CMOS CAMERA MODULES

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KLT-USB1A-FF-IMX335 V2.0

Sony IMX335 USB 인터페이스 고정 초점 **5MP M12** 카메라 모듈

카메라 모듈 번호	**KLT-USB1A-FF-IMX335 V2.0**	
이미지 센서	IMX335	Output Format: MJPG, YVY2
EFL	3.71 mm	30 FPS 2592 x 1944 (Full Frame)
F.NO	2.1	30 FPS 1920 x 1080 (Full HD)
픽셀	2592 x 1944	30 FPS 1280 x 720 (HD 720P)
보기 각도	129°(D) 100.6°(H) 51.9°(V)	Supporting OS
렌즈 유형	1/2.8 인치	Windows 7, 8.1, 10,Vista
렌즈 치수	16.30 x 16.30 x 22.10 mm	Windows XP SP2 under UVC
모듈 크기	38.00 x 38.00 mm	Linux Kernel V2.6.2.1 or later
모듈 유형	고정 초점	MAC OS 10.4 or later
인터페이스	USB	Compliant with UVC Version 1.0

결합 **USB** 케이블 부품 번호. **KLT-USB1A-Cable**

USB 케이블 연장 코드. 별매.

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SONY

[Product Information]

Ver.1.0

IMX335LLN

Diagonal 6.52 mm (Type 1 / 2.8) CMOS Solid-state Image Sensor with Square Pixel for Monochrome Cameras

Description

The IMX335LLN is a diagonal 6.52 mm (Type 1 / 2.8) CMOS active pixel type solid-state image sensor with a square pixel array and 5.14 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. 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: 2592 (H) × 1944 (V) approx. 5.04 M pixels
- ◆Readout mode
  - All-pixel scan mode
  - Window cropping mode
  - Vertical / Horizontal direction-normal / inverted readout mode
- ◆Readout rate
  - Maximum frame rate in All-pixel scan mode 2592(H) × 1944(V) A/D 10-bit : 60 frame/s
- ◆High dynamic range (HDR) function
  - Multiple exposure HDR
  - Digital overlap HDR
- ◆Variable-speed shutter function (resolution 1H units)
- ◆10-bit / 12-bit A/D converter
- ◆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 to 42 dB (step pitch 0.3 dB)
- ◆Supports I/O
  - CSI-2 serial data output (2 Lane / 4 Lane, RAW10 / RAW12 output)
- ◆Recommended exit pupil distance: -100 mm to –∞

STARVIS

* STARVIS is a trademark of Sony Corporation. The STARVIS is back-illuminated pixel technology used in CMOS image sensors for surveillance camera applications. It features a sensitivity of 2000 mV or more per 1 μm^2 (color product, when imaging with a 706 cd/m^2 light source, F5.6 in 1 s accumulation equivalent), and realizes high picture quality in the visible-light and near infrared light regions.

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Sony logo is a registered trademark of Sony Corporation.

Device Structure

◆CMOS image sensor	
◆Image size	Type 1/2.8
◆Total number of pixels	2704 (H) × 2104 (V) approx. 5.69 M pixels
◆Number of effective pixels	2616 (H) × 1964 (V) approx. 5.14 M pixels
◆Number of active pixels	2616 (H) × 1960 (V) approx. 5.13 M pixels
◆Number of recommended recording pixels	2592 (H) × 1944 (V) approx. 5.04 M pixels
◆Unit cell size	2.0 µm (H) × 2.0 µm (V)
◆Optical black	Horizontal (H) direction: Front 0 pixel, rear 0 pixel Vertical (V) direction: Front 13 pixels, rear 0 pixel
◆Dummy	Horizontal (H) direction: Front 0 pixel, rear 0 pixel Vertical (V) direction: Front 0 pixel, rear 0 pixel
◆Package	88 pin BGA

Image Sensor Characteristics

(Tj = 60 °C)

Item		Value	Remarks
Sensitivity (F8)	Typ.	1961 Digit	1/30 s accumulation 12 bit converted value
Saturation signal	Min.	3895 Digit	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. 5.04 M pixels	60	CSI-2	10

SONY

[Product Information]

Ver.1.1

IMX335LQN

Diagonal 6.52 mm (Type 1/2.8) CMOS Solid-state Image Sensor with Square Pixel for Color Cameras

Description

The IMX335LQN is a diagonal 6.52 mm (Type 1/2.8) CMOS active pixel type solid-state image sensor with a square pixel array and 5.14 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: 2592 (H) × 1944 (V) approx. 5.04 M pixels
- ◆Readout mode
  - All-pixel scan mode
  - Horizontal/Vertical 2/2-line binning mode
  - Window cropping mode
  - Vertical / Horizontal direction-normal / inverted readout mode
- ◆Readout rate
  - Maximum frame rate in All-pixel scan mode 2592 (H) × 1944 (V) A/D 10-bit : 60 frame/s
- ◆High dynamic range (HDR) function
  - Multiple exposure HDR
  - Digital overlap HDR
- ◆Variable-speed shutter function (resolution 1H units)
- ◆10-bit / 12-bit A/D converter
- ◆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 to 42 dB (step pitch 0.3 dB)
- ◆Supports I/O
  - CSI-2 serial data output (2 Lane / 4 Lane, RAW10 / RAW12 output)
- ◆Recommended exit pupil distance: –30 mm to –∞

STARVIS

* STARVIS is a trademark of Sony Corporation. The STARVIS is back-illuminated pixel technology used in CMOS image sensors for surveillance camera applications. It features a sensitivity of 2000 mV or more per 1 μm^2 (color product, when imaging with a 706 cd/m^2 light source, F5.6 in 1 s accumulation equivalent), and realizes high picture quality in the visible-light and near infrared light regions.

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Device Structure

- ◆CMOS image sensor
- ◆Image size — Type 1/2.8
- ◆Total number of pixels — 2704 (H) × 2104 (V) approx. 5.69 M pixels
- ◆Number of effective pixels — 2616 (H) × 1964 (V) approx. 5.14 M pixels
- ◆Number of active pixels — 2616 (H) × 1960 (V) approx. 5.11 M pixels
- ◆Number of recommended recording pixels — 2592 (H) × 1944 (V) approx. 5.04 M pixels
- ◆Unit cell size — 2.0 µm (H) × 2.0 µm (V)
- ◆Optical black — Horizontal (H) direction: Front 0 pixel, rear 0 pixel
  Vertical (V) direction: Front 13 pixels, rear 0 pixel
- ◆Dummy — Horizontal (H) direction: Front 0 pixel, rear 0 pixel
  Vertical (V) direction: Front 0 pixel, rear 0 pixel
- ◆Package — 88 pin CSP BGA

Image Sensor Characteristics

(Tj = 60 °C)

Item		Value	Remarks
Sensitivity (F5.6)	Typ.	2200 Digit	1/30 s accumulation 12 bit converted value
Saturation signal	Min.	3895 Digit	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. 5.04 M pixels	60	CSI-2	10
Horizontal/ Vertical 2/2-line binning	1296 (H) × 972 (V) approx. 1.26 M pixels	60	CSI-2	10