MT9V131

**VGA
1/4-inch
SOC Image Sensor
48-pin CLCC or Die**

Professional Image Quality for Networked Home Security

1 Cost-Effective VGA SOC

With all the necessary functionality built in, this all-in-one solution reduces the bill of materials.

2 Built-In Color Processing

The on-chip image flow processor performs a host of image correcting and enhancing functions you'd normally need another part for.

3 High-Quality Progressive Scan

High-quality digital video output minimizes image tearing. (Or progressive scan images are ideal for porting to compression and network interface chips.)

4 Low Power Consumption

The inherent low-power advantages of active-pixel architecture enable design flexibility.

5 Crystal Clear Image Quality

Video output that's on par with professional grade surveillance cameras.

Applications

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

How to Buy

Production and sample quantities of Aptina products may be ordered through qualified distributors. See our Web site for details. You may also request access to NDA data sheets and other technical documentation by visiting our Web site.

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IMAGING

MT9V131

Features

- System-on-a-chip (SOC)—a completely integrated camera system
- Ultra low-power, low-cost progressive scan
- Built-in scaler to perform pan, tilt, zoom functions
- On-chip image flow processor performs sophisticated processing: color recovery and correction, sharpening, gamma, lens shading correction, and on-the-fly defect correction
- Programmable controls: gain, horizontal and vertical blanking, auto black level offset correction, frame size/rate, exposure, left-right and top-bottom image reversal, window size, and panning
- Programmable gain and exposure control
- On-chip oscillator
- Two-wire serial programming interface

Specifications

Imaging Array
- Optical Format: 1/4-inch
- Active Array: 640(H) x 480(V)
- Imaging Area: 3.584mm x 2.688mm

Speed/Output
- Frame Rate: 30 fps at full resolution
- Data Rate: 12–13.5 Mp/s
- Master Clock: 24–27 MHz
- Data Format: Parallel

Sensitivity
- Pixel Size: 5.6µm x 5.6µm
- Dynamic Range: 60dB
- Responsivity: 1.9 V/lux-sec (550nm)

Power
- Supply: 2.8V ±0.25V
- Consumption: <80mW

Temperature Range
- Operating: −20°C to +60°C
- Storage: −40°C to +125°C

Package: 48-pin CLCC or Die

Block Diagram

SCLK, SDATA, SADDR, CLK, STANDBY, OE_BAR, VDD/DGND, VAA/AGND, VAA_PIX

Communication Bus

Sensor Core
- Based on MT9V011
- 668H x 496V (VGA+ Reference)
- 1/4-inch optical format
- Auto black compensation
- Programmable analog gain
- Programmable exposure
- Low power, 10-bit ADCs

Image Flow Processor
- Color correction, gamma, lens shading correction
- Auto exposure, white balance
- Interpolation and defect correction
- Flicker avoidance

SRAM Line Buffers

DOUT[7:0]:DOUT_LSB[1:0], PIXCLK, FRAME_VALID, LINE_VALID, FLASH

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