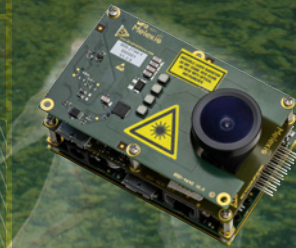


EVK75123

REAL-TIME 3D IMAGING

**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.

QVGA TIME-OF-FLIGHT CHIPSET EVALUATION KIT

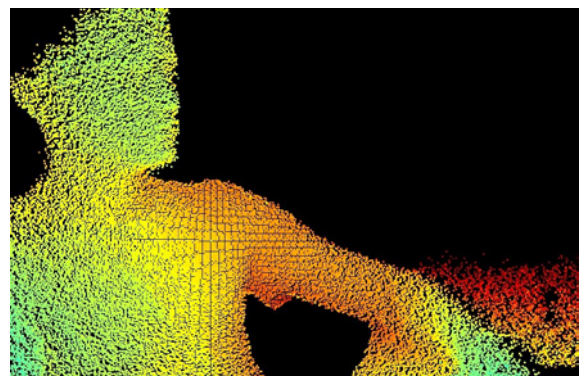
The EVK75123 is the evaluation kit for the MLX75023 and MLX75123 Time-of-Flight (TOF) chipset. This new chipset enables real-time 3D imaging at full QVGA resolution with unsurpassed sunlight robustness. The evaluation kit is a complete camera built around this chipset and can be directly connected to 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



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

