

## PRODUCT SUMMARY

### KODAK KAC-9648 IMAGE SENSOR

#### 1288 (H) X 1032 (V) COLOR CMOS IMAGE SENSOR

### DESCRIPTION

The KODAK KAC-9648 Image Sensor is a high performance, low power, 1/2" SXGA CMOS Active Pixel Sensor capable of capturing color, monochrome, still, or motion images and converting them to a digital data stream.

Mega-pixel class image quality is achieved by integrating a high performance analog signal processor comprising of a high speed 10 bit A/D converter, fixed pattern noise elimination circuits and separate color gain amplifiers. The offset and black level can be automatically adjusted on chip using a full loop black level compensation circuit.

Furthermore, a programmable smart timing and control circuit allows the user maximum flexibility in adjusting integration time, active window size, gain, frame rate. Various control, timing and power modes are also provided.

### FEATURES

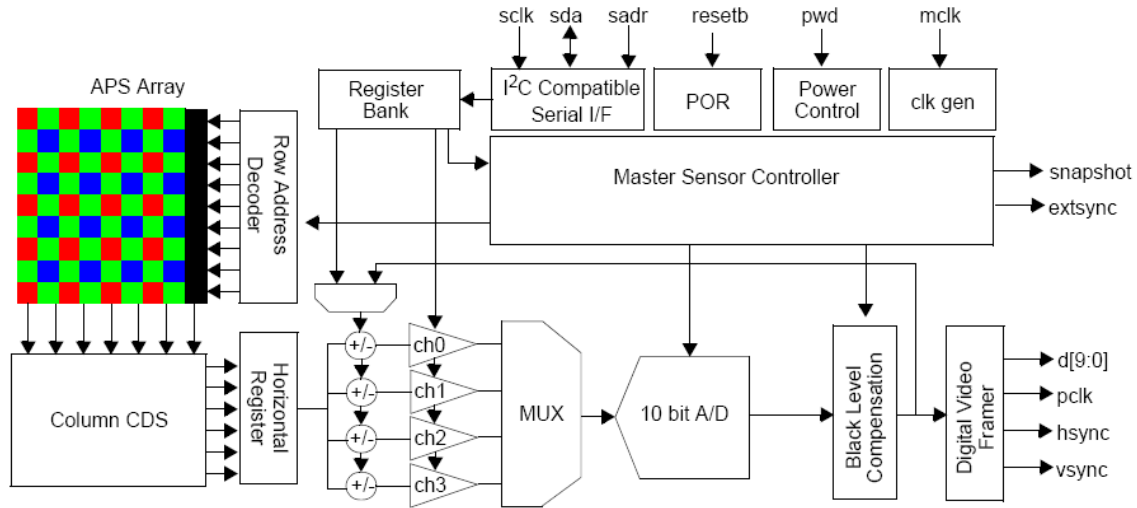
- Video and snapshot operation
- Progressive scan read out with horizontal and vertical flip
- Programmable exposure with master clock divider, inter row delay, inter frame delay, and partial frame integration
- Four channels of digitally programmable analog gain
- Full automatic servo loop for black level & offset adjustment on each gain channel
- Horizontal & vertical sub-sampling (2:1 & 4:2) with averaging
- Windowing
- Programmable pixel clock, inter-frame and inter-line delays
- I<sup>2</sup>C compatible serial control interface

Parameter	Typical Value
Array Format	Total: 1032 x 1312 Active: 1032 (V) x 1288 (H)
Effective Image Area	Total: 6.192mm x 7.872mm Active: 6.192mm x 7.728mm
Optical Format	1/2"
Pixel Size	6.0 μm x 6.0 μm
Video Outputs	8 & 10 Bit Digital
Frame Rate	18 frames per second
Dynamic Range	55 dB
Shutter	Rolling reset
FPN	0.2%
PRNU	1.7%
Sensitivity	2.5 V/lux*s
Fill Factor	49%
Color Mosaic	Bayer pattern
Microlens	none
Package	48 LCC
Single Supply	3.0V ± 10%
Power Consumption	150mW
Operating Temp	-10° C to 50° C

### APPLICATIONS

- Dual Mode Camera
- Digital Still Camera
- Security Camera
- Machine Vision

**CHIP BLOCK DIAGRAM**



**ORDERING INFORMATION**

Catalog Number	Product Name	Description
4H0723	KAC-9648-CBA-FB-AA	Color (Bayer RGB), Telecentric Microlens, CLCC Package, Clear Cover Glass (no coatings), Standard Grade
3F5386	KEM-3F5386-KAC-96XX	Evaluation Board (Main Board)
3F5385	KEH-3F5385-KAC-9648	Evaluation Board (Head Board)

Please see ISS Application Note "Product Naming Convention" (MTD/PS-0892) for a full description of naming convention used for KODAK image sensors.

Address all inquiries and purchase orders to:

Image Sensor Solutions  
Eastman Kodak Company  
Rochester, New York 14650-2010

Phone: [585] 722-4385  
Fax: [585] 477-4947  
E-mail: [imagers@kodak.com](mailto:imagers@kodak.com)