

General Description

The CmoX CX1332 is a 1/3.5-inch CMOS active-pixel digital image sensor which has a 1.3 MEGA PIXEL resolution of 1280 x 1024 and is capable of operating at up to 30 frames per second (fps). It incorporates camera functions on-chip such as sub-sampling, vertical and horizontal flipping. It is programmable through a simple two-wire serial bus interface. It has super low noise and very low power consumption.

CX1332 uses advanced sensor technology to reduce noise at low light condition and features proprietary sub-line exposure control to improve picture quality at extreme high lux lighting condition.

Features

- Super low noise CMOS image sensor
- Excellent low lux performance
- Programmable sub-sampling size: 1.3M, skipped-1.3M (S1M), and double skipped 1.3M (DS1M)
- High frame rate up to 30 fps
- Auto dark compensation
- Super low power consumption
- Horizontal/Vertical flip function for normal & windowed image
- Windowing function
- Two-wire serial bus interface
- Electronic exposure/gain control
- Idle & power down mode
- Median filter
- Sub-line exposure for extreme high lux exposure control
- Global shutter mode with low power dissipation
- Wide dynamic range enhancement
- Power-on reset and software reset function

Applications

- Cellular Phones
- PC Camera
- PDA Camera
- Digital Still Camera
- MP3 Camera
- Toys

Table 1: Key Specifications

Parameter		Typical Value
Optical Format		1/3.5 Inch
Active Imager Size		4.10mm x 3.28mm (H x V) 5.25mm Diagonal
Active Pixels		1280 x 1024 (H x V)
Pixel Size		3.2um x 3.2um
Color Filter Array		RGB Bayer Pattern
Maximum Data Rate		48 MHz
Master Clock		96 MHz
Frame Rate	SXGA (1280X1024)	30 fps max
	1/4 SXGA (640X512)	60 fps max
	1/16 SXGA (320X256)	120 fps max
Output Format		10-bit RGB Raw Data
Sensitivity		TBD
Dynamic Range		TBD
SNR _{MAX}		TBD
Dark Current		<2mV/sec@35°C <15mV/sec@60°C
Supply Voltage	Digital I/O	2.8 volts
	Digital Core	1.8 volts
	Analog	2.8 volts
Power Consumption(*)		27mA @ MCLK=48MHz
Operating Temperature		-20°C~70°C
Packaging		PLCC, CLCC, COB, CSP

(*) Excluding I/O power

CX1332 can be programmed by users for frame size, exposure control, gain setting, and other parameters. It can also be operated in its default mode. The maxima output frame rate of 1.3 Mega pixel-size image is 30 frames per second (fps) at the maximum data rate of 48MHz. LINE_REF and FRAME_REF signals are dedicated output pins, along with a pixel clock signal (PCLK) which is synchronous with valid data. On-chip analog to digital converters (ADC) provide 10-bit resolution per pixel.