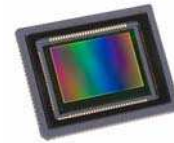


Foveon X3 Fx17-78-F13 Image Sensor

14.1 Megapixels in a 24.9mm (1.7x focal length multiplier) Optical Format



Features

Foveon X3 Technology

- A stack of three pixels captures superior color fidelity by measuring full color at every point in the captured image or video.
- Images and video have improved sharpness and immunity to color sampling artifacts (such as Moiré patterns) over traditional color filter array CCD and CMOS sensors.
- Foveon X3 technology directly converts light of all colors into useful signal information at every pixel location – no light absorbing filters are used to block the incident light.

Variable Pixel Size (VPS™) Technology

- Neighboring pixels can be grouped together on-chip to obtain the effect of a larger pixel.
- Enables flexible video capture at a variety of resolutions – producing high quality video free of sub-sampling artifacts.
- Enables higher ISO speed operation at reduced resolutions by increasing signal-to-noise ratio.

Integrated Digital Control

- Image sensor register control with a simple 3-wire interface.
- Allows full programming of readout and binning modes, including windowing and VPS.

Low Power and Simple Voltage

Requirements

- Use of advanced CMOS process technology enables low power consumption.
- Input voltages range from -0.5V to 2.5V.

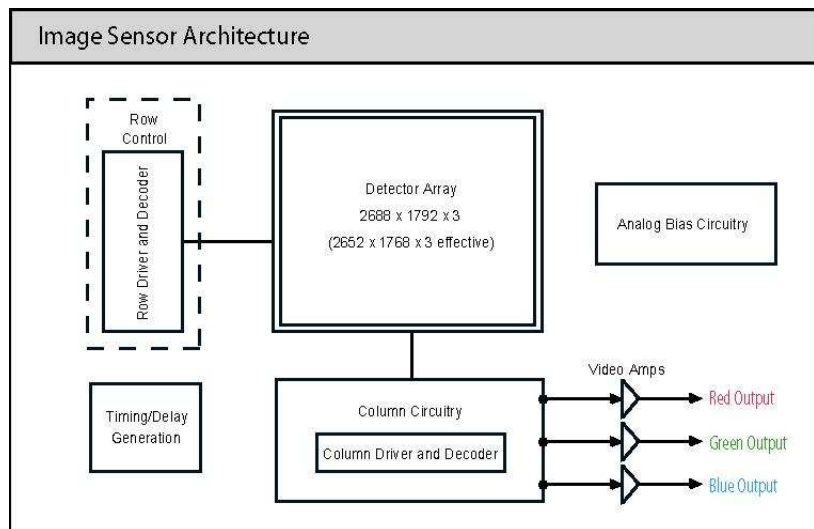
Low Noise and High Speed

- Low-noise 3-color parallel analog readout.
- Dynamic range in excess of 62dB.
- Full frame readout speed of more than 5fps, with capability to read out VGAX3 VPS video at 30fps

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Overview

The Foveon Fx17-78-F13 image sensor is a 1.7x FLM high-resolution CMOS direct image sensor that incorporates breakthrough Foveon X3 Technology. The latest in Foveon's large format CMOS image sensors, the device achieves significantly longer exposure times, broader ISO speed capability, and improved dynamic range over previous generations of X3 sensors. Foveon X3 direct image sensors capture full-measured color images through a unique stacked pixel design. By capturing three color pixels at each pixel location, the need for color interpolation and artifact-reducing blur filters is eliminated. As a result, for the 1.7x FLM optical format the Fx17-78-F13 sensor delivers the highest resolution possible without color artifacts. The sensor also features the powerful Variable Pixel Size (VPS) technology, allowing on-chip analog pixel binning for high frame rate video operation. Using VPS, the high resolution 14 megapixel sensor can be programmed to run as a "3-CCD" quality video sensor, producing VGAX3 video at 30fps.



Basic Specifications

Parameter	Specification
Total Pixels	14.5M, 2688 x 1792 x 3
Effective Pixels	14.1M, 2652 x 1768 x 3
Pixel Pitch	7.8µm
Effective Area	20.7mm x 13.8mm
Effective Diagonal	24.9mm
Aspect Ratio	3:2
Frame Rate	Full Array (14M): 5 fps 640 x 480 X3 (VPS): 30FPS

