SONY

Ver.1.0

IMX779-AQR/AQN

Diagonal 6.42 mm (Type 1/2.8) CMOS Solid-state Image Sensor with Square Pixel for Color Cameras

Description

The IMX779-AQR/AQN is a diagonal 6.4 mm (Type 1/2.8) CMOS active pixel type solid-state image sensor with a square pixel array and 8.45 M effective pixels. This chip operates with analog 2.9 V, digital 1.1 V, and interface 1.8V 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.
(Application: Security cameras)

Features

- ◆CMOS active pixel type dots
- ◆Built-in timing adjustment circuit, H/V driver and serial communication circuit
- ◆Input clock frequency: 24 MHz / 27 MHz / 37.125 MHz / 72 MHz / 74.25 MHz
- ◆Number of recommended recording pixels: 3840 (H) × 2160 (V) approx. 8.29 M pixels
- ◆Readout mode
  - All-pixel scan 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
  - Digital overlap HDR
- ◆Synchronizing sensor’s function
- ◆Variable-speed shutter function (resolution 1H unit)
- ◆Gain adjustment 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)
- ◆Output interface
  - CSI-2 serial data output (2 Lane / 4 Lane), RAW10 / RAW12 output
- ◆Communication interface
  - I^2C / I3C

STARVIS

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Device Structure

◆CMOS image sensor	
◆Image size	Diagonal 6.4 mm (Type 1/2.8) approx. 8.39 M pixels, All pixels
◆Total number of pixels	3856 (H) × 2228 (V) approx. 8.59 M pixels
◆Number of effective pixels	3856 (H) × 2192 (V) approx. 8.45 M pixels
◆Number of active pixels	3856 (H) × 2176 (V) approx. 8.39 M pixels
◆Number of recommended recording pixels	3840 (H) × 2160 (V) approx. 8.29 M pixels
◆Unit cell size	1.45 µm (H) × 1.45 µm (V)
◆Optical black	Horizontal (H) direction: Front 0 pixel, Rear 0 pixel
	Vertical (V) direction: Front 36 pixels, Rear 0 pixel
◆Dummy	Horizontal (H) direction: Front 0 pixel, Rear 0 pixel
	Vertical (V) direction: Front 1 pixel, Rear 1 pixel
◆Package	114 pin LGA (IMX779-AQR)
	60 pin BGA, CSP (IMX779-AQN)

Image Sensor Characteristics

(Tj = 60 °C)

Item		Value	Remarks
Sensitivity	Typ.	4997 LBS/lx/s (IMX779-AQR) 5240 LBS/lx/s (IMX779-AQN)	12 bit converted value
Saturation signal	Min.	3895 LSB	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	3840 (H) × 2160 (V) approx. 8.29 M pixels	90	CSI-2	10