

MT9D131



2-Megapixel  
1/3.2-Inch  
SOC Image Sensor  
48-Pin CLCC, Die, or iCSP

## High-Performance Video for Cost-Effective Security Systems

1

### Mainstream Form Factor

The 1/3.2-inch optical format fits mainstream home and office security systems.

2

### Low Noise, Better Low-Light Performance

Binning enables a pixel-combo mode that significantly improves sensitivity for superb low-light performance.

3

### Sophisticated On-Board Image Processing

With its SOC and on-chip IFP, this sensor performs image correcting and enhancing functions, as well as motion JPEG compression.

4

### High-Quality Video Output

Its high-quality progressive-scan images are easily ported to compression and network interface chips.

5

### Fast Time-to-Market

Integrating multiple functions on a single chip simplifies your design and enables a much faster time-to-market.

## Applications

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

# MT9D131

## Features

- 2-megapixel resolution (1600H x 1200V) progressive-scan image sensor
- 1/3.2-inch optical format
- 15 fps at full resolution (170mW); 30 fps at VGA resolution (90mW)
- Superior low-light performance
- Integrated auto focus and optical zoom
- Real-time JPEG encoder
- 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

## Specifications

### Imaging Array

- Optical Format: 1/3.2-inch
- Active Array: 1600(H) x 1200(V)
- Imaging Area: 4.73mm(H) x 3.52mm(V)

### Speed/Output

- Frame Rate: 15 fps at 1600(H) x 1200(V)  
30 fps at 800(H) x 600(V)

- Data Rate: 80 Mp/s
- Master Clock: 6–80 MHz (integrated PLL)
- Data Format: 8-bit parallel

### Sensitivity

- Pixel Size: 2.8 $\mu$ m x 2.8 $\mu$ m
- Dynamic Range: >41dB
- Responsivity: 1.0 V/lux-sec (550nm)

### Power

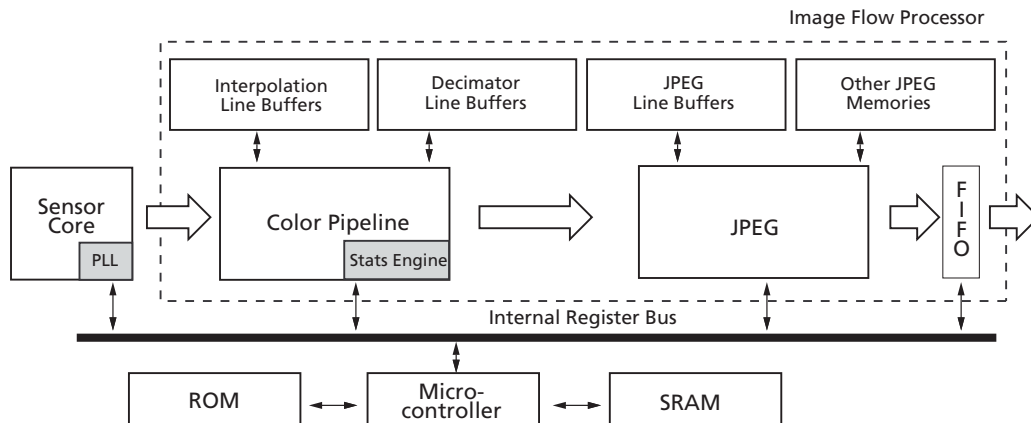
- Supply: Analog: 2.5–3.1V  
Digital: 1.7–1.95V  
I/O: 1.7–3.1V
- Consumption: 150mW (at 30 fps)

### Temperature Range

- Operating: –30°C to +70°C

**Package:** 48-pin CLCC, Die, or iCSP

## Block Diagram



[aptina.com](http://aptina.com)

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