

AR1820HS



18-Megapixel
1/2.3-inch
CMOS Image Sensor
Full HD support
60 ball ceramic iBGA

High-Resolution, Fast Video for Surveillance and Sports Cameras

1 Built-in Aptina A-PixHS™ Technology

The AR1820HS utilizes A-PixHS™ Technology, which brings Aptina's backside illuminated (BSI) pixel technology, together with an advanced high-speed sensor architecture to enable a new class of high performance cameras.

2 High-performance 1.25µm BSI Pixel

Aptina's BSI pixel has high quantum efficiency, low noise, and outstanding color fidelity.

3 High-Speed, High Resolution Images

Captures high-resolution 18MP images in 1/2.3" format at 24 fps, and 14MP (16:9 format) at >30fps.

4 Advanced pixel summing capability enables high-speed video

1080p at 60fps with more than 20% EIS (Electronic Image Stabilization area), and 1080p at 120fps with low-noise and low-power

5 Low power consumption

With an advanced sensor architecture, power consumption has been reduced significantly, which helps DSC/DVC's battery life accordingly.

Applications

- High-end Surveillance Cameras
- Sports Cameras
- Mobile Handsets



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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Features

- Aptina™ A-PixHS™ technology on 1.25mm BSI pixel technology together with advanced high-speed sensor architecture
- Simple 2-wire and 3-wire serial interface
- Auto black level calibration
- 24fps based on 12-bits at 18Mp full resolution
- Support for external mechanical shutter
- Support for external LED or Xenon flash
- 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: programmable to 4 or 8 lanes HiSPi™ (High-Speed Serial Pixel Interface)
- On-die phase-locked loop (PLL) oscillator
- Integrated position and color-based shading correction
- Slave mode for precise frame-rate control and for synchronizing multiple sensor
- A-Law data compression support: 12-10-12, 12-8-12, and 10-8-10.

Specifications (ADVANCE)

Imaging Array

- Optical Format: 1/2.3-inch (4:3)
- Pixel Size: 1.25um x 1.25um
- Active Array: 4912(H) x 3684(V)

Speed/Output

- Primary modes: see Modes diagram below
- Data rate: 800 Mb/s (HiSPi serial I/F)
- Master Clock: 6 - 54 MHz
- Data Format: 12-bit RAW (10-bit RAW for video)

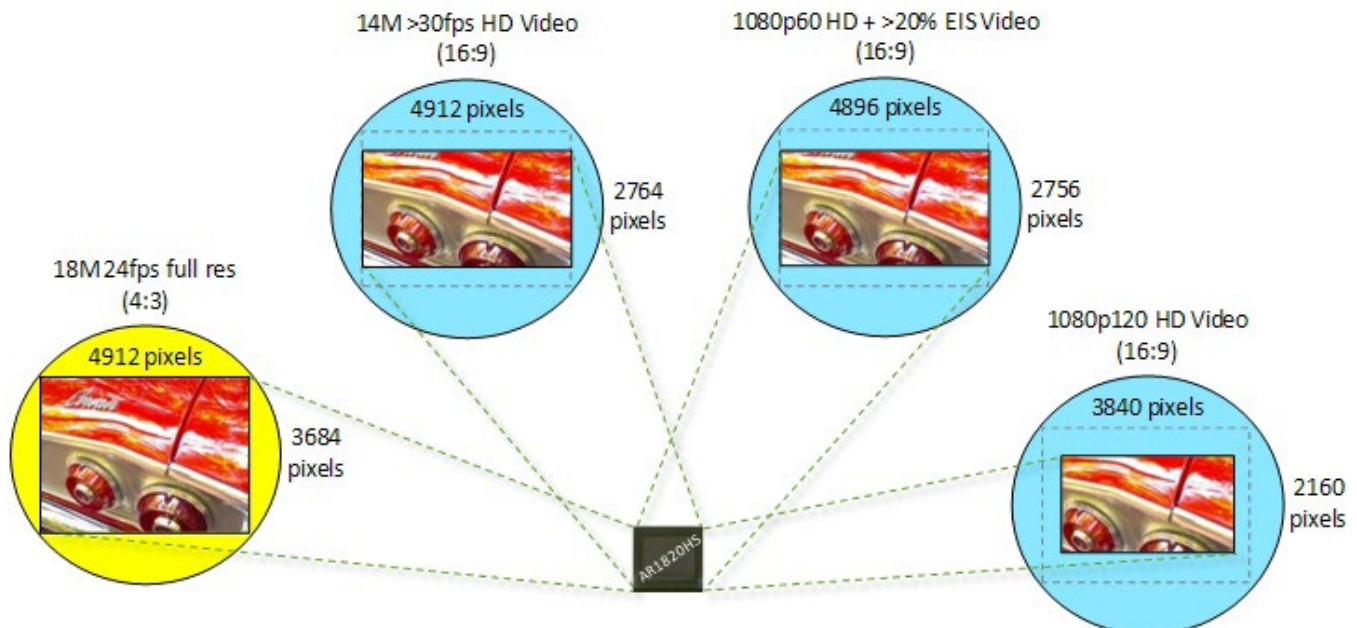
Supply Voltage

- Analog (VAA): 2.7 - 3.1V (2.8V nominal)
- Digital (VDD): 1.14 - 1.3V (1.2V nominal)
- Pixel (VAA_PIX): 2.7 - 3.1V (2.8V nominal)
- Digital (DVDD_1V8): 1.7 - 1.9V (1.8V nominal)
- I/O (VDD_IO): 1.7 - 1.9V (1.8V nominal) or 2.7 - 3.1V (2.8V nominal)
- HiSPi_TX (VDD_IO): 0.3 - 0.6V (0.4V nominal)

Temperature Range

- Operating: -30°C to +70°C (at junction)
- Package 10x10 mm 60 ball ceramic iBGA

Imaging Array by Modes



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