

[Product Information]

IMX422LLJ

Ver.1.1

Diagonal 9.2 mm (Type 1 / 1.7) CMOS solid-state Image Sensor with Square Pixel for Monochrome Cameras

Description

The IMX422LLJ is a diagonal 9.2 mm (Type 1 / 1.7) CMOS active pixel type solid-state image sensor with a square pixel array and 2.03 M effective pixels. This chip features a global shutter with variable charge-integration time. This chip operates with analog 3.3 V, digital 1.2 V, and interface 1.8 V triple power supply, and has low power consumption. High sensitivity, low dark current and low PLS characteristics are achieved.
(Applications: FA cameras, ITS cameras)

Features

- ◆ CMOS active pixel type dots
- ◆ Built-in timing adjustment circuit, H/V driver and serial communication circuit
- ◆ Global shutter function
- ◆ Input frequency
37.125 MHz / 74.25 MHz / 54 MHz
- ◆ Number of recommended recording pixels: 1624 (H) × 1240 (V) approx. 2.01 M pixels
 - Readout mode
 - All-pixel scan mode
 - Vertical / Horizontal 1 / 2 Subsampling mode
 - 2 × 2 Vertical FD binning mode
 - ROI mode
 - Vertical / Horizontal - Normal / Inverted readout mode
- ◆ Readout rate
 - Maximum frame rate in
 - All-pixel scan mode: 8 bit 477.6 frame/s, 10 bit: 434.1 frame/s, 12 bit: 270.4 frame/s
- ◆ Variable-speed shutter function (resolution 1 H units)
- ◆ 8-bit / 10-bit / 12-bit A/D converter
- ◆ CDS / PGA function
 - 0 dB to 24 dB: Analog Gain (0.1 dB step)
 - 24.1 dB to 48 dB: Analog Gain: 24 dB + Digital Gain: 0.1 dB to 24 dB (0.1 dB step)
- ◆ I/O interface
 - SLVS (4 ch / 8 ch switching) output (594 / 297 Mbps per 1 ch)
 - SLVS - EC (1 Lane / 2 Lane / 4 Lane / 8 Lane switching) output (2.376 / 1.188 Gbps per 1 Lane)
- ◆ Recommended lens F number: 2.8 or more (Close side)
- ◆ Recommended exit pupil distance: -100 mm to $-\infty$

Pregius

* Pregius is a trademark of Sony Corporation. The Pregius is global shutter pixel technology for active pixel-type CMOS image sensors that use Sony's low-noise CCD structure, and realizes high picture quality.

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Device Structure

- ◆ CMOS image sensor
- ◆ Image size Diagonal 9.2 mm (Type 1 / 1.7) Approx. 2.03 M pixels All-pixel
- ◆ Total number of pixels 1632 (H) × 1272 (V) Approx. 2.07 M pixels
- ◆ Number of effective pixels 1632 (H) × 1248 (V) Approx. 2.03 M pixels
- ◆ Number of active pixels 1632 (H) × 1248 (V) Approx. 2.03 M pixels
- ◆ Number of recommended recording pixels 1624 (H) × 1240 (V) Approx. 2.01 M pixels All-pixel
- ◆ Unit cell size 4.5 μm (H) × 4.5 μm (V)
- ◆ Optical black Horizontal (H) direction: Front 0 pixel, rear 0 pixel
Vertical (V) direction: Front 24 pixels, rear 0 pixel
- ◆ Package 226 pin LGA

Image Sensor Characteristics (Preliminary)

(Tj = 60 °C)

Item		Value	Remarks
Sensitivity (F8)	Typ.	1613 mV	1/30 s accumulation
Saturation signal	Min.	1001 mV	

Basic Drive Mode

Drive mode	Recommended number of recording pixels	Maximum frame rate [frame/s]	Output interface	ADC [bit]
All pixel	1624 (H) × 1240 (V) approx. 2.01 M pixels	239.0	SLVS 8 ch	8
		477.6	SLVS – EC 8 Lane	
		194.5	SLVS 8 ch	10
		434.1	SLVS – EC 8 Lane	
		165.4	SLVS 8 ch	12
		270.4	SLVS – EC 8 Lane	
Vertical / Horizontal 1/2 subsampling	812 (H) × 620 (V) approx. 0.50 M pixels	782.6	SLVS 8 ch	8
		904.0	SLVS – EC 8 Lane	
		651.0	SLVS 8 ch	10
		823.9	SLVS – EC 8 Lane	
		512.8	SLVS 8 ch	12
		518.8	SLVS – EC 8 Lane	
2 × 2 Vertical FD binning	812 (H) × 620 (V) approx. 0.50 M pixels	796.1	SLVS 8 ch	8
		909.2	SLVS – EC 8 Lane	
		662.3	SLVS 8 ch	10
		828.6	SLVS – EC 8 Lane	
		521.8	SLVS 8 ch	12
		521.8	SLVS – EC 8 Lane	