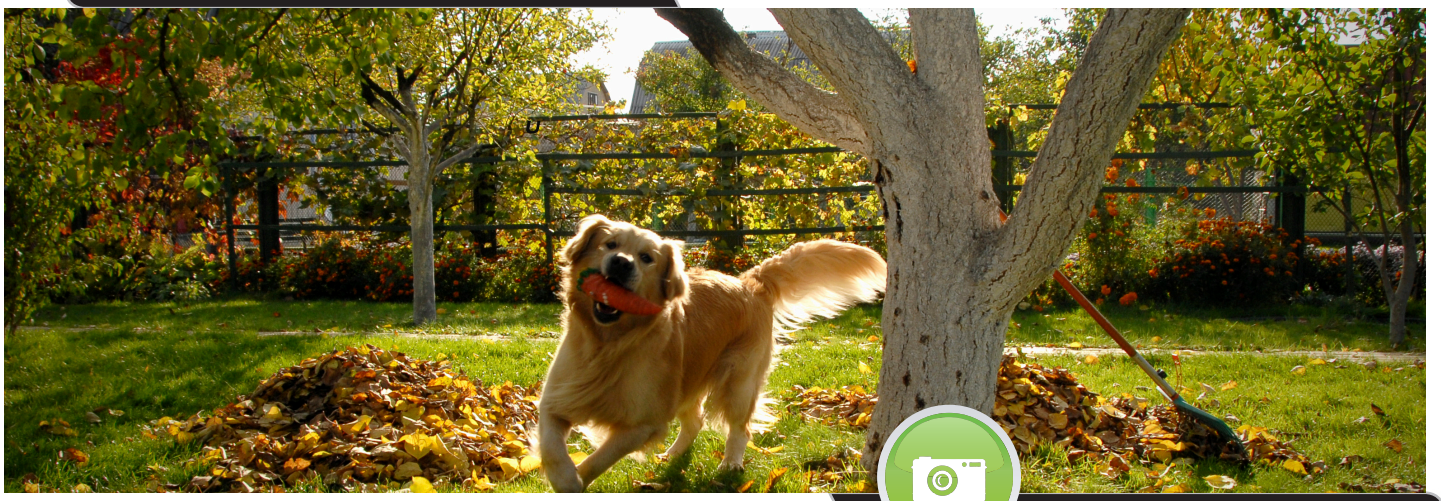
MT9F002



14-Megapixel
1/2.3-Inch
Digital Image Sensor
Full HD Support
48-Pin iLCC

A High-Speed HD Sensor for DSC/DVS Designs

1 World-Class 1.4µm Pixel Sensitivity

Produced on Aptina's world-class 1.4µm pixel with Aptina™ A-Pix technology, this high-resolution, highly sensitive compact sensor is perfect for DSC/DVC designs.

2 Full HD Video Modes and EIS

Full HD support—1080p at 60 fps—for max video performance and 20% extra imaging area for image stabilization.

3 Improved Low Light Performance

Equivalent level as CCD sensor to support DSC applications

4 High-Speed Snapshot Capability

This high-speed sensor has 14Mp resolution and can capture still images at more than 13 fps.

5 Flexible Interface Options

The MT9F002's flexibility provides a four-lane serial high-speed pixel interface (HiSPi™) for high-speed operation and a parallel interface for lower speed operation.

6 Preprocessing Features

Features, including resampling for sub-sampled video and 2D defect correction, provide improved image quality.

Applications

- Digital still cameras
- Digital video 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.

Aptina™
IMAGING

MT9F002

Features

- Full HD support at 60 fps for max video performance
- 20% extra imaging area for image stabilization in full HD
- Resampled binning to reduce jagged edges and artifacts
- Column summing for increased sensitivity in binned images
- 2 X 2 binning
- Row skipping: 2x, 4x, 8x, 16x, and 32x
- Column skipping: 2x, 4x
- On-sensor digital scaler
- Analog unity to 32x
- Digital unity to 15x
- 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
- Data interfaces: parallel or four-lane serial high-speed pixel interface (HiSPi™)
- On-die phase-locked loop (PLL) oscillator

Specifications (Preliminary)

Imaging Array

- Optical Format: 1/2.3-inch
- Active Array: 4384(H) x 3288(V)
- Imaging Area: 6.14mm(H) x 4.6mm(V)

Speed/Output

- Frame Rate: 13 fps (HiSPi serial I/F)
  6 fps (parallel I/F)
- Data Rate: 2.8 Gb/s (700 Mb/s per lane) (HiSPi serial I/F)
  96 MHz (parallel I/F)
- Master Clock: 6–48 MHz
- Data Format: 12-bit RAW (10-bit RAW for video)

Sensitivity

- Pixel Size: 1.4µm x 1.4µm
- Dynamic Range: 65dB

Power

- Supply: Analog: 2.8V (nominal)
  Digital: 1.8V (nominal)
  I/O: 1.8V (nominal) or 2.8V (nominal)

Optics

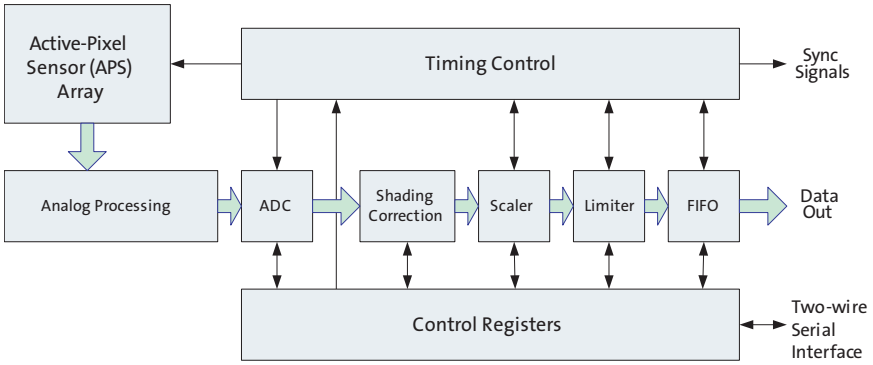
- CRA: 0°; 11.4°, 25°

Temperature Range

- Operating: –30°C to +70°C (at junction)

Package: 10mm x 10mm 48-pin iLCC

Block Diagram



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