



HWK1910A with sCMOS2.0™ Technology

OVERVIEW

The Fairchild Imaging HWK1910A is a high definition format, ultra-low-noise CMOS image sensor intended for surveillance and intelligent transportation applications requiring high quality imaging under extremely low light and wide dynamic range conditions. The device features an array of 5 transistor (5T) pixels on a 5.04 μm pitch with an active imaging resolution 1920(H) x 1080(V) pixels. The sensor runs in Rolling Shutter readout mode. In addition, it also has circuitry that enables high dynamic range data collection in a single frame. The sensor supports user-programmable row start/stop control for region of interest (ROI) readout mode. The HWK1910A delivers extreme low-light sensitivity with a read noise of 1 electron RMS. These features, combined with 2.1 megapixel resolution, 60 fps and the ability for auto calibration makes the HWK1910A easy to integrate in variety of systems and ideally suited for a variety of high throughput, low light-level imaging applications.

KEY FEATURES

Exceptional Low-Light Performance

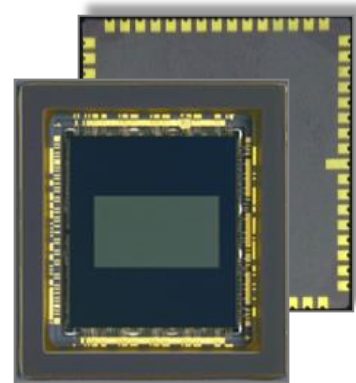
- 1e- RMS read noise at 60fps
- 0.7e- RMS read noise at lower frame rate

Single Frame High Dynamic Range

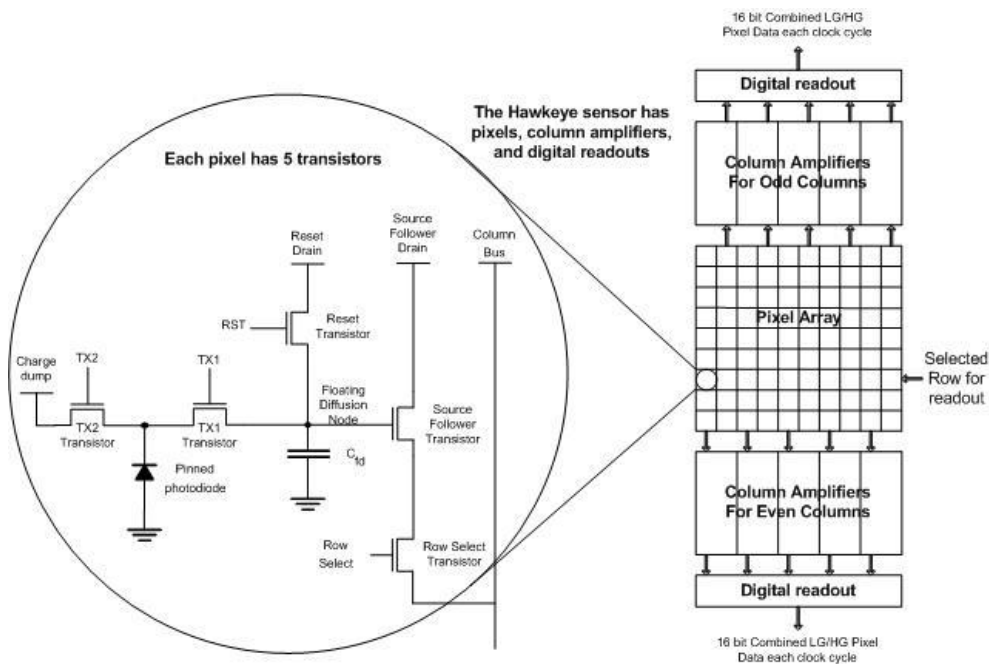
- 87dB single frame DR in WDR
- 120dB single frame DR in UDR™

High Frame Rate

- 60fps in WDR
- 30fps in UDR



BLOCK DIAGRAM

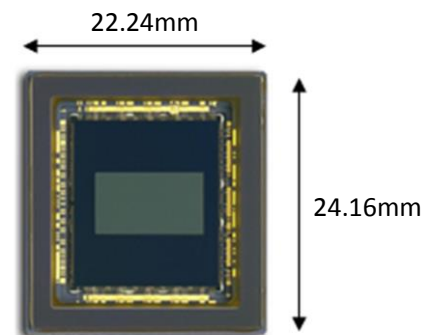




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GENERAL SPECIFICATIONS

Items	Parameters
Optical format	2/3"
Active array size	1920 (H) x 1080 (V)
Pixel size	5.04 μm x 5.04 μm
Active area	9.68 mm x 5.44 mm
Chroma	RGB and Monochrome
Shutter type	Rolling shutter
Max. frame rate	60 fps (WDR), 30 fps (UDR)
ADC resolution	16 bits (WDR), 16 bits companded (UDR)
Read noise	1e- RMS at 60 fps 0.7e- RMS at lower frame rate
Dynamic range	> 87dB (WDR), > 120dB (UDR)
Full well capacity	$\geq 23,000$ e-
Dark current	< 20 e-/pixel/sec at 20 °C
Power consumption	$\sim 1\text{W}$ at 30 fps, $\sim 1.5\text{W}$ at 60 fps
I/O interface	Digital: 1.8V LVCMOS and 1.8V HSTL
Supply voltage	1.8V, 2.8V, 3.3V
Operating temp	-30 °C to + 70 °C
Package type	64-pin CLCC



HWK1910A
Standard Package

PRODUCT EVALUATION KIT (PEK)

The Fairchild Imaging's HWK1910A USB3 PEK provides a very powerful and user-friendly system so that users can fully evaluate the capabilities of the sCMOS performance advantages including: superior low-light performance, high dynamic range, and high frame rates.

The HWK1910A USB3 PEK contains:

- Evaluation camera with HWK1910A sensor (color or mono)
- Software (GUI)
- PEK quick startup guide and user manual document

Price and availability:

- Please contact our Sales



CONTACT

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This product is designed, manufactured, and distributed utilizing the ISO 9001:2008 Business Management System.

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BAE SYSTEMS