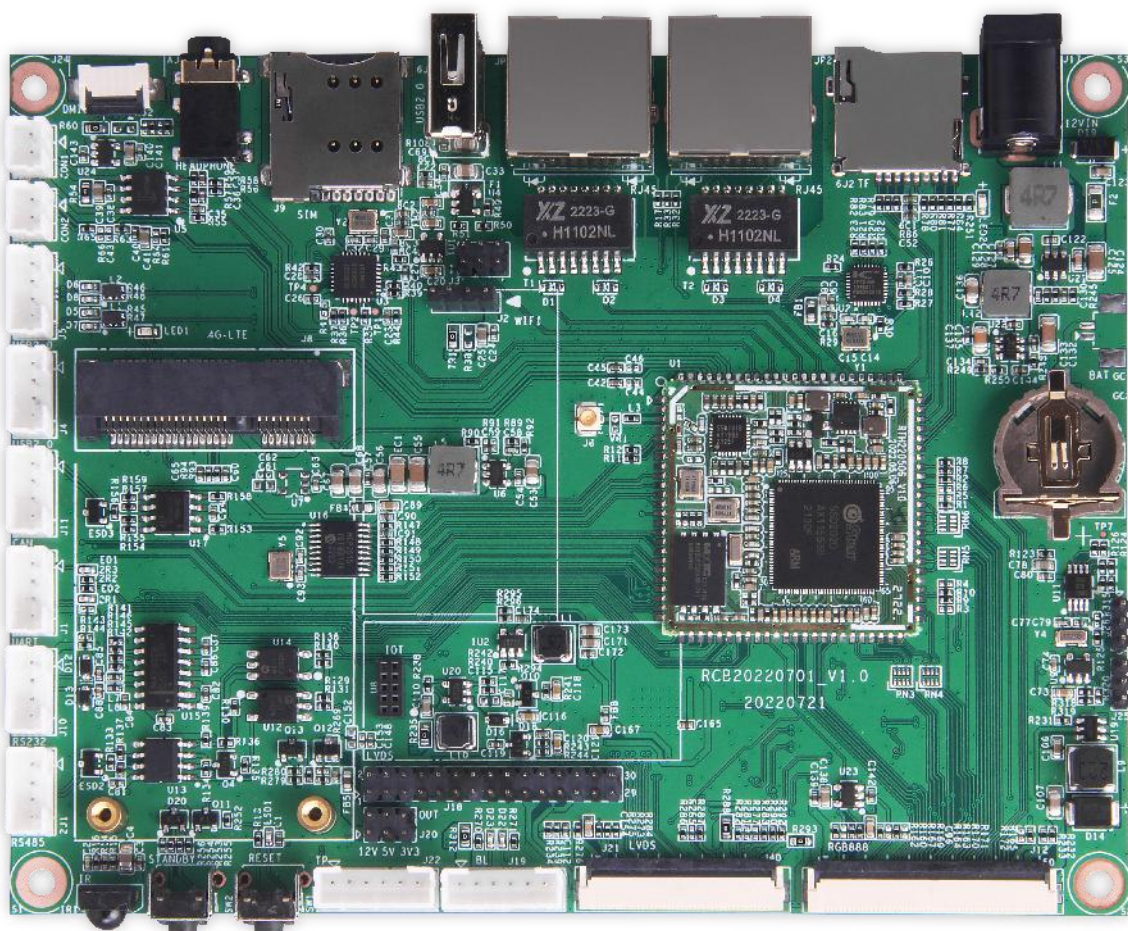


IoT Development Board Specification

MODEL:DB202



Confirmation

REVISION HISTORY					
VERSION	DATE	BOARD ID	PAGE	DESCRIPTION	AUTHOR
V1.0	2022/7/13	RCB20220701_V1.0	10	Specification	
V1.01	2022/9/7	RCB20220701_V1.0	10	Add LVDS describe	

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

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Website: www.geniatech.com

Address: Room 02-04, 10 / F, Block A, Building 8, Shenzhen International Innovation Valley, Dashi Road, Nanshan District, Shenzhen, Guangdong, China.

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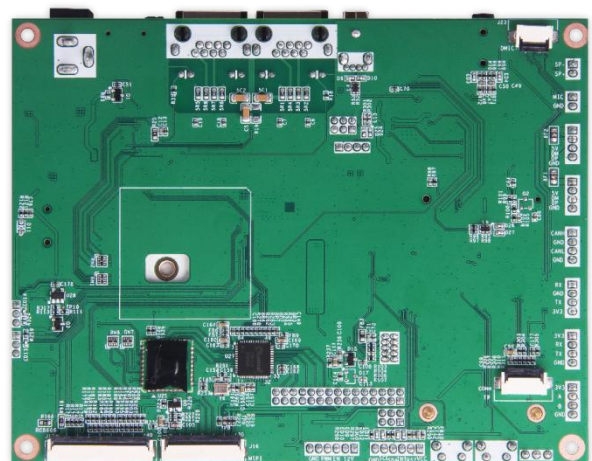
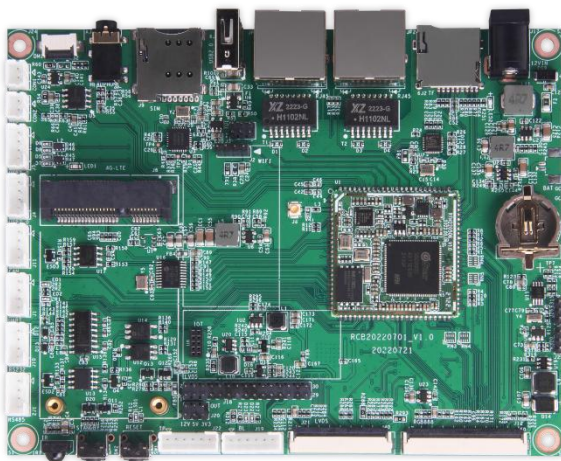
1. General Description

SSD20X is a highly integrated SoC chip from Sigmastar. It based on arm architecture (A7 dual core 1.2 GHz, integrates hardware H.264 / H.265 video decoder, built-in DDR, built-in 2 d 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.

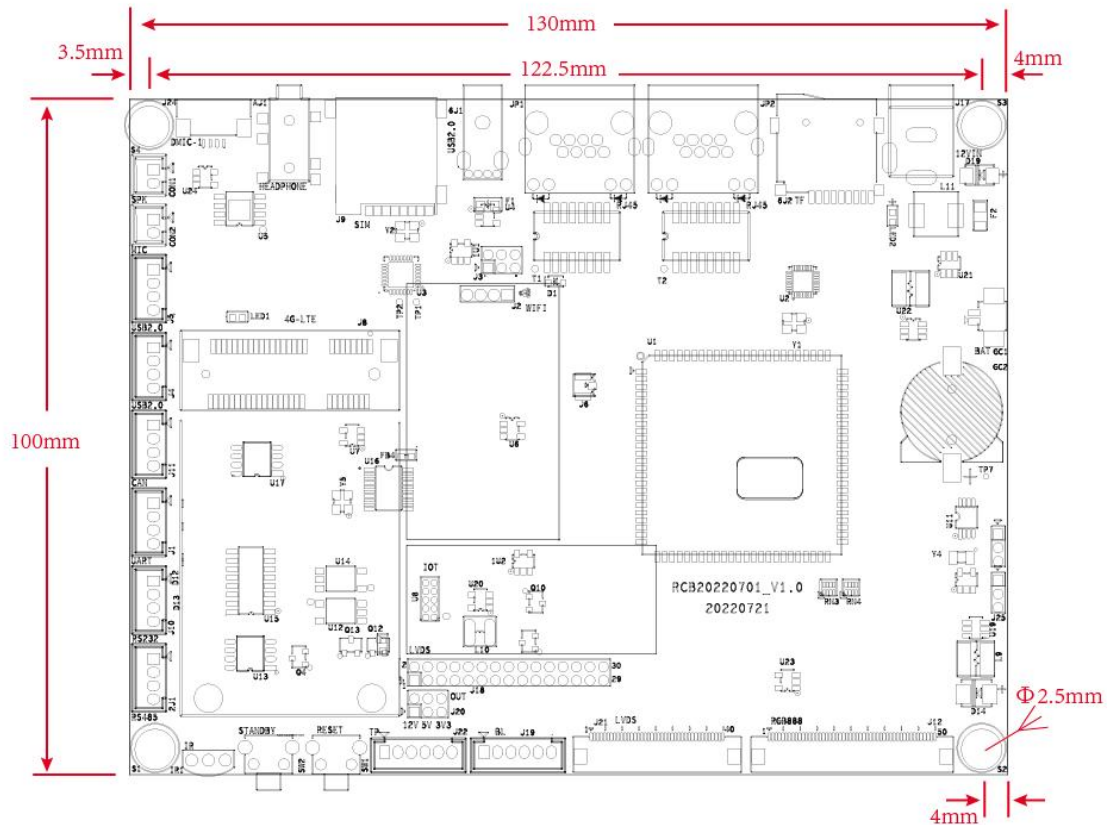
- Sigmastar SSD201/SSD202 with ARM Cortex-A7 Dual Core up to 1.2GHz
- 128MB RAM for SoM202 (64MB RAM for SoM201), 128MB/256MB Nand Flash
- Two 10/100M Ethernet
- Tiny Linux OS, 1s boot time
- Supports MIPI-DSI 4-lane interface. TTL supports the RGB666 or RGB888 format, and also supports the LVDS interface, with a maximum resolution of 1920 x 1080 FHD 60fps
- With rich interfaces such as I2C, UART, SPI, USB2.0, RMII, I2S(supports digital microphone array input), and others
- Support stereo input and output
- Support 8K/16K/48KHz sampling rate recording
- Stable operation at 0 °C-80 °C working temperature for 7X24 hours
- Designed for Commercial Application

2. Product Pictures

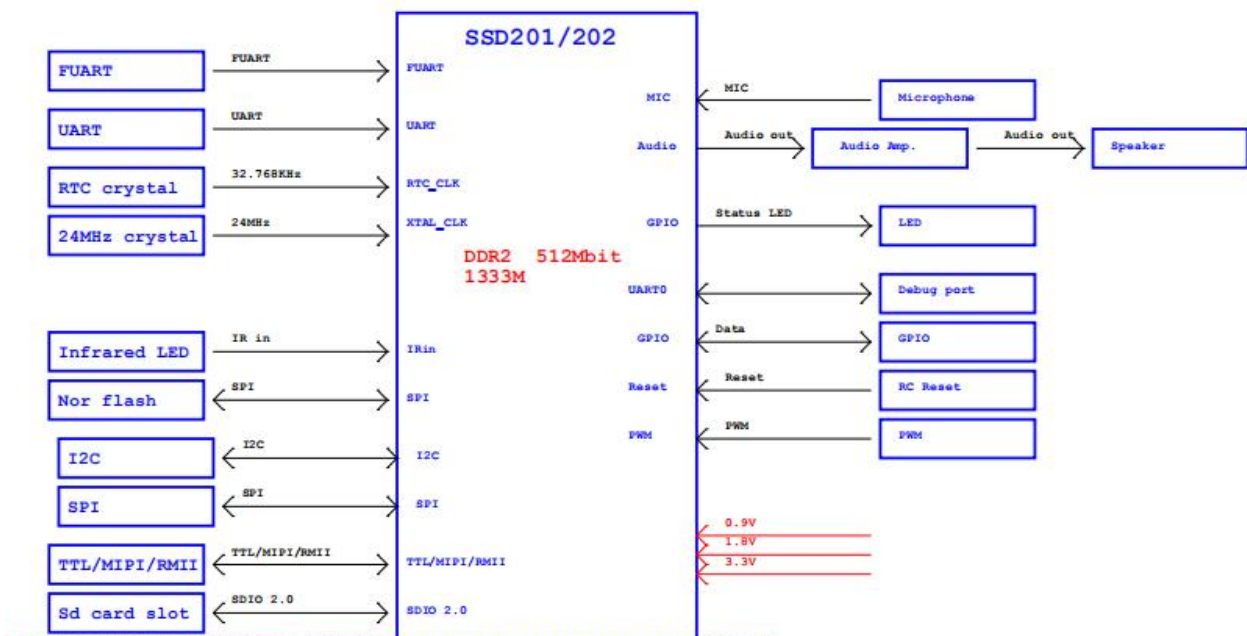
Below pictures are for reference only:



3.Board View



Block Diagram:



4.Features

CPU	Chip	SigmaStar SSD201/SSD202
	CPU Frequency	ARM® Cortex-A7 dual core up to 1.2GHz
Storage	Internal Memory	SoM202:DDR3 128MB SoM201: DDR2 64MB
	Internal Storage	1/2/4 bit SPI-NOR/SPI-NAND Flash 128MB/256MB/512MB
Network	2G/3G/4G/LTE	LTE for EU、LTE for AU、LTE for US(Optional)
	Built-in WiFi	802.11 a/b/g/n
	WiFi 2.4G Frequency Range	2.400~2.497GHz
	USB WiFi	Can delete built-in WiFi module,use external USB WiFi module.
	Ethernet port(LAN)	1*RJ45 10/100Mbps LAN(JP1) Default Ethernet port 1*RJ45 10/100Mbps (JP2),This network port is reused with the RGB display interface, and resistance hopping is required
Display	MIPI DSI	4-lane with max. 1.5Gbps and output up to FHD 60fps 30Pin FPC 0.5
	RGB	HD 60fps with RGB666 40Pin FPC 0.5
		HD 60fps with RGB888 format 50Pin FPC 0.5
	LVDS	Compatible with VESA and JEIDA standard Resolution Up to 1920x1080 60Hz or any other Resolution whose Pixel Clk less than 200MHz 40Pin FPC 0.5
		Compatible with VESA and JEIDA standard Resolution Up to 1920x1080 60Hz or any other Resolution whose Pixel Clk less than 200MHz 2*15Pin 2.0
	LVDS voltage	12V/5V/3.3V selection 6Pin 2.0 ranking
Touch interface	Capacitive touch	6Pin2.0 ranking
		6Pin FPC 0.5
I/O interface	USB2.0	USB-A 2.0 x 1 Two 4Pin 2.0 ranking
	CAN	4Pin 2.0 ranking
	RS232	4Pin 2.0 ranking
	RS485	4Pin 2.0 ranking
	UART	4Pin 2.0 ranking
Protocol	RS485	TIA485/EIA-485-A -7~+12V
	CAN	ISO11898-2:2016 and SAE J2284-1 to SAE J2284-5 ESD Protection(8kV IEC and HBM) 5Mbit/s

	UART	IO level 3.3V
	RS232	±5~±15V
Audio interface	AMIC	8K/16K/32K/48KHz sampling rate
	DMIC	8K/16K/32K/48KHz sampling rate
	1 x LINEOUT	8K/16K/32K/48KHz sampling rate
IR Interface	1 x IR input	NEC code value
Extended interface	LEDs	Power
	SIM Slot	Micro SIM Card
	SD Card	Micro SD Card
	GTIoT	2*5P 1.27 socket
	Debug	4P 2.0 ranking
	Button	Reset,User-defined custom keys(Power Standby)
Power pack	Supply voltage	DC12V 2A (4.5V~18V)
	DC Interface	Φ5.5/2.1mm
	Energy	Within 3W(No display screen for reference only)
	RTC&Watchdog	3V
Environment	Operating temperature	0℃ - 80℃
	Operating humidity	10%~90%
Mechanical properties	Size (mm)	130*100
	Net Weight (g)	90
Operating system(OS)	Linux kernel version: 4.9.84 UI flythings, littleVGL, miniGUI, QT	
Other	WiFi antenna	

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

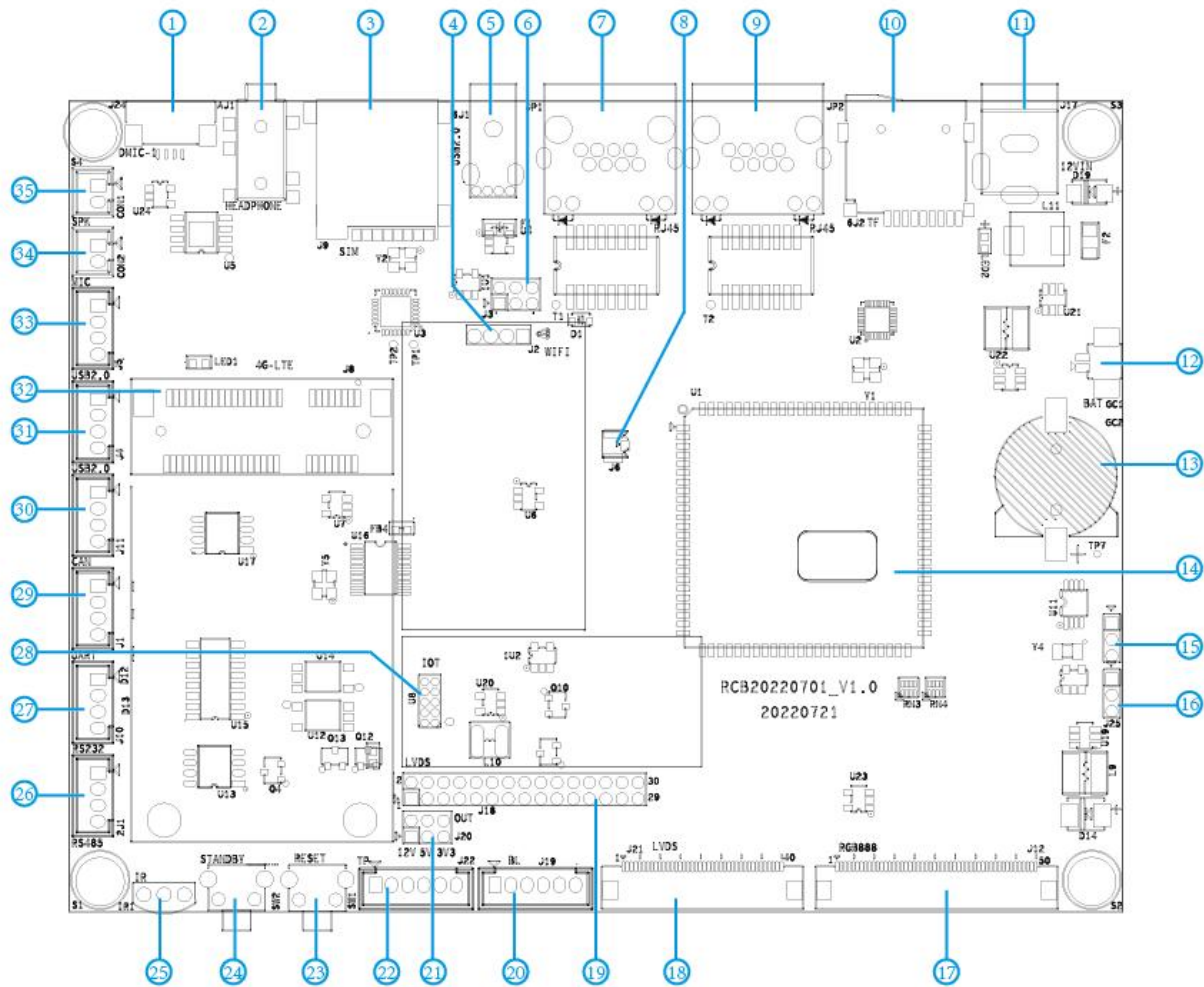
JPEG Encoder

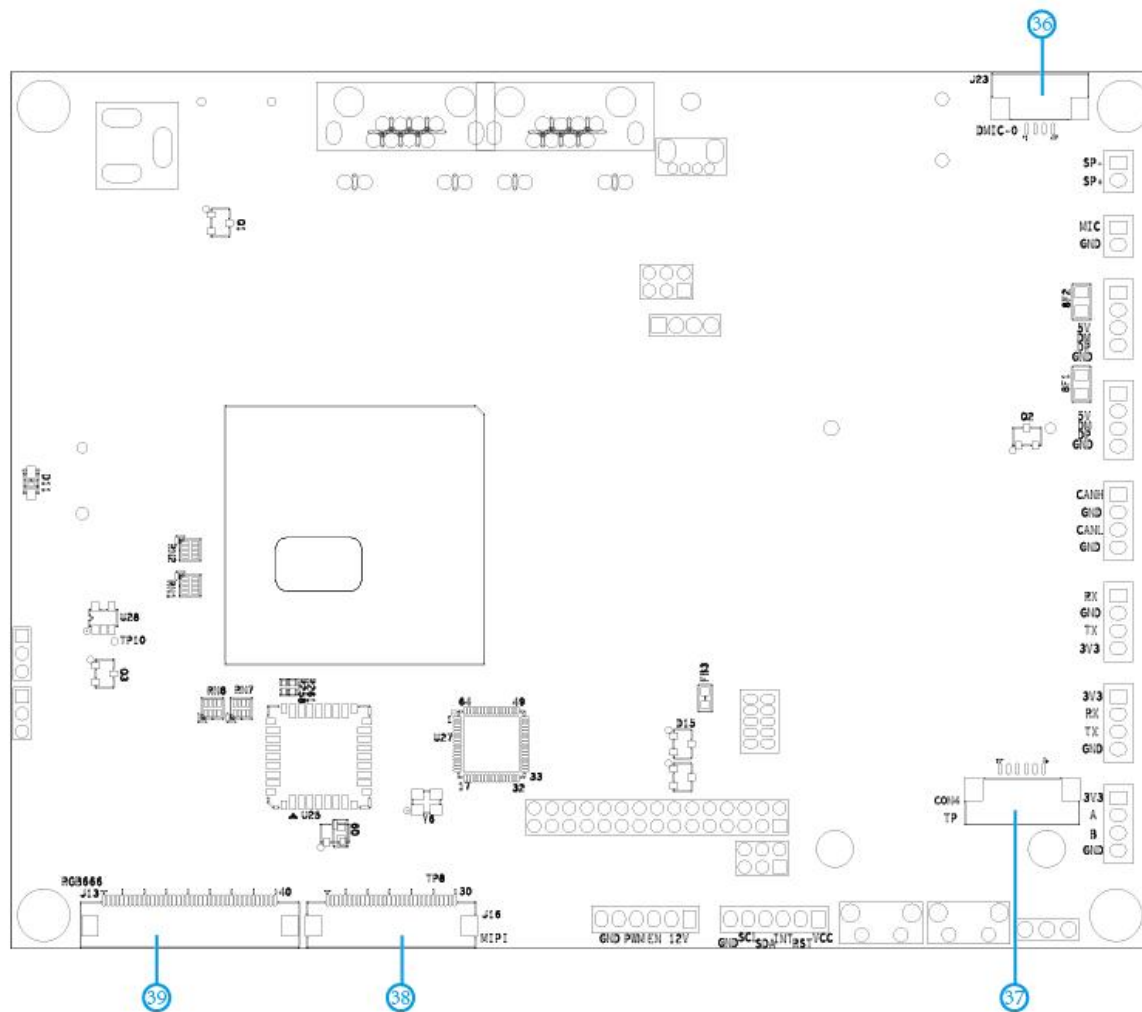
Support JPEG baseline encoding

Support YUV422 or YUV420 formats

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

6. Extension GPIO definition





No.	Name	Description
1	DMIC interface	1*6Pin 0.5 FPC
2	Audio+Mic	1*3.5mm Jack
3	SIM Card Slot	1*Micro SIM Card
4	USB2.0-1	1*USB2.0 4Pin 2.0mm(For the USB WiFi modules)
5	USB2.0	1*USB2.0 Type A
6	USB2.0-1 Skipping selection	1* (2*3Pin 2.0mm)
7	LAN1	1*RJ45 10/100(LED)
8	WIFI ANT	1*IPXE Port
9	LAN2	1*RJ45 10/100(LED)
10	TF Card Slot	1*Micro SD Card
11	DC IN	1* DC IN (Φ5.5/2.1mm)
12	RTC Battery interface	1*2Pin
13	RTC Battery	CR1220 battery seat
14	SoM202	1*96Pin 1.0mm stamp package

15	WDT Function Selection	1*3Pin2.0mm
16	MIPI/LVDS Function Selection	1*3Pin2.0mm
17	RGB888	1*50Pin0.5mm FPC
18	LVDS	1*30Pin0.5mm FPC
19	LVDS	1*(2*15Pin2.0mm)
21	LCD Voltage	1*6Pin2.0mm
21	LCD Voltage choose	1*(3*2Pin 2.0mm)
22	I2C(TP)	1*6Pin2.0mm
23	Reset key	1*key
24	User-defined custom keys	1*key
25	IR Reception	1*IR
26	RS485	1*4Pin2.0mm
27	RS232	1*4Pin2.0mm
28	GTIoT	1*(2x5Pin1.27mm)
29	Debug UART	1*4Pin2.0mm
30	CAN	1*4Pin2.0mm
31	USB2.0-2	1*4Pin2.0mm
32	Mini PCIe	1*52Pin 8.5mm
33	USB2.0-3	1*4Pin2.0mm
34	AMIC	1*2Pin2.0mm
35	SPK	1*2Pin2.0mm
36	DMIC	1*6Pin0.5mm FPC
37	I2C(TP)	1*6Pin0.5mm FPC
38	MIPI	1*30Pin0.5mm FPC
39	RGB666	1*40Pin0.5mm FPC

7.Precautions for use

1. Relative humidity: 10% ~ 90% .
2. Storage temperature: -10 ~ 125℃
3. Operation temperature: 0 ~ 80℃
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.