Picture this...

Micron's 3.1-Megapixel, 1/3.2 CMOS Image Sensor Takes Imaging Quality to the Next Level

Features

- Exclusive DigitalClarity™ technology with best-in-class image quality
- Low-power CMOS image sensor
- Superior low-light performance
- 3.1-megapixel image resolution (2,056H x 1,544V)
- 1/3.2-inch optical format
- Maximum data rate of 64 megapixels per second at 64 MHz PIXCLK
- On-chip, 10-bit analog-to-digital converter (ADC)
- Programmable snapshot and flash controls
- 2-wire serial interface
- Parallel and sub-low-voltage differential signaling (sub-LVDS) data interfaces
- Global reset
- Bayer-pattern down-size scaler

Complete Product Portfolio

Micron's highly anticipated, high-performance, 3.1-megapixel, MT9T012 image sensor, featuring our exclusive low-noise DigitalClarity technology, carries on the tradition of excellence that began with our 1.3-megapixel sensor and delivers best-in-class image quality for a wide variety of mobile applications. Like the 1.3-, 2-, and 5-megapixel sensors in this impressive product family, the low-power MT9T012 outputs sharp, clear, progressive scan images while extending an application's battery life. That combination, together with all of the usual advantages CMOS image sensors provide—design simplicity, reduced chip count, low integration costs, and fast time to market—make Micron imagers a smart choice.

Unprecedented Combination of High Resolution and Small Form Factor

The MT9T012 achieves a Micron first by squeezing a 3.1-megapixel resolution into a 1/3.2 optical format while maintaining a screaming 15 fps. Applications will benefit the high resolution/frame rate combination without sacrificing flexibility.

The MT9T012 integrates many advanced features—scaling, windowing, row mirroring, left-right frame reversal, column mirroring, and a power-on reset—right on the chip. This minimizes its form factor and maximizes board-space efficiency.

The MT9T012 extends the versatility of its predecessors by supporting 2x2 binning and global reset for long integration times. Plus, it enables the end-user to adjust its variable functions, such as frame rate, programmable gain, and exposure control, through a simple 2-wire serial interface.

Intrinsic Design and Lightning-Fast Delivery

Designers will marvel at how easy it is to design an application around our CMOS image sensors. The sensors make possible smaller, higher-performance products that take better-quality pictures and consume less power—and designers can get them on store shelves faster than ever before.

Applications

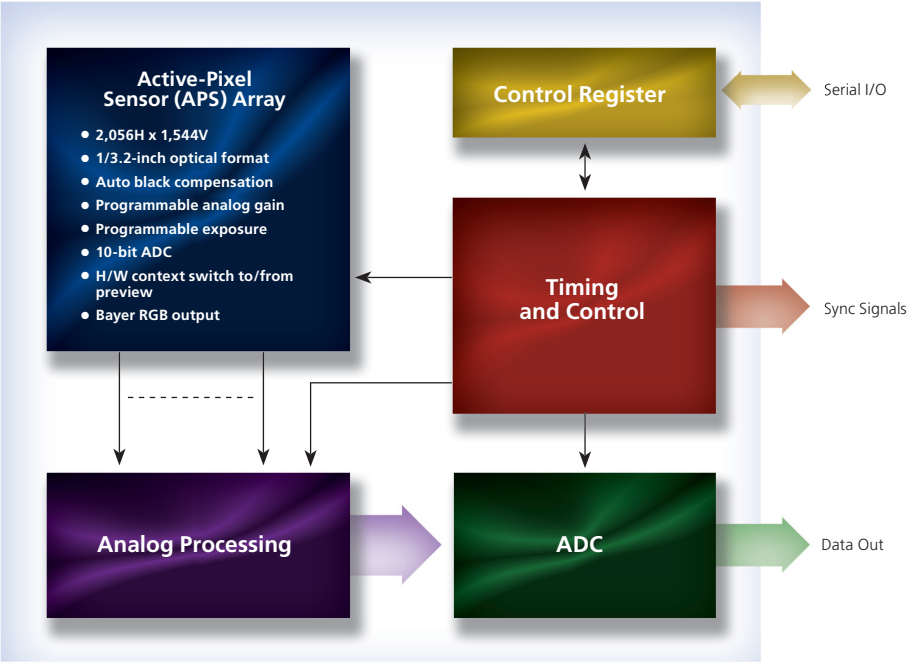
- Cellular phones
- PDAs
- MPEG video cameras
- Other battery-powered products

For more information about Micron's entire family of image sensor products or to order the MT9T012, call your Micron® Imaging representative or visit Micron's Web site at ***www.micron.com/imaging***.

Specifications

- **Pixel Size:** 2.2µm x 2.2µm
- **Array Format (Active):** 2,056H x 1,544V (including 4-pixel boundary)
- **Imaging Area:** 4.52mm x 3.4mm
- **Color Filter Array:** RGB Bayer color filters
- **Optical Format:** 1/3.2-inch
- **Frame Rate:** 15 fps @ full resolution; up to 30 fps with smaller window
- **Scan Mode:** Progressive
- **Shutter:** Electronic rolling shutter (ERS) with global reset
- **Window Size:** Programmable to any size
- **Programmable Controls:** Gain, frame rate, left-right and top-bottom image reversal
- **ADC:** 10 bit, on-chip
- **Maximum Data Rate:** 64 megapixels per second
- **Responsivity:** 0.53 V/lux-sec
- **Signal-to-Noise Ratio:** 37.7dB (preliminary)
- **Supply Voltage:** Digital I/O: 1.7V–3.1V
Digital Core: 1.7V–1.9V (1.8V nominal)
Analog: 2.4V–3.1V (2.8V nominal)
- **Operating Temp. Range:** -30°C to +70°C
- **Package:** Die (in wafer form)

Block Diagram



www.micron.com

Products are warranted only to meet Micron's production data sheet specifications. Products and specifications are subject to change without notice.