SONY

[Product Information]

Tentative

Ver.1.0

IMX565-AAMJ

Diagonal 14.0 mm (Type 1/1.1) CMOS solid-state Image Sensor with Square Pixel for Monochrome Cameras

Description

The IMX565-AAMJ is a diagonal 14.0 mm (Type 1/1.1) CMOS active pixel type solid-state image sensor with a square pixel array and 12.41 M effective pixels. This chip features a global shutter with variable charge-integration time. This chip operates with analog 3.3 V, 2.9 V, digital 1.1 V, and interface 1.8 V quadruple power supply. High sensitivity and low dark current characteristics are achieved.
(Applications: FA cameras, ITS cameras)

Features

- ◆CMOS active pixel type dots
- ◆Built-in timing adjustment circuit, H/V driver and serial communication circuit
- ◆Global shutter function
- ◆Input frequency 37.125 MHz / 74.25 MHz / 54 MHz
- ◆Number of recommended recording pixels: 4096 (H) × 3000 (V) approx. 12.28 M pixels
- ◆Readout mode

  All-pixel scan mode
  Vertical / Horizontal 1/2 Subsampling mode
  2 × 2 FD binning mode
  ROI mode
  Vertical / Horizontal - Normal / Inverted readout mode
- ◆Readout rate

  Maximum frame rate in

  All-pixel scan mode: 8 bit 42.6 frame/s, 10 bit 34.6 frame/s, 12 bit 29.2 frame/s
- ◆Pulse Output Function

  The monitor output for Exposure period

  Programmable pulse output
- ◆8-bit / 10-bit / 12-bit A/D converter
- ◆CDS / PGA function

  0 dB to 24 dB: Analog Gain (0.1 dB step)
  24.1 dB to 48 dB: Analog Gain: 24 dB + Digital Gain: 0.1 dB to 24 dB (0.1 dB step)
- ◆I/O interface

  CSI-2 serial data output (2 Lane / 4 Lane) (1188 / 891 / 594 Mbps per ch)
- ◆Recommended lens F number: 2.8 or more (Close side)

Pregius S

* Pregius S is a trademark of Sony Corporation. Preguis S is a global shutter sensor technology for active pixel-type CMOS image sensors. By Stacking the signal processing on the back illuminated type CMOS Image Sensor it realises small chip size and high sensitivity, whilst using the high picture quality global shutter pixel technology of Pregius.

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

Sony logo is a registered trademark of Sony Corporation.

Device Structure

◆CMOS image sensor		
◆Image size	Diagonal 14.0 mm (Type 1/1.1)	Approx. 12.41 M pixels
◆Total number of pixels	4128 (H) × 3072 (V)	Approx. 12.68 M pixels
◆Number of effective pixels	4128 (H) × 3008 (V)	Approx. 12.41 M pixels
◆Number of active pixels	4128 (H) × 3008 (V)	Approx. 12.41 M pixels
◆Number of recommended recording pixels	4096 (H) × 3000 (V)	Approx. 12.28 M pixels
◆Unit cell size	2.74 µm (H) × 2.74 µm (V)	
◆Optical black	Horizontal (H) direction: Front 0 pixel, rear 0 pixel	
	Vertical (V) direction: Front 64 pixels, rear 0 pixel	
◆Package	230 pin LGA	20.0 mm (H) × 16.8 mm (V)

Image Sensor Characteristics

(Tj = 60 °C)

Item		Value	Remarks
Sensitivity (F5.6)	Typ.	14510 Digit/lx/s	
Saturation signal	Min.	4094 Digit	

Basic Drive Mode

Drive mode	Recommended number of recording pixels	Maximum frame rate [frame/s]	Output interface	ADC [bit]
All pixel	4096 (H) × 3000 (V) approx. 12.28 M pixels	42	CSI-2	8
		34	CSI-2	10
		29	CSI-2	12
Vertical / Horizontal 1/2 subsampling	2048 (H) × 1500 (V) approx. 3.07 M pixels	152	CSI-2	8
		126	CSI-2	10
		107	CSI-2	12
2 × 2 FD binning mode	2048 (H) × 1500 (V) approx. 3.07 M pixels	152	CSI-2	8
		126	CSI-2	10
		107	CSI-2	12

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[Product Information]

Tentative

Ver.1.0

IMX565-AAQJ

Diagonal 14.0 mm (Type 1/1.1) CMOS solid-state Image Sensor with Square Pixel for Color Cameras

Description

The IMX565-AAQJ is a diagonal 14.0 mm (Type 1/1.1) CMOS active pixel type solid-state image sensor with a square pixel array and 12.41 M effective pixels. This chip features a global shutter with variable charge-integration time. This chip operates with analog 3.3 V, 2.9 V, digital 1.1 V, and interface 1.8 V quadruple power supply. High sensitivity and low dark current characteristics are achieved.
(Applications: FA cameras, ITS cameras)

Features

- ◆CMOS active pixel type dots
- ◆Built-in timing adjustment circuit, H/V driver and serial communication circuit
- ◆Global shutter function
- ◆Input frequency 37.125 MHz / 74.25 MHz / 54 MHz
- ◆Number of recommended recording pixels: 4096 (H) × 3000 (V) approx. 12.28 M pixels
- ◆Readout mode

  All-pixel scan mode
  Vertical / Horizontal 1/2 Subsampling mode
  ROI mode
  Vertical / Horizontal - Normal / Inverted readout mode
- ◆Readout rate
  Maximum frame rate in

  All-pixel scan mode: 8 bit 42.6 frame/s, 10 bit 34.6 frame/s, 12 bit 29.2 frame/s
- ◆Pulse Output Function

  The monitor output for Exposure period

  Programmable pulse output
- ◆8-bit / 10-bit / 12-bit A/D converter
- ◆CDS / PGA function
  0 dB to 24 dB: Analog Gain (0.1 dB step)
  24.1 dB to 48 dB: Analog Gain: 24 dB + Digital Gain: 0.1 dB to 24 dB (0.1 dB step)
- ◆I/O interface
  CSI-2 serial data output (2 Lane / 4 Lane) (1188 / 891 / 594 Mbps per ch)
- ◆Recommended lens F number: 2.8 or more (Close side)

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◆Optical black	Horizontal (H) direction: Front 0 pixel, rear 0 pixel	
	Vertical (V) direction: Front 64 pixels, rear 0 pixel	
◆Package	230 pin LGA	20.0 mm (H) × 16.8 mm (V)

Image Sensor Characteristics

(Tj = 60 °C)

Item		Value	Remarks
Sensitivity (F5.6)	Typ.	8620 Digit/lx/s	
Saturation signal	Min.	4094 Digit	

Basic Drive Mode

Drive mode	Recommended number of recording pixels	Maximum frame rate [frame/s]	Output interface	ADC [bit]
All pixel	4096 (H) × 3000 (V) approx. 12.28 M pixels	42	CSI-2	8
		34	CSI-2	10
		29	CSI-2	12
Vertical / Horizontal 1/2 subsampling	2048 (H) × 1500 (V) approx. 3.07 M pixels	153	CSI-2	8
		127	CSI-2	10
		108	CSI-2	12