IMX485LQJ/LQJ1
Diagonal 12.86 mm (Type 1/1.2) CMOS Solid-state Image Sensor with Square Pixel for Color Cameras

Description

The IMX485LQJ/LQJ1 is a diagonal 12.8 mm (Type 1/1.2) CMOS active pixel type solid-state image sensor with a square pixel array and 8.42 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: 3840 (H) × 2160 (V) approx. 8.29 M pixels
◆ Readout mode
  All-pixel scan mode
  Horizontal / Vertical 2/2-line binning mode
  Window cropping mode
  Horizontal / Vertical direction - Normal / Inverted readout mode
◆ Readout rate
  Maximum frame rate in
  All-pixel scan mode: 12 bit: 60 frame/s, 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 / 12-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) RAW10 / RAW12 output
◆ Recommended exit pupil distance: −30 mm to −∞
◆ Anti-reflective coating glass on both sides (IMX485LQJ1), Non anti-reflective coating glass (IMX485LQJ)

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Device Structure

- CMOS image sensor
- Image size: Diagonal 12.8 mm (Type 1/1.2) approx. 8.40 M pixels, All pixels
- Total number of pixels: 3864 (H) × 2200 (V) approx. 8.50 M pixels
- Number of effective pixels: 3864 (H) × 2180 (V) approx. 8.42 M pixels
- Number of active pixels: 3864 (H) × 2176 (V) approx. 8.40 M pixels
- Number of recommended recording pixels: 3840 (H) × 2160 (V) approx. 8.29 M pixels
- Unit cell size: 2.9 µm (H) × 2.9 µm (V)
- Optical black: Front 0 pixel, rear 0 pixel (H) direction
  Front 20 pixels, rear 0 pixel (V) direction
- Dummy: Front 0 pixel, rear 0 pixel (H) direction
  Front 0 pixel, rear 0 pixel (V) direction
- Package: 122 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)</td>
<td>Typ.</td>
<td>9530 Digit (IMX485LQJ)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10196 Digit (IMX485LQJ1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/30 s accumulation</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>All pixel</td>
<td>3840 (H) × 2160 (V) approx. 8.29 M pixels</td>
<td>90</td>
<td>CSI-2</td>
<td>10</td>
</tr>
<tr>
<td>Horizontal/ Vertical 2/2-line 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/