

Crystal Image through  
Imaging Innovation

**PIXELPLUS**



*Preliminary  
Brief Spec*

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***1/2.9 inch FHD Single Chip  
CMOS Image Sensor with HD-Analog Transmitter***

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**PV4209K**

**Rev 0.1**

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*1/2.9 inch FHD Single Chip  
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## Features

- 1924x1084 effective pixel array with RGB bayer color filters and micro-lens
- Output Interface
  - DVP(Digital Video Parallel) 10-bit
    - Raw RGB Bayer 10-bit
    - YCbCr422 10-bit
  - HD-Analog
- DVP output with Cropping & Down-scaler support
- Auto black level compensation support
- Programmable frame size, frame rate, window size, exposure and white balance gain support
- Horizontal/Vertical mirroring support
- Image processing on chip : lens shading compensation, gamma correction, defect correction, color correction, NR(2D noise reduction), color interpolation, edge enhancement, brightness, contrast, de-color, auto white balance, auto exposure control, back light compensation, Color saturation, Low light enhancement
- Automatic flicker cancellation support
- Smart IR-LED/TDN(moving) filter controller support
- Programmable static parking guideline support
- Software reset support
- On-chip phase locked loop ( PLL )
- I2C interface(Master/Slave) support
- Crystal input support

**1/2.9 inch FHD Single Chip**  
**CMOS Image Sensor with HD-Analog Transmitter**

## General Description

The PV4209K is a 1/2.9-inch CMOS image sensor with HD-Analog Transmitter. It is a single chip with an effective pixel array of 1924 (width) x 1084 (height). The PV4209K can generate a PVI(HD-Analog) data at maximum frame rate of 30 FPS. 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                       | 1924(H) x 1084(V)              |
| Effective image area                        | 5.3872 [mm] x 3.0352 [mm]      |
| Optical format                              | 1/2.9 [inch]                   |
| Input clock frequency                       | 27 [MHz]                       |
| Output interface                            | DVP 10-bit<br>HD-Analog        |
| Max. frame rate                             | 30 [FPS]                       |
| Dark signal                                 | TBD                            |
| Sensitivity                                 | TBD [e/lux*sec]                |
| Power supply                                | HVDD : 3.3 [V]                 |
|   | AVDD : 3.3 [V]                 |
|   | RVDD : 3.3 [V]                 |
|   | DVDD : 1.2 [V]                 |
| Power consumption                           | TBD [mW] @ dynamic (DVP)       |
|   | TBD [mW] @ dynamic (HD-Analog) |
|   | TBD [mW] @ standby             |
| Operating temp.<br>(Fully functional temp.) | -30~85 [°C] (Ambient)          |
| Dynamic range                               | TBD [dB]                       |
| SNR   | TBD [dB]                       |
| Package type                                | TBD                            |