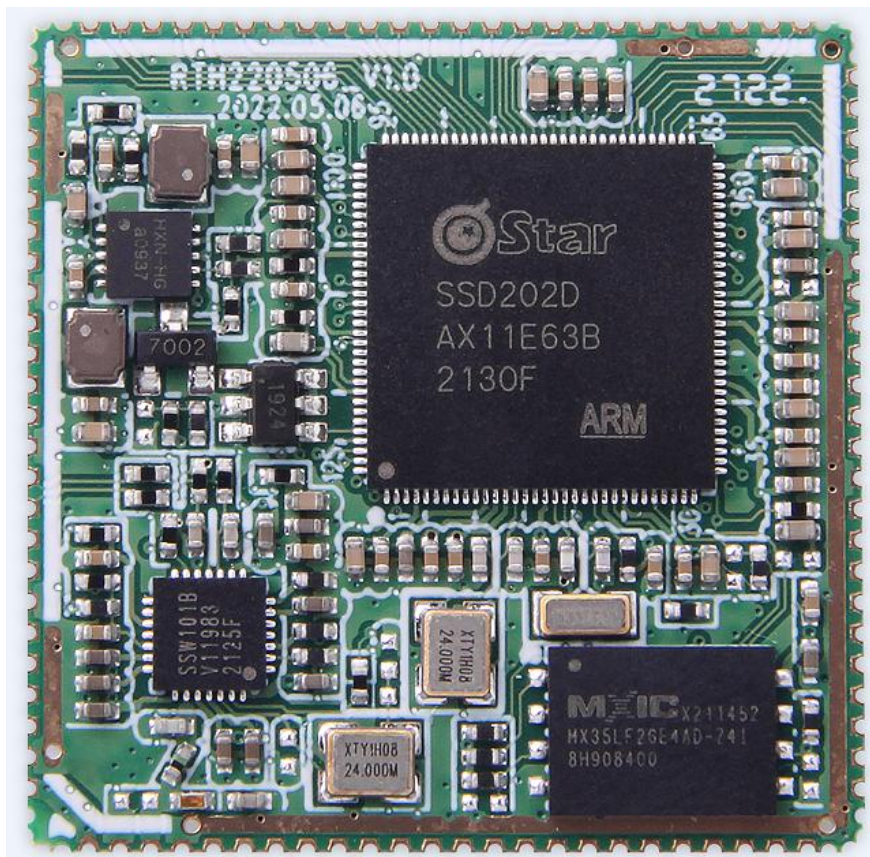


Sigmastar SSD201/SSD202 Core Board SPECIFICATION

MODEL:SOM-20x



Confirmation

REVISION HISTORY					
VERSION	DATE	BOARD ID	PAGE	DESCRIPTION	AUTHOR
V1.0	2022/6/13	RSOM20X REV1.0	8	Specification	
V1.01	2023/4/13	RTH220506_V1.0	8	Update	

APPROVED BY GENIATECH		
PREPARED BY 编写	CHECKED BY 审核	APPROVED BY 批准

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Shenzhen, Guangdong, China.

CONTENT

1. General Description	1
2. Product Pictures	1
3. Board View	2
4. Features	2
5. Support Formats	3
6. Extension GPIO definition	3
7. Module electrical parameters	5
8. Precautions for use	5

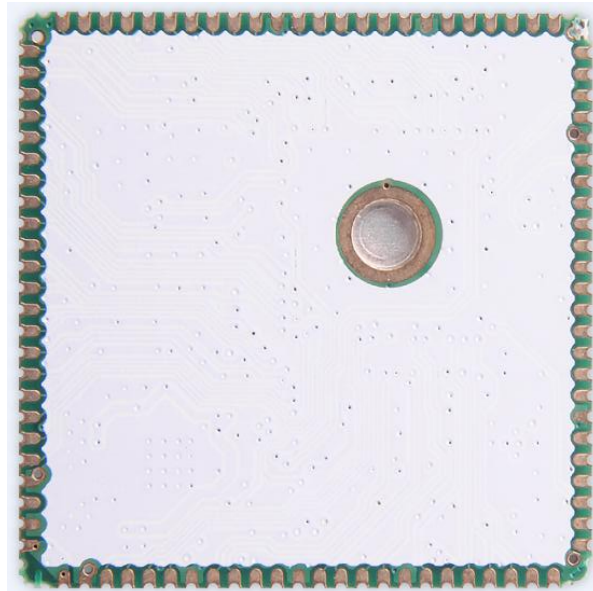
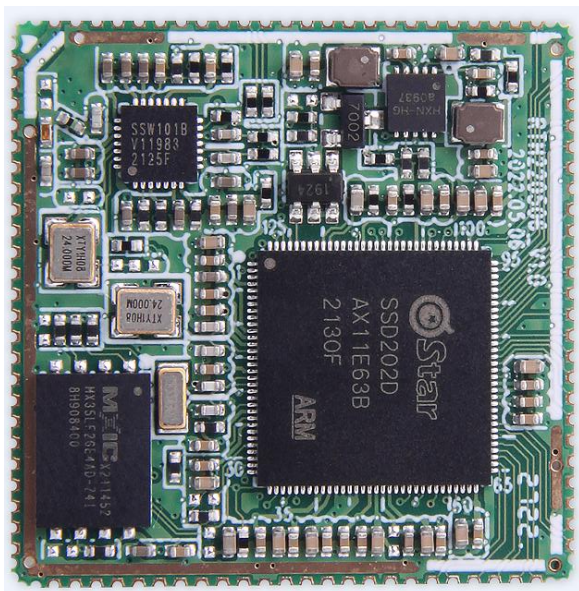
1. General Description

SOM20x is a SOM (System On Module) based on SigmaStar SSD201/SSD202 SoC (ARM Cortex A7 dual core). It has a small form factor as small as 2.95CM x 2.95CM, including WIFI, NAND and power circuit. It is designed for smart display, small building, smart electronics and IOT gateway.

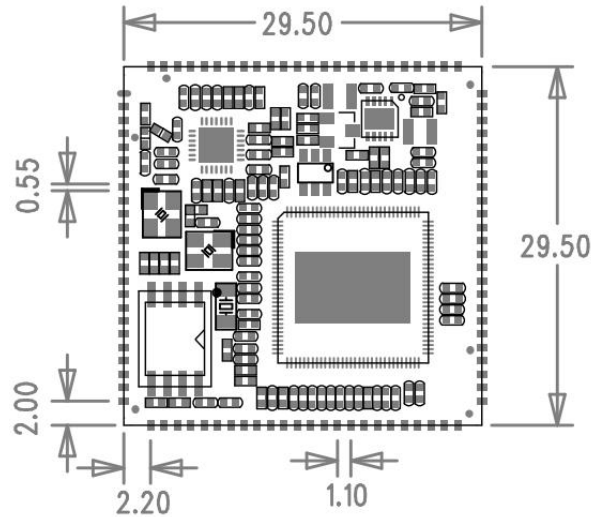
- Sigmastar SSD201/SSD202 with ARM Cortex-A7 Dual Core up to 1.2GHz
- 128MB RAM for SoM202 (64MB RAM for SoM201), 256MB(128MB/512MB optional) Nand Flash
- Small footprint (29.5mm*29.5mm)。Single side components
- Including one 10/100M PHY
- Tiny Linux OS, 1s boot time
- Supports MIPI-DSI 4-lane interface. TTL output up to HD 60fps with RGB565 or RGB666 or RGB888 format.
- With rich interfaces such as I2C, UART, SPI, SDIO, USB2.0, PWM, RMII, I2S(supports 8-way digital microphone array input), and others
- With immersion gold process pin, corrosion resistant, stable operation at 0 °C-80 °C working temperature for 7X24 hours
- Designed for Commercial Application
- 96 Pin 1.1mm interval, fully expandable

2. Product Pictures

Below pictures are for reference only:



3.Board View



4.Features

Item	Spec
CPU	SigmaStar SSD201/SSD202 ARM® Cortex-A7 dual core, up to 1.2GHz
GPU	Max FHD (1920*1080) /60FPS decoding, H.265/HEVC, I/P/B
Power	3.3V
Memory	SoM202:DDR3 128MB SoM201: DDR2 64MB
Flash	1/2/4 bit SPI-NOR/SPI-NAND Flash 128MB/256MB/512MB
OS	Linux kernel version: 4.9.84 UI flythings, littleVGL, miniGUI, QT
NIC	Max 2 10/100Mbps , one internal PHY, 1 RMII for ext PHY
WIFI	Singmaster wifi (SSW101B)
Display	MIPI/RGB: MIPI TX DSI 4-lan with max, 1.5Gbps and output up to FHD 60fps; Supports FHD graphic layer with Index 4/8, ARGB1555/ARGB4444/ARGB8888, RGB565, and YUV422 format.
Audio	1 x AMIC 1 x DMIC 1 x LINEOUTR/L, 8K/16K/32K/48KHz ;
USB	1 x USB 2.0 HOST
IR	1 x IR input (PM_IRIN)
Expansion	4 x UART (PM_UART used for Debug Serial) 1x SDIO2.0 (SD 2.0) 2x I2C、1 x I2S、1 x SPI、4 x PWM、GPIO

Size	29.5mm x 29.5mm
Pad Type	Stamp (96 PIN, 1.1mm pitch)
PCB	1.2mm 4 layers
Weight	8g

5.Support Formats

Video Decoder

H.264/AVC Variable block size;CABAC/CAVLC;Support max.resolution FHD 1080P@60fps

H.265/HEVC I/P/B slices;variable CTU size;High performance CABAC decoding;Support max.resolution FHD 1080P@60fps

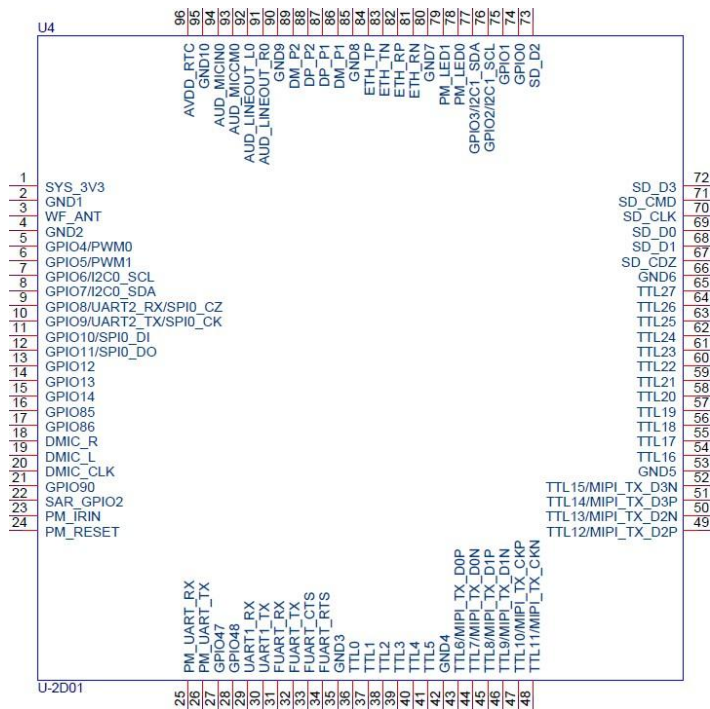
JPEG Encoder

Support JPEG baseline encoding

Support YUV422 or YUV420 formats

Support max. Resolution FHD(1920*1080) with 15fps

6. Extension GPIO definition



PIN	Default function	PIN	Default function
1	SYS_3V3	49	TTL12/MIPI_TX_D2P
2	GND1	50	TTL13/MIPI_TX_D2N

3	WF_ANT	51	TTL14/MIPI_TX_D3P
4	GND2	52	TTL15/MIPI_TX_D3N
5	GPIO4/PWM0	53	GND5
6	GPIO5/PWM0	54	TTL16
7	GPIO6/I2C0_SCL	55	TTL17
8	GPIO7/I2C0_SDA	56	TTL18
9	GPIO8/UART2_RX/SPIO_CZ	57	TTL19
10	GPIO9/UART2_TX/SPIO_CK	58	TTL20
11	GPIO10/SPIO_DI	59	TTL21
12	GPIO11/SPIO_DI	60	TTL22
13	GPIO12	61	TTL23
14	GPIO13	62	TTL24
15	GPIO14	63	TTL25
16	GPIO85	64	TTL26
17	GPIO86	65	TTL27
18	DMIC_R	66	GND6
19	DMIC_L	67	SD_CDZ
20	DMIC_CLK	68	SD_D1
21	GPIO90	69	SD_DO
22	SAR_GPIO2	70	SD_CLK
23	PM_IRIN	71	SD_CMD
24	PM_RESET	72	SD_D3
25	PM_UART_RX	73	SD_D2
26	PM_UART_TX	74	GPIO0
27	GPIO47	75	GPIO1
28	GPIO46	76	GPIO2/I2C1_SCL
29	UART1_RX	77	GPIO3/I2C1_SDA
30	UART1_TX	78	PM_LED0
31	FUART_RX	79	PM_LED1
32	FUART_TX	80	GND
33	FUART_CTS	81	ETH_RN
34	FUART_RTS	82	ETH_RP
35	GND3	83	ETH_TN
36	TTL0	84	ETH_TR
37	TTL1	85	GND8
38	TTL2	86	DM_P1

39	TTL3	87	DP_P1
40	TTL4	88	DP_P2
41	TTL5	89	DM_P2
42	GND4	90	GND9
43	TTL6/MIPI_TX_D0P	91	AUD_LINEOUT_R0
44	TTL7/MIPI_TX_D0N	92	AUD_LINEOUT_LO
45	TTL8/MIPI_TX_D1P	93	AUD_MICCM0
46	TTL9/MIPI_TX_D1N	94	AUD_MICIN0
47	TTL10/MIPI_TX_CKP	95	GND10
48	TTL11/MIPI_TX_CKN	96	AVDD_RTC

7. Module electrical parameters

Power pin	Minimum value	Maximal value	Power supply ripple requirements
SYS_3V3	3.2V	3.4V	<30mVrms

8. Precautions for use

1. Relative humidity: 10% ~ 90% .
2. Storage temperature: -10 ~ 125 °C
3. Operation temperature: 0 ~ 80 °C
4. Do not squeeze、 distort or disassemble the board.
5. Keep the board away from static electricity .
6. Keep the board away from water and other liquid.
7. Clean the board with soft and clean dry cloth when it's dirty.
8. Don't use long connect wires which may affect performance and image quality.