

Crystal Image through  
Imaging Innovation

**PIXELPLUS**



*Preliminary  
Brief Spec*

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***1/4 inch SD Single Chip  
CMOS Image Sensor with NTSC/PAL Transmitter***

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**PCB030KA**

**Rev 0.1**

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*1/4 inch SD Single Chip  
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## Features

- 688 x 528 effective pixel array with RGB bayer color filters and micro-lens
- Interface
  - Composite Output
    - CVBS(NTSC/PAL)
  - Digital Output
    - Progressive(YCbCr422/RGB565/RGB444/Bayer)
    - Interlace
- 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 black level compensation, auto white balance, auto exposure control, back light compensation
- Programmable frame size, window size and position
- Free scaling (scale down)
- Horizontal/Vertical mirroring
- Automatic flicker cancellation
- 4 overlay functions by using SPI ROM
- I2C master included
- SPI master included
- Chip address selection PADs
- Software reset
- On chip regulator for core
- Crystal input support

## General Description

The PCB030KA is a 1/4-inch CMOS image sensor with NTSC/PAL Transmitter. It is a single chip with effective pixel array of 688 (width) x 528 (height). The PCB030KA can generate analog/digital/composite outputs at maximum frame rate of 60. On-chip sensor functions can be controlled through I2C interface.

**Table 1 Key Performance Parameter**

Parameter	Typical value
Pixel size	5.6 [um] x 5.6 [um]
Effective pixel array	688 (H) x 528 (V)

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Parameter	Typical value
Effective image area	3.584 [mm] x 2.688 [mm]
Optical format	1/4 [inch]
Input clock frequency	27 [MHz]
Output interface	10/8-bit parallel CVBS(NTSC/PAL)
Max. frame rate	60fields/sec : NTSC @ 27[MHz]
	50fields/sec : PAL @ 27[MHz]
	60fps : YCbCr422/RGB565/RGB444 @ 54[MHz]
	60fps : Bayer @ 27[MHz]
Dark signal	TBD [mV/sec ] @ TBD [°C]
Sensitivity	TBD [V/Lux.sec]
Power supply	AVDD : 3.3 [V]
	HVDD : 3.3 [V]
	CVDD : 3.3 [V]
Power consumption	TBD [mW]@dynamic @ NTSC
	TBD [mW]@dynamic @ PAL
	TBD [uW] @standby
Operating Temp. (Fully Functional Temp.)	-40~105 [°C] (Ambient)
Dynamic range	TBD [dB]
SNR	TBD [dB]