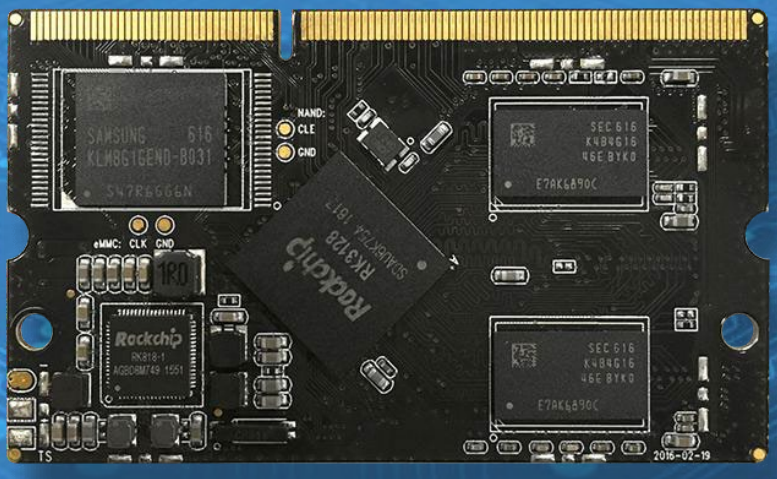
Core-3128J

Quad-core high performance core board V1.1



T-chip Intelligent Technology Co.,Ltd.

www.t-firefly.com

Directory

Company Profile

T-Chip Intelligent Technology Co., Ltd. was founded in 2005. It has more than 10 years of research and development experience in scientific and technological products, has 6 invention patents and more than 30 computer software copyrights, and is a national high-tech enterprise. We focus on the research and development, design, production and sales of open source intelligent hardware, internet of things and digital audio products, and provide the overall solution for intelligent hardware products meanwhile.

Firefly is a brand owned by T-chip Technology. It operates open source products, open source communities and online stores. It has a large number of enterprise users and developer users, and its products are well received by users. Firefly open source products include open source boards, core boards, industry mainboards, etc. The open-source board series is the recommended board card by chip original factory Rockchip and obtain the support of native SDK. The core boards and industrial mainboards are widely used in commercial displays, advertisement integrated machines, intelligent POS, face recognition terminals, internet of things, intelligent cities, etc. At present, there are more than 100,000 users, including over 2,000 enterprise users. And well-known users include ARM, Google, Baidu, Tencent, Alibaba, etc.

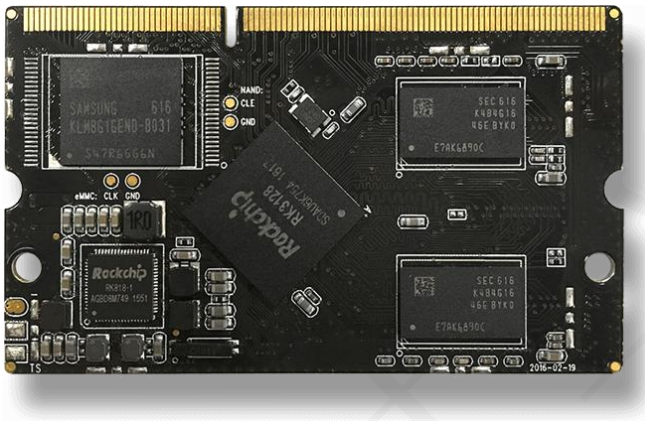
Firefly team has more than 60 research and development members and has the research and development capabilities in schematic design, PCB layout, mainboard production, embedded development, system development, application program development, etc., which accelerates the research and development process for many technology entrepreneurs and start-ups, and provides professional technical services..

" Make technology more simple, Make life more intelligent " is the idea of Firefly team. We hope to make the research and development of various technology products efficient and simple, and let intelligent technology integrate in our lives through the open source products and technical services of Firefly.

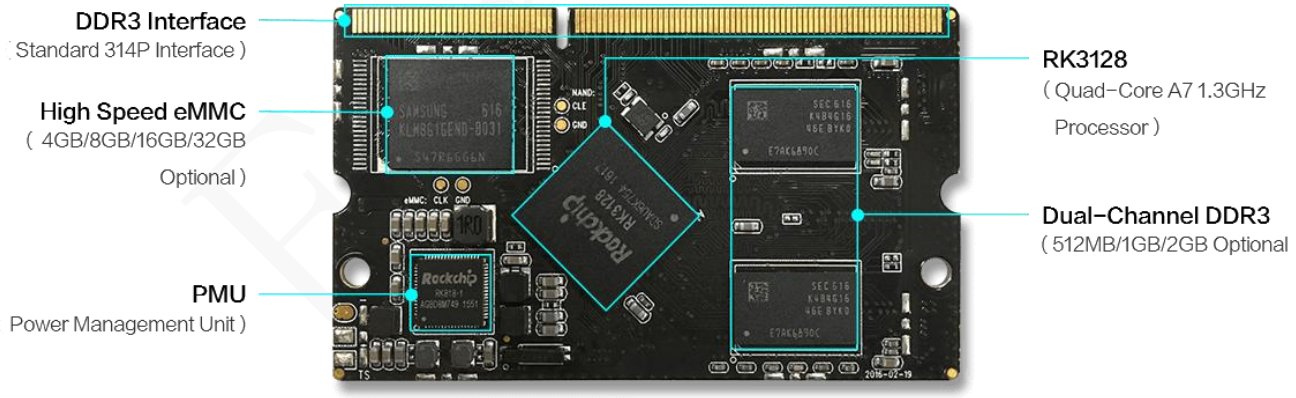
1. Product Overview

1.1 Overview

Core-3128J, as a high-performance core board based on quad-core Cortex-A7, adopts Rockchip RK3128 quad-core Cortex-A7 1.3GHz CPU and offers a variety of options for storage configuration. The users can only need to extend functional baseboard to quickly carry out project research and production. The core board is compact and delicate, with a size of only 67.6mm x 41mm, which can save more valuable space.

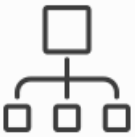


The core board is equipped with immersion gold (IMG) interface which is stable and reliable. The DDR3-204P interface can connect to all the chips, which best guarantees the data transmission and extensibility. The IMG pins are corrosion resistant, solid and reliable as is bolted.



The supporting source code, instruction manual, technical materials and development tools are available for download on the official website, and the development baseboards are available for purchase, making it easier to develop and learn.

1.2 Product Features

		
Strong Performance (quad-core A7, 1.3ghz CPU)	High Reliability (IMG precision board, with stable operation for 7x24 hours)	High Extensibility (extended interfaces, supporting mainstream screen)
		
Multi operating System (support Android/Ubuntu/Linux)	code opening source (SDK and related materials available)	

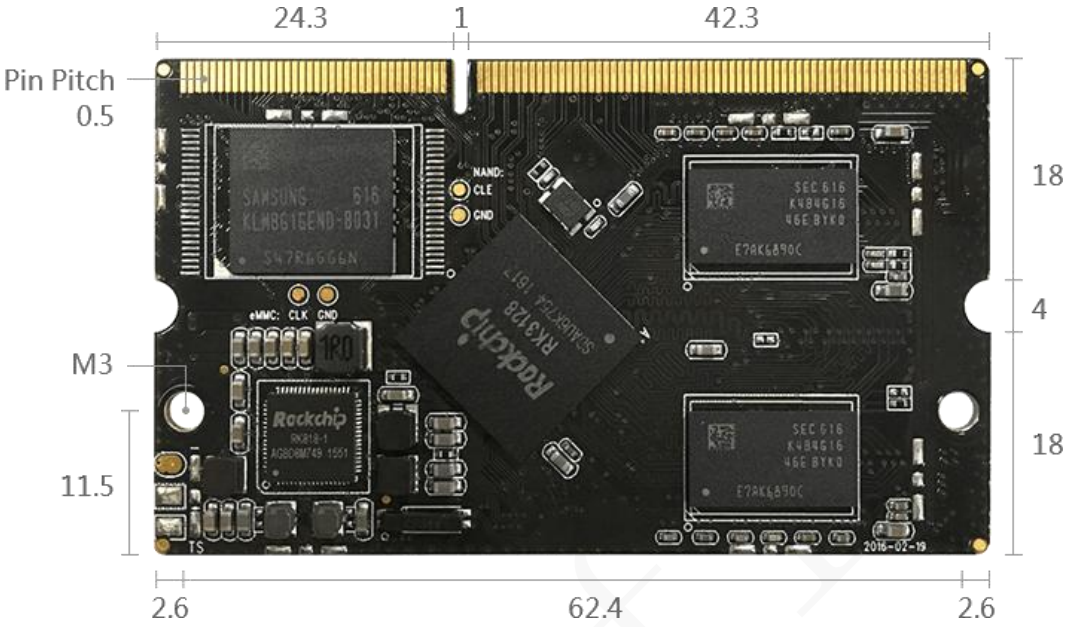
1.3 Application Scenarios

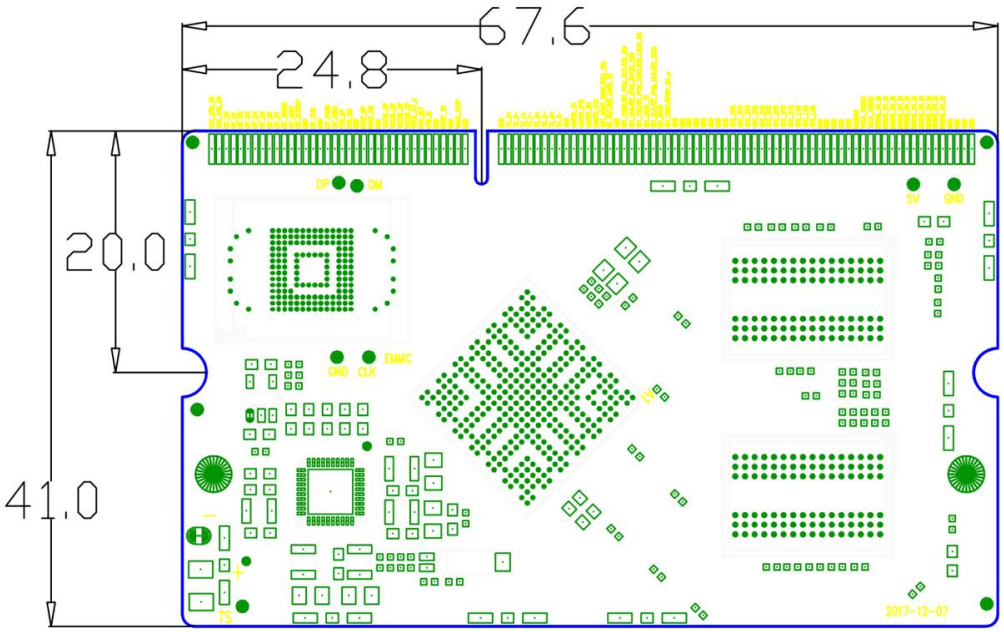
			
Amusement equipment	Commercial display	Medical / health equipment	Vending machines
			
mobile POS machines	Interactive printer	Smart robot	Industrial computer

2. Hardware Specifications

Types	Specifications
CPU	Rockchip RK3128
Processor	ARM® quad-core Cortex™-A7, with the master frequency up to1.3GHz
GPU	ARM® Mali-400 MP2 Dual-core GPU, embedded with high performance 2D acceleration hardware
Video	1080P multi-format video decoding, including 1080P H.265 hardware decoding 1080P video coding, supportingH.264
PMU	RK818 PMU power management unit
DDR	Dual-channel DDR3 (512 MB / 1G / 2G optional)
Memory	High-speed eMMC（4GB / 8GB / 16GB / 32GB optional）
Decoder	Integrated high-quality Codec audio decoder
WiFi	Equipped with SDIO interface, it is used to extend WiFi& blue tooth two-in-one module
Network	Integrated GMAC Ethernet controller, extended Realtek RTL8211E 10/100/1000Mbps Ethernet can be achieved
Display	Video output interface: 1 x HDMI, supporting HD video output;1 x CVBS, simulating video output Display interface: 1 x MIPI, single channel or 1 x LVDS single channel or 1 x RGB display interface
Audio	1 x HDMI , Audio output 1 x SPDIF, Digital audio interface for audio output 2 x I2S, for Audio input &output
Camera	1 x DVP camera interface (supporting up to 5M pixel)
USB	1 x USB2.0 Host，1 x USB2.0 OTG
Infrared	1 x infrared receiving interface (PWM3 pins occupied)
Ports	3 x UART (UART2 acts as Debug Serial by default) 2 x SDIO/SDMMC (SDIO1 acts to extend WiFi module, SDMMC0 to extend TF card) 4 x PWM(PWM3 for infrared reception) 4 x I2C、3 x ADC、2 x SPI、GPIO up to 73 pieces
Power	Input voltage: 5V, peak current: 2A
System	Android5.1 / Ubuntu 15.04 / Linux
Interface Type	DDR3 memory interface (204P, 0.5mm spacing)
Size	The size of core board：67.6mm × 41mm
Weight	10g

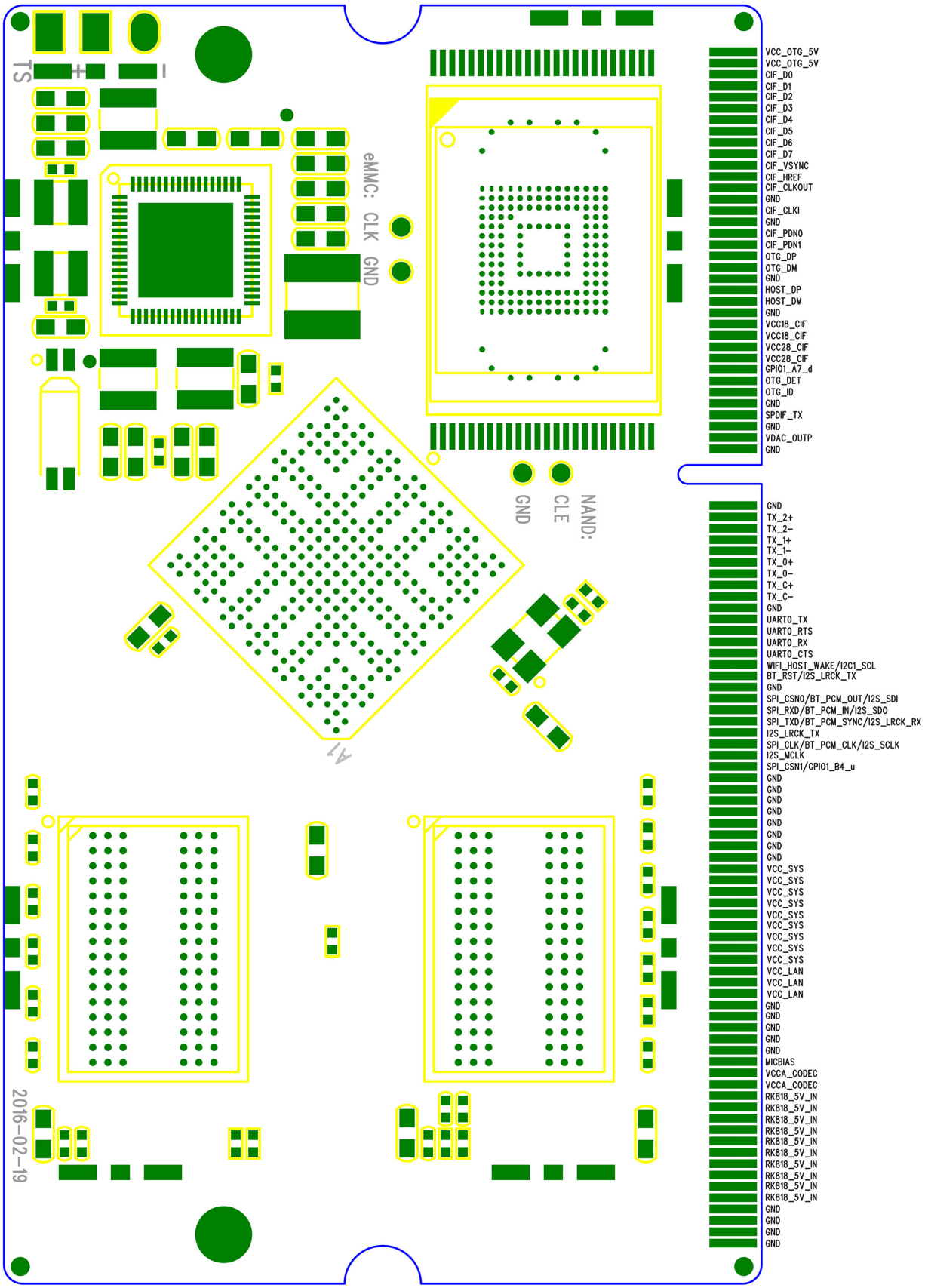
3. Core Board PCB Size

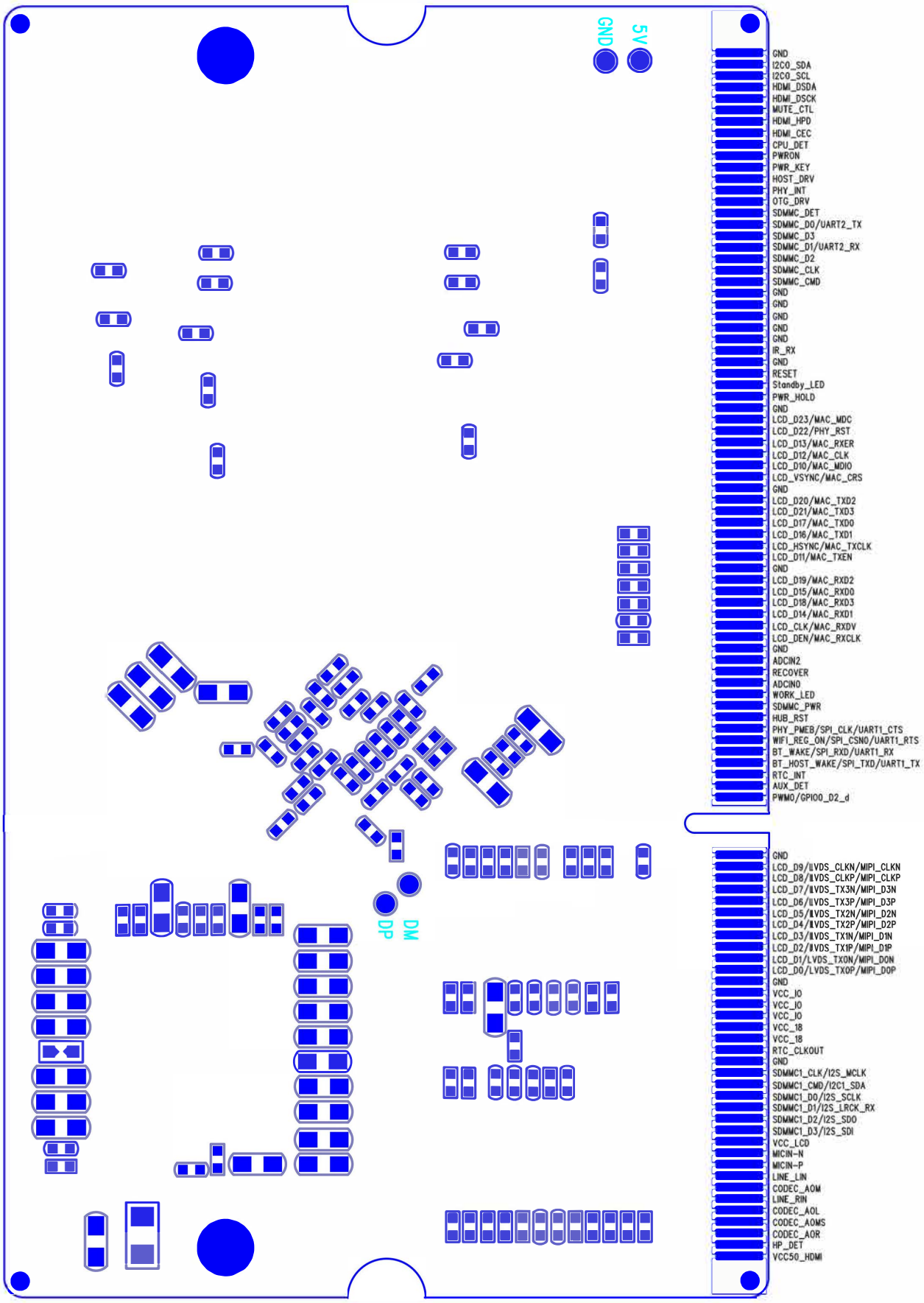




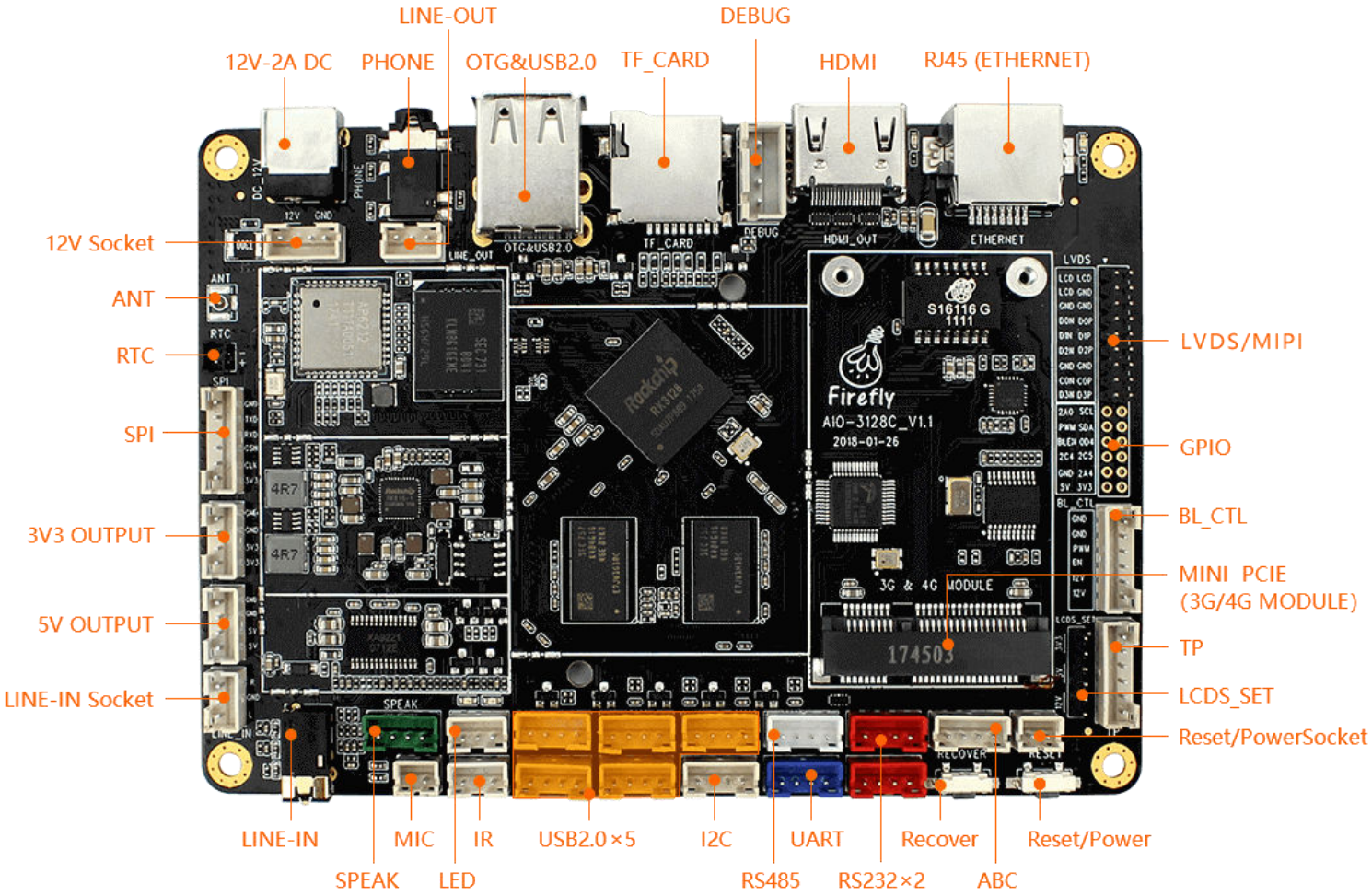
Unit：mm

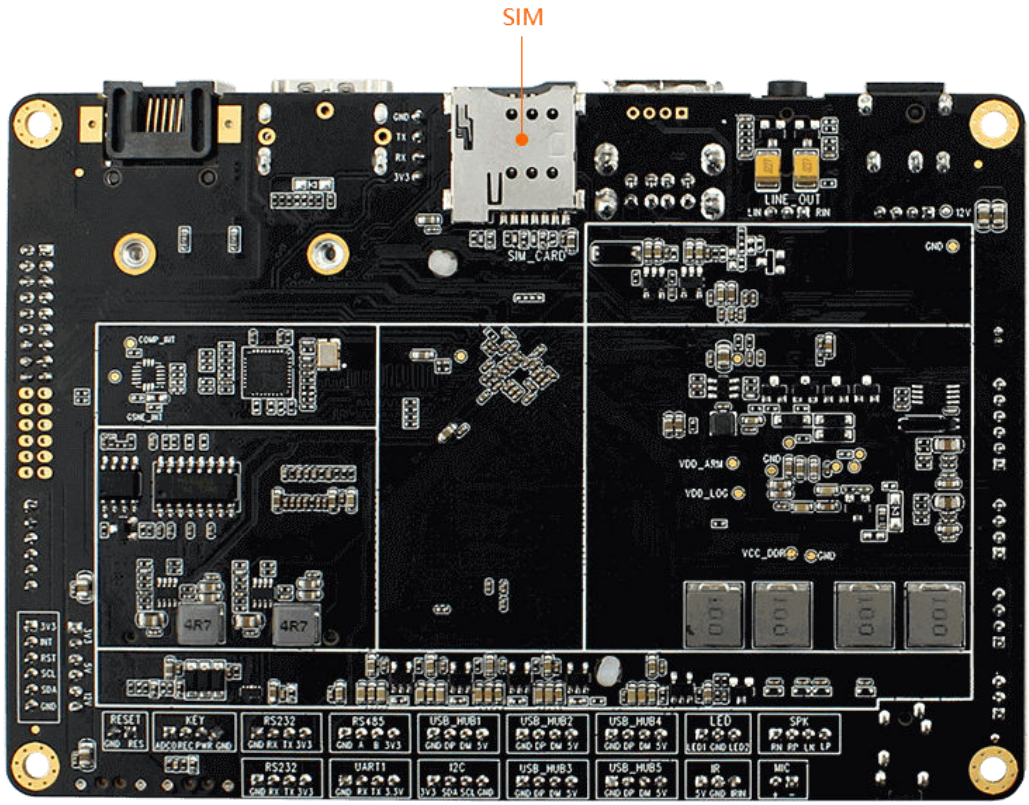
4. Core Board Interface Funtions




GND
5V
DM
DP
GND
I2C0_SDA
I2C0_SCL
HDMI_DSDA
HDMI_DSCK
MUTE_CTL
HDMI_HPD
HDMI_CEC
CPU_DET
PWRON
PWR_KEY
HOST_DRV
PHY_INT
OTG_DRV
SDMMC_DET
SDMMC_D0/UART2_TX
SDMMC_D3
SDMMC_D1/UART2_RX
SDMMC_D2
SDMMC_CLK
SDMMC_CMD
GND
GND
GND
GND
GND
IR_RX
GND
RESET
Standby_LED
PWR_HOLD
GND
LCD_D23/MAC_MDC
LCD_D22/PHY_RST
LCD_D13/MAC_RXER
LCD_D12/MAC_CLK
LCD_D10/MAC_MDIO
LCD_VSYNC/MAC_CRS
GND
LCD_D20/MAC_TXD2
LCD_D21/MAC_TXD3
LCD_D17/MAC_TXD0
LCD_D16/MAC_TXD1
LCD_HSYNC/MAC_TXCLK
LCD_D11/MAC_TXEN
GND
LCD_D19/MAC_RXD2
LCD_D15/MAC_RXD0
LCD_D18/MAC_RXD3
LCD_D14/MAC_RXD1
LCD_CLK/MAC_RXDV
LCD_DEN/MAC_RXCLK
GND
ADCIN2
RECOVER
ADCIN0
WORK_LED
SDMMC_PWR
HUB_RST
PHY_PWEB/SPI_CLK/UART1_CTS
WIFI_REG_ON/SPI_CSN0/UART1_RTS
BT_WAKE/SPI_RXD/UART1_RX
BT_HOST_WAKE/SPI_TXD/UART1_TX
RTC_INT
AUX_DET
PWM0/GPIO0_D2_d
GND
LCD_D9/LVDS_CLKN/MIPI_CLKN
LCD_D8/LVDS_CLKP/MIPI_CLKP
LCD_D7/LVDS_TX3N/MIPI_D3N
LCD_D6/LVDS_TX3P/MIPI_D3P
LCD_D5/LVDS_TX2N/MIPI_D2N
LCD_D4/LVDS_TX2P/MIPI_D2P
LCD_D3/LVDS_TX1N/MIPI_D1N
LCD_D2/LVDS_TX1P/MIPI_D1P
LCD_D1/LVDS_TX0N/MIPI_D0N
LCD_D0/LVDS_TX0P/MIPI_D0P
GND
VCC_IO
VCC_IO
VCC_IO
VCC_18
VCC_18
RTC_CLKOUT
GND
SDMMC1_CLK/I2S_MCLK
SDMMC1_CMD/I2C1_SDA
SDMMC1_D0/I2S_SCLK
SDMMC1_D1/I2S_LRCK_RX
SDMMC1_D2/I2S_SDO
SDMMC1_D3/I2S_SDI
VCC_LCD
MICIN-N
MICIN-P
LINE_LIN
CODEC_AOM
LINE_RIN
CODEC_AOL
CODEC_AOMS
CODEC_AOR
HP_DET
VCC50_HDMI

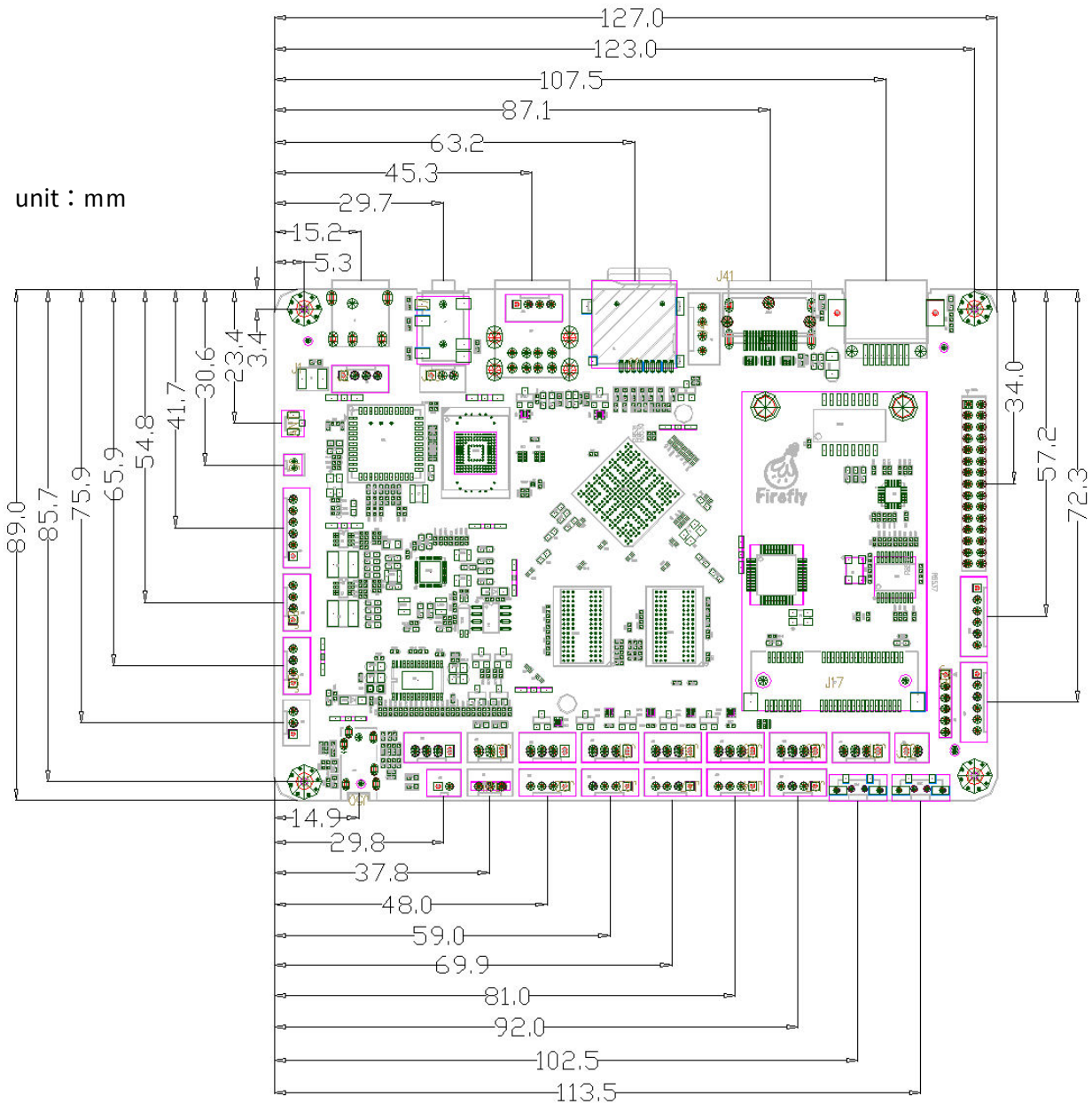
5. Mainboard Interface description



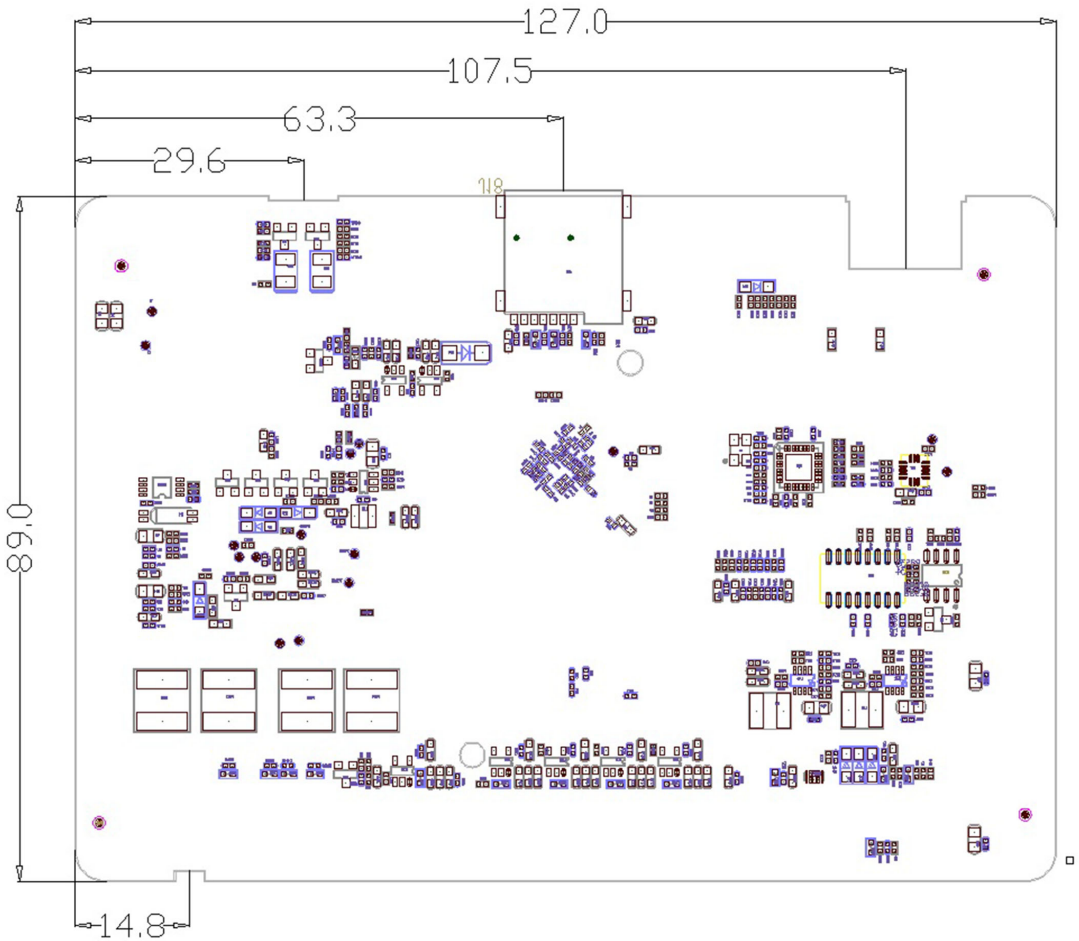


6. Core Board PCB Size

TOP unit：mm



Bottom （unit：mm）



7. Pin Definition

PIN	Core board pin definition	Default function	Defual function description	Pad type/IO Pull
1	VCC50_HDMI	VCC50_HDMI	VCC50_HDMI	
2	VBOOST	VBOOST	VBOOST	
3	HP_DET	CODEC_HPDET	Headphone jack detection input	A N/A
4	VBOOST	VBOOST	VBOOST	
5	CODEC_AOR	CODEC_AOR	Right channel output	A N/A
6	CIF_D0/TS_D0	CIF_D0	CIF_D0	N/A down
7	CODEC_AOMS	CODEC_AOMS	Headphone virtual ground feedback	A N/A
8	CIF_D1/TS_D1	CIF_D1	CIF_D1	N/A down
9	CODEC_AOL	CODEC_AOL	Left channel output	A N/A
10	CIF_D2/TS_D2	CIF_D2	CIF_D2	
11	LINE_RIN	CODEC_AIR	Right channel line input	A N/A
12	CIF_D3/TS_D3	CIF_D3	CIF_D3	N/A down
13	CODEC_AOM	CODEC_AOMS	Headphone virtual ground feedback	A N/A
14	CIF_D4/TS_D4	CIF_D4	CIF_D4	N/A down
15	LINE_LIN	CODEC_AIL	Left channel line input	A N/A
16	CIF_D5/TS_D5	CIF_D5	CIF_D5	N/A down
17	MICIN-P	CODEC_MICR	Right channel microphone input	A N/A
18	CIF_D6/TS_D6	CIF_D6	CIF_D6	N/A down
19	MICIN-N	CODEC_MICL	Left channel microphone input	A N/A
20	CIF_D7/TS_D7	CIF_D7	CIF_D7	N/A down
21	VCC_LCD	VCC_LCD	VCC_LCD	
22	CIF_VSYNC/TS_SYNC	CIF_VSYNC	CIF_VSYNC	N/A down
23	SDMMC1_D3/I2S_SDI/GPIO1_A5_D	SDMMC1_D3	SDIO1 port, for WIFI module	I/O down
24	CIF_HREF/TS_FAIL	CIF_HSYNC	CIF_HSYNC	N/A down
25	SDMMC1_D2/I2S_SDO/GPIO1_A4_D	SDMMC1_D2	SDIO1 port, for WIFI module	I/O down
26	CIF_CLKO/TS_CLKO	CIF_CLKO	CIF_CLKO	N/A down
27	SDMMC1_D1/I2S_LRCK_RX/GPIO1_A2_U	SDMMC1_D1	SDIO1 port, for WIFI module	I/O up
28	GND	GND	GND	
29	SDMMC1_D0/I2S_SCLK/GPIO1_A1_D	SDMMC1_D0	SDIO1 port, for WIFI module	I/O down
30	CIF_CLKI/TS_VALID	CIF_CLKI C	IF_CLKI	N/A down
31	SDMMC1_CMD/I2C1_SDA/GPIO0_A3_U	SDMMC1_CMD	SDIO1 port, for WIFI module	I/O up
32	GND	GND	GND	

33	SDMMC1_CLK/I2S_MCLK/GPIO1_A0_D	SDMMC1_CLK	SDIO1 port, for WIFI module	I/O down
34	GPIO3_D7/CIF_PDN0/TEST_CLKO	CVBS_INT	CVBS in chip interrupt signal	I/O down
35	GND	GND	GND	
36	CIF_PDN1/GPIO3_B3_U	CIF_RST	CVBS in chip reset signal	I/O up
37	RTC_CLKOUT	RTC_CLKOUT	RTC_CLKOUT	
38	OTG_DP	OTG_DP	USB OTG Data Plus port	A N/A
39	VCC_18	VCC_18	VCC_18	
40	OTG_DM	OTG_DM	USB OTG Data Minus port	A N/A
41	VCC_18	VCC_18	VCC_18	
42	GND	GND	GND	
43	VCC_IO_3.0V	VCC_IO_3.0V	VCC_IO_3.0V	
44	HOST_DP	HOST_DP	USB HOST Data Plus port	A N/A
45	VCC_IO_3.0V	VCC_IO_3.0V	VCC_IO_3.0V	
46	HOST_DM	HOST_DM	USB HOST Data Minus port	A N/A
47	VCC_IO_3.0V	VCC_IO_3.0V	VCC_IO_3.0V	
48	GND	GND	GND	
49	GND	GND	GND	
50	VCC18_CIF	VCC18_CIF	VCC18_CIF	
51	LCD_D0/LVDS_TX0P/MIPI_D0P	MIPI_DSI_DP0/LVDS_DP0	MIPI or LVDS signal output	A N/A
52	VCC18_CIF	VCC18_CIF	VCC18_CIF	
53	LCD_D1/LVDS_TX0N/MIPI_D0N	MIPI_DSI_DN0/LVDS_DN0	MIPI or LVDS signal output	A N/A
54	VCC28_CIF	VCC28_CIF	VCC28_CIF	
55	LCD_D2/LVDS_TX1P/MIPI_D1P	MIPI_DSI_DP1/LVDS_DP1	MIPI or LVDS signal output	A N/A
56	VCC28_CIF	VCC28_CIF	VCC28_CIF	
57	LCD_D3/LVDS_TX1N/MIPI_D1N	MIPI_DSI_DN1/LVDS_DN1	MIPI or LVDS signal output	A N/A
58	FLASH_WP/EMMC_PWR/GPIO2_A5_D	FLASH_WP/EMMC_PWR	NandFlash write rotect/EMMC RESET	I/O down
59	LCD_D4/LVDS_TX2P/MIPI_D2P	MIPI_DSI_DP2/LVDS_DP2	MIPI or LVDS signal output	A N/A
60	OTG_DET	OTG_DET	USB OTG connected detect input	A N/A
61	LCD_D5/LVDS_TX2N/MIPI_D2N	MIPI_DSI_DN2/LVDS_DN2	MIPI or LVDS signal output	A N/A
62	OTG_ID	OTG_ID	USB OTG ID detect input, need external pull-up	A N/A
63	LCD_D6/LVDS_TX3P/MIPI_D3P	MIPI_DSI_DP3/LVDS_DP3	MIPI or LVDS signal output	A N/A
64	GND	GND	GND	
65	LCD_D7/LVDS_TX3N/MIPI_D3N	MIPI_DSI_DN3/LVDS_DN3	MIPI or LVDS signal output	A N/A
66	SPDIF/GPIO3_D3_U	WIFI_EN	BT module enable	I/O up

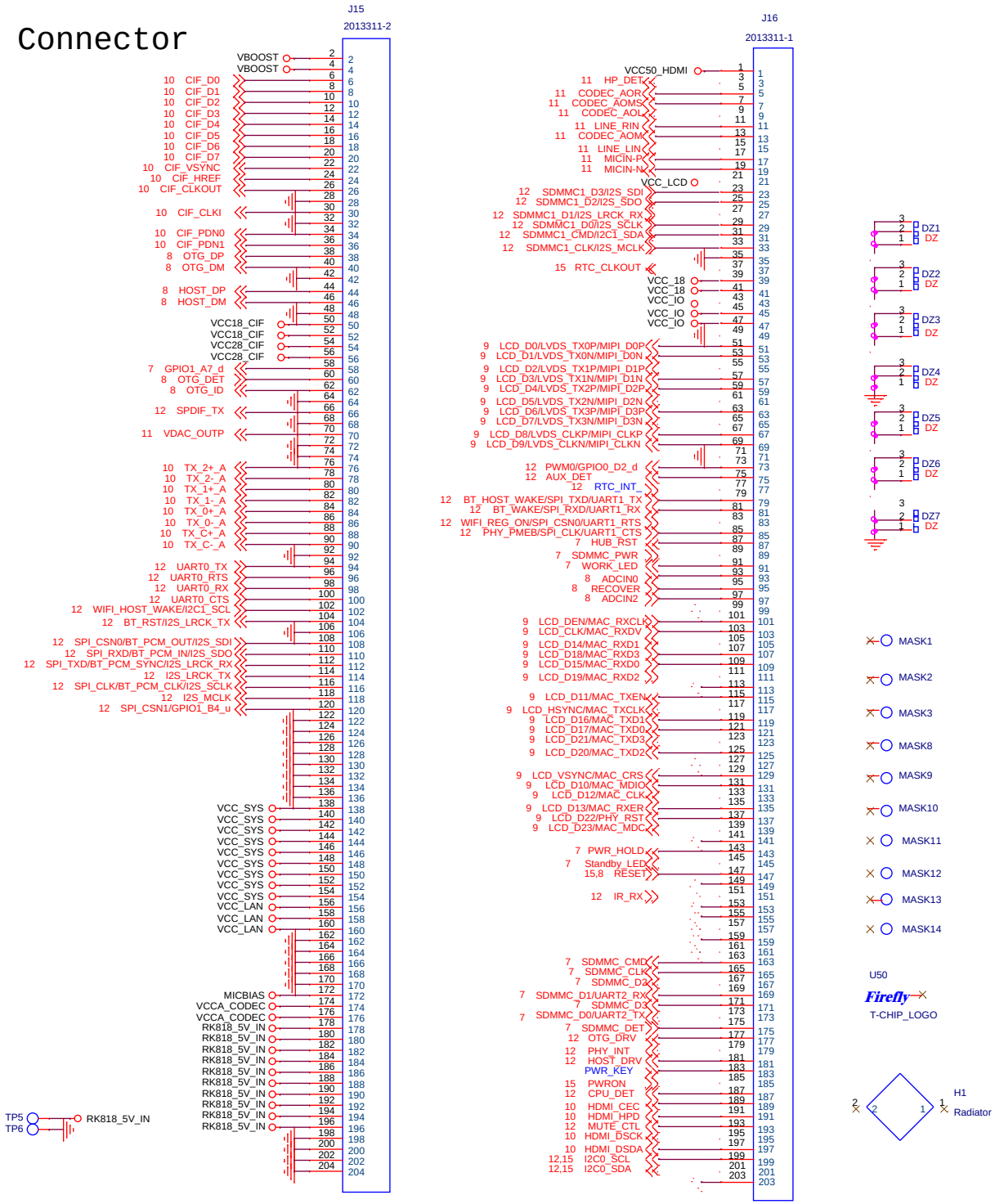
67	LCD_D8/LVDS_CLKP/MIPI_CLKP	MIPI_DSI_CLKP/LVDS_CLKP	MIPI or LVDS signal output	A N/A
68	GND	GND	GND	
69	LCD_D9/LVDS_CLKN/MIPI_CLKN	MIPI_DSI_CLKN/LVDS_CLKN	MIPI or LVDS signal output	A N/A
70	VDAC_OUTP	VDAC_IOUTP	Positive Output for DAC	A N/A
71	GND	GND	GND	
72	GND	GND	GND	
73	PWM0/GPIO0_D2_D	LCDC_BL	LCD backlight enable	I/O down
74	GND	GND	GND	
75	PWM1/GPIO0_D3_D	PWM1	PWM1	I/O down
76	HDMI_TX2P	DMI_TX2P	HDMI channel 2 differential serial data positive	A N/A
77	PWM2/GPIO0_D4_U	MCU_GPIO2	MCU control signal	I/O up
78	HDMI_TX2N	HDMI_TX2N	HDMI channel 2 differential serial data negative	A N/A
79	SPI_TXD/UART1_TX/GPIO1_B1_U	UART1_TX	UART1 serial port, for debug	I/O up
80	HDMI_TX1P	HDMI_TX1P	HDMI channel 1 differential serial data positive	A N/A
81	SPI_RXD/UART1_RX/GPIO1_B2_D	UART1_RX	UART1 serial port, for debug	I/O up
82	HDMI_TX1N	HDMI_TX1N	HDMI channel 1 differential serial data negative	A N/A
83	SPI_CSN0/UART1_RTSN/GPIO1_B3_U	PMIC_INT	PMIC interrupt signal	I/O up
84	HDMI_TX0P	HDMI_TX0P	HDMI channel 0 differential serial data positive	A N/A
85	SPI_CLK/UART1_CTS/GPIO1_B0_D	TP_INT	TP interrupt signal	I/O up
86	HDMI_TX0N	HDMI_TX0N	HDMI channel 0 differential serial data negative	A N/A
87	FLASH_WRN/SFC_CSN0/GPIO2_A2_	FLASH_WRN/SFC_CS0	NandFlash write enable/SPI Flash CS	I/O up
88	HDMI_TXCP	HDMI_TXCP	HDMI differential pixel clock positive	A N/A
89	SDMMC0_PWR/GPIO1_B6_D	SDMMC0_PWR	SDMMC0 power control	I/O down
90	HDMI_TXCN	HDMI_TXCN	HDMI differential pixel clock negative	A N/A
91	FLASH_CS3/EMMC_RST/GPIO1_C7_U	FLASH_CS3	Nandflash select3 port	I/O up
92	GND	GND	GND	
93	ADCIN0	ADCIN0	ADCIN0	A N/A
94	UART0_TX/GPIO2_D2_D	UART0_TX	UART0 serial port, for BT module	I/O down
95	ADCIN1	ADKEY_IN	KEYPAD	A N/A
96	UART0_RTSN/GPIO0_C1_U	UART0_RTSN	UART0_RTSN	I/O up
97	ADCIN2	CAR_BAT	Battery voltage input	A N/A

98	UART0_RX/GPIO2_D3_D	UART0_RX	UART0 serial port, for BT module	I/O down
99	GND	GND	GND	
100	UART0_CTSN/GPIO2_D5_D	COMPASS_INT	Compass interrupt signal	I/O down
101	LCD_DEN/MAC_RXCLK/GPIO2_B3_D	5V_PWR_EN	5V Power enable	I/O down
102	I2C1_SCL/GPIO0_A2_U	GSEN_INT	G-sensor interrupt signal	I/O up
103	LCD_CLK/MAC_RXDV/GPIO2_B0_D	ACC_DET	ACC signal detection	I/O down
104	I2S_LRCK_TX/GPIO1_A3_D	WIFI/BT_PWR_EN	WIFI/BT power supply control	I/O down
105	LCD_D14/MAC_RXD1/GPIO2_C0_D	VOICE_BYPASS	Voice process chip signal bypass	I/O down
106	GND	GND	GND	
107	LCD_D18/MAC_RXD3/GPIO2_C4_D	I2C2_SDA	I2C2 serial port, need external pull-up	I/O down
108	SPI_CSN0/I2S_SDI/GPIO0_B6_U	I2S_SDI	PCM port, for codec	I/O up
109	LCD_D15/MAC_RXD0/GPIO2_C1_D	USB_HUB_RST	USB HUB chip reset	I/O down
110	SPI_RXD/I2S_SDO/GPIO0_B5_U	I2S_SDO	PCM port, for codec	I/O up
111	LCD_D19/MAC_RXD2/I2C2_SCL/GPIO2_C5	I2C2_SCL	I2C2 serial port, need external pull-up	I/O down
112	SPI_TXD/I2S_LRCK_RX/GPIO0_B3_U	I2S_LRCK_RX	PCM port, for codec	I/O up
113	GND	GND	GND	
114	I2S_LRCK_TX/GPIO0_B4_U	I2S_LRCK_TX	PCM port, for codec	I/O up
115	LCD_D11/MAC_TXEN/GPIO2_B5_D	PWR_HOLD	ON/OFF Signal Control	I/O down
116	SPI_CLK/I2S_SCLK/GPIO0_B1_U	I2S_SCLK	PCM port, for codec	I/O up
117	LCD_HSYNC/MAC_TXCLK/GPIO2_B1	BACK_DET	Reverse signal detection	I/O down
118	I2S_MCLK/GPIO0_B0_U	I2S_MCLK	PCM port, for codec	I/O up
119	LCD_D16/MAC_TXD1/GPIO2_C2_D	LP_SENSOR_INT LP	Sensor interrupt	I/O down
120	SPI_CSN1/GPIO1_B4_U	LCDC_PWR_EN	LCD power supply control	I/O up
121	LCD_D17/MAC_TXD0/GPIO2_C3_D	I2C3_RST	WK2142 reset	I/O down
122	GND	GND	GND	
123	LCD_D21/MAC_TXD3/GPIO2_C7_D	MCU_GPIO_1	MCU control signal	I/O down
124	GND	GND	GND	I/O down
125	LCD_D20/MAC_TXD2/GPIO2_C6_D	I2C3_INT	WK2142 interrupt	
126	GND	GND	GND	
127	GND	GND	GND	
128	GND	GND	GND	
129	LCD_VSYNC/MAC_CRS/GPIO2_B2_D	DC_BAT_DET	Power detection	I/O down
130	GND	GND	GND	
131	LCD_D10/MAC_MDIO/GPIO2_B4_D	OTG_DRV	OTG Power supply control	I/O down
132	GND	GND	GND	

133	LCD_D12/MAC_CLK/GPIO2_B6_D	VOICE_PROCESS_RST	Voice process chip reset	I/O down
134	GND	GND	GND	
135	LCD_D13/MAC_RXER//GPIO2_B7_D	VOICE_PROCESS_PWD	Voice process chip power supply control	I/O down
136	GND	GND	GND	
137	LCD_D22/PHY_RST/GPIO2_D0_D	reserve		I/O down
138	VCC_SYS_4.5V	VCC_SYS_4.5V	VCC_SYS_4.5V	
139	LCD_D23/MAC_MDC/GPIO2_D1_D	GPS_PWR_EN	GPS module power supply control	I/O down
140	VCC_SYS_4.5V	VCC_SYS_4.5V	VCC_SYS_4.5V	
141	GND	GND	GND	
142	VCC_SYS_4.5V	VCC_SYS_4.5V	VCC_SYS_4.5V	
143	FLASH_ALE/SPI_CLK/GPIO2_A0_D	FLASH_ALE/SPI_CLK	Nandflash address latch enable	I/O down
144	VCC_SYS_4.5V	VCC_SYS_4.5V	VCC_SYS_4.5V	
145	FLASH_RDN/SPC_CSN1/GPIO2_A3_U	FLASH_RDN	Nandflash read enable	I/O up
146	VCC_SYS_4.5V	VCC_SYS_4.5V	VCC_SYS_4.5V	
147	RESET	RESET	RESET	
148	VCC_SYS_4.5V	VCC_SYS_4.5V	VCC_SYS_4.5V	
149	GND	GND	GND	
150	VCC_SYS_4.5V	VCC_SYS_4.5V	VCC_SYS_4.5V	
151	IR/GPIO3_D2_U	BT_WAKE	CPU wake up BT module	I/O up
152	VCC_SYS_4.5V	VCC_SYS_4.5V	VCC_SYS_4.5V	
153	GND	GND	GND	
154	VCC_SYS_4.5V	VCC_SYS_4.5V	VCC_SYS_4.5V	
155	GND	GND	GND	
156	VCC_LAN	VCC_LAN	VCC_LAN	
157	GND	GND	GND	
158	VCC_LAN	VCC_LAN	VCC_LAN	
159	GND	GND	GND	
160	VCC_LAN	VCC_LAN	VCC_LAN	
161	GND	GND	GND	
162	GND	GND	GND	
163	SDMMC0_CMD/GPIO1_B7_U	SDMMC0_CMD	SDMMC0 command output	I/O up
164	GND			
165	SDMMC0_CLKO/GPIO1_C0_D	SDMMC0_CLKO	SDMMC0 clock output	I/O down
166	GND	GND	GND	
167	SDMMC0_D2/JTAG_TCK/GPIO1_C4_U	SDMMC0_D2	SDMMC0 data2 port	I/O up
168	GND	GND	GND	
169	SDMMC0_D1/UART2_RX/GPIO1_C3_U	SDMMC0_D1	SDMMC0 data1 port	I/O up

170	GND	GND	GND	
171	SDMMC0_D3/JTAG_TMS/GPIO1_C5_U	SDMMC0_D3	SDMMC0 data3 port	I/O up
172	MICBIAS	CODEC_MICBIAS	Microphone bias output	A N/A
173	SDMMC0_D0/UART2_TX/GPIO1_C2_U	SDMMC0_D0	SDMMC0 data0 port	I/O up
174	VCCA_CODEC	VDAC_AVDD	VDAC power supply	AP N/A
175	SDMMC0_DET/GPIO1_C1_U	SDMMC0_DET	SDMMC0 detect input	I/O up
176	VCCA_CODEC	CODEC_AVDD	CODEC power supply 3.3V	AP N/A
177	SDMMC1_PWR/GPIO0_D6_D	SPK_CTL	Speak enable	I/O down
178	RK818_5V_IN	RK818_5V_IN	RK818_5V_IN	
179	UART2_RTSN/GPIO0_D0_U	LCD_RST	LCD reset signal control	I/O up
180	RK818_5V_IN	RK818_5V_IN	RK818_5V_IN	
181	GPIO3_C4_D	HP_CTL	Earphone output control	I/O down
182	RK818_5V_IN	RK818_5V_IN	RK818_5V_IN	
183	GPIO3_C7_U	WIFI_HOST_	WAKE WIFI wake up CPU	I/O up
184	RK818_5V_IN	RK818_5V_IN	RK818_5V_IN	
185	PWRON	PWRON	PWRON	
186	RK818_5V_IN	RK818_5V_IN	RK818_5V_IN	
187	UART2_CTSN/GPIO0_D1_U	TP_RST	TP reset signal control	I/O up
188	RK818_5V_IN	RK818_5V_IN	RK818_5V_IN	
189	HDMI_CEC/GPIO0_C4_U	HDMI_CEC	HDMI_CEC	I/O up
190	RK818_5V_IN	RK818_5V_IN	RK818_5V_IN	
191	HDMI_HPD/GPIO0_B7_D	HDMI_HPD	HDMI Hot Plug Detection input	I/O down
192	RK818_5V_IN	RK818_5V_IN	RK818_5V_IN	
193	GPIO3_C5_D	BT_EN	BT module enable	I/O down
194	RK818_5V_IN	RK818_5V_IN	RK818_5V_IN	
195	HDMI_SCL/I2C3_SCL/GPIO0_A6_U	HDMI_SCL/I2C3_SCL	HDMI I2C serial port/I2C3 serial port	I/O up
196	RK818_5V_IN	RK818_5V_IN	RK818_5V_IN	
197	HDMI_SDA/I2C3_SDA/GPIO0_A7_U	HDMI_SDA/I2C3_SDA	HDMI I2C serial port/I2C3 serial port	I/O up
198	GND	GND	GND	
199	I2C0_SCL/GPIO0_A0	I2C0_SCL	I2C0 serial port, need external pull-up	I/O up
200	GND	GND	GND	
201	I2C0_SDA/GPIO0_A1	I2C0_SDA	I2C0 serial port, need external pull-up	I/O up
202	GND	GND	GND	
203	GND	GND	GND	
204	GND	GND	GND	

Connector


J15
2013311-2
VBOOST
VBOOST
10 CIF_D0
10 CIF_D1
10 CIF_D2
10 CIF_D3
10 CIF_D4
10 CIF_D5
10 CIF_D6
10 CIF_D7
10 CIF_VSYNC
10 CIF_HREF
10 CIF_CLKOUT
10 CIF_CLKI
10 CIF_PDN0
10 CIF_PDN1
8 OTG_DP
8 OTG_DM
8 HOST_DP
8 HOST_DM
VCC18_CIF
VCC18_CIF
VCC28_CIF
VCC28_CIF
7 GPIO1_A7_d
8 OTG_DET
8 OTG_ID
12 SPDIF_TX
11 VDAC_OUTP
10 TX_2+_A
10 TX_2-_A
10 TX_1+_A
10 TX_1-_A
10 TX_0+_A
10 TX_0-_A
10 TX_C+_A
10 TX_C-_A
12 UART0_TX
12 UART0_RTS
12 UART0_RX
12 UART0_CTS
12 WIFI_HOST_WAKE/I2C1_SCL
12 BT_RST/I2S_LRCK_TX
12 SPI_CSN0/BT_PCM_OUT/I2S_SDI
12 SPI_RXD/BT_PCM_IN/I2S_SDO
12 SPI_TXD/BT_PCM_SYNC/I2S_LRCK_RX
12 I2S_LRCK_TX
12 SPI_CLK/BT_PCM_CLK/I2S_SCLK
12 I2S_MCLK
12 SPI_CSN1/GPIO1_B4_u
VCC_SYS
VCC_SYS
VCC_SYS
VCC_SYS
VCC_SYS
VCC_SYS
VCC_SYS
VCC_SYS
VCC_SYS
VCC_LAN
VCC_LAN
VCC_LAN
MICBIAS
VCCA_CODEC
VCCA_CODEC
RK818_5V_IN
RK818_5V_IN
RK818_5V_IN
RK818_5V_IN
RK818_5V_IN
RK818_5V_IN
RK818_5V_IN
RK818_5V_IN
RK818_5V_IN
TP5
TP6
RK818_5V_IN
J16
2013311-1
VCC50_HDMI
11 HP_DET
11 CODEC_AOR
11 CODEC_AOMS
11 CODEC_AOL
11 LINE_RIN
11 CODEC_AOM
11 LINE_LIN
11 MICIN-P
11 MICIN-N
VCC_LCD
12 SDMMC1_D3/I2S_SDI
12 SDMMC1_D2/I2S_SDO
12 SDMMC1_D1/I2S_LRCK_RX
12 SDMMC1_D0/I2S_SCLK
12 SDMMC1_CMD/I2C1_SDA
12 SDMMC1_CLK/I2S_MCLK
15 RTC_CLKOUT
VCC_18
VCC_18
VCC_IO
VCC_IO
VCC_IO
9 LCD_D0/LVDS_TX0P/MIPI_D0P
9 LCD_D1/LVDS_TX0N/MIPI_D0N
9 LCD_D2/LVDS_TX1P/MIPI_D1P
9 LCD_D3/LVDS_TX1N/MIPI_D1N
9 LCD_D4/LVDS_TX2P/MIPI_D2P
9 LCD_D5/LVDS_TX2N/MIPI_D2N
9 LCD_D6/LVDS_TX3P/MIPI_D3P
9 LCD_D7/LVDS_TX3N/MIPI_D3N
9 LCD_D8/LVDS_CLKP/MIPI_CLKP
9 LCD_D9/LVDS_CLKN/MIPI_CLKN
12 PWM0/GPIO0_D2_d
12 AUX_DET
12 RTC_INT_
12 BT_HOST_WAKE/SPI_TXD/UART1_TX
12 BT_WAKE/SPI_RXD/UART1_RX
12 WIFI_REG_ON/SPI_CSN0/UART1_RTS
12 PHY_PMEB/SPI_CLK/UART1_CTS
7 HUB_RST
7 SDMMC_PWR
7 WORK_LED
8 ADCIN0
8 RECOVER
8 ADCIN2
9 LCD_DEN/MAC_RXCLK
9 LCD_CLK/MAC_RXDV
9 LCD_D14/MAC_RXD1
9 LCD_D18/MAC_RXD3
9 LCD_D15/MAC_RXD0
9 LCD_D19/MAC_RXD2
9 LCD_D11/MAC_TXEN
9 LCD_HSYNC/MAC_TXCLK
9 LCD_D16/MAC_TXD1
9 LCD_D17/MAC_TXD0
9 LCD_D21/MAC_TXD3
9 LCD_D20/MAC_TXD2
9 LCD_VSYNC/MAC_CRS
9 LCD_D10/MAC_MDIO
9 LCD_D12/MAC_CLK
9 LCD_D13/MAC_RXER
9 LCD_D22/PHY_RST
9 LCD_D23/MAC_MDC
7 PWR_HOLD
7 Standby_LED
15,8 RESET
12 IR_RX
7 SDMMC_CMD
7 SDMMC_CLK
7 SDMMC_D2
7 SDMMC_D1/UART2_RX
7 SDMMC_D3
7 SDMMC_D0/UART2_TX
7 SDMMC_DET
12 OTG_DRV
12 PHY_INT
12 HOST_DRV
PWR_KEY
15 PWRON
12 CPU_DET
10 HDMI_CEC
10 HDMI_HPD
12 MUTE_CTL
10 HDMI_DSCK
10 HDMI_DSDA
12,15 I2C0_SCL
12,15 I2C0_SDA
DZ1
DZ
DZ2
DZ
DZ3
DZ
DZ4
DZ
DZ5
DZ
DZ6
DZ
DZ7
DZ
MASK1
MASK2
MASK3
MASK8
MASK9
MASK10
MASK11
MASK12
MASK13
MASK14
U50
Firefly
T-CHIP_LOGO
H1
Radiator

8. Appendix

8.1 Source code acquisition

Please visit the official website "Resource Download": (please click here)

8.2 Contact us

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