8-Megapixel, 1/2.5-Inch CMOS Image Sensor

The Ultimate Combination of Pixel Size, Resolution, and Optical Format

Features

- DigitalClarity® technology
- High-speed capture
- High frame rate preview mode with arbitrary downsize scaling from maximum resolution
- 2x2 down-size mode
- Programmable controls: gain, frame size/rate, exposure, left-right and top-bottom image reversal, window size, and panning
- Auto black level calibration
- Support for external mechanical shutter
- Support for external LED or Xenon flash
- Data interface: parallel
- Simple two-wire serial interface
- On-chip phase-lock loop (PLL)

Innovative Active-Pixel Architecture

Your customers want sleek and elegant digital still cameras and mobile phones almost as much as they want great image quality. With Micron's latest CMOS image sensor you can give them both. Built using an innovative 1.75µm active-pixel architecture, the MT9E001 is capable of capturing vivid 8-megapixel resolution images in a relatively small 1/2.5-inch optical format. That's right. 8.

Unmatched CMOS Quality with DigitalClarity Technology

Micron's CMOS image sensors achieve CCD image quality (based on signal-to-noise ratio and low-light sensitivity), while maintaining the inherent size, cost, and integration advantages of CMOS.

Our exclusive DigitalClarity technology combines several patented and innovative technologies that enable our CMOS imagers to outperform the competition. This breakthrough, low-noise technology delivers very low dark current, exceptional light sensitivity, and a low pixel height to minimize crosstalk.

High-Resolution, High-Speed Image Capture

With 12-bit ADC, the prototype sensor offers 8-megapixel resolution (3264V x 2448H pixels) that matches the performance of similar CCDs and even exceeds that level of quality at HD video rates. What's more, at 10-frames-per-second image capture at full resolution, and 30 frames per second at 2 megapixels, this sensor enables high-speed DSC performance and functions—bringing a competitive advantage to your designs.

Applications

- Digital still cameras
- Cellular phones

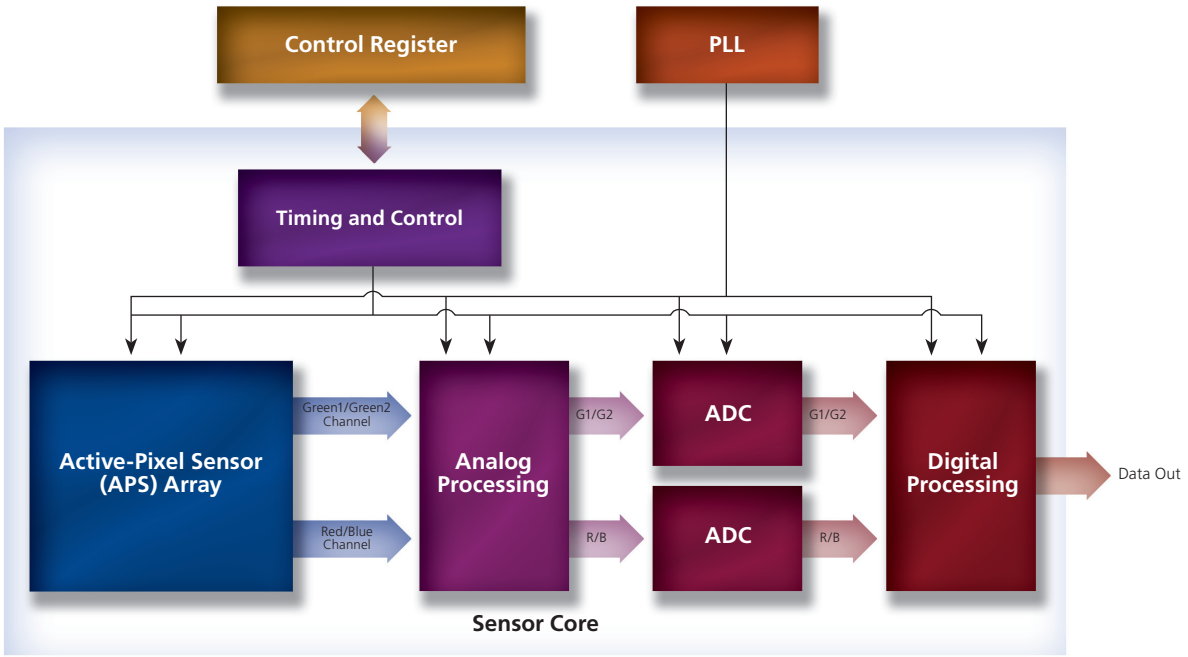
Coming Soon

The prototype 8-megapixel sensor, with its breakthrough 1.75µm x 1.75µm pixel size, demonstrates once again that Micron is the innovation leader in the CMOS image sensor segment. This innovative image sensor is expected to sample in the fall of 2006. For more information about this or other sensors, visit ***www.micron.com/imaging***.

Specifications

- **Pixel Size:** 1.75µm x 1.75µm
- **Array Format (Active):** 3264H x 2448V
- **Color Filter Array:** RGB Bayer pattern
- **Optical Format:** 1/2.5-inch (4:3)
- **Frame Rate:** Full resolution: 10 fps
  2 megapixels: 30 fps
  Video mode: 720p @ 30 fps
- **Shutter:** Electronic rolling shutter (ERS) with global reset release (GRR)
- **ADC:** 12-bit
- **Maximum Data Rate:** 96 megapixels per second
- **Master Clock:** 96 MHz
- **Chief Ray Angle:** 10.2°
- **Supply Voltage:** Analog: 2.6–3.1V (2.8V nominal)
  Digital: 1.7–1.9V (1.8V nominal)
  I/O: 1.8–2.8V
  PLL: 2.6–3.1V (2.8V nominal)
- **Input Clock Frequency:** 6–48 MHz
- **Package:** iLCC

Block Diagram



www.micron.com