

[Product Information]

IMX458-AALH5

Ver.1.0

Diagonal 5.867 mm (Type 1/3.06) 13 Mega-Pixel CMOS Image Sensor with Square Pixel for Color Cameras

Description

The IMX458-AALH5 is a diagonal 5.867mm (Type 1/3.06) 13 Mega-pixel CMOS active pixel type stacked image sensor with a square pixel array. It adopts Sony's Stacked CMOS Image Sensor technology to achieve high speed image capturing by column parallel A/D converter circuits and high sensitivity and low noise image (comparing with conventional CMOS image sensor) through the backside illuminated imaging pixel structure. R, G, and B pigment primary color mosaic filter is employed. By introducing spatially multiplexed exposure technology, high dynamic range still pictures and movies are achievable. It equips an electronic shutter with variable integration time. It operates with three power supply voltages: analog 2.7 V, digital 1.2 V and 1.8 V for input/output interface and achieves low power consumption.

In addition, this product is designed for use in cellular phone and tablet pc. When using this for another application, Sony Semiconductor Solutions Corporation does not guarantee the quality and reliability of product.

In addition, individual specification change cannot be supported because this is a standard product.

Consult your Sony Semiconductor Solutions Corporation sales representative if you have any questions.

Features

- ◆ Back-illuminated and stacked CMOS image sensor
- ◆ High Dynamic Range (HDR) mode with raw data output.
- ◆ High signal to noise ratio (SNR).
- ◆ Full resolution @30 fps (Normal / HDR), 4K2K @30 fps (Normal / HDR), 1080p @90 fps (Normal)
- ◆ Output video format of RAW10/8.
- ◆ Pixel binning readout and V sub-sampling function.
- ◆ Independent flipping and mirroring.
- ◆ CSI-2 serial data output (MIPI 2lane/4lane, Max. 1.3 Gbps/lane, D-PHY spec. ver. 1.1 compliant)
- ◆ 2-wire serial communication.
- ◆ Two PLLs for independent clock generation for pixel control and data output interface.
- ◆ Dynamic Defect Pixel Correction (DPC).
- ◆ Fast mode transition. (on the fly)
- ◆ Dual sensor synchronization operation.
- ◆ 4 k bit of OTP ROM for users.
- ◆ Built-in temperature sensor

Sony reserves the right to change products and specifications without prior notice.

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Device Structure

◆ CMOS image sensor	
◆ Image size	Diagonal 5.867 mm (Type 1/3.06)
◆ Total number of pixels	4224 (H) × 3192 (V) approx. 13.48 M pixels
◆ Number of effective pixels	4224 (H) × 3144 (V) approx. 13.28 M pixels
◆ Number of active pixels	4208 (H) × 3120 (V) approx. 13.13 M pixels
◆ Chip size	5.990 mm (H) × 3.908 mm (V)
◆ Unit cell size	1.12 μm (H) × 1.12 μm (V)

Image Sensor Characteristics

(T_j = 60 °C)

Item		Value	Remarks
Sensitivity (F2.8)	Min.	153 LSB	1/120 s integration
Saturation signal	Min.	1023 LSB	

Basic Drive Mode

Drive mode	Number of active pixels	Maximum frame rate [frame/s]
Full resolution (Normal/HDR)	4208 (H) × 3120 (V) approx. 13.13 M pixels	30 (Normal) 40 (HDR)
2 Sub-sampling (V : 1/2)	2100 (H) × 1560 (V) approx. 3.28 M pixels	60
3 Binning (V: 1/3)	1400 (H) × 752 (V) approx. 1.05 M pixels	123