

[Product Information]

Tentative

IMX472-AAJK

Ver.0.1

Diagonal 21.77 mm (Type 4/3) CMOS Image Sensor with Square Pixel for Color Cameras

Description

The IMX472-AAJK is a diagonal 21.77 mm (Type 4/3) CMOS active pixel type image sensor with a square pixel array and 21.46 M effective pixels. This sensor incorporates maximum 27 dB PGA circuit and 12 bits A/D converter. 12 bits digital output makes it possible to readout the signals of 20.89 M active pixels at high-speed of 120 frame/s in still picture mode.

In addition, this product is designed for use in consumer use digital still 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 consumer use digital still camera.

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
- ◆ Type 4/3 CMOS active pixel type dots
- ◆ Input clock frequency 72 MHz
- ◆ All-pixel readout mode
 - Various readout modes (*)
- ◆ Each pixel readout method deployment for the specific mode
 - (1) Normal, (2) Phase difference, (3) Single pixel, (4) HDR
- ◆ H driver, V driver and serial communication circuit on chip
- ◆ 10 bits / 12 bits A/D converter on chip
- ◆ 14 lane (8 lane + 6 lane) SLVS-EC output
- ◆ R, G, B primary color mosaic filters on chip (Quad Bayer structure)

* Please refer to the datasheet for binning/subsampling details of readout modes.

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Device Structure

| | |
|------------------------------|--|
| ◆ CMOS image sensor | |
| ◆ Image size | Diagonal 21.77 mm (Type 4/3) |
| ◆ Total number of pixels | 5388 (H) × 4256 (V) approx. 22.93 M pixels |
| ◆ Number of effective pixels | 5324 (H) × 4028 (V) approx. 21.46 M pixels |
| ◆ Number of active pixels | 5280 (H) × 3956 (V) approx. 20.89 M pixels |
| ◆ Chip size | 20.58 mm (H) × 16.45 mm (V) (include scribe area) |
| ◆ Unit cell size | 3.30 μm (H) × 3.30 μm (V) |
| ◆ Optical black | Horizontal (H) direction: Front 48 pixels, Rear 0 pixel Vertical (V) direction: Front 80 pixels, Rear 0 pixel |
| ◆ Package | 216 pin LGA |

Image Sensor Characteristics

(T_j = 60 °C)

| Item | Value | Remarks |
|--------------------|---------------|--------------------|
| Sensitivity (F5.6) | Typ. 2014 LSB | 1/30 s integration |
| Saturation signal | Min. 4095 LSB | |

Basic Drive Mode

| Drive mode | Number of active pixels | Max frame rate [frame/s] | Output bit [bit] |
|-------------------|--|--------------------------|------------------|
| Readout mode 1-a | 5280 (H) × 3956 (V) approx. 20.89 M pixels | 121.0 | 12 |
| Readout mode 1-b | 5280 (H) × 3956 (V) approx. 20.89 M pixels | 158.4 | 10 |
| Readout mode 2-a | 5280 (H) × 3956 (V) approx. 20.89 M pixels | 60.9 | 12 |
| Readout mode 3-a | 2640 (H) × 1978 (V) approx. 5.22 M pixels | 121.8 | 12 |
| Readout mode 3-b | 2640 (H) × 1978 (V) approx. 5.22 M pixels | 159.9 | 10 |
| Readout mode 4-a | 1760 (H) × 1318 (V) approx. 2.32 M pixels | 358.7 | 12 |
| Readout mode 4-b | 1760 (H) × 1318 (V) approx. 2.32 M pixels | 465.7 | 10 |
| Readout mode 5-a | 1760 (H) × 1318 (V) approx. 2.32 M pixels | 183.0 | 12 |
| Readout mode 5-b | 1760 (H) × 1318 (V) approx. 2.32 M pixels | 240.2 | 10 |
| Readout mode 6-b | 1760 (H) × 790 (V) approx. 1.39 M pixels | 762.7 | 10 |
| Readout mode 7-b | 2640 (H) × 1318 (V) approx. 3.48 M pixels | 469.8 | 10 |
| Readout mode 8-b | 1760 (H) × 438 (V) approx. 0.77 M pixels | 701.8 | 10 |
| Readout mode 9-b | 1760 (H) × 262 (V) approx. 0.46 M pixels | 1139.8 | 10 |
| Readout mode 10-a | 5280 (H) × 3956 (V) approx. 20.89 M pixels | 94.2 | 12 |
| Readout mode 10-b | 5280 (H) × 3956 (V) approx. 20.89 M pixels | 114.8 | 10 |
| Readout mode 11-a | 5280 (H) × 3956 (V) approx. 20.89 M pixels | 60.9 | 12 |