

Diagonal 64.84 mm (Type 4.1) CMOS Image Sensor with Square Pixel for Color Cameras

Description

The IMX811-AAQR is a diagonal 64.84 mm (Type 4.1) CMOS active pixel type image sensor with a square pixel array and 247.04 M effective pixels. This sensor incorporates maximum 24 dB PGA circuit and 16-bit A/D converter. 16-bit digital output makes it possible to readout the signals of 247.04 M effective pixels at high-speed of 5.3 frame/s in All-pixel readout mode.

(Application: FA cameras)

Features

- ◆ Type 4.1 CMOS active pixel type dots
- ◆ Input clock frequency 72 MHz
- ◆ All-pixel readout mode
 - Various readout modes (*)
- ◆ Rolling shutter function
- ◆ H driver, V driver and serial communication circuit on chip
- ◆ +24 dB gain settable in CDS/PGA on chip
- ◆ Built-in 12-bit/14-bit/16-bit A/D converter
- ◆ R, G, B primary color mosaic filters on chip
- ◆ Back-illuminated type
- ◆ Sensor Slave Mode only
- ◆ Seal glass: both sides are processed by AR coating
- ◆ SLVS-EC output

* Please refer to the datasheet for binning/subsampling details of readout modes.

Device Structure

◆ Back-Illuminated CMOS image sensor	
◆ Image size	Diagonal 64.84 mm (Type 4.1)
◆ Total number of pixels	19680 (H) × 13308 (V) approx. 261.90 M pixels
◆ Number of effective pixels	19240 (H) × 12840 (V) approx. 247.04 M pixels
◆ Number of active pixels	19200 (H) × 12800 (V) approx. 245.76 M pixels
◆ Unit cell size	2.81 μm (H) × 2.81 μm (V)
◆ Optical black	Horizontal (H) direction: Left 188 pixels, right 188 pixels Vertical (V) direction: Top 56 pixels, bottom 56 pixels
◆ Package	786 pin LGA 75.0 mm (H) × 63.6 mm (V)

Image Sensor Characteristics

(T_j = 60 °C)

Item		Value	Remarks
Sensitivity	Typ.	11,639 LSB/lx/s	Zone S
Saturation signal	Min.	15,405 LSB 10,152 LSB	Left for 0.4 s, Zone 0 to II' Left for 30 s, Zone 0 to II'

Basic Drive Mode

Drive mode	Recommended number of recording pixels	Maximum frame rate [frame/s]	Output interface	ADC [bit]
All-pixel readout mode	19200 (H) × 12800 (V) Approx. 245.76 M pixels	12.4	SLVS-EC	12
		10.5	SLVS-EC	14
		5.3	SLVS-EC	16

