Melexis
INSPIRED ENGINEERING

EVK75123

REAL-TIME 3D IMAGING

TIME-OF-FLIGHT CHIPSET EVALUATION KIT
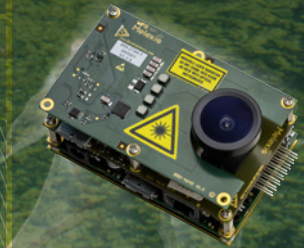
# QVGA TIME-OF-FLIGHT CHIPSET EVALUATION KIT

The EVK75123 is the evaluation kit for the MLX75023 and MLX75123 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 and can be directly connected to a PC for visualization and recording of depth map data, while allowing direct access to many configuration settings.

EVK75123 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 chipset 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 also provided. The built-in flexibility of our evaluation kit enables any designer to develop the necessary system know-how and experience for use in their application.

The evaluation kit is available in variants with 60 deg and 110 deg field-of-view (FOV).

KEY FEATURES

- ⊘ MLX75023 and MLX75123 TOF Chipset
- ⊘ QVGA resolution
- ⊘ 120 klux sunlight rejection
- ⊘ VCSEL illumination (60° or 110°)
- ⊘ Modulation frequency up to 40MHz
- ⊘ Distance and confidence data at max. 60 FPS
- ⊘ Visualizer, C API and Matlab SDK
- ⊘ Dimensions: 80 x 50 x 35mm
        15mm TOF chipset board only

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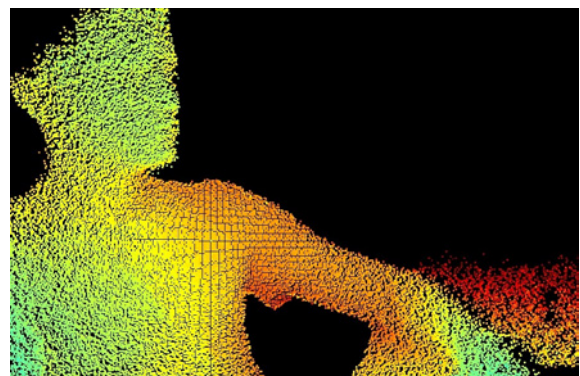
ILLUMINATION BOARD

- 4x VCSELs (60° or 110° field of view)
- Programmable peak optical power (0 - 25W)
- Onboard temperature sensor
- Eye safe (certificate available)

TOF CHIPSET BOARD

- MLX75023 QVGA, 320x240 pixels, TOF sensor array
- MLX75123 TOF companion chip
- Standard S mount (M12x0.5) lens holder
- Two temperature sensors
- Programmable input clock and VMIX voltage
- FPD-Link III serializer

INTERFACE BOARD

- Interface between TOF Chipset Board and 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 and confidence data

EVK75123 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)

EVK75123 ORDER CODES

- EVK75123-60-850-1 : 60deg FOV, 850nm VCSELs
- EVK75123-110-850-1 : 110deg FOV, 850nm VCSELs
- EVK75123-110-940-1 : 110deg FOV, 940nm VCSELs

BLOCK DIAGRAM