

[Product Information]

IMX272AQK

Ver.1.0

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

Description

The IMX272AQK is a diagonal 21.77 mm (Type 4/3) CMOS active pixel type image sensor with a square pixel array and 21.27 M effective pixels. This sensor incorporates maximum 24 dB PGA circuit and 12 bits A/D converter. 12 bits digital output makes it possible to readout the signals of 21.27 M effective pixels at high-speed of 60 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

- ◆ Type 4/3 CMOS active pixel type dots
- ◆ Input clock frequency 72 MHz
- ◆ All-pixel readout mode
Various readout modes (*)
- ◆ H driver, V driver and serial communication circuit on chip
- ◆ 10 bits / 12 bits A/D converter on chip
- ◆ 12 Lane (6 Lane + 6 Lane) SLVS-EC output
- ◆ R, G, B primary color mosaic filters on chip

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

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

| | |
|------------------------------|--|
| ◆ CMOS image sensor | |
| ◆ Image size | Diagonal 21.77 mm (Type 4/3) |
| ◆ Total number of pixels | 5388 (H) × 4040 (V) approx. 21.77 M pixels |
| ◆ Number of effective pixels | 5324 (H) × 3996 (V) approx. 21.27 M pixels |
| ◆ Number of active pixels | 5280 (H) × 3956 (V) approx. 20.89 M pixels |
| ◆ Chip size | 21.56 mm (H) × 20.46 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 27 pixels, Rear 0 pixel |
| ◆ Package | 194 pin LGA |

Image Sensor Characteristics

(T_j = 60 °C)

| Item | Value | Remarks |
|--------------------|---------------|--------------------|
| Sensitivity (F5.6) | Typ. 1634 LSB | 1/10 s integration |
| Saturation signal | Min. 4608 LSB | |

Basic Drive Mode

| Drive mode | Number of active pixels | Max frame rate [frame/s] | Output data bit length [bit] |
|-----------------|--|--------------------------|------------------------------|
| Readout mode 0 | 5280 (H) × 3956 (V) approx. 20.89 M pixels | 60.03 | 12 |
| Readout mode 1 | 5280 (H) × 3956 (V) approx. 20.89 M pixels | 30.02 | 12 |
| Readout mode 2 | 5280 (H) × 3956 (V) approx. 20.89 M pixels | 64.32 | 10 |
| Readout mode 3 | 5280 (H) × 3956 (V) approx. 20.89 M pixels | 30.02 | 10 |
| Readout mode 4 | 5280 (H) × 3044 (V) approx. 16.07 M pixels | 78.13 | 12 |
| Readout mode 5 | 5280 (H) × 3044 (V) approx. 16.07 M pixels | 39.06 | 12 |
| Readout mode 6 | 5280 (H) × 3044 (V) approx. 16.07 M pixels | 83.71 | 10 |
| Readout mode 7 | 5280 (H) × 3044 (V) approx. 16.07 M pixels | 39.06 | 10 |
| Readout mode 8 | 5280 (H) × 1978 (V) approx. 10.44 M pixels | 111.02 | 10 |
| Readout mode 9 | 4128 (H) × 2264 (V) approx. 9.35 M pixels | 111.80 | 10 |
| Readout mode 10 | 2640 (H) × 1522 (V) approx. 4.02 M pixels | 85.39 | 10 |
| Readout mode 11 | 2640 (H) × 1522 (V) approx. 4.02 M pixels | 165.90 | 10 |
| Readout mode 12 | 1760 (H) × 1018 (V) approx. 1.79 M pixels | 126.53 | 12 |
| Readout mode 13 | 1760 (H) × 1318 (V) approx. 2.32 M pixels | 98.33 | 12 |
| Readout mode 14 | 2640 (H) × 1318 (V) approx. 3.48 M pixels | 191.04 | 10 |
| Readout mode 15 | 1760 (H) × 790 (V) approx. 1.39 M pixels | 161.80 | 12 |
| Readout mode 16 | 2640 (H) × 790 (V) approx. 2.09 M pixels | 314.36 | 10 |
| Readout mode 17 | 1760 (H) × 438 (V) approx. 0.77 M pixels | 284.02 | 12 |
| Readout mode 18 | 2640 (H) × 440 (V) approx. 1.16 M pixels | 549.45 | 10 |
| Readout mode 19 | 2640 (H) × 564 (V) approx. 1.49 M pixels | 434.36 | 10 |
| Readout mode 20 | 2640 (H) × 262 (V) approx. 0.69 M pixels | 886.70 | 10 |