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 –∞
◆ 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 μm2 (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.

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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

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity (F5.6) Typ.</td>
<td>10352 Digit (IMX464LQR)</td>
<td>1/30 s accumulation</td>
</tr>
<tr>
<td></td>
<td>10973 Digit (IMX464LQR1)</td>
<td>12 bit converted value</td>
</tr>
<tr>
<td>Saturation signal Min.</td>
<td>3895 Digit</td>
<td>12 bit converted value</td>
</tr>
</tbody>
</table>

(Tj = 60 °C)

Basic Drive Mode

<table>
<thead>
<tr>
<th>Drive mode</th>
<th>Recommended number of recording pixels</th>
<th>Maximum frame rate [frame/s]</th>
<th>Output interface</th>
<th>ADC [bit]</th>
</tr>
</thead>
<tbody>
<tr>
<td>All pixel</td>
<td>2688 (H) × 1520 (V) approx. 4.09 M pixels</td>
<td>90</td>
<td>CSI-2</td>
<td>10</td>
</tr>
</tbody>
</table>

Image Sensors for Security Cameras:
https://www.sony.net/cis-security/