Ver.1.0

IMX482LQJ

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 −∞

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.

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 (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](image)

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
Diagram 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)

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity (F5.6)</td>
<td>Typ.</td>
<td>9733 Digit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/30 s accumulation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12 bit converted value</td>
</tr>
<tr>
<td>Saturation signal</td>
<td>Min.</td>
<td>3895 Digit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12 bit converted value</td>
</tr>
</tbody>
</table>

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>2 × 2 Adjacent Pixel Binning</td>
<td>1920 (H) × 1080 (V) approx. 2.07 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/