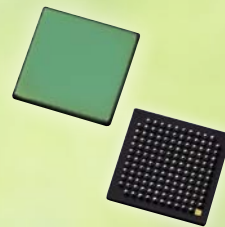


MLX75027

## AUTOMOTIVE VGA TIME OF FLIGHT SENSOR



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.

## SINGLE CHIP HIGH RESOLUTION AUTOMOTIVE TOF SENSOR

The MLX75027 Automotive Time-Of-Flight sensor supports up to VGA resolution. The sensor, alongside the BSI VGA pixel array, provides the control signals for the illumination unit and has a MIPI CSI-2 high speed serial interface to stream data to the host processor.

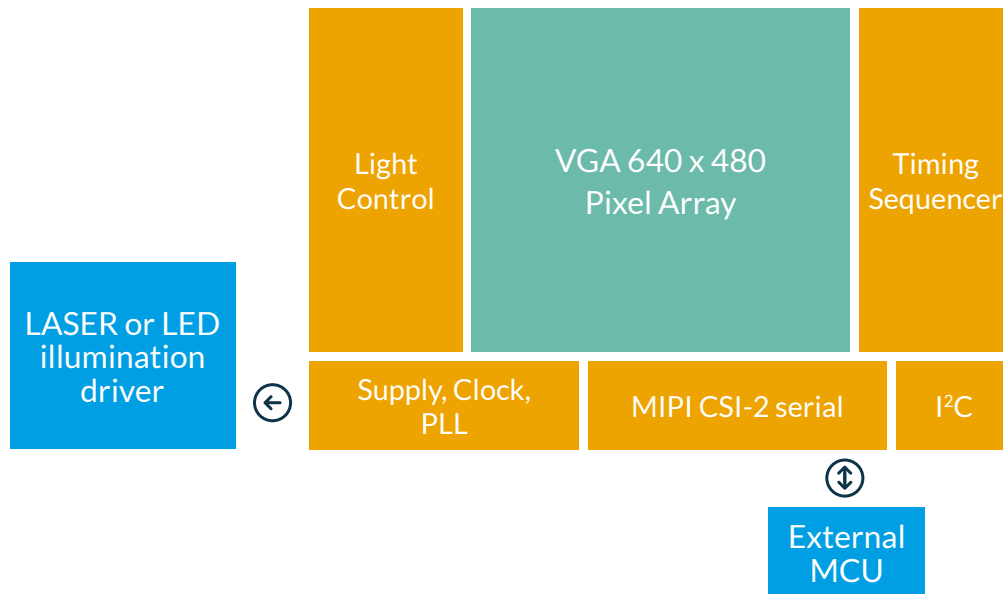


Thanks to a simple supply system, with only 3 positive voltage domains, the sensor simplifies the design of the supply unit and together with a low power dissipation allows a very compact 3D camera.

The MLX75027 supports up to 100MHz illumination modulation frequency, which makes it well suited for VCSELs illumination and has a built-in temperature sensor.

The EVK75027 evaluation kit is available to evaluate the MLX75027 Automotive VGA ToF sensor.

## BLOCK DIAGRAM



## KEY FEATURES

- ✓ 1/2" optical VGA (640 x 480) Time-of-Flight image sensor
- ✓ High distance accuracy because of programmable modulating frequencies up to 100MHz
- ✓ Full resolution readout up to 135 distance frames per second (in 4 phase configuration)
- ✓ 1.5ms phase readout time
- ✓ Up to 8 raw phases (or quads) per frame, per-phase statistics & diagnostics
- ✓ Continuous or triggered operation mode(s)
- ✓ Configurable over I2C (up to 400kHz)
- ✓ CSI-2 serial data output, MIPI D-PHY, 1 clock lane, 2 or 4 data lanes
- ✓ Build-in temperature sensor
- ✓ Region of interest (ROI) selection, Integrated support for binning (2x2, 4x4, 8x8), Horizontal mirror & vertical flip image modes
- ✓ 14 x 14 x 2.2 mm BGA package (141 pins)
- ✓ Ambient operating temperature range -40 +105°C

