

Diagonal 9.04 mm (Type 1/1.8) CMOS Solid-state Image Sensor with Square Pixel for Color Cameras

Description

The IMX464LQR/LQR1 is a diagonal 9.04 mm (Type 1/1.8) CMOS active pixel type solid-state image sensor with a square pixel array and 4.17 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 are achieved through the adoption of R, G and B primary color mosaic filters. This chip features an electronic shutter with variable charge-integration time.

(Applications: Surveillance cameras, FA cameras, Industrial 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: 2688 (H) × 1520 (V) approx. 4.09 M pixels
- ◆ Readout mode
 - All-pixel scan mode
 - Window cropping mode
 - Vertical / Horizontal direction-normal / inverted readout mode
- ◆ Readout rate
 - Maximum frame rate in All-pixel scan mode 2688 (H) × 1520 (V) A/D 10-bit : 90 frame/s
- ◆ High dynamic range (HDR) function
 - Multiple exposure HDR
 - Digital overlap HDR
- ◆ Variable-speed shutter function (resolution 1H units)
- ◆ 10-bit / 12-bit A/D converter
- ◆ CDS / PGA function
 - 0 dB to 29.4 dB : Analog Gain 29.4 dB (step pitch 0.3 dB)
 - 29.7 dB to 71.4 dB : Analog Gain 29.4 dB + Digital Gain 0.3 to 42 dB (step pitch 0.3 dB)
- ◆ Supports I/O
 - CSI-2 serial data output (2 Lane / 4 Lane, RAW10 / RAW12 output)
- ◆ Recommended exit pupil distance: -30 mm to $-\infty$
- ◆ Anti-reflective coating glass on both sides (IMX464LQR1), Non anti-reflective coating glass (IMX464LQR)

STARVIS

* STARVIS and **STARVIS** are registered trademarks or trademarks of Sony Group Corporation or its affiliates. The STARVIS is back-illuminated pixel technology used in CMOS image sensors for security camera applications. It features a sensitivity of 2000 mV or more per 1 μm^2 (color product, when imaging with a 706 cd/m² light source, F5.6 in 1 s accumulation equivalent), and realizes high picture quality in the visible-light and near infrared light regions.

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

"Sony", "SONY" logo are registered trademarks or trademarks of Sony Group Corporation or its affiliates.

Device Structure

- ◆ CMOS image sensor
- ◆ Image size Type 1/1.8
- ◆ Total number of pixels 2781 (H) × 1632 (V) approx. 4.53 M pixels
- ◆ Number of effective pixels 2712 (H) × 1538 (V) approx. 4.17 M pixels
- ◆ Number of active pixels 2712 (H) × 1536 (V) approx. 4.17 M pixels
- ◆ Number of recommended recording pixels 2688 (H) × 1520 (V) approx. 4.09 M pixels
- ◆ Unit cell size 2.9 μm (H) × 2.9 μm (V)
- ◆ Optical black Horizontal (H) direction: Front 0 pixel, rear 0 pixel
Vertical (V) direction: Front 13 pixels, rear 0 pixel
- ◆ Dummy Horizontal (H) direction: Front 0 pixel, rear 0 pixel
Vertical (V) direction: Front 0 pixel, rear 0 pixel
- ◆ Package 132 pin LGA

Image Sensor Characteristics

(Tj = 60 °C)

Item		Value	Remarks
Sensitivity (F5.6)	Typ.	10352 Digit (IMX464LQR) 10973 Digit (IMX464LQR1)	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]
All pixel	2688 (H) × 1520 (V) approx. 4.09 M pixels	90	CSI-2	10

