Crystal Image through
Imaging Innovation

PIXELPLUS

Preliminary

Brief Spec

1/3 inch FHD Bayer Chip

CMOS Image Sensor with 1936x1096 Pixel Array

PS4210K

Rev 0.8

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Features

- 1936 x 1096 effective pixel array with RGB bayer color filters and micro-lens
- Output format: RGB Bayer (progressive scan)
- Interface
  - 8/10-bit digital parallel interface support
  - 1/2-lane serial output MIPI support @ max 1.08[Gbps/lane]
- Auto black level compensation
- Programmable frame size, frame rate, window size, image orientation, and exposure
- Horizontal/Vertical mirroring and image cropping
- External synchronization support (Genlock)
- Chip address selection PAD
- Software reset
- On-chip phase locked loop (PLL)
- I2C Interface support

General Description

The PS4210K is a 1/3-inch CMOS image sensor. It is a Bayer sensor with effective pixel array of 1936 (width) x 1096 (height). The PS4210K can generate a 10-bit RGB raw Bayer data at maximum frame rate of 30 FPS through 2-channel MIPI serial interface or 8/10-bit parallel based on BT1120 format. On-chip sensor functions can be controlled through I2C interface.

Table 1 Key Performance Parameter

Parameter	Typical value
Pixel size	2.8 [um] x 2.8 [um]
Effective pixel array	1936 (H) x 1096 (V)
Effective image area	5.420 [mm] x 3.068 [mm]
Optical format	1/3 [inch]
Input clock frequency	27 [MHz]
Output interface	8/10-bit parallel (BT1120)
	MIPI serial interface with 1/2 lane
Max. frame rate	10-bit parallel, 30 [FPS] @ 108 [MHz]
	1-lane MIPI, 30 [FPS] @ 1.08 [Gbps/lane]
	2-lane MIPI, 30 [FPS] @ 540 [Mbps/lane]
Dark signal	8.77 [mV/sec] @ 60 [°C]
Sensitivity	3.60 [V/Lux.sec]

Parameter	Typical value
Power supply	HVDD : 1.8~3.3 [V]
	AVDD,RVDD : 3.3 [V]
	DVDD: 1.5 [V]
	DVDDM : 1.5 [V]
	DVDDPLL : 1.5 [V]
Power consumption	174.7 [mW] @ dynamic, parallel, 30fps, HVDD 1.8V
	237.8 [mW] @ dynamic, parallel, 30fps, HVDD 3.3V
	155.8 [mW] @ dynamic, mipi 1lane, 30fps, HVDD 1.8V
	157.5 [mW] @ dynamic, mipi 1lane, 30fps, HVDD 3.3V
	4.85 [uW] @ standby, HVDD 1.8V
	15.4 [uW] @ standby, HVDD 3.3V
Operating Temp. (fully functional Temp.)	-30~85 [°C] @ ambient
Dynamic range	60.0 [dB] @ 60 [°C]
SNR	42.0 [dB] @ 60 [°C]