

Maximum Flexibility with Excellent Performance in a Variety of Applications



KEY BENEFITS

- » High speed 6.5MP, 170fps, CMOS active pixel image sensor
- » Global and rolling electronic shutter with High Dynamic Range (HDR) features
- » Configurable pixel for linear light or HDR response
- » 58dB and 62dB dynamic range for global and rolling shutter, respectively
- » More than 100dB dynamic range for HDR
- » Windowing with up to 32 RoI simultaneous selection with output data compaction
- » Pixel binning
- » Sub sampling
- » Combined windowing binning, sub sampling modes
- » Image mirroring and flipping
- » Fixed pattern noise, shading and vignetting correction
- » Defective pixel correction
- » Fine gain and offset control
- » <2W power consumption

FEATURES

- » 5µm pixel pitch
- » 170fps @ full 6.5MP resolution and 12-bits
- » Up to 3,000fps @ 640 x 480 (ultra high speed mode)
- » SPI controls
- » 24 LVDS high speed outputs, transferring image data up to 14Gbit/sec
- » 2 additional LVDS ports for clock recovery and image synchronization
- » External clock of 9.6MHz
- » Package: 179 pins micro PGA

TYPICAL APPLICATIONS

- » High resolution machine vision
- » General inspection
- » Low light surveillance



SENSOR OVERVIEW

Lince6M5 is a single chip, fully digital, high speed CMOS image sensor, designed for maximum flexibility. It has excellent performance in a large variety of applications, ranging from low noise, high dynamic range surveillance, to high speed slow motion analysis, including high resolution machine vision applications. Lince6M5 incorporates a high speed 6.5MP CMOS active pixel image sensor providing both global and rolling electronic shutter, as well as High Dynamic Range (HDR) features. The sensor array utilizes active CMOS pixels with pinned photodiodes to deliver high image quality whilst maintaining the size, cost, and integration advantage of the CMOS technology.

The pixel response can be configured for either linear light response with 58dB and 62dB dynamic range for global and rolling electronic shutter, respectively, or high dynamic range response with more than 100dB dynamic range.

All the features and CIS functions are programmable through a simple four wire standard Serial Peripheral Interface (SPI). The device includes 24 LVDS high speed outputs allowing image data to be transferred at up to 14Gbit/sec, and 2 additional LVDS ports for clock recovery and image synchronization. The whole system runs with an external clock of 9.6MHz and all required timing and reference voltages are internally generated, thus minimizing the need for external components. It includes a power down capability for very low power dissipation.

Lince6M5 is a very versatile sensor that can operate in a large range of applications.

IMAGE SENSOR		MISCELLANEOUS	
Optical format – inch	1	Die area – mm	18 x 18
Active imager size – mm	12.8 (H) x 12.8 (V)	Power supply – V	Dual 3.3 / 1.8
Active pixel	2,560 x 2,560	Maximum power consumption – W	<2
Pixel size – μm	5 x 5	Operating junction temperature – °C	-40 to +125
Pixel type	5T active pixel with pinned photodiode	Package	179 pins micro PGA
Shutter type	Electronic global shutter and rolling shutter with exposition time control		
Frame rate – fps	Programmable: Up to 170 @ 2,560 x 2,560		
Sensing modes	Linear and HDR		
Dynamic range – dB	58 in global shutter 62 in rolling shutter		