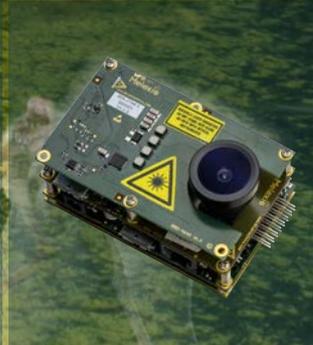


**EVK75024**

**GEN2 QVGA**

**TIME-OF-FLIGHT CHIPSET  
EVALUATION KIT**



Microbats generate ultrasound via the larynx and emit the sound through the nose or open mouth; from 14,000 to over 100,000 hertz, well beyond the range of the human ear. The emitted vocalizations form a broad beam of sound used to probe the environment, as well as communicate with other bats.

## FULL QVGA RESOLUTION WITH UNSURPASSED SUNLIGHT ROBUSTNESS

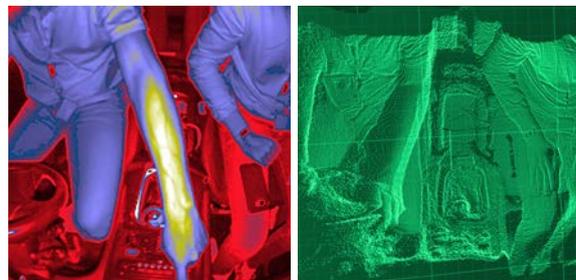
The EVK75024 is our evaluation kit for the second generation automotive QVGA MLX75024 & MLX75123BA time-of-flight (ToF) chipset. This new chipset enables real-time 3D imaging at full QVGA resolution with unsurpassed sunlight robustness. The evaluation kit is a complete camera built around this chipset, 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**

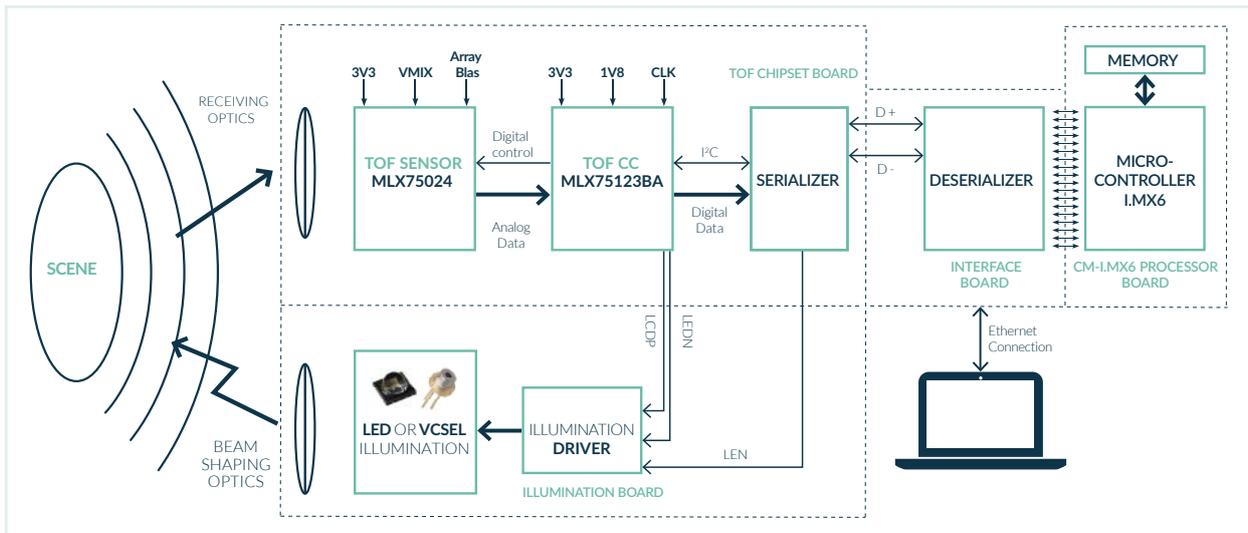
### KEY FEATURES

- ✓ 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



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## 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)