1.3-Megapixel, 1/3-Inch CMOS Image Sensor Camera System-on-a-Chip

Megapixel Imaging for Home Security Systems

Features

- DigitalClarity® low-cost CMOS imaging technology
- 1.3-megapixel resolution (1280H x 1024V) progressive-scan CMOS image sensor
- 1/3-inch optical format
- 15 frames per second (fps) at 170mW, full resolution; 30 fps at 90mW, VGA resolution
- Superior low-light performance
- On-chip image flow processor (IFP)
- Image decimation to any size with fluid zoom and pan
- Fully automatic xenon and LED-type flash support, including fast exposure adaptation
- Multiple parameter contexts for fast, easy mode switching
- Camera control sequencer that automates video clips and snapshots with or without flash
- On-chip, 10-bit analog-to-digital converter (ADC)
- Two-wire serial interface
- Progressive ITU_R BT.656 (YCbCr), 565RGB, 555RGB, 444RGB, raw Bayer, and processed Bayer output data formats

Made for Home and Office Networks

Micron Technology's MT9M131 is an SXGA-format, single-chip camera with a 1/3-inch CMOS active-pixel digital image sensor. With the MT9M131 designed in, users can get an affordable security system that produces high-quality digital video output. Its progressive-scan images are ideal for porting to compression and network interface chips. Data streaming across a network is kept to a minimum, so the network doesn't get bogged down or overloaded.

Featuring Six 8-Bit Formats

The MT9M131 can be programmed to output progressive-scan images at up to 30 (fps) in preview/power-saving mode and 15 fps in full-resolution (SXGA) mode. In either mode, the image data can be output in any one of six 8-bit formats.

Low Noise, Low Power, Better Low-Light Performance

Developed by a world-renowned group of imaging experts, the MT9M131 provides superior low-light performance, achieving CCD-quality sensitivity levels. Equipped with Micron's progressive readout, low-noise DigitalClarity technology, the high-performance MT9M131 delivers brilliant color images even under some of the poorest lighting conditions, making it ideal for high-resolution network security cameras.

Sophisticated On-Board Image Processing

For basic operation, the innovative camera system-on-a-chip (SOC) requires only a power supply, lens, and clock source. With the MT9M131, designers can simply plug and play. Its on-chip image flow processor performs a host of image correcting and enhancing functions you'd normally need another part for, such as color recovery and correction; sharpening; gamma correction; and auto black level offset correction, exposure, white balance, lens shading, flicker avoidance, and on-the-fly defect correction directly on the chip itself, minimizing device form factor as well as needed board space. And because it requires fewer parts, the MT9M131 simplifies design compared to CCDs and enables a much faster time-to-market.

Applications

- 802.11 wireless network cameras
- Power line modem camera
- IP camera
- uPNP AV, WiFi, UWB cameras
- Small office monitoring
- Home monitoring

Contact Micron

Micron's MT9M131 incorporates a number of features and functions to streamline your designs and improve your customers' imaging experiences. To order, call us at +1 208-368-3900 or visit us on the Web at ***www.micron.com/imaging***.

Specifications

- **Pixel Size:** 3.6µm x 3.6µm
- **Array Format: (active)** 1280H x 1024V
- **Imaging Area:** 4.6mm x 3.7mm
- **Color Filter Array:** RGB Bayer color filters
- **Optical Format:** 1/3-inch (5:4)
- **Frame Rate:** 15 fps @ 1280H x 1024V; 30 fps @ 640H x 512V
- **Scan Mode:** Progressive
- **Shutter:** Electronic rolling shutter (ERS)
- **Automatic Functions:** Exposure, white balance, black level offset correction, flicker detection and avoidance, color saturation control, defect identification and correction, aperture correction
- **Programmable Controls:** Exposure, white balance, blanking, color, sharpness, gamma, lens shading correction, left-right and up-down image reversal, zoom, windowing
- **Flash Support:** Xenon and LED
- **ADC:** 10-bit, dual on-chip
- **Data Rate:** 27 megapixels per second (master clock, 54 MHz)
- **Responsivity:** 1.0 V/lux-sec (550nm)
- **Dynamic Range:** >71dB
- **Signal-to-Noise Ratio:** 44dB (MAX)
- **Supply Voltage:** 2.8V ±0.3V
- **Power Consumption:** 170mW (@ 15 fps), 90mW (@ 30 fps)
- **Operating Temp. Range:** -30°C to +70°C
- **Package:** 48-pin CLCC or die

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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.