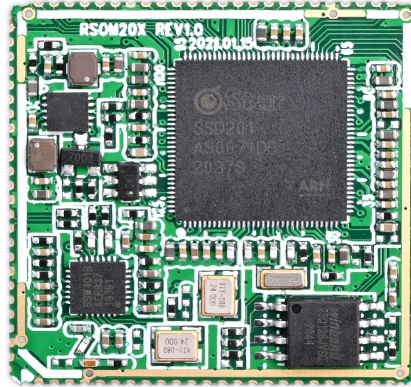


# System on Module

## SoM 20X



SSD20X is a highly integrated SoC chip from Sigmastar. It is based on ARM architecture (A7 dual core 1.2 GHz, integrates hardware H.264 / H.265 video decoder, built-in DDR, built-in 2D graphics engine, support for TTL/MiPI display driver interface, built-in Ethernet MAC and PHY, etc., mainly used in intelligent building indoor machine, smart home control, small gateway, elevator floor indicator, the speech recognition application of household appliances, VOIP, coffee machine and so on many scenes with screen display.

### Excellent Audio features

- Support stereo input and output
- Support 8K/16K/48KHz sampling rate recording
- ADC boost gain supports -6dB~15dB or 0dB~21dB with interval 3dB

- ADC digital gain supports -63.5dB~33dB with interval 0.5dB, can be muted to zero

- SNR of DR A-Weighted ADC > 90dB (@gain=0dB)

### Excellent video features

- H.264/AVC Decoder
- H.265/HEVC Encoder
- JPEG Decoder

### Rich peripheral interfaces

- Universal peripheral interface and bus
- GPIO, UART, SPI, CAN, PWM, I2C, IR, etc.

### Display Subsystem

- Built-in contrast, brightness, sharpness and saturation control

- TTL output HD 60fps,

- Support: RGB565/RGB666/RGB888 format

- MiPI TX DSI 4-channel with a maximum speed of 1.5Gbps and a maximum of 60 frames per second

- Support: ARGB1555 / ARGB444 / ARGB8888, RGB565, and YUV422 format

### Security engine

- Support AES/DES/3DES/RSA/SHA-1/SHA/256

- Support for safe startup

- Added hardware encryption IC

### Enterprise service

- Provide complete customization, technical support and mass production services

# Specifications



Processor	Sigmastar SSD201/SSD202D ARM® Cortex-A7 dual core, up to 1.2GHz Neon and FPU
Video Processor	Decoder:H.264/AVC,H.265/HEVC,I/P/B Max FHD(1920x1080)/60FPS Encoder:JPEG/MJPEG,YUV422,YUV420 Max FHD(1920x1080)/15FPS
Audio Processor	Support stereo input and output Support 8K/16K/48KHz sampling rate recording Gain adjustable
2D Graphics Engine	JPG,JPEG,PNG
RAM	Build-in 64MB DDR2-1333 (SSD201) <b>Build-in 128MB DDR3-1600 (SSD202D)</b>
ROM	128MB(256MB Optional,up to 2GB) SPI Nor Flash SPI Nand Flash(Default)
Encryption IC	Support
RTC+WDT	Build-in(ultra-low power)
OS	Linux kernel 4.9.84 + UI engine

## Peripheral interface extraction

SDIO 2.0	MIPI DSI
USB 2.0	IR
GPIOs	UART
PWM	TTL
I2C	RMII
DMIC(L/R)	SPI
SAR 3-ch	Timer

\*See the pin definitions in the hardware manual for details

## Mechanical properties

Power Supply	DC:3.3V
Power Consumer	<0.9W
Operating temperature range	-20°C~85°C
Relative humidity	10% ~ 90%
Size (mm)	29.5mm*29.5mm

# Board diagram

