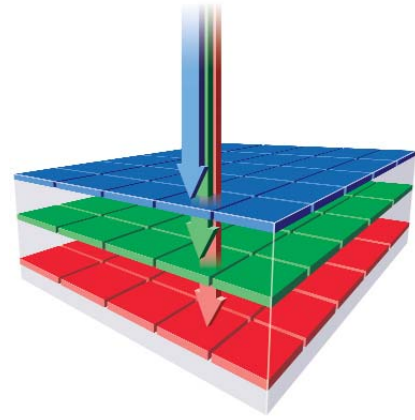




Foveon FO18-50-F19 4.5 MP X3 Direct Image Sensor



Features

Foveon X3[®] Technology

- A stack of three pixels captures superior color fidelity by measuring full color at every point in the captured image.
- Images have improved sharpness and immunity to color artifacts (moiré).

Variable Pixel Size (VPS) Capability

- Several 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.
- Enables higher ISO mode at lower resolutions.
- Reduces noise by combining pixels.

On-Chip A/D Conversion

- Integrated 12-bit A/D converter running at up to 40 MHz.
- Color sequential row readout onto a 12-bit tri-state output data bus.

Integrated Digital Control

- Minimal external control logic required.
- Data bus from the image sensor can be connected directly to DSP or video capture bus.
- Image sensor control is via simple three wire serial interface.

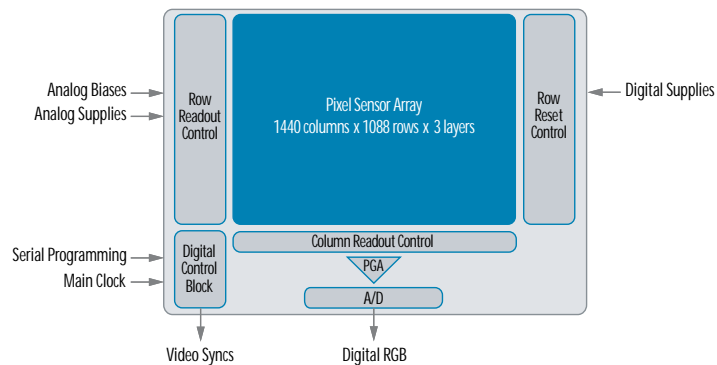
Ultra Low Power

- Advanced CMOS process technology results in ultra low power requirements.
- Power consumption is less than 200 mW during readout, less than 40 mW in standby mode, and less than 1 mW in power down mode. (Preliminary)

Low Noise

- The Foveon X3 direct image sensor offers extremely low-noise readout and high dynamic range.
- Proprietary readout circuits suppress fixed pattern noise artifacts associated with CMOS image sensors.

The Foveon FO18-50-F19 is a 1/1.8-inch CMOS direct image sensor that incorporates breakthrough Foveon X3 technology. Foveon X3 direct image sensors capture full-measured color images through a unique stacked pixel sensor design. By capturing full-measured color images, the need for color interpolation and artifact-reducing blur filters is eliminated. As a result, the Foveon F19 delivers the highest degree of sharpness and artifact-free color detail from a 1/1.8-inch image sensor. The Foveon FO18-50-F19 features the powerful VPS (Variable Pixel Size) capability. VPS provides the on-chip capability of grouping neighboring pixels together to form larger pixels that are optimal for high frame rate, reduced noise, or dual mode still/video applications. Other advanced features include: low fixed pattern noise, ultra-low power consumption, and integrated digital control.



Specifications

Effective Pixel Sensors	4.5 million pixels (1420 columns x 1060 rows x 3 layers) (1.5R, 1.5G, 1.5B)	Number of measured-color data points captured by image sensor
Total Pixel Sensors	4.7 million pixels (1440 columns x 1088 rows x 3 layers) (1.5R, 1.5G, 1.5B)	Total number of data points in pixel sensor array
Pixel Pitch	5.0 μ m	Center-to-center spacing of pixel locations
Effective Area	7.1 mm x 5.3 mm	
Effective Diagonal	8.8 mm	
Aspect Ratio	4:3	
Frame Rate	7 fps for: • 1420 columns x 1060 rows x 3 layers 30 fps for: • 640 columns x 480 rows x 3 layers (VPS)	Maximum number of frames per second in the rolling shutter mode
Variable Pixel Size Increments	Integer Multiples	Number of pixels averaged together for output