

PKA210K

NEW

1/2.92-inch 2MP RGB-IR bayer CMOS image sensor. It provides the function that can adjust the color as to the intensity of IR, the input is RGBIR, and the output is normal RGB HDR bayer output. So, it can be co-operated by a regular ISP.

Description

The PKA210K is 2 megapixel RGB-IR bayer image sensor for occupant monitoring system (OMS). It has excellent noise performance for low light condition and high dynamic range supported by 2 exposure HDR mode up to 120dB.

The PKA210K provides linear color output according to the IR intensity without switching of discontinuous filters of RGB color and black/white. In an environment no visible light, IR signals are processed using IR light sources, and in an environment where visible light and IR are mixed, colors can be adjusted as to the intensity of IR intensity. The output is a normal RGB HDR bayer output, so it can be processed by a regular ISP.

The PKA210K consists of 1960 (H) x 1120 (V) effective pixel array. The sensor supports high dynamic range (HDR) using DCG (Dual Conversion Gain) and multi-exposure method up to 120dB. The output interface of PKA210K is 2-Lane MIPI, DVP combo. It supports external synchronization (Genlock) and one-time programmable (OTP) memory for data calibration and product information. The PKA210K incorporates on-chip CIS special functions such as defective pixel correction (DPC), each exposure 2DNR, auto white balance(AWB) and so on.

Key Features

- Shutter type : Rolling shutter
- 1920 x 1080 display pixel array
- 120dB HDR with 2-Lane MIPI / DVP Combo
- Low fixed pattern noise of 2.8um BSI Pixel
- Low readout noise
- RGB-IR pixel technology with RGB NIR 4x4 pattern
- RGBIR to RGB HDR Bayer converter for Normal RGB ISP Processing
- Color Noise Adaptation in accordance with IR intensity
- Programmable frame size, window size, and exposure
- External synchronization support (Genlock)
- One-time programmable memory (OTP)
- AR coating Glass (Option)
- Dead Pixel Correction (DPC)
- Each exposure 2DNR
- Combine & Compress
- Auto White Balance (AWB)

Key Performance Parameters

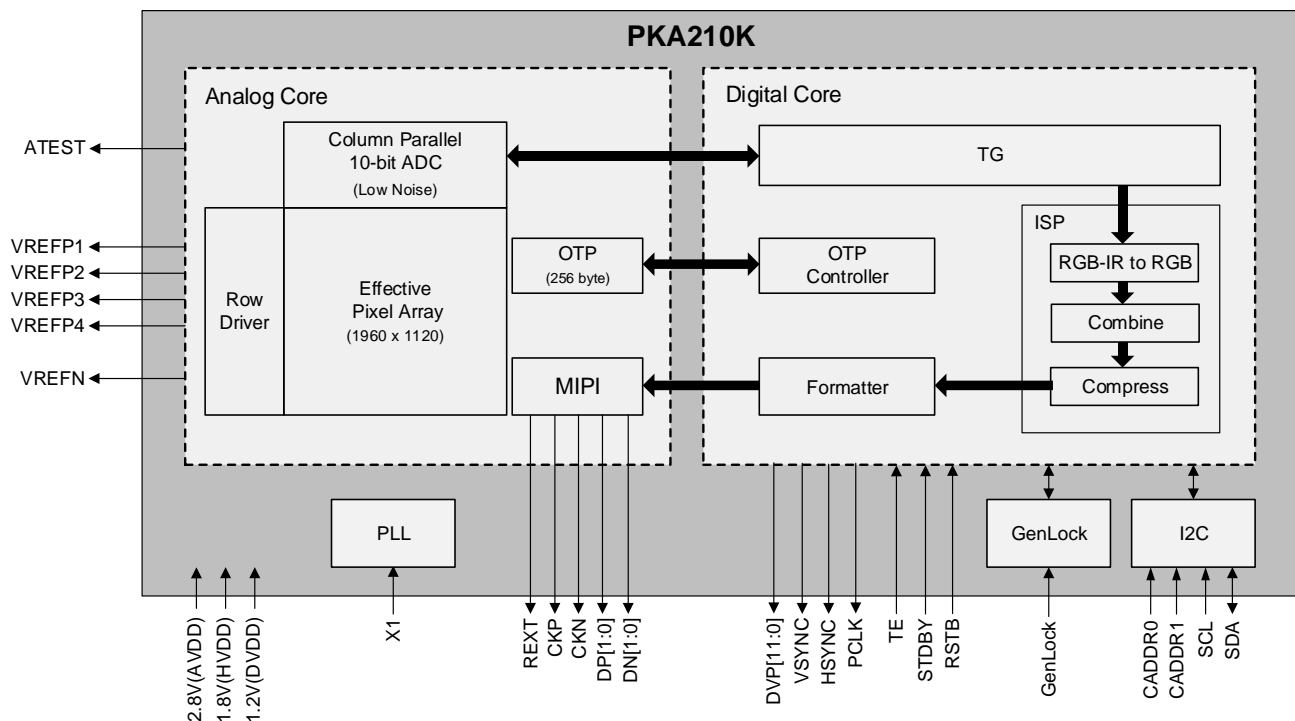
Parameter	Typical value
Pixel size	2.8 um x 2.8 um
Shutter type	Rolling shutter
Display pixel array	1920 (H) x 1080 (V)
Effective pixel array	1960 (H) x 1120 (V)
Optical format	1/2.92 inch
CRA	23.7 °
Input clock frequency	27 MHz
AR coating glass	O (option)
Output interface	2-Lane MIPI / DVP Combo
Max. frame rate	HDR 30fps
Dark Current	TBD e/sec
Sensitivity	28.1 e-/Lux-s
Power supply	HVDD : 1.8 ~ 2.8V
	AVDD : 2.8 V
	DVDD : 1.2 V
Power consumption	< 300 mW
Operating temp.	-40 ~ 105 °C (Ambient)
Max. dynamic range	120 dB
SNR	44.8 dB
Package type	TBD
Package size	TBD



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Block Diagram



Application

- ✦ Occupant Monitoring System Camera
 - OMS (Occupant Monitoring System)