SONY

Ver.1.0

IMX675-AAMR

Diagonal 6.53 mm (Type 1/2.8) CMOS Solid-state Image Sensor with Square Pixel for Monochrome Cameras

Description

The IMX675-AAMR is a diagonal 6.53 mm (Type 1/2.8) CMOS active pixel type solid-state image sensor with a square pixel array and 5.12 M effective pixels. This chip operates with analog 3.3 V, digital 1.1 V, and interface 1.8 V triple power supply, and has low power consumption. High sensitivity, low dark current and no smear are achieved. This chip features an electronic shutter with variable charge-integration time.
(Application: Security cameras)

Features

- ◆ CMOS active pixel type dots
- ◆ Built-in timing adjustment circuit, H/V driver and serial communication circuit
- ◆ Input frequency: 24 MHz / 27 MHz / 37.125 MHz / 72 MHz / 74.25 MHz
- ◆ Number of recommended recording pixels: 2592 (H) × 1944 (V) approx. 5.03M pixel
- ◆ Readout mode
  - All-pixel scan mode
  - 2×2 adjacent pixel 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: 80 frame/s
- ◆ Dual Speed Streaming (DSS) function
- ◆ High dynamic range (HDR) function
  - Digital overlap HDR
  - Clear HDR
- ◆ Synchronizing sensors function
- ◆ Variable-speed shutter function (resolution 1H unit)
- ◆ CDS / PGA function
  - 0 dB to 30 dB: Analog Gain 30 dB (step pitch 0.3 dB)
  - 30.3 dB to 72 dB: Analog Gain 30 dB + Digital Gain 0.3 dB to 42 dB (step pitch 0.3 dB)
- ◆ Supports I/O
  - CSI-2 serial data output (2 Lane / 4 Lane)
  - RAW10 / RAW12 output

STARVIS 2

* STARVIS 2 and its logo are registered trademarks or trademarks of Sony Group Corporation or its affiliates.The STARVIS 2 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). It also has a wide dynamic range (AD 12 bit) of more than 8 dB compared to STARVIS for the same pixel size in a single exposure, and achieves high picture quality in the visible-light and near infrared light regions.

Device Structure

◆CMOS image sensor	
◆Image size	Diagonal 6.53 mm (Type 1/2.8) approx. 5.12 M pixels, All pixels
◆Total number of pixels	2608 (H) × 1984 (V) approx. 5.17 M pixels
◆Number of effective pixels	2608 (H) × 1964 (V) approx. 5.12 M pixels
◆Number of active pixels	2608 (H) × 1960 (V) approx. 5.11 M pixels
◆Number of recommended recording pixels	2592 (H) × 1944 (V) approx. 5.03 M pixels
◆Unit cell size	2.0 μm (H) × 2.0 μm (V)
◆Optical black	Horizontal (H) direction: Front 0 pixels, rear 0 pixels
	Vertical (V) direction: Front 20 pixels, rear 0 pixels
◆Package	114 pin LGA

Image Sensor Characteristics

(Tj = 60 °C)

Item		Value	Remarks
Sensitivity	Typ.	24228 Digit/lx/s	12 bit converted value
Saturation signal	Min.	3895 Dight	12 bit converted value

Basic Drive Mode

Drive mode	Recommended number of recording pixels	Maximum frame rate [frame/s]	Output interface	ADC [bit]
All-pixel	2592 (H) × 1944 (V) approx. 5.03 M pixels	80	CSI-2	10
2×2 adjacent pixel binning mode	1296 (H) × 972 (V) approx. 1.25 M pixels	80	CSI-2	10

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