1-60m (~25m)
Optics: SM1/C, 20-40° FoV

Upgradable detector
Multi-camera

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HDK

To evaluate Flash LiDAR technology, we offer a technology evaluation kit

Illumination

Wavelength 940nm
Pulse repetition 1 to 10MHz
Power : 4 to 10W
(configurable to Class-1)

Detector

60 x 32 SPAD pixels
Field of View : 20° (default optics)
Angular resolution: 0.3°
Frame rate: 30 fps
Typical range: 15 m (@10% r)

Hardware

Detector 2K CMOS SPAD pixels
TDC (50ps) and D-ToF firmware
Multicore CPU: ARM Cortex-A53 + Cortex-R5
GPU : Mali-400
Interfaces: mini DisplayPort, USB 2.0 / 3.0 and Ethernet
Xilinx's Zynq FPGA

Software

Application development API (C++, Python)

Lidar on chip

C1100 CMOS IC Integrates detector front-end with a direct time of flight (D-ToF) digital processor.

C1100 CMOS circuit

Pixel resolution : 240x160 pixels (38K, HQVGA)
Control interface : SPI
Data interface : LVDS, SERDES 2.5 Gbps - TDC depth resolution : 50ps / 7.5 mm
Frame rate : = 300 fps

Technology : CMOS wafer-bonded stacked circuit analog / digital
Ambient light: < 60Klux

2D imaging:

Intensity imaging,
Low-light imaging,
Global + rolling shutter

3D : imaging :

up to 60m range,
3cm resolution

Quality control :

realtime embedded quality (QoR) per pixel

Test chip :

Engineering samples Q2'2022

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