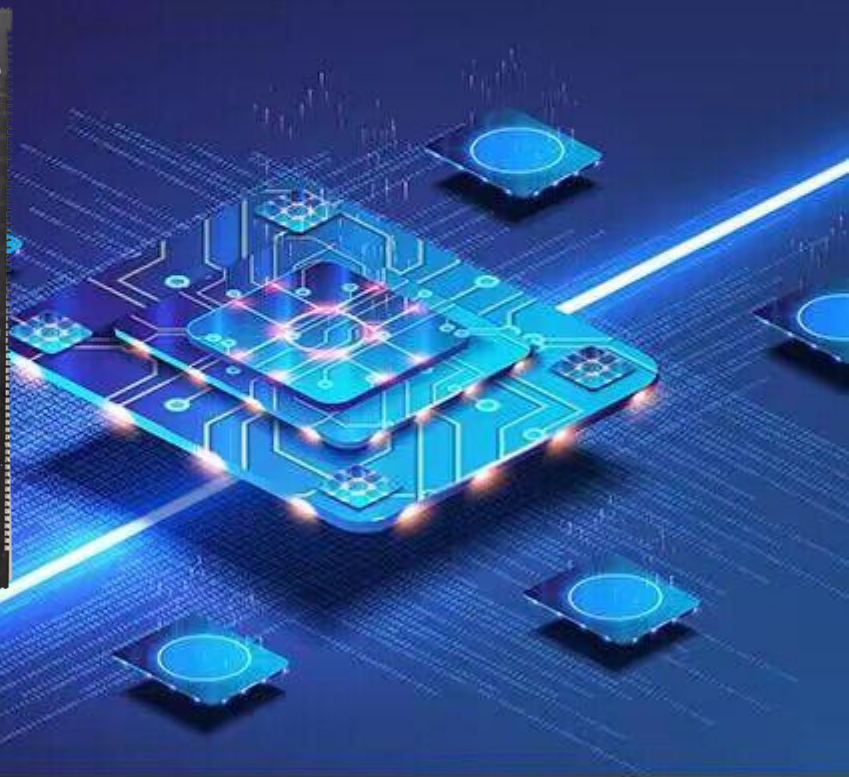


芯联

SSD2386-Core-Board

邮票孔核心板



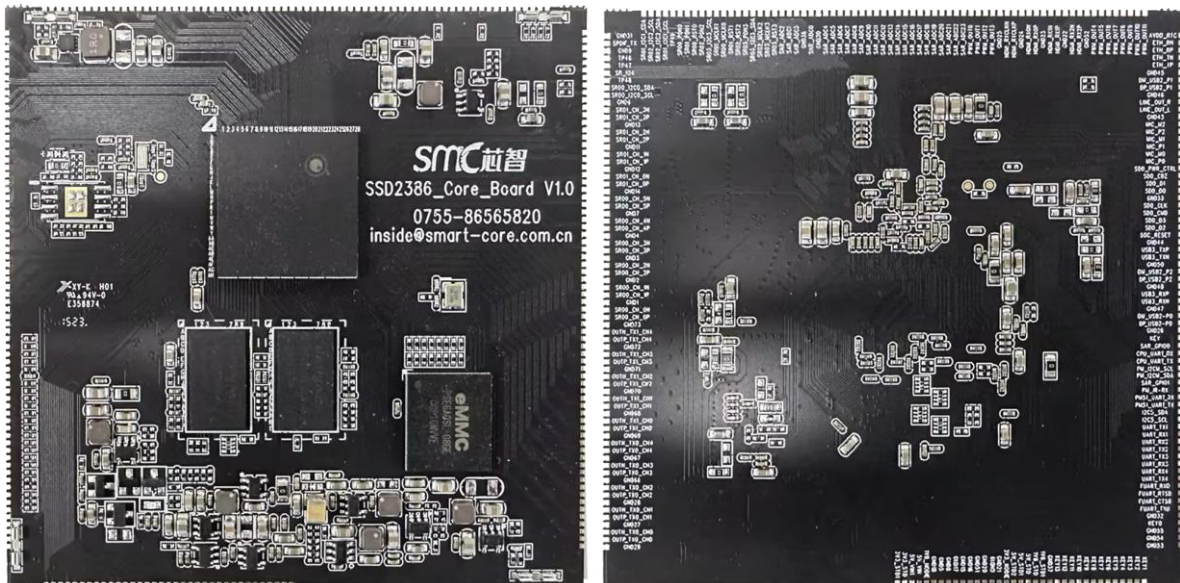
王丹萌-18566214297

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## 产品简介

SSD2386\_Core\_Board 由245个引脚设计的邮票孔板卡。板卡采用 4 核 ARM Cortex-A55处理器芯片SSD2386，搭配2颗1G \* 2 DDR4内存，8GB EMMC存储。同时预留了 SPI FLASH 存储芯片。



### 高性能控制器

基于 Sigmastar 高性能控制器，采用 4 核 ARM Cortex-A55，支持 POC 开机功能。具有 HDMI、MIPI Sensor、CCIR656/601、BIT1120 等视频输入接口；拥有强大的图像理解码器、3D 功能、IPU 算力以及内置 8 位的 MCU。

### 丰富的扩展接口

- 1、支持 4lane 或者 2lane MIPI RX 接口
- 2、支持 3 个 USB2.0、1 个 USB3.0 接口
- 3、支持 6 路 UART 和 1 路 FUART
- 4、支持 4 路精度 10bit 和 24 路精度 12bit 的 ADC 采样
- 5、支持 8 路 PWM 输入和 20 路 PWM 输出
- 6、支持 2 路 SPI 接口
- 7、支持 3 路 AMIC 差分输入
- 8、支持 Lineout 单端双声道输出

### 强大的显示能力

- 9、支持 RGB888 TTL Panel
- 10、支持 MIPI Panel
- 11、支持 Daul LVDS Panel
- 12、支持 1 路 HDMI1.4 接口输入

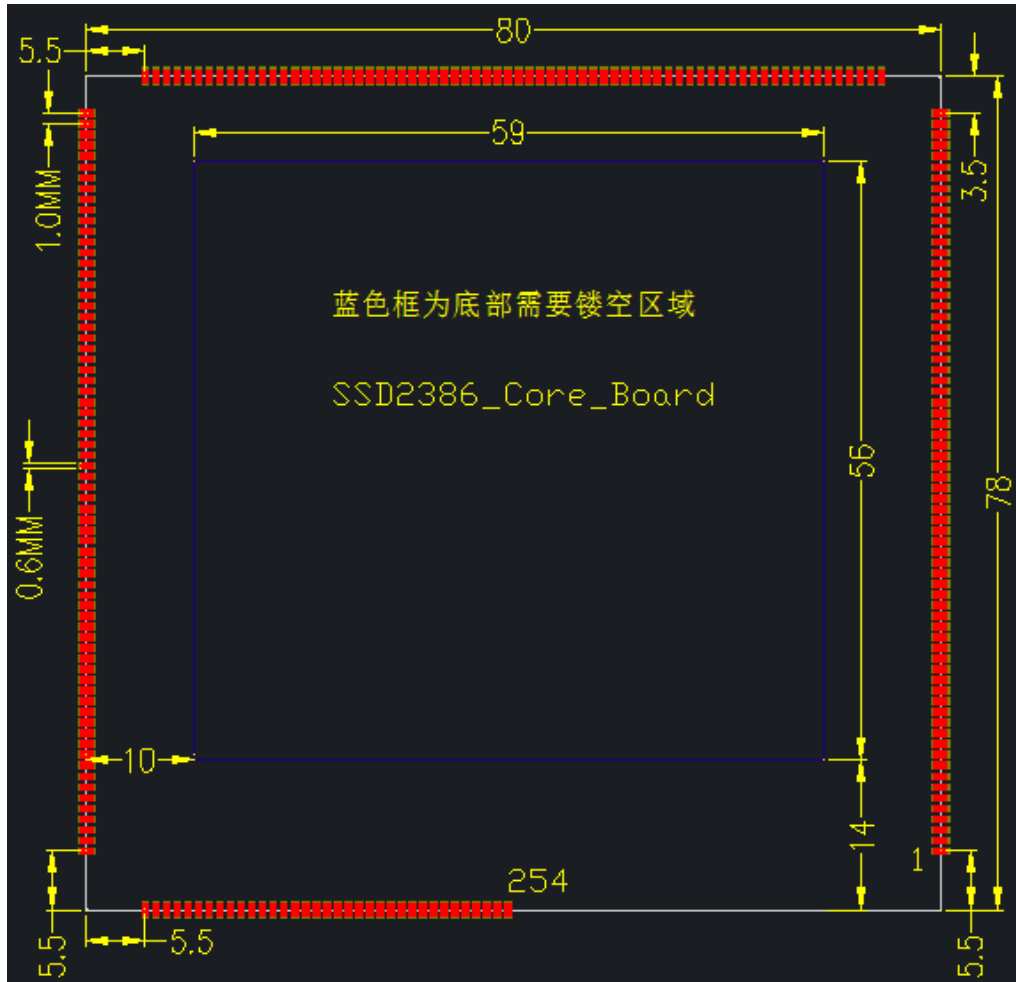
### 应用场景

广泛应用于单 LCD 投影仪、广告机、智能家电、智能扫地机、AIOT 智能语音交互等场景。

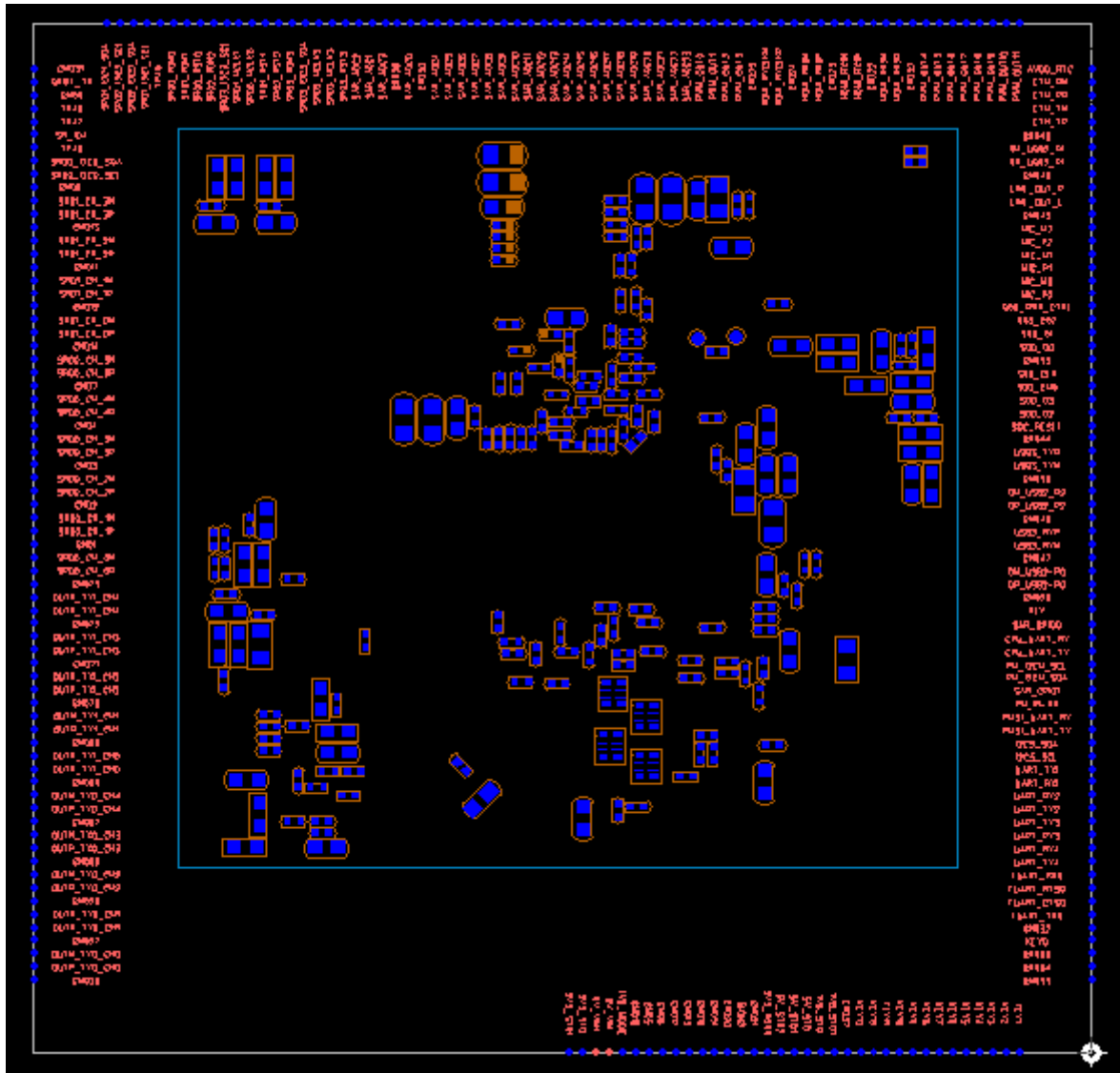
## 规格参数

基本参数	
主控芯片	SigmaStar SSD2386
DDR4 内存	板载 1Gx2 、最大可支持 4G
EMMC	板载 16G 、最大可支持 64G
硬件特性	
以太网	具备自适应 10M/100M 网口
无线网络	支持 USB WIFI
显示	支持 RGB888 TTL Panel (Max 720P@60fps) 支持 MIPI Panel (Max 2560*1600@60fps) 支持 4lane (MIPI00) 或者 2lane (MIPI01) MIPI RX 接口
音频	SPDIF 、 Line Out 单端双声道输出
USB	支持 2 个 USB2.0 接口及 1 个 USB3.0 接口
调试	串口调试、以太网、USB、JTAG
扩展接口	具备 2 路 SPI 接口 支持 4lane (MIPI00) 或者 2lane (MIPI01) MIPI RX 接口 具备两个 HDMI 接口
工作温度	-20° C ~ +70° C
系统软件	
系统支持	Android V12
外观规格	
核心板尺寸	80*78MM
接口类型	邮票孔方式 245 PIN 间距 1.0 MM 焊盘宽度 0.6MM
PCB 规格	FR4 4 层板 设计 黑色沉金工艺

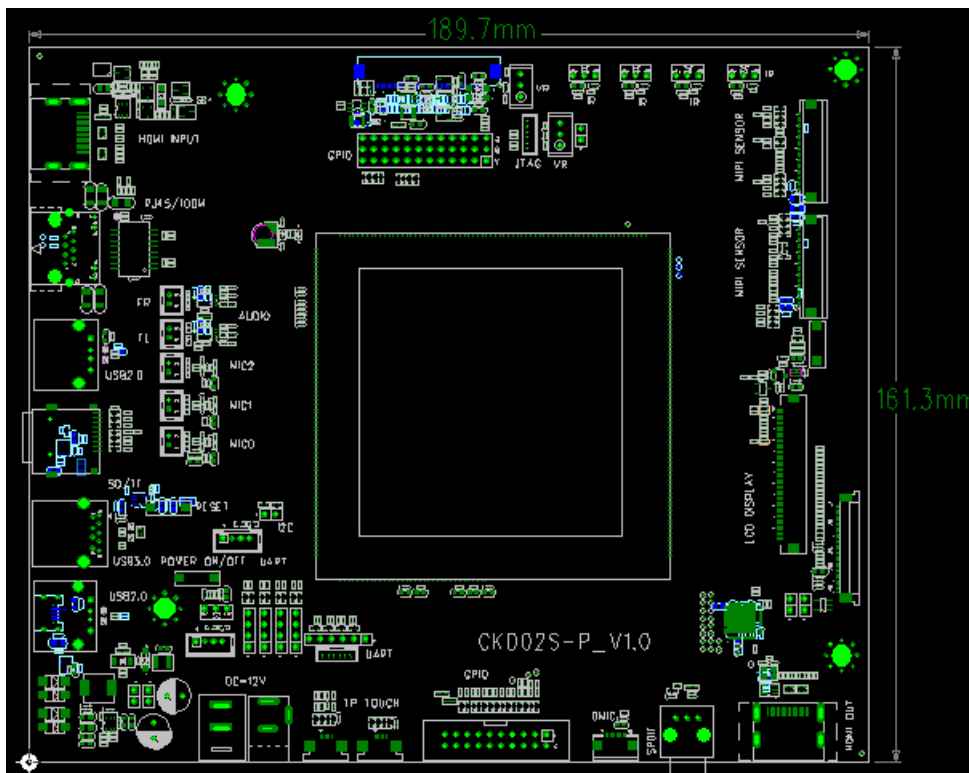
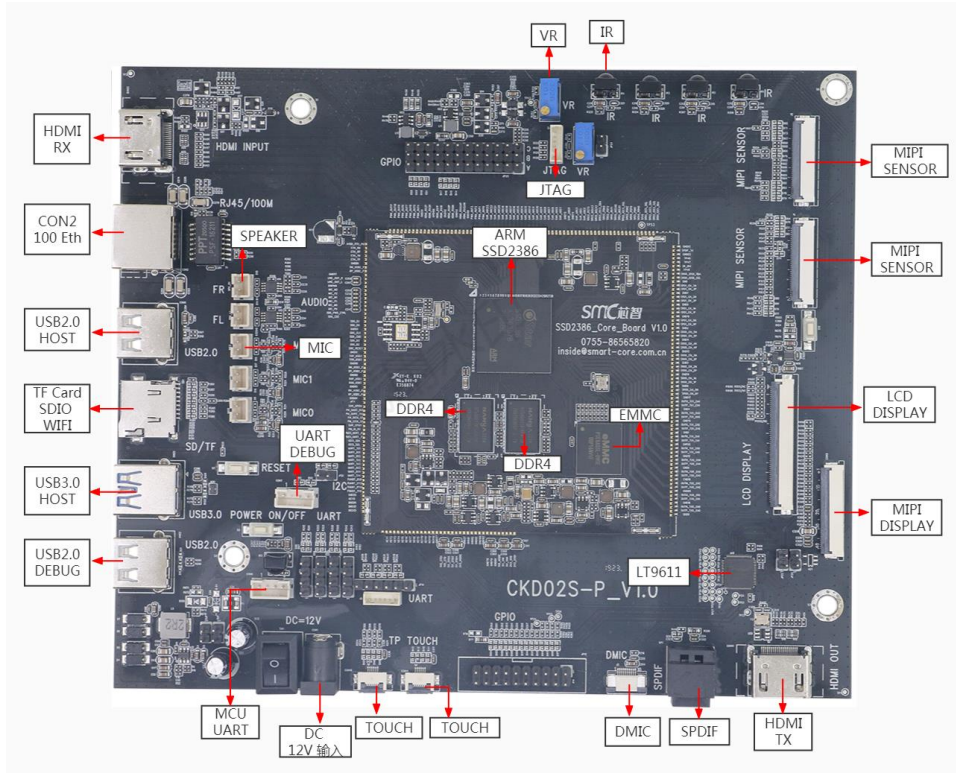
## 板卡尺寸



# 接口描述



# 核心板+底板



## 接口定义

Part A 1-70 PIN 定义				
PIN	名称	状态	功能定义	备注
1	GND29	GND	Ground	
2	OUTP_TX0_CH0	I/O	MIPI Transmit Group 0 Channel 0 Positive	
3	OUTN_TX0_CH0	I/O	MIPI Transmit Group 0 Channel 0 Negative	
4	GND27	GND	Ground	
5	OUTP_TX0_CH1	I/O	MIPI Transmit Group 0 Channel 1 Positive	
6	OUTN_TX0_CH1	I/O	MIPI Transmit Group 0 Channel 1 Negative	
7	GND28	GND	Ground	
8	OUTP_TX0_CH2	I/O	MIPI Transmit Group 0 Channel 2 Positive	
9	OUTN_TX0_CH2	I/O	MIPI Transmit Group 0 Channel 2 Negative	
10	GND66	GND	Ground	
11	OUTP_TX0_CH3	I/O	MIPI Transmit Group 0 Channel 3 Positive	
12	OUTN_TX0_CH3	I/O	MIPI Transmit Group 0 Channel 3 Negative	
13	GND67	GND	Ground	
14	OUTP_TX0_CH4	I/O	MIPI Transmit Group 0 Channel 4 Positive	
15	OUTN_TX0_CH4	I/O	MIPI Transmit Group 0 Channel 4 Negative	
16	GND69	GND	Ground	
17	OUTP_TX1_CH0	I/O	MIPI Transmit Group 1 Channel 0 Positive	
18	OUTN_TX1_CH0	I/O	MIPI Transmit Group 1 Channel 0 Negative	
19	GND68	GND	Ground	
20	OUTP_TX1_CH1	I/O	MIPI Transmit Group 1 Channel 1 Positive	
21	OUTN_TX1_CH1	I/O	MIPI Transmit Group 1 Channel 1 Negative	
22	GND70	GND	Ground	
23	OUTP_TX1_CH2	I/O	MIPI Transmit Group 1 Channel 2 Positive	
24	OUTN_TX1_CH2	I/O	MIPI Transmit Group 1 Channel 2 Negative	
25	GND71	GND	Ground	



Part A 1-70 PIN 定义				
PIN	名称	状态	功能定义	备注
26	OUTP_TX1_CH3	I/O	MIPI Transmit Group 1 Channel 3 Positive	
27	OUTN_TX1_CH3	I/O	MIPI Transmit Group 1 Channel 3 Negative	
28	GND72	GND	Ground	
29	OUTP_TX1_CH4	I/O	MIPI Transmit Group 1 Channel 4 Positive	
30	OUTN_TX1_CH4	I/O	MIPI Transmit Group 1 Channel 4 Negative	
31	GND73	GND	Ground	
32	SR00_CH_OP	I	Sensor Group 0 Channel 0 Positive Input	
33	SR00_CH_ON	I	Sensor Group 0 Channel 0 Negative Input	
34	GND1	GND	Ground	
35	SR00_CH_1P	I	Sensor Group 0 Channel 1 Positive Input	
36	SR00_CH_1N	I	Sensor Group 0 Channel 1 Negative Input	
37	GND2	GND	Ground	
38	SR00_CH_2P	I	Sensor Group 0 Channel 2 Positive Input	
39	SR00_CH_2N	I	Sensor Group 0 Channel 2 Negative Input	
40	GND3	GND	Ground	
41	SR00_CH_3P	I	Sensor Group 0 Channel 3 Positive Input	
42	SR00_CH_3N	I	Sensor Group 0 Channel 3 C Input	
43	GND4	GND	Ground	
44	SR00_CH_4P	I	Sensor Group 0 Channel 4 Positive Input	
45	SR00_CH_4N	I	Sensor Group 0 Channel 4 Negative Input	
46	GND7	GND	Ground	
47	SR00_CH_5P	I	Sensor Group 0 Channel 5 Positive Input	
48	SR00_CH_5N	I	Sensor Group 0 Channel 5 Negative Input	
49	GND14	GND	Ground	
50	SR01_CH_OP	I	Sensor Group 1 Channel 0 Positive Input	

Part A 1-70 PIN 定义				
PIN	名称	状态	功能定义	备注
51	SR01_CH_0N	I	Sensor Group 1 Channel 0 Negative Input	
52	GND12	GND	Ground	
53	SR01_CH_1P	I	Sensor Group 1 Channel 1 Positive Input	
54	SR01_CH_1N	I	Sensor Group 1 Channel 1 Negative Input	
55	GND11	GND	Ground	
56	SR01_CH_2P	I	Sensor Group 1 Channel 2 Positive Input	
57	SR01_CH_2N	I	Sensor Group 1 Channel 2 Negative Input	
58	GND13	GND	Ground	
59	SR01_CH_3P	I	Sensor Group 1 Channel 3 Positive Input	
60	SR01_CH_3N	I	Sensor Group 1 Channel 3 Negative Input	
61	GND6	GND	Ground	
62	SR00_I2CO_SCL	0	I2C 0 Master I2C Clock	
63	SR00_I2CO_SDA	I/O	I2C 0 Master I2C Data	
64	TP48	I/O	General Purpose Input/Output 2	
65	SR_IO4	I/O	General Purpose Input/Output 4	
66	TP47	I/O	General Purpose Input/Output 1	
67	TP46	I/O	General Purpose Input/Output 0	
68	GND9	GND	Ground	
69	SPDIF_TX	I/O	General Purpose Input/Output	
70	GND31	GND	Ground	

Part B 71-140 PIN 定义				
PIN	名称	状态	功能定义	备注
71	SR01_I2C1_SDA	I/O	I2C 1 Master I2C Data (VDDP3318_3 domain)	
72	SR02_I2C2_SCL	0	I2C 2 Master I2C Clock (VDDP3318_3 domain)	
73	SR02_I2C2_SDA	I/O	I2C 2 Master I2C Data (VDDP3318_3 domain)	
74	SR01_I2C1_SCL	0	I2C 1 Master I2C Clock (VDDP3318_3 domain)	
75	TP49	I/O	General Purpose Input/Output 3	
76	SR00_PDN0	I/O	Sensor Power Down 0(Output)	
77	SR01_PDN1	I/O	Sensor Power Down 1(Output)	
78	SR00_RST0	I/O	Sensor Reset 0 (Output)	
79	SR02_PDN2	I/O	Sensor Power Down 2(Output)	
80	SR03_I2C3_SCL	0	I2C 3 Master I2C Clock	
81	SR01_MCLK1	I/O	Sensor MCLK 1 (Output)	
82	SR00_MCLK0	I/O	Sensor MCLK 0 (Output)	
83	SR01_RST1	I/O	Sensor Reset 1 (Output) General Purpose	
84	SR02_RST2	I/O	Sensor Reset 2 (Output)	
85	SR03_PDN3	I/O	Sensor Reset 2 (Output)	
86	SR03_I2C3_SDA	I/O	General Purpose Input/Output	
87	SR02_MCLK2	I/O	Sensor MCLK 2 (Output)	
88	SR03_MCLK3	I/O	Sensor MCLK 3 (Output)	
89	SR03_RST3	I/O	Sensor Reset 3 (Output)	
90	SAR_ADC2	I/O	Muxed to SARADC Input Channel 2	
91	SAR_ADC1	I/O	Muxed to SARADC Input Channel 1	
92	SAR_ADC3	I/O	Muxed to SARADC Input Channel 3	
93	GND36	G	Ground	
94	SAR_ADC0	I/O	Muxed to SARADC Input Channel 0	
95	GND30	GND	Ground	

Part B 71-140 PIN 定义				
PIN	名称	状态	功能定义	备注
96	SAR_ADC4	I/O	Muxed to SARADC Input Channel 4	
97	SAR_ADC5	I/O	Muxed to SARADC Input Channel 5	
98	SAR_ADC6	I/O	Muxed to SARADC Input Channel 6	
99	SAR_ADC7	I/O	Muxed to SARADC Input Channel 7	
100	SAR_ADC8	I/O	Muxed to SARADC Input Channel 8	
101	SAR_ADC9	I/O	Muxed to SARADC Input Channel 9	
102	SAR_ADC10	I/O	Muxed to SARADC Input Channel 10	
103	SAR_ADC11	I/O	Muxed to SARADC Input Channel 11	
104	SAR_ADC12	I/O	Muxed to SARADC Input Channel 12	
105	SAR_ADC13	I/O	Muxed to SARADC Input Channel 13	
106	SAR_ADC14	I/O	Muxed to SARADC Input Channel 14	
107	SAR_ADC15	I/O	Muxed to SARADC Input Channel 15	
108	SAR_ADC16	I/O	Muxed to SARADC Input Channel 16	
109	SAR_ADC17	I/O	Muxed to SARADC Input Channel 17	
110	SAR_ADC18	I/O	Muxed to SARADC Input Channel 18	
111	SAR_ADC19	I/O	Muxed to SARADC Input Channel 19	
112	SAR_ADC20	I/O	Muxed to SARADC Input Channel 20	
113	SAR_ADC21	I/O	Muxed to SARADC Input Channel 21	
114	SAR_ADC22	I/O	Muxed to SARADC Input Channel 22	
115	SAR_ADC23	I/O	Muxed to SARADC Input Channel 23	
116	PWM_OUT0	I/O	Pulse Width Modulation 0	
117	PWM_OUT1	I/O	Pulse Width Modulation 1	
118	PWM_OUT2	I/O	Pulse Width Modulation 2	
119	PWM_OUT3	I/O	Pulse Width Modulation 3	
120	GND25	GND	Ground	

Part B 71-140 PIN 定义				
PIN	名称	状态	功能定义	备注
121	HDMI_RXCLKN	I	HDMI RX Clock Negative	
122	HDMI_RXCLKP	I	HDMI RX Clock Positive	
123	GND24	GND	Ground	
124	HDMI_RX0N	I	HDMI RX D0 Negative	
125	HDMI_RX0P	I	HDMI RX D0 Positive	
126	GND23	GND	Ground	
127	HDMI_RX1N	I	HDMI RX D1 Negative	
128	HDMI_RX1P	I	HDMI RX D1 Positive	
129	GND22	GND	Ground	
130	HDMI_RX2N	I	HDMI RX D2 Negative	
131	HDMI_RX2P	I	HDMI RX D2 Positive	
132	GND52	GND	Ground	
133	PWM_OUT4	I/O	Pulse Width Modulation 4	
134	PWM_OUT5	I/O	Pulse Width Modulation 5	
135	PWM_OUT8	I/O	Pulse Width Modulation 8	
136	PWM_OUT7	I/O	Pulse Width Modulation 7	
137	PWM_OUT6	I/O	Pulse Width Modulation 6	
138	PWM_OUT9	I/O	Pulse Width Modulation 9	
139	PWM_OUT10	I/O	Pulse Width Modulation 10	
140	PWM_OUT11	I/O	Pulse Width Modulation 11	

Part C 141-210 PIN 定义				
PIN	名称	状态	功能定义	备注
141	AVDD_RTC	AVDD	AVDD_RTC	
142	ETH_RN	I	10/100M Ethernet Differential Pair	
143	ETH_RP	I	10/100M Ethernet Differential Pair	
144	ETH_TN	O	10/100M Ethernet Differential Pair	
145	ETH_TP	O	10/100M Ethernet Differential Pair	
146	GND45	GND	Ground	
147	DM_USB2_P1	I/O	USB 2.0 Differential Pair, Negative Port 1	
148	DP_USB2_P1	I/O	USB 2.0 Differential Pair, Positive Port 1	
149	GND46	GND	Ground	
150	LINE_OUT_R	O	Audio Right Channel Line Output	
151	LINE_OUT_L	O	Audio Left Channel Line Output	
152	GND43	GND	Ground	
153	MIC_M2	I	Audio Channel 2 Microphone Negative Input	
154	MIC_P2	I	Audio Channel 2 Microphone Positive Input	
155	MIC_M1	I	Audio Channel 1 Microphone Negative Input	
156	MIC_P1	I	Audio Channel 1 Microphone Positive Input	
157	MIC_M0	I	Audio Channel 0 Microphone Negative Input	
158	MIC_P0	I	Audio Channel 0 Microphone Positive Input	
159	SD0_PWR_CTRL	I/O	SD0 General Purpose Input/Output 0	
160	SD0_CDZ	I	SD 3.0 Card Detect	
161	SD0_D1	I/O	SD 3.0 Data Bus 1	
162	SD0_D0	I/O	SD 3.0 Data Bus 0	
163	GND33	GND	Ground	
164	SD0_CLK	O	SD 3.0 Clock	
165	SD0_CMD	O	SD 3.0 Command	

Part C 141-210 PIN 定义				
PIN	名称	状态	功能定义	备注
166	SD0_D3	I/O	SD 3.0 Data Bus 3	
167	SD0_D2	I/O	SD 3.0 Data Bus 2	
168	SOC_RESET	I	System Reset (Active High)	
169	GND44	GND	Ground	
170	USB3_TXP	0	USB 3.0 SuperSpeed TX Diff. Pair, Positive	
171	USB3_TXN	0	USB 3.0 SuperSpeed TX Diff. Pair, Negative	
172	GND50	GND	Ground	
173	DM_USB2_P2	I/O	Negative Port 2 (merged with USB3.0 SS)	
174	DP_USB2_P2	I/O	Positive Port 2 (merged with USB3.0 SS)	
175	GND48	GND	Ground	
176	USB3_RXP	I	USB 3.0 SuperSpeed RX Diff. Pair, Positive	
177	USB3_RXN	I	USB 3.0 SuperSpeed RX Diff. Pair, Negative	
178	GND47	GND	Ground	
179	DM_USB2-P0	I/O	USB 2.0 Differential Pair, Negative Port 0	
180	DP_USB2-P0	I/O	USB 2.0 Differential Pair, Positive Port 0	
181	GND26	GND	Ground	
182	KEY	KEY	POC 开关机控制 通电后打开 MCU	
183	SAR_GPIO0	I/O	Muxed to SARADC Input Channel 0	
184	CPU_UART_RX	I	Debug UART Receive Data Input with Pull Up	
185	CPU_UART_TX	I/O	Debug UART Transmit Data Output with Pull Up	
186	PM_I2CM_SCL	0	I2C Master I2C Clock	
187	PM_I2CM_SDA	I/O	I2C Master I2C Data	
188	SAR_GPIO1	I/O	Muxed to SARADC Input Channel 1	
189	PM_IR-RX	I	IR Receiver	
190	PM51_UART_RX	I/O	General Purpose Input/Output 0	

Part C 141-210 PIN 定义				
PIN	名称	状态	功能定义	备注
191	PM51_UART_TX	I/O	General Purpose Input/Output 1	
192	I2C5_SDA	I/O	I2C 5 Master I2C Data	
193	I2C5_SCL	0	I2C 5 Master I2C Clock	
194	UART_TX1	0	UART1 Transmit Data Output with Pull Up Resistor	
195	UART_RX1	I	UART1 Receive Data Input with Pull Up Resistor	
196	UART_RX2	I	UART2 Receive Data Input with Pull Up Resistor	
197	UART_TX2	0	UART2 Transmit Data Output with Pull Up Resistor	
198	UART_TX3	0	UART3 Transmit Data Output with Pull Up Resistor	
199	UART_RX3	I	UART3 Receive Data Input with Pull Up Resistor	
200	UART_RX4	I	UART4 Receive Data Input with Pull Up Resistor	
201	UART_TX4	0	UART4 Transmit Data Output with Pull Up Resistor	
202	FUART_RXD	I	Fast UART Receive Data Input	
203	FUART_RTSD	0	Fast UART Request to Send	
204	FUART_CTSD	I	Fast UART Clear to Send	
205	FUART_TXD	0	Fast UART Transmit Data Output	
206	GND32	GND	Ground	
207	KEY0	I/O	KEY General Purpose Input/Output 0	
208	GND55	GND	Ground	
209	GND54	GND	Ground	
210	GND53	GND	Ground	



Part C 141-210 PIN 定义				
PIN	名称	状态	功能定义	备注
191	PM51_UART_TX	I/O	General Purpose Input/Output 1	
192	I2C5_SDA	I/O	I2C 5 Master I2C Data	
193	I2C5_SCL	0	I2C 5 Master I2C Clock	
194	UART_TX1	0	UART1 Transmit Data Output with Pull Up Resistor	
195	UART_RX1	I	UART1 Receive Data Input with Pull Up Resistor	
196	UART_RX2	I	UART2 Receive Data Input with Pull Up Resistor	
197	UART_TX2	0	UART2 Transmit Data Output with Pull Up Resistor	
198	UART_TX3	0	UART3 Transmit Data Output with Pull Up Resistor	
199	UART_RX3	I	UART3 Receive Data Input with Pull Up Resistor	
200	UART_RX4	I	UART4 Receive Data Input with Pull Up Resistor	
201	UART_TX4	0	UART4 Transmit Data Output with Pull Up Resistor	
202	FUART_RXD	I	Fast UART Receive Data Input	
203	FUART_RTSD	0	Fast UART Request to Send	
204	FUART_CTSD	I	Fast UART Clear to Send	
205	FUART_TXD	0	Fast UART Transmit Data Output	
206	GND32	GND	Ground	
207	KEY0	I/O	KEY General Purpose Input/Output 0	
208	GND55	GND	Ground	
209	GND54	GND	Ground	
210	GND53	GND	Ground	

Part D 210-245 PIN 定义				
PIN	名称	状态	功能定义	备注
211	KEY1	I/O	KEY General Purpose Input/Output 1	
212	KEY2	I/O	KEY General Purpose Input/Output 2	
213	KEY3	I/O	KEY General Purpose Input/Output 3	
214	KEY4	I/O	KEY General Purpose Input/Output 4	
215	KEY5	I/O	KEY General Purpose Input/Output 5	
216	KEY6	I/O	KEY General Purpose Input/Output 6	
217	KEY7	I/O	KEY General Purpose Input/Output 7	
218	KEY8	I/O	KEY General Purpose Input/Output 8	
219	KEY9	I/O	KEY General Purpose Input/Output 9	
220	KEY10	I/O	KEY General Purpose Input/Output 10	
221	KEY11	I/O	KEY General Purpose Input/Output 11	
222	KEY12	I/O	KEY General Purpose Input/Output 12	
223	KEY13	I/O	KEY General Purpose Input/Output 13	
224	GND37	GND	Ground	
225	1V8_STD1	P	1.8V 电源	
226	1V8_STD	P	1.8V 电源	
227	5V_STD	P	5V 电源	
228	5V_STD1	P	5V 电源	
229	5V_STD2	P	5V 电源	
230	3V3_NODIE	P	3.3V 电源	
231	GND21	GND	Ground	
232	GND19	GND	Ground	
233	GND20	GND	Ground	
234	GND51	GND	Ground	
235	GND16	GND	Ground	



## 注意事项

相对湿度 $\leq 80\%$

整机组装流程需要使用ESD防护。

整机装配时，要轻拿轻放，不要使板子变形或扭曲，不要重压。

整套内部的线材布线要合理，线材尽量不要直接穿过PCB板，特别是不要从主IC经过，避免影响整套设备EMC性能。