Melexis
INSPIRED ENGINEERING

EVK75024

GEN2 QVGA

TIME-OF-FLIGHT CHIPSET EVALUATION KIT

FULL QVGA RESOLUTION WITH UNSURPASSED SUNLIGHT ROBUSTNESS

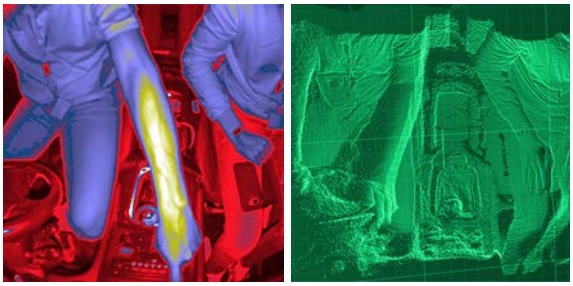
The EVK75024 is our evaluation kit for the second generation automotive QVGA MLX75024 & MLX75123BA time-of-flight (ToF) chipset. This new chipset enables real-time 3D imaging at full QVGA resolution with unsurpassed sunlight robustness. The evaluation kit is a complete camera built around this chipset, which can be directly connected to a PC for real-time visualization and recording of depth map data, while allowing direct access to many configuration settings.

The EVK75024 is a modular plug-and-play platform perfectly set up for customization by its customers. The kit consists of four stacked PCBs (from top to bottom: illumination board, ToF sensor board, interface board and a processor board). It is possible to detach the top two PCBs from the bottom two PCBs by bypassing the board to board connection with an external cable suitable for FPD-Link III communication. A graphical user interface for Windows is provided for live depth map visualization, basic recording, analysis and configuration. For custom SW development, a MATLAB SDK and C API is provided. The built-in flexibility of our evaluation kit enables any designer to develop the necessary system know-how and product experience for use in their application.

The evaluation kit is available in variants with either 80° field-of-view (FOV) with LUMILEDS LUXEON 940 nm LED illumination or 110° FOV with 940 nm VCSEL illumination. LUMILEDS

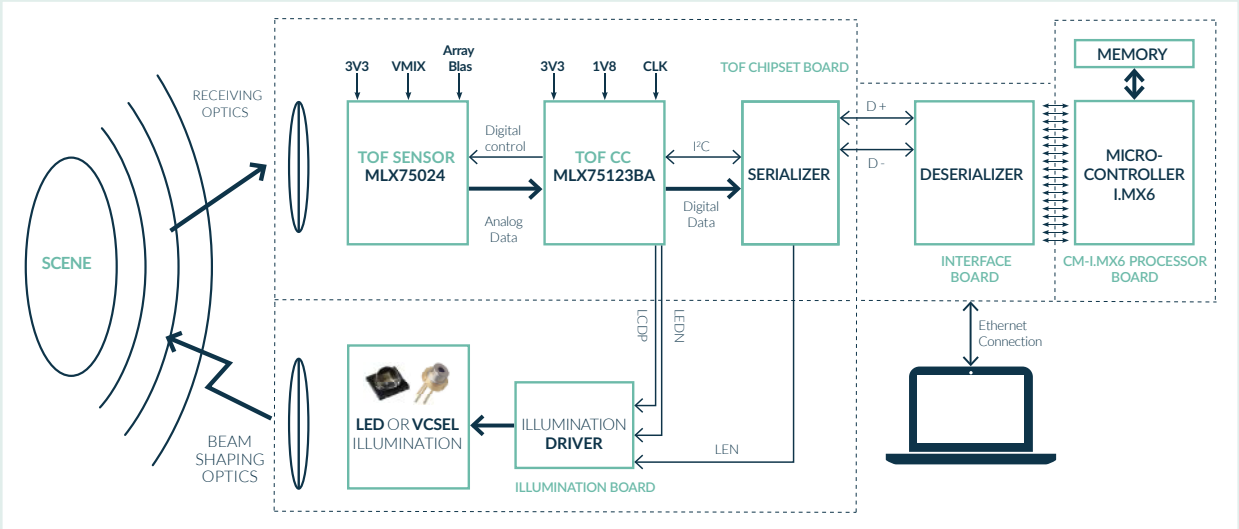
KEY FEATURES

- MLX75024 & MLX75123BA ToF chipset
- VCSEL illumination (110° FOV, 940 nm)
- LUMILEDS LUXEON LED illumination (80° FOV, 940 nm)
- Modulation frequencies up to 40 MHz
- Exchangeable sensor optics (standard S mount)
- Distance & confidence data at max. 60 FPS
- Raw data mode(s)



- 120 Klux sunlight rejection
- Visualizer, C API & Matlab SDK

BLOCK DIAGRAM



ILLUMINATION BOARD

- 4x VCSELs (110° FOV)
- 4x LUXEON IR LEDs (80° FOV)
- Programmable peak optical power
- Onboard temperature sensor
- Eye safe (certificate available)

TOF CHIPSET BOARD

- MLX75024 QVGA, 320 x 240 pixels, ToF sensor array
- MLX75123BA ToF companion chip
- Standard S mount (M12 x 0.5) lens holder
- Two temperature sensors
- Programmable input clock and VMIX voltage
- FPD-Link III serializer

INTERFACE BOARD

- Interface between ToF chipset board & CM-i.MX6 board
- FPD-Link III deserializer
- Power input (9 - 16V) and RJ45 ethernet connector
- GPIO connector (I2C, SPI, VIN, 3V3 & three GPIOs)

CM-I.MX6 PROCESSOR BOARD

- Quad core i.MX6 processor running up to 1.2 GHz
- Calculates the distance & confidence data

EVK75024 PACKAGE CONTENTS

- 1x HW module
- 1x external AC/DC PSU
- 1x ethernet cable
- Visualizer for Windows
- Matlab SDK & C API (+ example code)
- Registration number (for SW, documentation & support)