High-integration Coaxial HD ISP Chip

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XS5018A is an image signal processing chip designed for CMOS image sensors, specifically tailored for vehicle surround-view cameras. It is mainly targeted at the automotive product market, featuring highly integrated peripheral components to simplify product design. The chip is equipped with a high-performance ISP and 3DNR, offering processing capabilities up to 1080P@30 fps. It supports standard-definition analog output via CVBS (960H) and high-definition analog output through HDcctv 720P, 960P, and 1080P. With an embedded CPU, XS5018A enables flexible software applications.

◎ Inventor of coaxial HD, with proprietary intellectual rights

◎ Integrated DAC, video buffer, and comparator

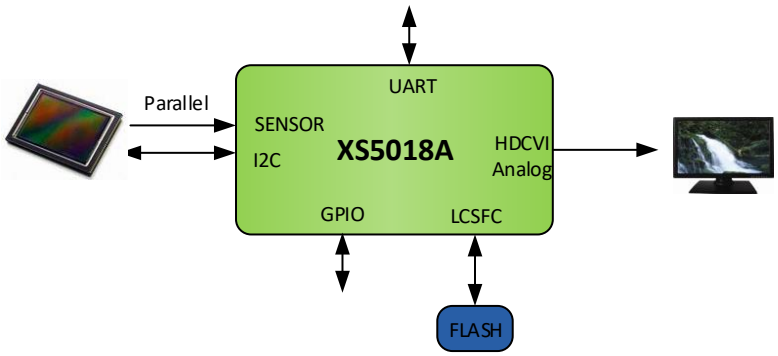
◎ Compatible with HDcctv and CVBS

◎ Supports 960H, 720p, 960p, and 1080p

◎ ISP supports up to 1080p@30 fps

◎ High-performance 2D and 3D noise reduction

◎ Supports seamless frame rate reduction



- **Video Input Interface**
  - Supports 10bit RGB Byer input and clock up to 100 MHz
- **External Interface**
  - Supports POR
  - UART × 1, can be multiplexed as GPIO
  - I2C × 1
  - SPI × 1, can be multiplexed as GPIO
  - Integrated with JTAG, can be multiplexed as GPIO
  - Integrated with a comparator
  - Integrated with video DAC and Buffer
- **Image Signal Processing**
  - Supports 2D noise reduction
  - Supports 3D noise reduction
  - Supports shading correction and dynamic bad pixel correction
  - Supports AE and AWE
  - Supports correcting uneven green
  - Supports color correction and false color correction
  - Supports edge enhancement
  - Supports seamless frame reduction
- **Video Processing**
  - Supports video cropping and scaling up/down
  - Supports privacy masking and OSD overlay
- **Physical Specifications**
  - Core voltage: 1.1 V
  - Common IO voltage: 3.3 V
  - Sensor IO voltage: 1.8/3.3 V
- **QFN5X5, 48-pin, pitch of 0.35 mm**
- It supports various coaxial HD and SD formats, including
  960H@25/30 fps
  720P@25/30/50/60 fps
  960P@25/30 fps
  1080P@25/30 fps
- **Integrated with a video DAC, video buffer, and comparator, further simplifying PCB design and reducing hardware BOM costs**