

MT9M002



1.6-Megapixel
1/4.5-inch
CMOS Image Sensor
48-pin CLCC

Breakthrough Performance for the Consumer HD Market

- 1 HD Video at Fast Frame Rates**
Captures stunning 1080p HD video at 30 fps and 720p HD video at 60 fps.
- 2 Compact Camera Design**
Small sensor footprint for lightweight, compact video camera designs.
- 3 Lower-Cost Lens Design**
Small optical format enables a smaller, lower-cost lens design, meeting consumer demand on portability and price.
- 4 Excellent Low-Light Sensitivity**
Great for recording video indoors.
- 5 Image Stabilization Support**
Additional active pixel area supports high-quality image stabilization, eliminating the effects of jittery hands or camera shake.

Applications

- Digital video cameras
- Solid state (Flash) pocket video cameras
- Digital still cameras



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.

Features

- High frame rate (1440H x 1080V @ 30 fps and 1280H x 720V at 60 fps)
- Superior low-light performance
- Low dark current
- Global reset release (GRR), which starts the exposure of all rows simultaneously
- Simple two-wire serial interface
- Programmable controls: gain, frame rate, frame size, exposure
- Horizontal and vertical mirror image
- Automatic black level calibration
- On-chip phase-locked loop (PLL) oscillator
- Bulb exposure mode for arbitrary exposure times
- Snapshot mode to take frames on demand
- Parallel data output
- Electronic rolling shutter (ERS), progressive scan
- Arbitrary image decimation with anti-aliasing
- Programmable I/O slew rate
- Programmable power-down mode (mode A or mode B)
- Xenon and LED flash support with fast exposure adaptation
- Flexible support for external auto focus, optical zoom, and mechanical shutter

Specifications

Imaging Array

- Optical Format: 1/4.5-inch
- Active Array: 1472(H) x 1096(V)

Speed/Output

- Imaging Area: 3.24mm(H) x 2.41mm(V)
- Frame Rate: 60 fps at 1280H x 720V;
30 fps at 1440H x 1080V
- Data Rate: 99 Mp/s
- Master Clock: 49.5 MHz
- Data Format: Parallel/LVDS (serial)

Sensitivity

- Pixel Size: 2.2 μ m x 2.2 μ m
- Dynamic Range: 70.1dB
- Responsivity: 1.4 V/lux-sec (550nm)

Power

- Supply: Digital: 1.7–1.9V
I/O: 2.6–3.1V
PLL: 2.6–3.1V
Analog: 2.6–3.1V
- Consumption: 364mW at 2.8V (parallel)

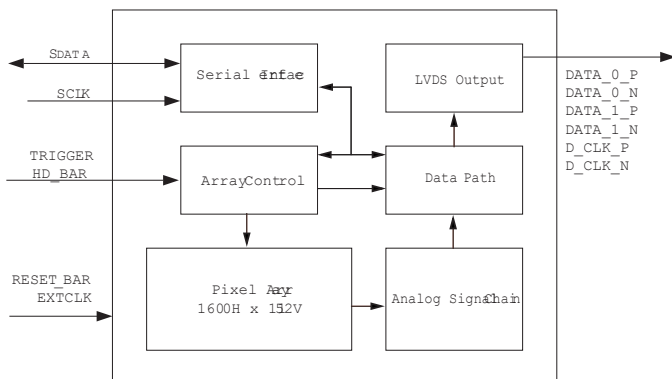
Temperature Range

- Operating: –30°C to +70°C

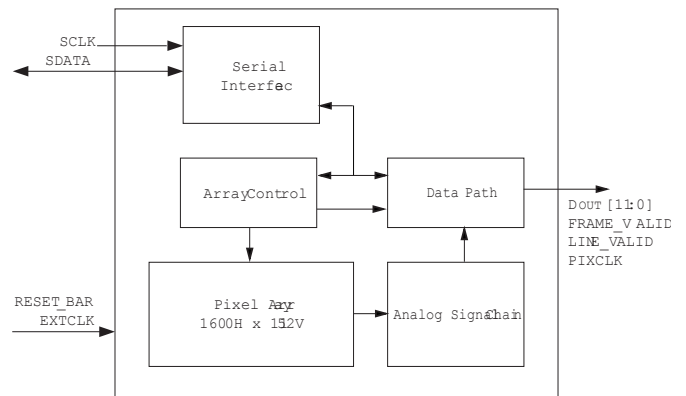
Package: 48-pin CLCC

Block Diagram

LVDS Output (Slave Mode)
(master mode not shown)



Parallel Output (Master Mode)



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