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

Features

- 15 frames per second (fps) at full resolution
- 1,080p at 30 fps with windowing
- 720p at 30 fps in binning mode
- MIPI- and CCP2-compliant, sub-low-voltage differentia signaling (sub-LVDS)
- Two-wire serial interface
- Low-power, progressive scan CMOS image sensor
- On-chip, 12-bit analog-to-digital converter (ADC)
- Viewfinder and snapshot modes
- Programmable gain and exposure control
- Global reset
- Binning for enhanced viewing experience
- Phase lock loop (PLL) for versatile clock in scheme

Applications

- Cellular phones
- Digital still cameras
- HDTV video cameras

Overview

If you're ready to take your camera phone or digital still camera design to the next level, we have an image sensor that will help you do it. The MT9P011 squeezes a 5-megapixel resolution into a 1/2.5-inch optical format while enabling 15 fps at full resolution and 1,080 progressive scan at 30 fps in binning mode. Whether it's used to capture continuous video or single frames—even in extreme low-light conditions—an MT9P011-equipped phone or digital still camera will deliver sharp, crystal-clear images.

In addition to high-resolution image capture, this imager Integrates an on-chip 10-bit parallel or serial (1-lane MIPI and CCP2-compliant) interface. Those features, 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 the MT9P011 an ideal solution for ultra-thin mobile applications.

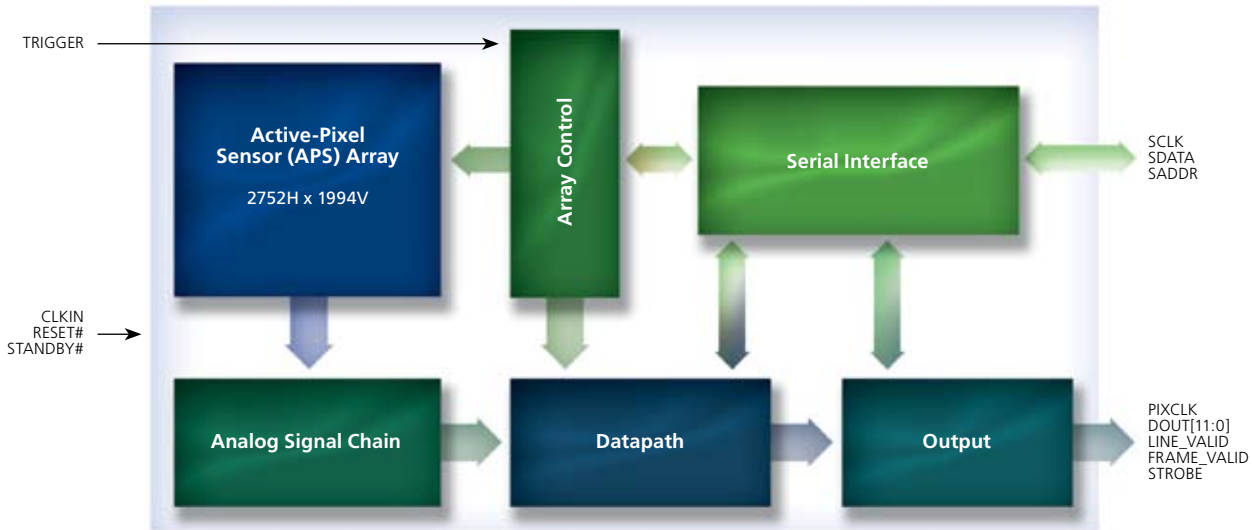
Contact Us

For more detailed information about the MT9P011 image sensor—or any of our other high-performance mobile imaging solutions—contact your local Micron representative.

Specifications

- **Pixel Size:** 2.2µm x 2.2µm
- **Array Format (Active):** 2592H x 1944V
- **Imaging Area:** 5.70mm x 4.28mm
- **Color Filter Array:** RGB Bayer color filters
- **Optical Format:** 1/2.5 inch
- **Frame Rates:** 15 fps @ full resolution,
  30 fps @ 1,080p (1920H x 1080V) by windowing,
  30 fps @ 720p (1280H x 720V) by binning
- **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
- **CRA:** 22° and 27°
- **Gain:** Analog: 1–8 (step size: 0.25)
  Digital: 1–16 (step size: 0.125)
- **Dynamic Range:** 70dB
- **Responsivity:** 1.4 V/lux-sec (550nm)
- **Maximum Signal-to-Noise Ratio:** 38dB
- **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:** 381mW @ full resolution
- **Operating Temp:** –30°C to +70°C
- **Package:** Die, 48-pin iLCC

SOC Block Diagram



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