

Diagonal 12.86 mm (Type 1/1.2) CMOS Solid-state Image Sensor with Square Pixel for Color Cameras

Description

The IMX482LQJ is a diagonal 12.8 mm (Type 1/1.2) CMOS active pixel type solid-state image sensor with a square pixel array and 2.10 M effective pixels. This chip operates with analog 2.9 V, digital 1.2 V, and interface 1.8 V triple power supply, and has low power consumption. High sensitivity, low dark current and no smear. This chip features an electronic shutter with variable charge-integration time.

(Applications: Security cameras)

Features

- ◆ CMOS active pixel type dots
- ◆ Built-in timing adjustment circuit, H/V driver and serial communication circuit
- ◆ Input frequency: 6 to 27 MHz / 37.125 MHz / 74.25 MHz
- ◆ Number of recommended recording pixels: 1920 (H) × 1080 (V) approx. 2.07 M pixels
- ◆ Readout mode
 - 2 × 2 Adjacent Pixel Binning
 - Window cropping mode with 2 × 2 Adjacent Pixel Binning
 - Horizontal / Vertical direction - Normal / Inverted readout mode
- ◆ Readout rate
 - Maximum frame rate in
 - 2 × 2 Adjacent Pixel Binning : 10 bit: 90 frame/s
- ◆ High dynamic range (HDR) function
 - Multiple exposure HDR
 - Digital overlap HDR
- ◆ Synchronizing sensors function
- ◆ Variable-speed shutter function (resolution 2H units)
- ◆ 10-bit A/D converter
- ◆ CDS / PGA function
 - 0 dB to 72 dB (step pitch 0.3 dB)
- ◆ Supports I/O
 - CSI-2 serial data output (2 Lane / 4 Lane / 8 Lane / 4 Lane × 2 ch) RAW12 output
- ◆ Recommended exit pupil distance: -30 mm to $-\infty$

STARVIS

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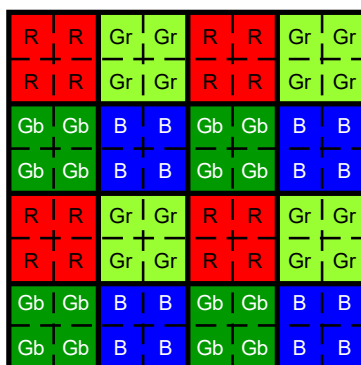
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Device Structure

◆ CMOS image sensor (Quad Bayer structure)

Quad Bayer structure is constructed of 4 same color pixels into which 1 pixel of bayer pixel array is divided as following figure.



Quad Bayer Structure

When normal operation, 4 same color pixels are added and made 1 pixel, and output as bayer pixel array. In addition, a group of divided 4 same color pixels is defined as 1 pixel unit in this product specification.

- ◆ Image size Diagonal 12.86 mm (Type 1/1.2) approx. 2.10 M pixels
- ◆ Total number of pixels 1932 (H) × 1100 (V) approx. 2.12 M pixels
- ◆ Number of effective pixels 1932 (H) × 1090 (V) approx. 2.10 M pixels
- ◆ Number of active pixels 1932 (H) × 1088 (V) approx. 2.10 M pixels
- ◆ Number of recommended recording pixels 1920 (H) × 1080 (V) approx. 2.07 M pixels
- ◆ Unit cell size 5.8 μm (H) × 5.8 μm (V)
- ◆ Optical black Horizontal (H) direction: Front 0 pixel, rear 0 pixel
Vertical (V) direction: Front 10 pixels, rear 0 pixel
- ◆ Dummy Horizontal (H) direction: Front 0 pixel, rear 0 pixel
Vertical (V) direction: Front 0 pixel, rear 0 pixel
- ◆ Package 122 pin LGA

Image Sensor Characteristics

(Tj = 60 °C)

Item		Value	Remarks
Sensitivity (F5.6)	Typ.	9733 Digit	1/30 s accumulation 12 bit converted value
Saturation signal	Min.	3895 Digit	12 bit converted value

Basic Drive Mode

Drive mode	Recommended number of recording pixels	Maximum frame rate [frame/s]	Output interface	ADC [bit]
2 × 2 Adjacent Pixel Binning	1920 (H) × 1080 (V) approx. 2.07 M pixels	90	CSI-2	10

