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

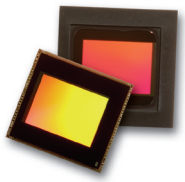


Image Quality Has Never Been Better

Features

- DigitalClarity™ CMOS imaging technology
- Low-power, progressive scan CMOS image sensor
- 5-megapixel resolution (2,592H x 1,944V)
- 1/2.5-inch optical format
- On-chip, 12-bit analog-to-digital converter (ADC)
- 12 frames per second (fps) at full resolution
- Viewfinder and snapshot modes
- Programmable gain and exposure control
- Two-wire serial interface
- Global reset
- Binning for enhanced viewing experience
- Phase lock loop (PLL) for versatile clock in scheme

Improved Performance Means New Possibilities

Equip your customers with Micron's 5-megapixel MT9P001 image sensor and they'll discover a new world of possibilities for their phones and digital still cameras. They can capture the extraordinary, the inspirational, and even the everyday experience in high-quality images worth keeping.

Unparalleled CMOS Image Quality

Micron's exclusive DigitalClarity technology dramatically reduces noise levels in our CMOS sensors. The 5-megapixel, 1/2.5-inch optical format of the MT9P001, operating within the space constraints of mobile applications, brings DSC-class images to the mobile phone space. Your MT9P001-equipped phone or digital still camera will deliver sharp, crystal-clear images—whether capturing continuous video or single frames—even in extreme low-light conditions.

The MT9P001 comes with all the advantages of our CMOS technology, including a small form factor, low power consumption, fast performance, and ease of integration. Sophisticated camera functions, including programmable gain, frame rate, exposure time, image mirroring, and viewfinder and snapshot modes have been incorporated onto the chip itself.

High-Resolution Image Capture

With a 12-bit ADC, our 5-megapixel CMOS image sensor enables high-resolution image capture that matches the performance of CCD-based digital still cameras. Furthermore, with 12 fps image capture at full resolution, it enables specialized high-speed DSC performance not achieved with CCDs. These features, paired with advanced functions like pixel binning (to smooth alias artifacts) and global reset for snapshot modes, make the MT9P001 the perfect choice for next-generation ultra-high-end camera phones and digital still cameras.

Applications

- Cellular phones
- PDAs
- Digital still cameras

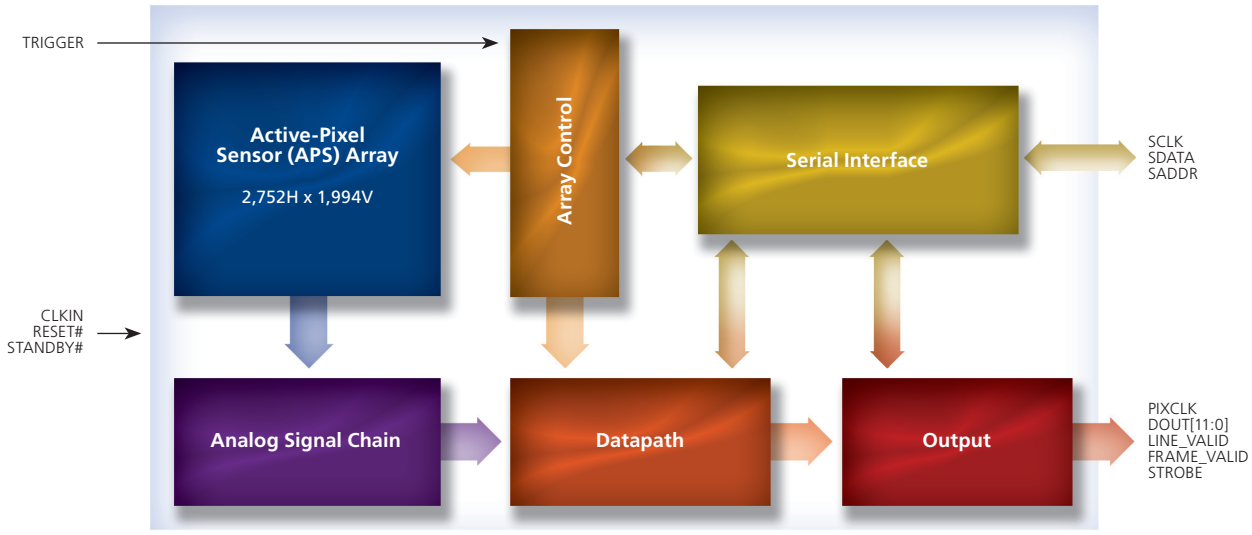
For Designers Who Demand More; For Customers Who Expect More

Micron's new 5-megapixel image sensor is the latest addition to our comprehensive portfolio of high-performance mobile imaging solutions. The MT9P001 incorporates a number of features and functions to streamline your designs and improve your customers' imaging experiences. To order, call us at 208-368-3900 or visit us on the Web at ***www.micron.com/imaging***.

Specifications

- **Pixel Size:** 2.2µm x 2.2µm
- **Array Format (Active):** 2,592H x 1,944V
- **Imaging Area:** 5.70mm x 4.28mm
- **Color Filter Array:** RGB Bayer color filters
- **Optical Format:** 1/2.5 inch
- **Frame Rates:** 12 fps @ full resolution
30 fps @ VGA resolution (640H x 480V)
- **Scan Mode:** Progressive
- **Shutter:** Electronic rolling shutter (ERS), global reset release (GRR)
- **Window Size:** Programmable to any size
- **Exposure Time:** 10µs–32s; bulb (external timer, snapshot only)
- **Operating Modes:** ERS continuous video, ERS snapshot, ERS bulb, GRR snapshot, GRR bulb
- **Input Clock:** 6–27 MHz
- **Master Clock:** 96 MHz
- **Maximum Data Rate:** 96 megapixels per second
- **Programmable Controls:** Gain, frame rate, exposure time, horizontal and vertical blanking, image mirroring
- **ADC:** 12-bit, on-chip
- **Gain:** Analog: 1–8 (Step size: 0.25)
Digital: 1–16 (Step size: 0.125)
- **Dynamic Range:** 60dB
- **Responsivity:** 0.53 V/lux-sec (550nm)
- **Maximum Signal-to-Noise Ratio:** 40.5dB
- **Supply Voltage:** Analog: 2.6V–3.1V (2.8V nominal)
Digital: 1.7V–1.9V (1.8V nominal)
I/O: 1.8V–3.1V
- **Power Consumption:** <260mW
- **Operating Temp:** -30°C to +70°C
- **Package:** Die, 48-pin iLCC

Block Diagram



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