

SC2002 (M11S) Milbeaut® Image Processor



Surveillance camera market continues to grow driven by a growing demand in security products. New features include excellent backlight correction, low illuminance shooting and support for high performance and low power image processing functions.

The SC2002 (M11S) is designed to meet the surveillance market needs. It features H.265 video encoder WDR images enhancement capability with built-in video analytics hardware core that improves image detections and identification.

Applications such as drones, action cameras and security cameras require high definition picture quality operating at low power. The SC2002 delivers high-speed processing of increased image data using very low power. It is able to synthesize two or three images taken at different exposures, achieves dynamic range of 120dB, preforms image/face detection and reduces block noise from moving objects while consumes at less than 1.5 Watt of power.

The SC2002 (M11S) is an essential component for building image processing applications.

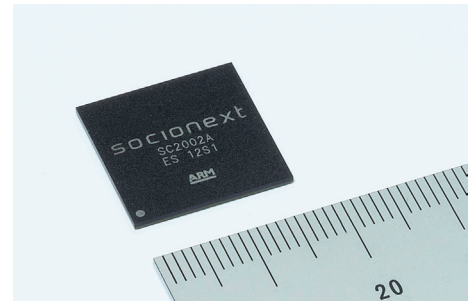
Key Features

Advanced Image Processing

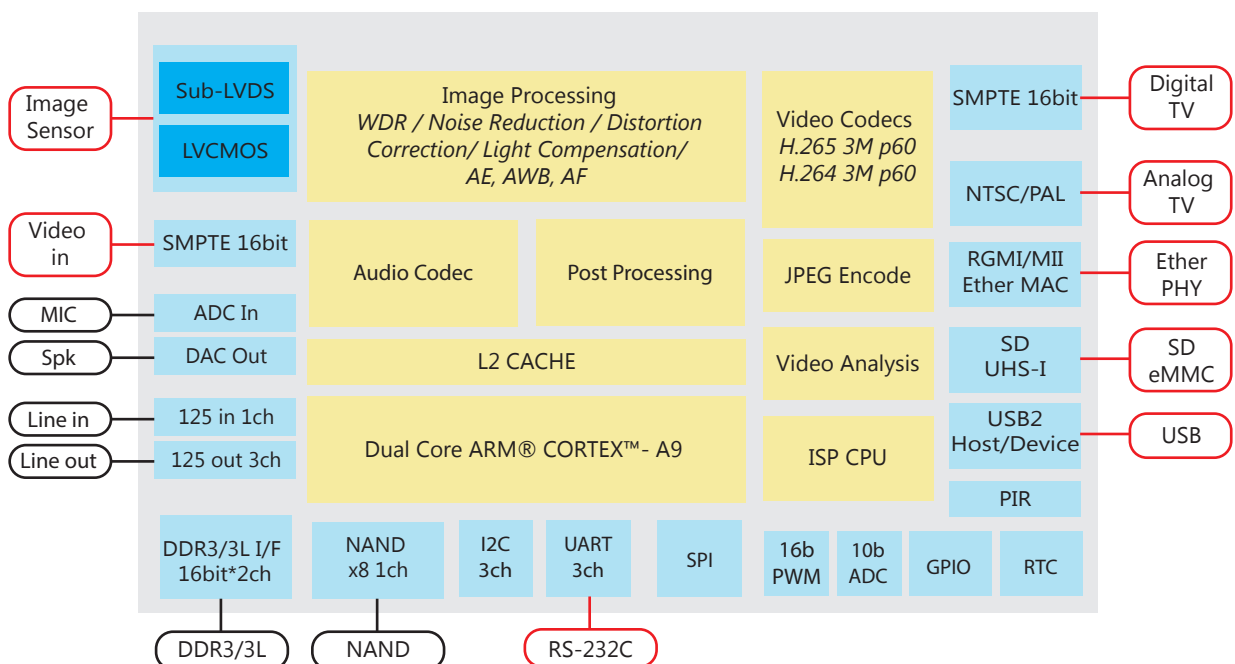
- 3MP 60fps image processing
- 3MP 60fps H.265 and H.264 encoding
- DOL3 HDR techniques
- Excellent low light capability

Low Power Consumption

- Under 1.5Watts at 3MP 30fps recording



SC2002 (M11S) Block Diagram



SC2002(M11S) General Specifications

Imaging Processing

- Video Codec H.265/H.264 encoder 3M@60p 40Mbps Multi streaming: max. 16 streaming
- JPEG encoder up to 600Mp/s

Sensor I/F

- SubLVDS 8lane+1clk (648Mbps/lane)
 - Up to 3Mp@120p
- CMOS 12bit Raw
 - Up to 3Mp@60p

CPU

- Cortex A9 Dual (600MHz)
- ARM946
- DSP(332MHz) for Audio Codec
 - G.711(a-Law, u-Law)/G.726/AMR-NB/AAC - LC/PCM
- DSP(443MHz) for Video Analytics
 - Face Detection/Object Detection/Tampering Alarm/Video motion filter

Power

- Typical 1.5W

Operation Temperature

- T= -20°C ~ +85°C

Peripherals

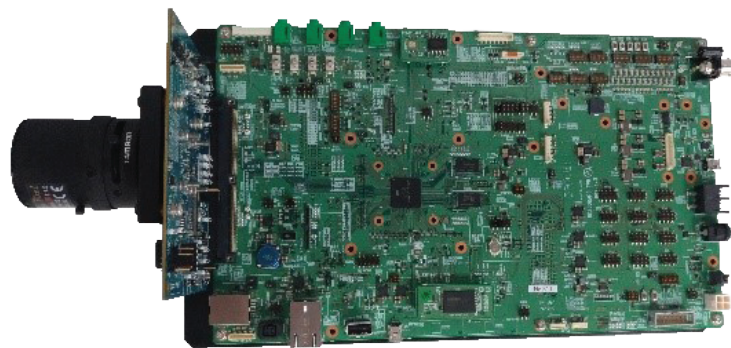
- USB2.0 Host/Device
- SD Card (UHS -1x2ch: 192MHz)
- NAND Flash (8bit)
- Composite Video (NTSC/PAL)
- 16bit Parallel Video IN/OUT
- GbE MAC(MII/RGMII)
- DRAM DDR3/DDR3L@1584Mbps 16bitx2ch
- Audio I/F(I2S INx1ch OUTx3ch)
- CA9 peripheral
 - I2Cx2/SPIx3/UARTx2/PWMx5/ADCx4/GPIOx64/DMACx16/TMRx16/WDTx2/ I2S INx1/I2S OUTx3/PIRx1
- ARM946 peripheral
 - I2Cx1/SPIx2/UARTx1/PWMx3/GPIOx16/DMACx1/TMRx1/AFVD
- RTC
- Audio ADC(stereo x1)/DAC(stereo x1)

Camera Features

- Face detection/Object Detection/Tampering Alarm
- Lens Distortion Correction(Horizontal)
- Video High Dynamic Range (Overlap 2/3 frames)
- 2D/3D Noise Reduction
- Mirror/vertical inversion, 90/180/270-degree rotation
- Privacy mask
- Defog/Flicker Correction/High Light Compensation
- IR Optimizer

SC2002(M11S) Development Kit

- **Board**
 - Sensor Board(IMX290) & Main Board(SC0B03A---00A)
- **Device software**
 - Linux distribution & Linux software development environment
 - Drivers camera-FW & Middleware
 - Application framework & Reference application
- **Image Tuning Tools (PC Tools)**
 - Camera control software
 - Image tuning software (Picture Meister XR)
 - Client software (PC streaming viewer, etc)



SC2002(M11S) Board