SONY

Ver.1.0

IMX556PLR

Diagonal 8.0 mm (Type 1/2) VGA-Pixel Time-of-Flight Image Sensor

Description

The IMX556PLR is a fully integrated optical Time-of-Flight (ToF) camera sensor. The sensor features 640 x 480 (VGA) time-of-flight pixels. Combined with a modulated light source, this sensor is capable of measuring distance and reflectivity with VGA resolution. This chip operates with analog 2.7 V, digital 1.2 V, and interface 1.8 V triple power supply, and has low power consumption. The device features CSI-2 serial data outputs.
(Application: FA cameras, Industrial cameras)
In addition, this product is designed for use in FA / Industrial camera. When using this for another application, Sony Semiconductor Solutions Corporation does not guarantee the quality and reliability of product. Therefore, don't use this for applications other than FA / Industrial camera.
Consult your Sony Semiconductor Solutions Corporation sales representative if you have any questions.

Features

- ◆ Back-illuminated Time-of-flight image sensor
- ◆ High signal to noise ratio (SNR)
- ◆ Full resolution @max60 frame/s (4phase/frame)
- ◆ Pixel binning readout function
- ◆ Independent flipping and mirroring
- ◆ CSI-2 serial data output (MIPI 4lane, 960 Mbps/lane, D-PHY spec. ver. 1.2 compliant)
- ◆ 2-wire serial communication (Supports I2C "Fast-mode") / 4-wire SPI
- ◆ 4-wire SPI Master for Illumination signal
- ◆ 192 bits of OTP for users
- ◆ Built-in temperature sensor

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Device Structure

- ◆ Time-of-Flight Image Sensor
- ◆ Image size — Diagonal 8.0 mm (Type 1/2)
- ◆ Total number of pixels — 642 (H) × 498 (V) approx. 0.319 M pixels
- ◆ Number of effective pixels — 642 (H) × 484 (V) approx. 0.310 M pixels
- ◆ Number of active pixels — 640 (H) × 480 (V) approx. 0.307 M pixels
- ◆ Unit cell size — 10.0 μm (H) × 10.0 μm (V)
- ◆ Substrate material — Silicon
- ◆ Package — 136 pin LGA 15.50 mm (H) × 15.00 mm (V)

Sensor Characteristics

(Tj = 60 °C)

Item		Value	Remarks
Dark signal	Max.	3 LSB	
DC contrast	Min.	65 %	
Saturation signal	Min.	1023 LSB	

Readout Mode

Mode	Binning	MIPI Lane
A-B	1 × 1 2 × 2 4 × 4 8 × 8	4 Lanes 2 Lanes
A+B		
A		
B		
A&B		

The image of each readout mode shows below. There is Tap A/B in one pixel. The number of horizontal output data for A&B mode is double of other modes.

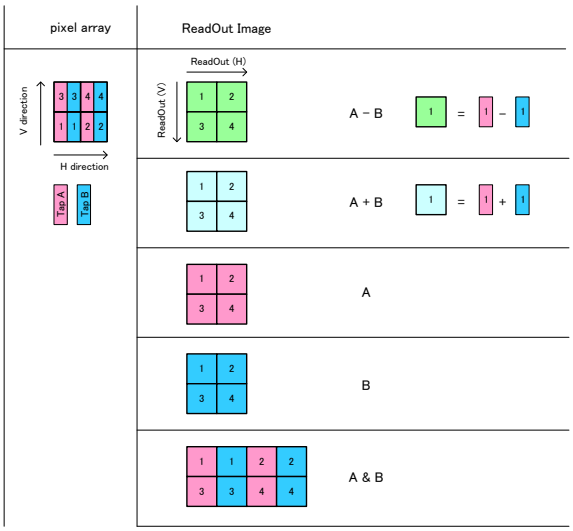

Image Sensors for Industrial Applications:
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