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LCB3399 核心模块

产品手册

V1.3

上海临滴科技有限公司

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上海临滴科技有限公司

网址：www.neardi.com

电话：+86 21 20952021

邮箱：sales@neardi.com

地址：上海市闵行区联航路 1505 弄 1 号 8 楼

版本历史

版 本	日 期	说 明
V1.0	2019/10/20	初始版本
V1.1	2020/11/05	修正 UART3 描述错误
V1.2	2020/12/23	修正 B2B 连接器型号描述
V1.3	2021/01/03	更新 J0101 部分 pin 脚信号及描述

目 录

1 产品概述

1.1 产品描述

LCB3399 基于瑞芯微 RK3399 芯片平台精心设计的一款全功能核心模块，尺寸仅有 62mm*50mm。核心模块与底板的连接采用两颗 tyco/AMP 的 0.8mm pitch 双排 120Pin 板对板连接器，并通过 4 颗 M2 的螺丝固定，稳定可靠、易于安装和维护。

LCB3399 包含 CPU、DDR、eMMC 和 PMU 部分。CPU 为 RK3399；DDR 采用市场主流型号 LPDDR3，双通道 64bit 带宽，更低功耗更快频率，可选 2GB/4GB 配置；eMMC 采用高速 eMMC 5.1 标准，可选 4GB~128GB 多种容量配置；PMU 由 RK808 及多路 DC-DC 和 LDO 组成，CPU 核心电压均支持 DVFS 动态调压。

LCB3399 采用模块化的设计理念，将需求相同、要求严格的核心部分单独设计为一个全功能模块，并经过全面的测试和批量化验证。用户基于该模块开发产品，可节省项目开发周期，降低企业成本，提高公司效率。

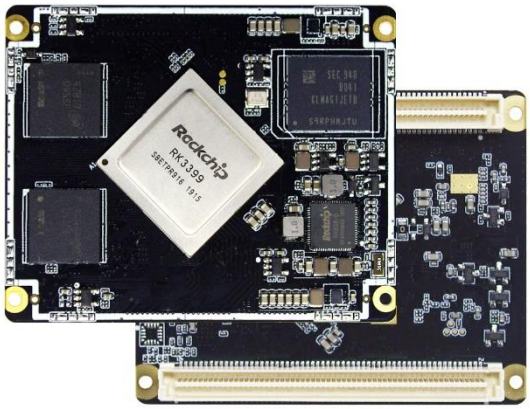


图 1-1

1.2 产品框图

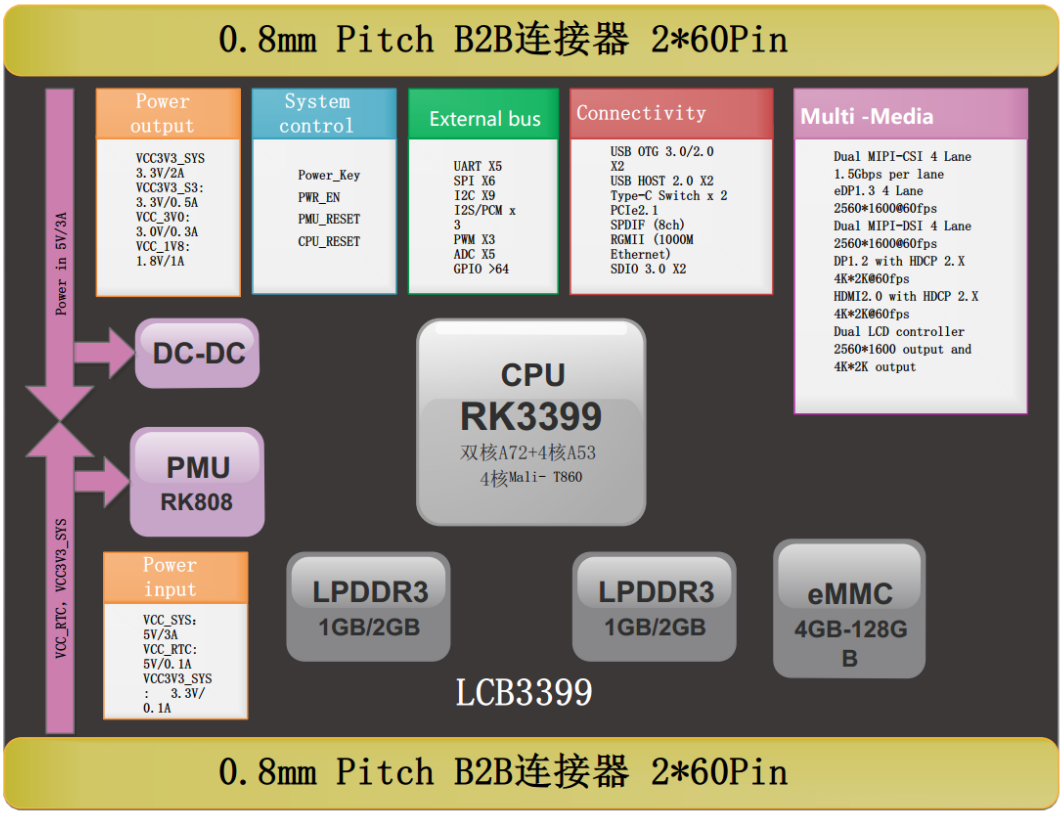

0.8mm Pitch B2B连接器 2*60Pin
Power output
VCC3V3_SYS 3.3V/2A
VCC3V3_S3: 3.3V/0.5A
VCC_3V0: 3.0V/0.3A
VCC_1V8: 1.8V/1A
System control
Power_Key
PWR_EN
PMU_RESET
CPU_RESET
External bus
UART X5
SPI X6
I2C X9
I2S/PCM x 3
PWM X3
ADC X5
GPIO >64
Connectivity
USB OTG 3.0/2.0 X2
USB HOST 2.0 X2
Type-C Switch x 2
PCIe2.1
SPDIF (8ch)
RGMII (1000M Ethernet)
SDIO 3.0 X2
Multi -Media
Dual MIPI-CSI 4 Lane 1.5Gbps per lane
eDP1.3 4 Lane 2560*1600@60fps
Dual MIPI-DSI 4 Lane 2560*1600@60fps
DP1.2 with HDCP 2.X 4K*2K@60fps
HDMI2.0 with HDCP 2.X 4K*2K@60fps
Dual LCD controller 2560*1600 output and 4K*2K output
Power in 5V/3A
VCC_RTC, VCC3V3_SYS
DC-DC
PMU RK808
CPU RK3399
双核A72+4核A53
4核Mali- T860
Power input
VCC_SYS: 5V/3A
VCC_RTC: 5V/0.1A
VCC3V3_SYS: 3.3V/0.1A
LPDDR3 1GB/2GB
LPDDR3 1GB/2GB
eMMC 4GB-128GB
LCB3399
0.8mm Pitch B2B连接器 2*60Pin

图 1-2

2 尺寸和结构

2.1 产品尺寸

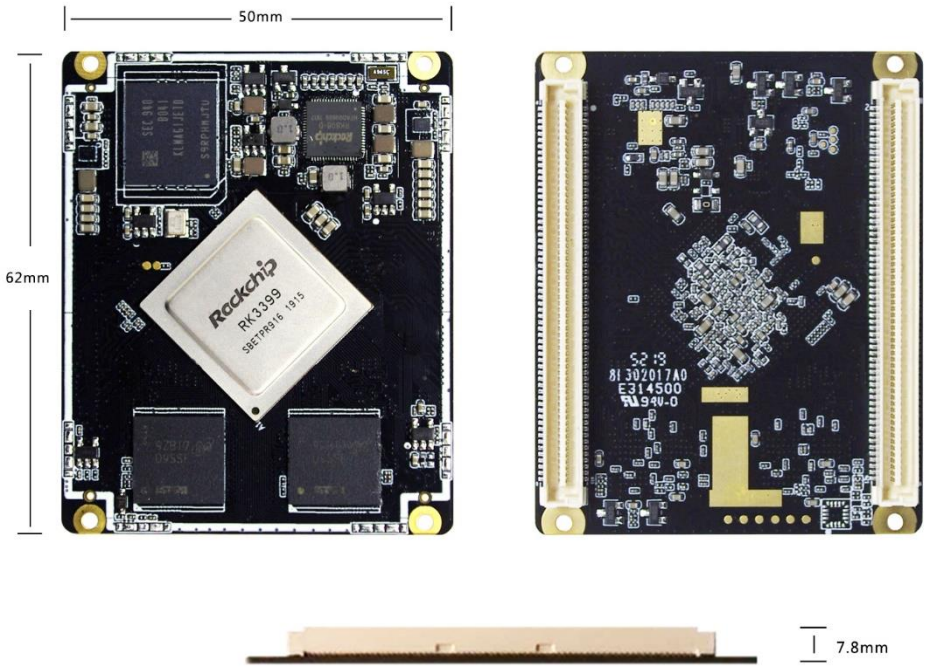
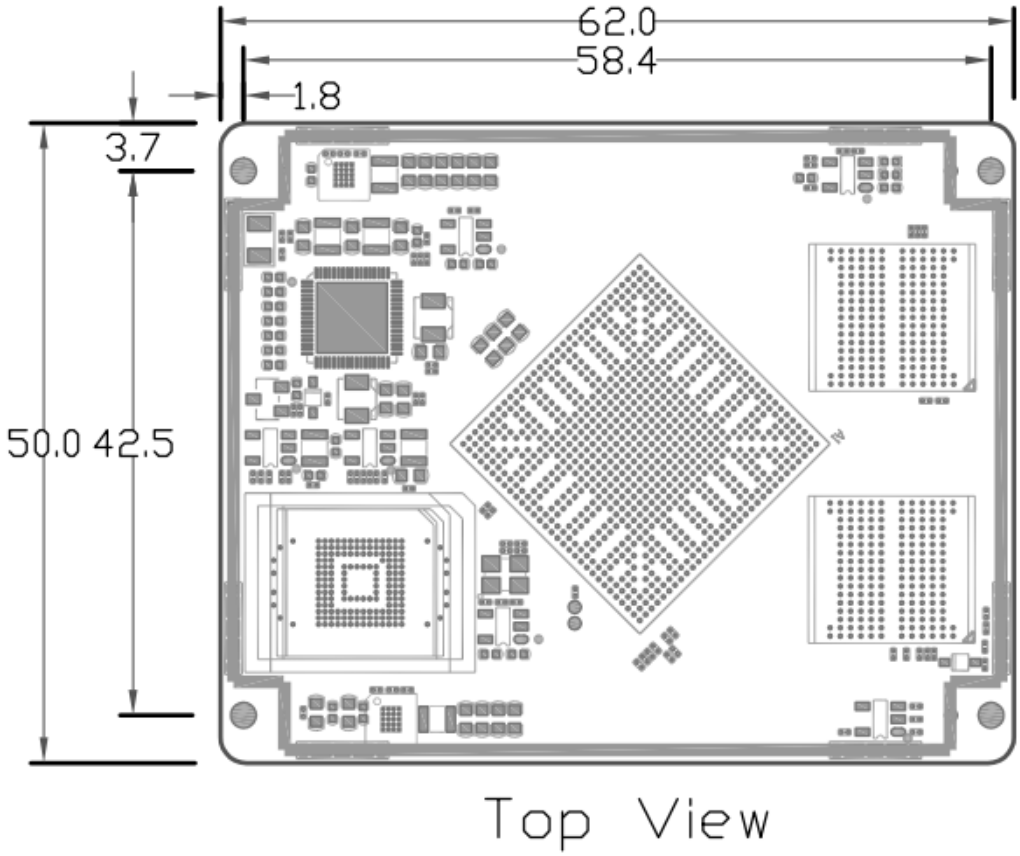


图 2-1



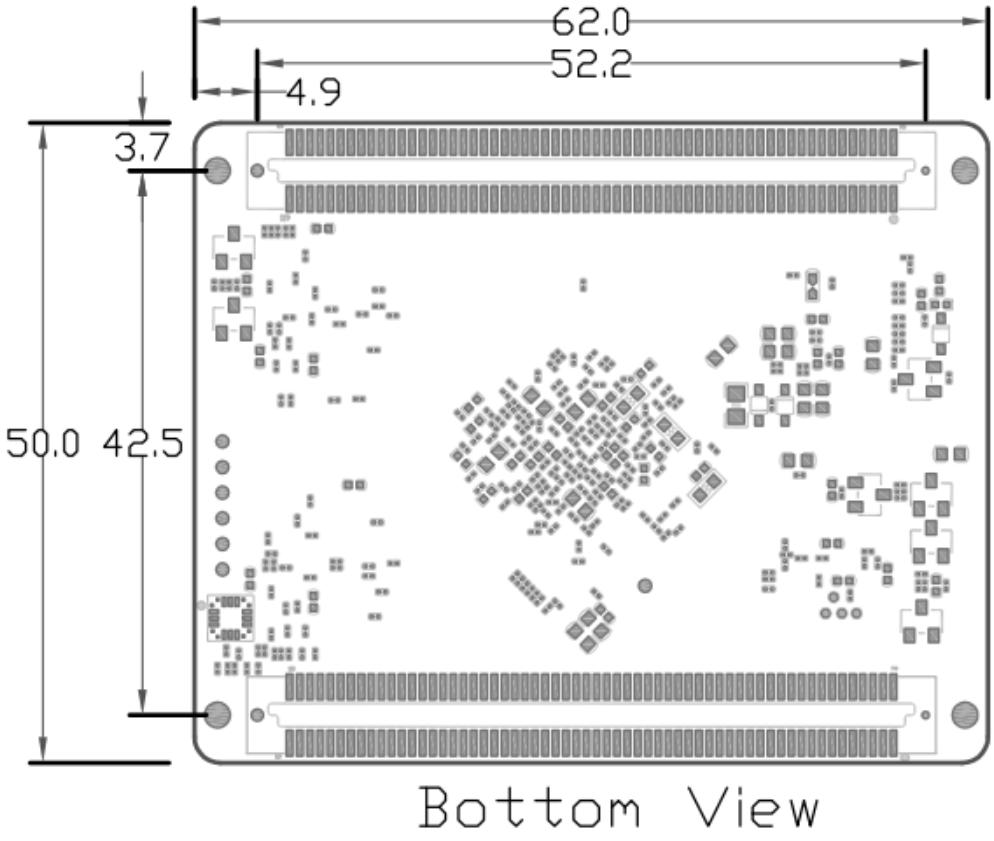


图 2-2

2.2 连接方式

LCB3399 采用 2 颗 tyco Electronics/AMP 的 B2B 连接器，该连接器为 0.8mm Pitch 2*60Pin 的公座，型号：5177986-5，如图 2-3 和 2-4 所示。

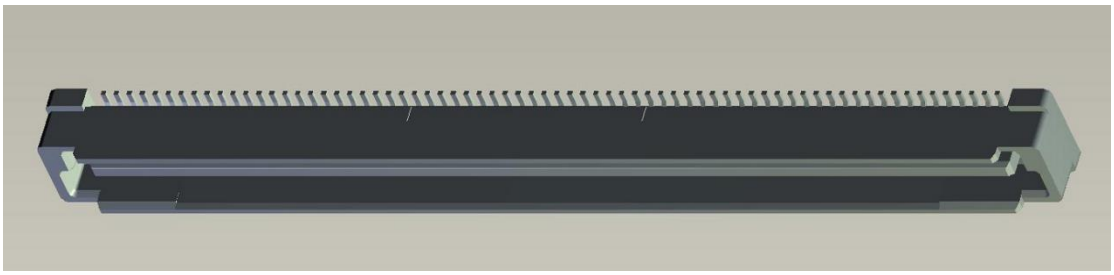


图 2-3

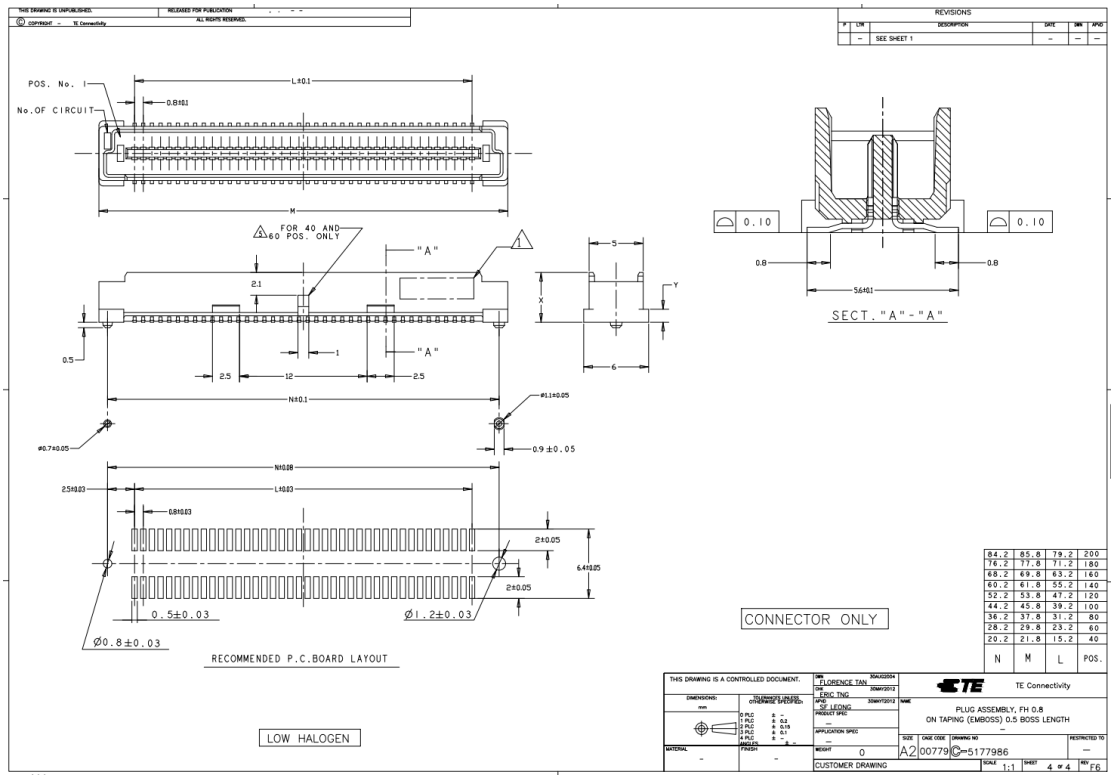


图 2-4

底板上应选择对应的连接器母座型号，常规合高为：5mm，型号为：5177985-5，如图 2-5 和 2-6 所示。

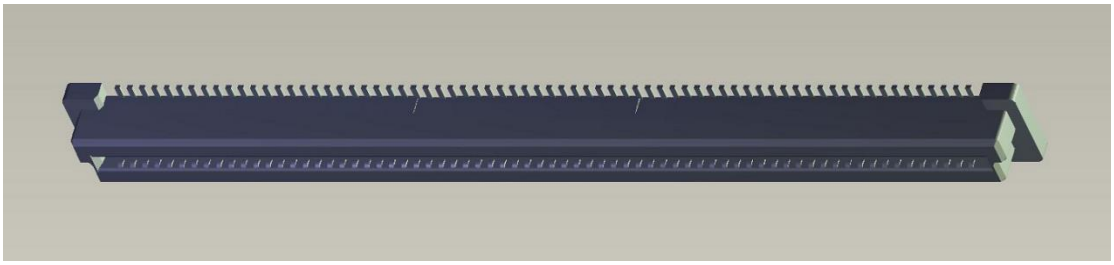


图 2-5

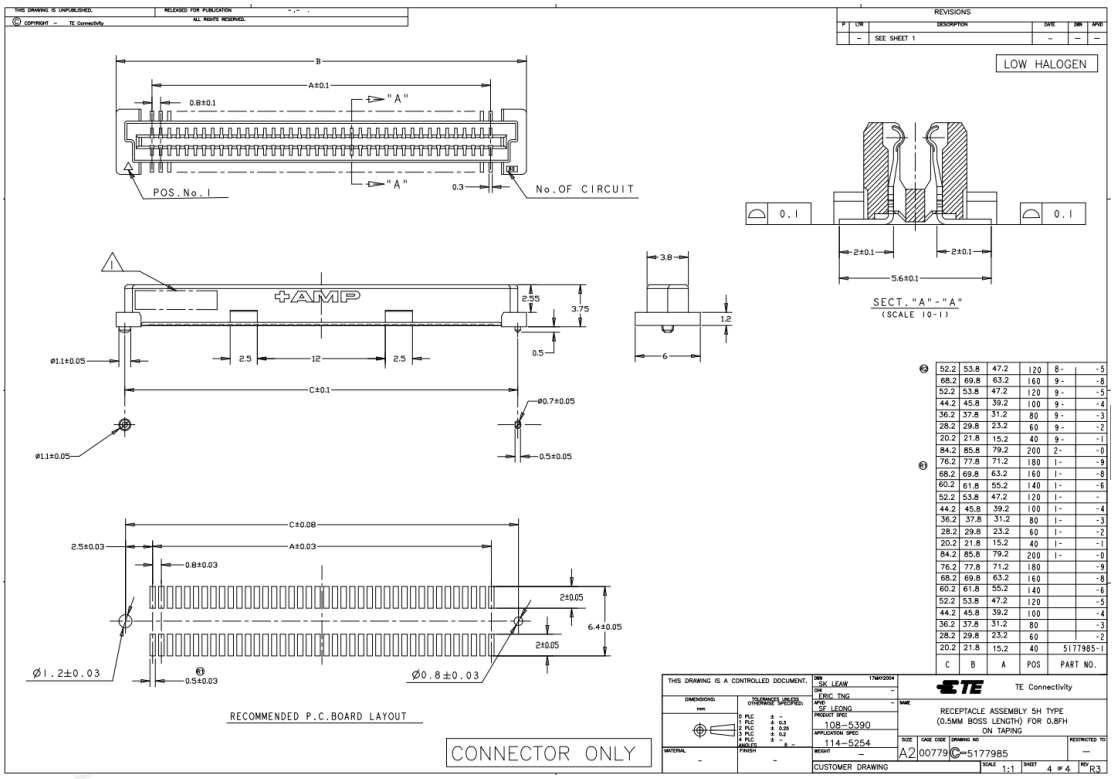


图 2-6

3 基本参数

表 3-1

Function	Description
CPU	RK3399, 28 nm HKMG, Big cluster with dual-coreCortex-A72 + little cluster with quad-core Cortex-A53
GPU	Mali- T860 MP4，OpenGL ES1.1/2.0/3.0/3.1/3.2, OpenCL1.2, DirectX11.1
VPU	4K VP9 and 4K H265 up to 60fps video decoding 1080P@60fps multi-format video decoding (MVC, mpeg-1/2/4, VC-1) 1080P video encoding, with h.264, MVC and VP8 format supported Video anti-cross, de-noising, edge/detail/color optimization supported
DDR	LPDDR3，2GB/4GB(Optional)
eMMC	eMMC 5.1， 8GB/16GB/32GB/64GB/128GB(Optional)
PMU	RK808，Support a variety of power supply
Camera Interface	Two ISP built-in Dual MIPI-CSI 4 Lane of 1.5 Gbps/Lane ITU-R BT 601/656 compliant Maximum input resolution of one ISP is 14M pixels
Display Interface	Two VOP embedded Dual MIPI-DSI 4 Lane of 1.5 Gbps/Lane up to 2560x1600@60fps eDP1.3 4 Lane of 2.7/1.62 Gbps/lane DP1.2 4 Lane with HDCP2.2 up to 4kx2k at 60Hz resolution HDMI2.0 3 Lane with HDCP2.2
USB Interface	HOST*2，TYPE-C*1
TYPE-C Interface	Type-C PHY with Type-C V1.1 and USB PD2.0 Attach/detach detection and signaling as DFP, UFP and DRP Support USB3.0 Type-C and DisplayPort 1.2 Alt Mode Up to 5Gbps data rate for USB3.0 Up to 5.4Gbps (HBR2) data rate for DP1.2
Audio Interface	Two I2S/PCM built-in up to 8 channels TX and 8 channels RX SPDIF supported Audio resolution from 16bits to 32bits Sample rate up to 192KHz Provides master and slave work mode, software configurable Support 3 I2S formats (normal, left-justified, right-justified) Support 4 PCM formats (early, late1, late2, late3) Support two 16-bit audio data store together in one 32-bit wide location Support 16, 20, 24 bits audio data transfer in linear PCM mode
Connectivity	Compatible with SDIO 3.0 protocol GMAC 10/100/1000M Ethernet Controller Six on-chip SPI controllers Five on-chip UART controllers inside

	Eight on-chip I2C controllers Five groups of GPIO (GPIO0~GPIO4), totally have 100+ GPIOs Five-channel single-ended 10-bit SAR-ADC up to 1MS/s sampling rate
OS	Android / Ubuntu / Buildroot
PCB interface	B2B，240 Pin
PCB size	L* W *H(mm)：62 * 50 * 7.8（PCB 1.2mm）

4 接口定义

4.1 pin 脚编号

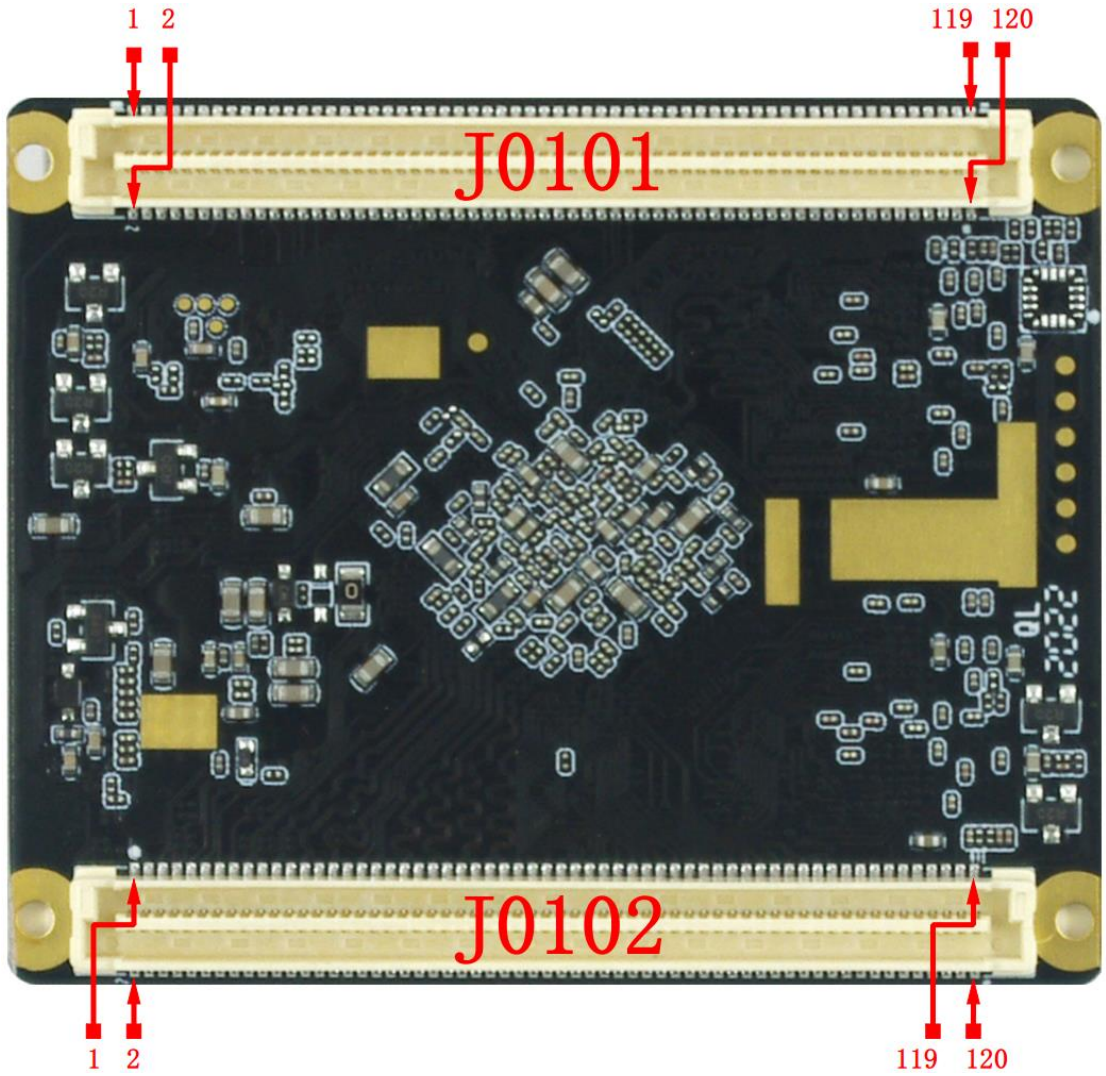


图 4-1

4.2 pin 脚描述

Pin No	Pin Name	Pin Type	I/O Def	I/O Pull	Pull Resistor	Description	Power domain	Tablet/VR REF	Excavator/BOX
J0101.1	VCC_SYS	P	N/A	N/A	N/A	Power input 5V/3A	N/A	Main power supply	Main power supply
J0101.2	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0101.3	VCC_SYS	P	N/A	N/A	N/A	Power input 5V/3A	N/A	Main power supply	Main power supply
J0101.4	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0101.5	VCC_SYS	P	N/A	N/A	N/A	Power input 5V/3A	N/A	Main power supply	Main power supply

J0101.6	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0101.7	VCC_SYS	P	N/A	N/A	N/A	Power input 5V/3A	N/A	Main power supply	Main power supply
J0101.8	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0101.9	VCC_SYS	P	N/A	N/A	N/A	Power input 5V/3A	N/A	Main power supply	Main power supply
J0101.10	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0101.11	VCC_SYS	P	N/A	N/A	N/A	Power input 5V/3A	N/A	Main power supply	Main power supply
J0101.12	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0101.13	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0101.14	VCC3V3_SYS	P	N/A	N/A	N/A	Power input 3.3V/2A	N/A	3.3V power supply	3.3V power supply
J0101.15	PCIE_RX_1P	A	N/A	N/A		PCIE differential lane 1 positive input		PCIE_RX_1P	PCIE_RX_1P
J0101.16	VCC3V3_SYS	P	N/A	N/A	N/A	Power input 3.3V/2A	N/A	3.3V power supply	3.3V power supply
J0101.17	PCIE_RX_1N	A	N/A	N/A		PCIE differential lane 1 negative input		PCIE_RX_1N	PCIE_RX_1N
J0101.18	VCC3V3_S3	P	N/A	N/A	N/A	Power output 3.3V/0.5A	N/A	For external devices used	For AVCC/DVCC of ethernet phy
J0101.19	PCIE_TX_1P	A	N/A	N/A		PCIE differential lane 1 positive output		PCIE_TX_1P	PCIE_TX_1P
J0101.20	VCC3V3_S3	P	N/A	N/A	N/A	Power output 3.3V/0.5A	N/A	AVCC/DVCC of ethernet phy	AVCC/DVCC of ethernet phy
J0101.21	PCIE_TX_1N	A	N/A	N/A		PCIE differential lane 1 negative output		PCIE_TX_1N	PCIE_TX_1N
J0101.22	VCC1V8_S3	P	N/A	N/A	N/A	Power output 1.8V/0.5A	N/A	IOVCC of LCM/MIPI-CAM/sensor	IOVCC of LCM/CAM/sensor
J0101.23	PCIE_RX_0P	A	N/A	N/A		PCIE differential lane 0 positive input		PCIE_RX_0P	PCIE_RX_0P
J0101.24	TYPEC0_U2VBUSDET	A	N/A	N/A		TYPEC0 connected/vbus power detect for USB2.0		TYPEC0_U2VBUSDET	TYPEC0_U2VBUSDET
J0101.25	PCIE_RX_0N	A	N/A	N/A		PCIE differential lane 0 negative input		PCIE_RX_0N	PCIE_RX_0N
J0101.26	TYPEC0_ID	A	N/A	N/A		TYPEC0 ID detect input,200kohm internal pull-up to USB_AVDD_1V8		TYPEC0_ID	TYPEC0_ID
J0101.27	PCIE_TX_0P	A	N/A	N/A		PCIE differential lane 0 positive output		PCIE_TX_0P	PCIE_TX_0P
J0101.28	ADC_IN3	A	N/A	N/A		DRAM ID detect input	1.8V		RAM_ID
J0101.29	PCIE_TX_0N	A	N/A	N/A		PCIE differential lane 0 negative output		PCIE_TX_0N	PCIE_TX_0N
J0101.30	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0101.31	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0101.32	HOST0_DM	A	N/A	N/A		USB HOST0 Data Minus port		HOST0_DM	HOST0_DM
J0101.33	PCIE_RCLK_100M_N	A	N/A	N/A		PCIE 100MHz reference clock as input to PLL		PCIE_RCLK_100M_N	PCIE_RCLK_100M_N
J0101.34	HOST0_DP	A	N/A	N/A		USB HOST0 Data Plus port		HOST0_DP	HOST0_DP
J0101.35	PCIE_RCLK_100M_P	A	N/A	N/A		PCIE 100MHz reference clock as input to PLL		PCIE_RCLK_100M_P	PCIE_RCLK_100M_P
J0101.36	HOST1_DM	A	N/A	N/A		USB HOST1 Data Minus port		HOST1_DM	HOST1_DM
J0101.37	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0101.38	HOST1_DP	A	N/A	N/A		USB HOST1 Data Plus port		HOST1_DP	HOST1_DP
J0101.39	GPIO4_A5/I2S1_LRCK_TX	I/O	I	down	34k-93k	HDMI input interrupt input I2S 1 port, for BT module	1.8V	HDMIIN_INT	I2S1_LRCK_TX_BT_PCM
J0101.40	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0101.41	GPIO3_D4/I2S0_SDI1SDO3	I/O	I	down	34k-93k	I2S 0 port, for audio codec	1.8V	I2S0_SDI1	I2S0_SDI1

J0101.42	GPIO0_B2	I/O	I	down	55k-176k	WIFI module power enable	1.8V	WIFI_REG_ON_H	WIFI_REG_ON_H
J0101.43	GPIO3_D5/I2S0_SDI2SDO2	I/O	I	down	34k-93k	I2S 0 port, for audio codec	1.8V	I2S0_SDO2	I2S0_SDI2
J0101.44	GPIO0_B1/PMUIO2_1833_VOLSEL	I/O	I	down	55k-176k	BT module power enable	1.8V	BT_REG_ON_H	BT_REG_ON_H
J0101.45	GPIO3_D6/I2S0_SDI3SDO1	I/O	I	down	34k-93k	I2S 0 port, for audio codec	1.8V	I2S0_SDO1	I2S0_SDI3
J0101.46	GPIO0_A3/SDIO0_WRPT	I/O	I	down	55k-176k	WIFI module wake up AP	1.8V	WIFI_HOST_WAKE_L	WIFI_HOST_WAKE_L
J0101.47	GPIO0_B5/TCPD_VBUS_SOURCE3/TCPD_VBUS_FDIS	I/O	I	down	55k-176k	Type-C1 discharge control Hall Sensor interrupt input	1.8V	DNP	HALL_INT_L
J0101.48	GPIO0_B3	I/O	I	down	55k-176k	Speaker PA power enable	1.8V	SPK_CTL_H	SPK_CTL_H
J0101.49	GPIO1_A4/ISP_PRELIGHT_TRIG	I/O	I	down	34k-93k	ISP_PRELIGHT_TRIG	1.8V	DNP	ISP_PRELIGHT_TRIG
J0101.50	GPIO0_A4/SDIO0_INTn	I/O	I	down	55k-176k	BT module wake up AP	1.8V	BT_HOST_WAKE_L	BT_HOST_WAKE_L
J0101.51	GPIO1_C6/DFTJTAG_TDI/TCPD_VBUS_SOURCE0	I/O	I	down	34k-93k	G-sensor interrupt input	1.8V	GSENSOR_INT_L	GSENSOR_INT_L
J0101.52	GPIO1_B4/I2C4_SCL	I/O	I	up	33k-88k	I2C serial port 4, for MEMS need external pull-up	1.8V	I2C4_SCL	I2C_SCL_MEMS
J0101.53	GPIO1_D0/DFTJTAG_CLK/TCPD_VBUS_SOURCE2	I/O	I	down	34k-93k	Gyroscope interrupt input FUSB302 interrupt input for Type-C1	1.8V	GYR_INT_L	GYR_INT_L
J0101.54	GPIO1_B3/I2C4_SDA	I/O	I	up	33k-88k	I2C serial port 4, for MEMS need external pull-up	1.8V	I2C4_SDA	I2C_SDA_MEMS
J0101.55	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0101.56	GPIO0_A2/WIFI_26MHZ	I/O	I	down	55k-176k	26MHz clock output	1.8V	RK3399_26M_OUT	RK3399_26M_OUT
J0101.57	GPIO4_B2/SDMMC0_D2/APJTAG_TCK	I/O	I	up	33k-88k	SDMMC0 data port JTAG TCK for AP	1.8V/3.0V auto	SDMMC0_D2 APJTAG_TCK	SDMMC0_D2 APJTAG_TCK
J0101.58	GPIO1_C2/SPI3_CS0	I/O	I	up	33k-88k	Gas gauge interrupt input Motor power enable CC controller over current flag	1.8V	ALRT_H	Motor_PWR
J0101.59	GPIO4_B0/SDMMC0_D0/UART2DBG_RX	I/O	I	up	33k-88k	SDMMC0 data port	1.8V/3.0V auto	SDMMC0_D0	SDMMC0_D0
J0101.60	GPIO1_C7/DFTJTAG_TDO/TCPD_VBUS_SOURCE1	I/O	I	down	34k-93k	Adapter insert detect input	1.8V	CHARG_OK_H	DC_DET_H
J0101.61	GPIO4_B1/SDMMC0_D1/UART2DBG_TX	I/O	I	up	33k-88k	SDMMC0 data port	1.8V/3.0V auto	SDMMC0_D1	SDMMC0_D1
J0101.62	GPIO0_A1/DDRIO_PWROFF/TCPD_CCDB_EN	I/O	I	up	54k-120k	SDMMC0 power control output	1.8V	SDMMC0_PWR_H	SDMMC0_PWR_H
J0101.63	GPIO4_B5/SDMMC0_CMD/MCUJTAG_TMS	I/O	I	up	33k-88k	SDMMC0 command output JTAG TMS for MCU	1.8V/3.0V auto	SDMMC0_CMD MCUJTAG_TMS	SDMMC0_CMD MCUJTAG_TMS
J0101.64	GPIO1_B2/SPI1_CSN0/PMCU_JTAG_TMS	I/O	I	up	33k-88k	SPI bus port 1, for FW boot JTAG TMS for PMCU	1.8V	SPI1_CSn0	SPI1_CSn0
J0101.65	GPIO0_A7/SDMMC0_DET	I/O	I	up	54k-120k	SDMMC0 detect input	1.8V	SDMMC0_DET_L	SDMMC0_DET_L
J0101.66	GPIO1_B1/SPI1_CLK/PMCU_JTAG_TCK	I/O	I	up	33k-88k	SPI bus port 1, for FW boot JTAG TCK for PMCU	1.8V	SPI1_CLK	SPI1_CLK

J0101.67	GPIO4_B4/SDMMC0_CLKOUT/MCUJTAG_TCK	I/O	I	down	34k-93k	SDMMC0 clock output JTAG TCK for MCU	1.8V/3.0V auto	SDMMC0_CLKO MCUJTAG_TCK	SDMMC0_CLKO MCUJTAG_TCK
J0101.68	GPIO1_A7/SPI1_RXD/PMCU_UART4DBG_RX	I/O	I	up	33k-88k	SPI bus port 1, for FW boot Uart4 serial port data input,for PMCU debug	1.8V	SPI1_RXD	SPI1_RXD
J0101.69	GPIO4_B3/SDMMC0_D3/APJTAG_TMS	I/O	I	up	33k-88k	SDMMC0 data port JTAG TMS for AP	1.8V/3.0V auto	SDMMC0_D3 APJTAG_TMS	SDMMC0_D3 APJTAG_TMS
J0101.70	VCC1V8_DVP	P	N/A	N/A	N/A	Power output 1.8V/0.1A	N/A	IOVCC of CIFI-CAM	IOVCC of CIFI-CAM
J0101.71	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0101.72	GPIO3_C0/MAC_COL/UART3_CTSN	I/O	I	up	26k-71k	MAC collision detect	3.3V		MAC_COL
J0101.73	GPIO1_B0/SPI1_TXD/PMCU_UART4DBG_TX	I/O	I	up	33k-88k	SPI bus port 1, for FW boot Uart4 serial port data output,for PMCU debug	1.8V	SPI1_TXD	SPI1_TXD
J0101.74	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0101.75	GPIO0_B4/TCPD_VBUS_BDIS	I/O	I	down	55k-176k	Type-C0 discharge control	1.8V	TYPE_C0_DISCHARGE	DNP
J0101.76	EDP_TX3N	A	N/A	N/A		eDP differential lane 3 negative output		EDP_TX3N	EDP_TX3N
J0101.77	GPIO2_B0/VOP_CLK/CIF_VSYNC/I2C7_SCL	I/O	I	up	33k-88k	Camera vsync input	1.8V	CIF_VSYNC	GPIO2_B0/CIF_VSYNC/I2C7_SCL
J0101.78	EDP_TX3P	A	N/A	N/A		eDP differential lane 3 positive output		EDP_TX3P	EDP_TX3P
J0101.79	GPIO2_A0/VOP_D0/CIF_D0/I2C2_SDA	I/O	I	up	33k-88k	Camera data port	1.8V	CIF_D0	GPIO2_A0/CIF_D0/I2C2_SDA
J0101.80	EDP_TX2N	A	N/A	N/A		eDP differential lane 2 negative output		EDP_TX2N	EDP_TX2N
J0101.81	GPIO1_B5	I/O	I	down	34k-93k	LCD panel power enable	1.8V	LCD_EN_H	LCD_EN_H
J0101.82	EDP_TX2P	A	N/A	N/A		eDP differential lane 2 positive output		EDP_TX2P	EDP_TX2P
J0101.83	GPIO2_B3/SPI2_CLK/VOP_DEN/CIF_CLKOUT	I/O	I	up	33k-88k	Camera clock output	1.8V	CIF_CLKO	GPIO2_B3/CIF_CLKO /SPI2_CLK
J0101.84	EDP_TX1P	A	N/A	N/A		eDP differential lane 1 positive output		EDP_TX1P	EDP_TX1P
J0101.85	GPIO2_A1/VOP_D1/CIF_D1/I2C2_SCL	I/O	I	up	33k-88k	Camera data port	1.8V	CIF_D1	GPIO2_A1/CIF_D1 /I2C2_SCL
J0101.86	EDP_TX1N	A	N/A	N/A		eDP differential lane 1 negative output		EDP_TX1N	EDP_TX1N
J0101.87	GPIO1_C3/PWM2	I/O	I	down	34k-93k	Power dynamic voltage scaling control for LOGIC/CENTERLOG	1.8V	LOG_DVS_PWM	LOG_DVS_PWM
J0101.88	EDP_TX0P	A	N/A	N/A		eDP differential lane 0 positive output		EDP_TX0P	EDP_TX0P
J0101.89	RESET_L	I	I	up	10K	manual reset signal of RK3399	1.8V	manual reset signal of RK3399	manual reset signal of RK3399
J0101.90	EDP_TX0N	A	N/A	N/A		eDP differential lane 0 negative output		EDP_TX0N	EDP_TX0N
J0101.91	GPIO0_B0/SDMMC0_WRPT/TEST_CLKOUT2	I/O	I	up	54k-120k	DVP power enable	1.8V	DNP	DVP_PWR_H
J0101.92	EDP_AUXP	A	N/A	N/A		eDP differential AUX channel negative output		EDP_AUXP	EDP_AUXP

J0101.93	GPIO2_A7/VOP_D7/CIF_D7 /I2C7_SDA	I/O	I	up	33k-88k	Camera data port	1.8V	CIF_D7	GPIO2_A7/CIF_D7/I2C7_SDA
J0101.94	EDP_AUXN	A	N/A	N/A		eDP differential AUX channel positive output		EDP_AUXN	EDP_AUXN
J0101.95	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0101.96	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0101.97	GPIO3_B5/MAC_MDIO/UA RT1_TX	I/O	I	up	26k-71k	MAC management command and data PCIE reset input	3.3V	TOUCH_INT_L	MAC_MDIO
J0101.98	GPIO2_B2/SPI2_TXD/CIF_C LKIN/I2C6_SCL	I/O	I	up	33k-88k	Camera clock input I2C serial port 6,for battery,need external pull-up	1.8V	CIF_CLKI	GPIO2_B2/CIF_CLKI / I2C6_SCL/SPI2_TXD
J0101.99	GPIO3_C1/MAC_TXCLK/U ART3_RTSN	I/O	I	up	26k-71k	MAC transmit clock	3.3V		MAC_TXCLK
J0101.100	GPIO2_B1/SPI2_RXD/CIF_ HREF/I2C6_SDA	I/O	I	up	33k-88k	Camera href input I2C serial port 6,for battery,need external pull-up	1.8V	CIF_HREF	GPIO2_B1/CIF_HREF/ I2C6_SDA/SPI2_RXD
J0101.101	GPIO3_B0/MAC_MDC/SPI0 _CSN1	I/O	I	up	26k-71k	MAC management clock	3.3V		MAC_MDC
J0101.102	GPIO2_B4/SPI2_CSN0	I/O	I	up	33k-88k	Camera power down control output for front	1.8V	DVP_PDN0_H	GPIO2_B4/DVP_PDN0_H /SPI2_CSN
J0101.103	GPIO3_A2/MAC_RXD2/SPI 4_CLK	I/O	I	up	26k-71k	MAC receive data	3.3V		MAC_RXD2
J0101.104	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0101.105	GPIO3_A7/MAC_RXD1/SPI 0_CSN0	I/O	I	up	26k-71k	MAC receive data	3.3V		MAC_RXD1
J0101.106	GPIO3_B3/MAC_CLK/I2C5_ SCL	I/O	I	up	26k-71k	MAC reference clock output I2C serial port 4,need external pull-up	3.3V	I2C_SCL_TP	MAC_MCLK
J0101.107	GPIO3_B6/MAC_RXCLK/U ART3_RX	I/O	I	up	26k-71k	MAC receive clock	3.3V		MAC_RXCLK
J0101.108	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0101.109	GPIO3_B1/MAC_RXDV	I/O	I	down	27k-102k	MAC receive data valid	3.3V		MAC_RXDV
J0101.110	GPIO3_A4/MAC_TXD0/SPI 0_RXD	I/O	I	down	27k-102k	MAC transmit data	3.3V	LCD_RST	MAC_TXD0
J0101.111	GPIO3_B7/MAC_CRS/UAR T3_TX	I/O	I	up	26k-71k	MAC carrier sense detect	3.3V		MAC_CRS
J0101.112	GPIO3_A0/MAC_TXD2/SPI 4_RXD	I/O	I	down	27k-102k	MAC transmit data	3.3V		MAC_TXD2
J0101.113	GPIO3_A6/MAC_RXD0/SPI 0_CLK	I/O	I	up	26k-71k	MAC receive data	3.3V		MAC_RXD0
J0101.114	GPIO3_A1/MAC_TXD3/SPI 4_TXD	I/O	I	down	27k-102k	MAC transmit data	3.3V	CABC_EN	MAC_TXD3
J0101.115	GPIO3_A3/MAC_RXD3/SPI 4_CSN0	I/O	I	up	26k-71k	MAC receive data	3.3V		MAC_RXD3

J0101.116	GPIO3_B2/MAC_RXER/I2C 5_SDA	I/O	I	up	26k-71k	MAC receive error I2C serial port 4,need external pull-up	3.3V	I2C_SDA_TP	MAC_RXER
J0101.117	GPIO1_A2/ISP_FLASHTRIG IN/TCPD_CC1_VCONN_EN	I/O	I	down	34k-93k	Charge and cc controler interrupt input	1.8V	CHG_CC_INT_L	CHG_CC_INT_L
J0101.118	GPIO3_A5/MAC_TXD1/SPI 0_TXD	I/O	I	down	27k-102k	MAC transmit data	3.3V		MAC_TXD1
J0101.119	GPIO0_A5/EMMC_PWRON	I/O	I	up	54k-120k	Power key detect input	1.8V	PWR_KEY_L	PWR_KEY_L
J0101.120	GPIO3_B4/MAC_TXEN/UA RT1_RX	I/O	I	up	26k-71k	MAC transmit enable AP wake up PCIE	3.3V	TOUCH_RST_L	MAC_TXEN
J0102.1	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0102.2	VCC_1V8	P	N/A	N/A	N/A	Power output 1.8V/0.5A	N/A	VDDIO of WIFI/Btsensor	VDDIO of WIFI/Btsensor
J0102.3	RTC_CLKO_WIFI	O	O	up	10K	32768HZ clock out	1.8V	RTC CLK of WIFI/BT	RTC CLK of WIFI/BT
J0102.4	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0102.5	POWER_KEY	I	I	up	10K	Power on signal of PMU	VCCA	System power key	System power key
J0102.6	TYPEC0_DP	A	N/A	N/A		TYPEC0 Data Plus port		TYPEC0_DP	TYPEC0_DP
J0102.7	ADC_IN1	A	N/A	N/A		AD keyboard input	1.8V	ADKEY_IN	ADKEY_IN
J0102.8	TYPEC0_DM	A	N/A	N/A		TYPEC0 Data Minus port		TYPEC0_DM	TYPEC0_DM
J0102.9	ADC_IN2	A	N/A	N/A		Headphone	1.8V	HP_HOOK	HP_HOOK
J0102.10	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0102.11	PMIC_EXT_EN	O	O	down	N/A	EXT_EN of PMU	VCCA	Output enable signal for external power path	Output enable signal for external power path
J0102.12	TYPEC1_DP	A	N/A	N/A		TYPEC1 Data Plus port		TYPEC1_DP	TYPEC1_DP
J0102.13	HDMI_HPD	A	N/A	N/A		HDMI Hot Plug Detection interrupt with 5V tolerance		HDMI_HPD	HDMI_HPD
J0102.14	TYPEC1_DM	A	N/A	N/A		TYPEC1 Data Minus port		TYPEC1_DM	TYPEC1_DM
J0102.15	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0102.16	TYPEC1_TX1P	A	N/A	N/A		TYPEC1 positive half of first SuperSpeed TX differential pair.		TYPEC1_TX1P	TYPEC1_TX1P
J0102.17	HDMI_TX2N	A	N/A	N/A		HDMI channel 2 differential serial data negative		HDMI_TX2N	HDMI_TX2N
J0102.18	TYPEC1_TX1M	A	N/A	N/A		TYPEC1 negative half of first SuperSpeed TX differential pair.		TYPEC1_TX1M	TYPEC1_TX1M
J0102.19	HDMI_TX2P	A	N/A	N/A		HDMI channel 2 differential serial data positive		HDMI_TX2P	HDMI_TX2P
J0102.20	TYPEC1_RX1M	A	N/A	N/A		TYPEC1 negative half of first SuperSpeed RX differential pair.		TYPEC1_RX1M	TYPEC1_RX1M
J0102.21	HDMI_TX1N	A	N/A	N/A		HDMI channel 1 differential serial data negative		HDMI_TX1N	HDMI_TX1N
J0102.22	TYPEC1_RX1P	A	N/A	N/A		TYPEC1 positive half of first SuperSpeed RX differential pair.		TYPEC1_RX1P	TYPEC1_RX1P
J0102.23	HDMI_TX1P	A	N/A	N/A		HDMI channel 1 differential serial data positive		HDMI_TX1P	HDMI_TX1P

J0102.24	TYPEC0_TX2P	A	N/A	N/A		TYPEC0 positive half of second SuperSpeed TX differential pair.		TYPEC0_TX2P	TYPEC0_TX2P
J0102.25	HDMI_TX0N	A	N/A	N/A		HDMI channel 0 differential serial data negative		HDMI_TX0N	HDMI_TX0N
J0102.26	TYPEC0_TX2M	A	N/A	N/A		TYPEC0 negative half of second SuperSpeed TX differential pair.		TYPEC0_TX2M	TYPEC0_TX2M
J0102.27	HDMI_TX0P	A	N/A	N/A		HDMI channel 0 differential serial data positive		HDMI_TX0P	HDMI_TX0P
J0102.28	TYPEC0_RX2M	A	N/A	N/A		TYPEC0 negative half of second SuperSpeed RX differential pair.		TYPEC0_RX2M	TYPEC0_RX2M
J0102.29	HDMI_TCN	A	N/A	N/A		HDMI differential pixel clock negative		HDMI_TCN	HDMI_TCN
J0102.30	TYPEC0_RX2P	A	N/A	N/A		TYPEC0 positive half of second SuperSpeed RX differential pair.		TYPEC0_RX2P	TYPEC0_RX2P
J0102.31	HDMI_TCP	A	N/A	N/A		HDMI differential pixel clock positive		HDMI_TCP	HDMI_TCP
J0102.32	TYPEC0_TX1P	A	N/A	N/A		TYPEC0 positive half of first SuperSpeed TX differential pair.		TYPEC0_TX1P	TYPEC0_TX1P
J0102.33	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0102.34	TYPEC0_TX1M	A	N/A	N/A		TYPEC0 negative half of first SuperSpeed TX differential pair.		TYPEC0_TX1M	TYPEC0_TX1M
J0102.35	MIPI_TX0_D0P	P	N/A	N/A		MIPI-DSI0 differential lane 0 positive		MIPI_TX0_D0P	MIPI_TX0_D0P
J0102.36	TYPEC0_RX1M	A	N/A	N/A		TYPEC0 negative half of first SuperSpeed RX differential pair.		TYPEC0_RX1M	TYPEC0_RX1M
J0102.37	MIPI_TX0_D0N	A	N/A	N/A		MIPI-DSI0 differential lane 0 negative		MIPI_TX0_D0N	MIPI_TX0_D0N
J0102.38	TYPEC0_RX1P	A	N/A	N/A		TYPEC0 positive half of first SuperSpeed RX differential pair.		TYPEC0_RX1P	TYPEC0_RX1P
J0102.39	MIPI_TX0_D1P	A	N/A	N/A		MIPI-DSI0 differential lane 1 positive		MIPI_TX0_D1P	MIPI_TX0_D1P
J0102.40	TYPEC0_AUXM	A	N/A	N/A		TYPEC0 AUX differential TX/RX serial data.		TYPEC0_AUXM	TYPEC0_AUXM
J0102.41	MIPI_TX0_D1N	A	N/A	N/A		MIPI-DSI0 differential lane 1 negative		MIPI_TX0_D1N	MIPI_TX0_D1N
J0102.42	TYPEC0_AUXP	A	N/A	N/A		TYPEC0 AUX differential TX/RX serial data.		TYPEC0_AUXP	TYPEC0_AUXP
J0102.43	MIPI_TX0_CLKP	A	N/A	N/A		MIPI-DSI0 differential clock lane positive		MIPI_TX0_CLKP	MIPI_TX0_CLKP
J0102.44	TYPEC0_AUXP_PD_PU	A	N/A	N/A		TYPEC0 AUX pull-up/pull-down polarity reversal pins.		TYPEC0_AUXP_PD_PU	TYPEC0_AUXP_PD_PU
J0102.45	MIPI_TX0_CLKN	A	N/A	N/A		MIPI-DSI0 differential clock lane negative		MIPI_TX0_CLKN	MIPI_TX0_CLKN
J0102.46	TYPEC0_AUXM_PU_PD	A	N/A	N/A		TYPEC0 AUX pull-up/pull-down polarity reversal pins.		TYPEC0_AUXM_PU_PD	TYPEC0_AUXM_PU_PD
J0102.47	MIPI_TX0_D2P	A	N/A	N/A		MIPI-DSI0 differential lane 2 positive		MIPI_TX0_D2P	MIPI_TX0_D2P
J0102.48	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0102.49	MIPI_TX0_D2N	A	N/A	N/A		MIPI-DSI0 differential lane 2 negative		MIPI_TX0_D2N	MIPI_TX0_D2N
J0102.50	MIPI_RX0_D0N	P	N/A	N/A		MIPI-CSI0 differential lane 0 negative		MIPI_RX0_D0N	MIPI_RX0_D0N
J0102.51	MIPI_TX0_D3P	A	N/A	N/A		MIPI-DSI0 differential lane 3 positive		MIPI_TX0_D3P	MIPI_TX0_D3P
J0102.52	MIPI_RX0_D0P	A	N/A	N/A		MIPI-CSI0 differential lane 0 positive		MIPI_RX0_D0P	MIPI_RX0_D0P

J0102.53	MIPI_TX0_D3N	A	N/A	N/A		MIPI-DSI0 differential lane 3 negative		MIPI_TX0_D3N	MIPI_TX0_D3N
J0102.54	MIPI_RX0_D1N	A	N/A	N/A		MIPI-CSI0 differential lane 1 negative		MIPI_RX0_D1N	MIPI_RX0_D1N
J0102.55	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0102.56	MIPI_RX0_D1P	A	N/A	N/A		MIPI-CSI0 differential lane 1 positive		MIPI_RX0_D1P	MIPI_RX0_D1P
J0102.57	GPIO2_C4/SDIO0_D0/SPI5_RXD	I/O	I	up	54k-124k	SDIO0 data port ,for WIFI module	1.8V	SDIO0_D0	SDIO0_D0
J0102.58	MIPI_RX0_CLKN	A	N/A	N/A		MIPI-CSI0 differential clock lane negative		MIPI_RX0_CLKN	MIPI_RX0_CLKN
J0102.59	GPIO2_C7/SDIO0_D3/SPI5_CSN0	I/O	I	up	54k-127k	SDIO0 data port ,for WIFI module	1.8V	SDIO0_D3	SDIO0_D3
J0102.60	MIPI_RX0_CLKP	A	N/A	N/A		MIPI-CSI0 differential clock lane positive		MIPI_RX0_CLKP	MIPI_RX0_CLKP
J0102.61	GPIO2_D0/SDIO0_CMD	I/O	I	up	54k-128k	SDIO0 command output,for WIFI module	1.8V	SDIO0_CMD	SDIO0_CMD
J0102.62	MIPI_RX0_D2N	A	N/A	N/A		MIPI-CSI0 differential lane 2 negative		MIPI_RX0_D2N	MIPI_RX0_D2N
J0102.63	GPIO2_C6/SDIO0_D2/SPI5_CLK	I/O	I	up	54k-126k	SDIO0 data port ,for WIFI module	1.8V	SDIO0_D2	SDIO0_D2
J0102.64	MIPI_RX0_D2P	A	N/A	N/A		MIPI-CSI0 differential lane 2 positive		MIPI_RX0_D2P	MIPI_RX0_D2P
J0102.65	GPIO2_C5/SDIO0_D1/SPI5_TXD	I/O	I	up	54k-125k	SDIO0 data port ,for WIFI module	1.8V	SDIO0_D1	SDIO0_D1
J0102.66	MIPI_RX0_D3N	A	N/A	N/A		MIPI-CSI0 differential lane 3 negative		MIPI_RX0_D3N	MIPI_RX0_D3N
J0102.67	GPIO2_D1/SDIO0_CLKOUT/TEST_CLKOUT1	I/O	I	up	54k-129k	SDIO0 clock output,for WIFI module	1.8V	SDIO0_CLK	SDIO0_CLK
J0102.68	MIPI_RX0_D3P	A	N/A	N/A		MIPI-CSI0 differential lane 3 positive		MIPI_RX0_D3P	MIPI_RX0_D3P
J0102.69	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0102.70	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0102.71	GPIO4_C4/UART2DBG_TX	I/O	I	up	33k-89k	Uart2 serial port data output,for AP debug	3.0V	UART2_TXD	UART2_TXD
J0102.72	MIPI_TX1/RX1_D3N	A	N/A	N/A		MIPI-DSI1/CSI1 differential lane 3 negative		MIPI_TX1/RX1_D3N	MIPI_TX1/RX1_D3N
J0102.73	GPIO4_C0/I2C3_SDA_HDMI/UART2DBG_RX	I/O	I	up	33k-89k	I2C serial port 3,for HDMI,need external pull-up	3.0V	I2C_SDA_HDMI	I2C_SDA_HDMI
J0102.74	MIPI_TX1/RX1_D3P	A	N/A	N/A		MIPI-DSI1/CSI1 differential lane 3 positive		MIPI_TX1/RX1_D3P	MIPI_TX1/RX1_D3P
J0102.75	GPIO4_C1/I2C3_SCL_HDMI/UART2DBG_TX	I/O	I	up	33k-89k	I2C serial port 3,for HDMI,need external pull-up	3.0V	I2C_SCL_HDMI	I2C_SCL_HDMI
J0102.76	MIPI_TX1/RX1_D2N	A	N/A	N/A		MIPI-DSI1/CSI1 differential lane 2 negative		MIPI_TX1/RX1_D2N	MIPI_TX1/RX1_D2N
J0102.77	GPIO4_A6/I2S1_SDI0	I/O	I	down	34k-93k	HDMI input standby enable I2S 1 port, for BT module	1.8V	HDMIIN_STBY	I2S1_SDI0_BT_PCM
J0102.78	MIPI_TX1/RX1_D2P	A	N/A	N/A		MIPI-DSI1/CSI1 differential lane 2 positive		MIPI_TX1/RX1_D2P	MIPI_TX1/RX1_D2P
J0102.79	GPIO4_D0/PCIE_CLKREQN	I/O	I	up	33k-89k	ALS sensor interrupt input	3.0V	LIGHT_INT_L	LIGHT_INT_L
J0102.80	MIPI_TX1/RX1_CLKN	A	N/A	N/A		MIPI-DSI1/CSI1 differential clock lane negative		MIPI_TX1/RX1_CLKN	MIPI_TX1/RX1_CLKN
J0102.81	GPIO4_C2/PWM0/VOP1_PWM_CABC	I/O	I	down	34k-95k	LCD panel backlight brightness control output	3.0V	LCD_BL_PWM	LCD_BL_PWM
J0102.82	MIPI_TX1/RX1_CLKP	A	N/A	N/A		MIPI-DSI1/CSI1 differential clock lane positive		MIPI_TX1/RX1_CLKP	MIPI_TX1/RX1_CLKP

J0102.83	GPIO4_A0/I2S_CLK	I/O	I	down	34k-93k	I2S MCLK, for both I2S0 and I2S1	1.8V	I2S_MCLK	I2S_MCLK
J0102.84	MIPI_TX1/RX1_D1N	A	N/A	N/A		MIPI-DSI1/CSI1 differential lane 1 negative		MIPI_TX1/RX1_D1N	MIPI_TX1/RX1_D1N
J0102.85	GPIO4_A3/I2S1_SCLK	I/O	I	down	34k-93k	HDMI input power enable for VCC1V8 I2S 1 port, for BT module	1.8V	HDMIIN_PWREN18	I2S1_SCLK_BT_PCM
J0102.86	MIPI_TX1/RX1_D1P	A	N/A	N/A		MIPI-DSI1/CSI1 differential lane 1 positive		MIPI_TX1/RX1_D1P	MIPI_TX1/RX1_D1P
J0102.87	GPIO3_D1/I2S0_LRCK_RX	I/O	I	down	34k-93k	I2S 0 port, for audio codec	1.8V	I2S0_LRCK_RX	I2S0_LRCK_RX
J0102.88	MIPI_TX1/RX1_D0N	A	N/A	N/A		MIPI-DSI1/CSI1 differential lane 0 negative		MIPI_TX1/RX1_D0N	MIPI_TX1/RX1_D0N
J0102.89	GPIO4_A7/I2S1_SDO0	I/O	I	down	34k-93k	I2S 1 port, for BT module	1.8V	HDMIIN_PWREN33	I2S1_SDO0_BT_PCM
J0102.90	MIPI_TX1/RX1_D0P	P	N/A	N/A		MIPI-DSI1/CSI1 differential lane 0 positive		MIPI_TX1/RX1_D0P	MIPI_TX1/RX1_D0P
J0102.91	VCCA1V8_CODEC	P	N/A	N/A	N/A	Power output 1.8V/0.2A	N/A	VDDIO of Audio Codec	VDDIO of Audio Codec
J0102.92	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND
J0102.93	GPIO3_D3/I2S0_SDI0	I/O	I	down	34k-93k	I2S 0 port, for audio codec	1.8V	I2S0_SDI0	I2S0_SDI0
J0102.94	GPIO2_C3/UART0_RTSN	I/O	I	up	54k-123k	UART0 serial port, for BT module	1.8V	UART0_RTS	UART0_RTS
J0102.95	GPIO4_A4/I2S1_LRCK_RX	I/O	I	down	34k-93k	HDMI input reset output I2S 1 port, for BT module	1.8V	HDMIIN_RST	I2S1_LRCK_RX_BT_PCM
J0102.96	GPIO4_D4	I/O	I	down	34k-95k	Headphone insert detect input	3.0V	HP_DET_H	HP_DET_H
J0102.97	GPIO4_A1/I2C1_SDA	I/O	I	up	33k-88k	I2C serial port 1,for Audio,need external pull-up	1.8V	I2C1_SDA	I2C_SDA_AUDIO
J0102.98	GPIO2_D2/SDIO0_DETN/PCIE_CLKREQN	I/O	I	up	54k-130k	AP wake up BT module	1.8V	BT_WAKE_L	BT_WAKE_L
J0102.99	GPIO4_A2/I2C1_SCL	I/O	I	up	33k-88k	I2C serial port 1,for Audio,need external pull-up	1.8V	I2C1_SCL	I2C_SCL_AUDIO
J0102.100	GPIO4_D1/DP_HOTPLUG	I/O	I	down	34k-95k	USB HOST power control output	3.0V	VCC5V0_HOST_EN	VCC5V0_HOST_EN
J0102.101	GPIO4_C5/SPDIF_TX	I/O	I	down	34k-95k	HDMI digital audio potical output	3.0V		SPDIF_TX
J0102.102	GPIO4_C6/PWM1	I/O	I	down	34k-95k	Touch panel reset input	3.0V		TOUCH_RST_L
J0102.103	GPIO4_C3/UART2DBG_RX	I/O	I	up	33k-89k	Uart2 serial port data input,for AP debug	3.0V	UART2_RXD	UART2_RXD
J0102.104	GPIO2_C0/UART0_RX	I/O	I	up	54k-120k	UART0 serial port, for BT module	1.8V	UART0_RXD	UART0_RXD
J0102.105	GPIO3_D2/I2S0_LRCK_TX	I/O	I	down	34k-93k	I2S 0 port, for audio codec	1.8V	I2S0_LRCK_TX	I2S0_LRCK_TX
J0102.106	GPIO2_D3/SDIO0_PWREN	I/O	I	down	55k-176k	MIPI camera reset output MEMSl interrupt input	1.8V	Camera_RST_L	DNP
J0102.107	GPIO4_D5	I/O	I	down	34k-95k	LCD panel CABC enable LCD panel reset output	3.0V		CABC_EN
J0102.108	GPIO2_C2/UART0_CTSN	I/O	I	up	54k-122k	UART0 serial port, for BT module	1.8V	UART0_CTS	UART0_CTS
J0102.109	GPIO4_C7/HDMI_CECINOUT/EDP_HOTPLUG	I/O	I	up	33k-89k	HDMI CEC communication	3.0V	HDMI_CEC	HDMI_CEC
J0102.110	GPIO2_D4/SDIO0_BKPWR	I/O	I	down	55k-176k	Camera power down control output for rear	1.8V	DVP_PDN1_H	DVP_PDN1_H
J0102.111	GPIO3_D7/I2S0_SDO0	I/O	I	down	34k-93k	I2S 0 port, for audio codec	1.8V	I2S0_SDO0	I2S0_SDO0
J0102.112	PWR_EN	I	I	down	N/A	Adapter voltage detect input	3.3V~12V	system power on signal by adapter plug in	system power on signal by adapter plug in
J0102.113	GPIO3_D0/I2S0_SCLK	I/O	I	down	34k-93k	I2S 0 port, for audio codec	1.8V	I2S0_SCLK	I2S0_SCLK
J0102.114	GND	G	N/A	N/A	N/A	power ground	N/A	GND	GND

J0102.115	GPIO2_C1/UART0_TX	I/O	I	up	54k-121k	UART0 serial port, for BT module	1.8V	UART0_TXD	UART0_TXD
J0102.116	VCC2V8_DVP	P	N/A	N/A	N/A	Power output 2.8V/0.15A	N/A	AVDD of Camera	AVDD of Camera
J0102.117	VCC_3V0	P	N/A	N/A	N/A	Power output 3.0V/0.25A	N/A	VDD pull up of APIO4	VDD pull up of APIO4
J0102.118	VCC3V3_S0	P	N/A	N/A	N/A	Power output 3.3V/0.15A	N/A	VCCIO of display panel	VCCIO of display panel
J0102.119	VCCA	P	N/A	N/A	N/A	Power input 3.3V~5V/0.1A	N/A	VCC_RTC/VCCA of PMU	VCC_RTC/VCCA of PMU
J0102.120	VCCA3V0_CODEC	P	N/A	N/A	N/A	Power output 3.0V/0.3A	N/A	AVDD of Audio IC	AVDD of Audio IC

Notes:

①:Pin Type: I = input, O = output, I/O = input/output (bidirectional), P=power supply, A = Analog input

②:I/O Pull: u=default pull-up, d=default pull-down, Z=default high-Z, fix up=default pull-up and can't be configured to pull-down

③:Output Drive Unit is mA, only Digital IO has driver strength value;

5 电源规格

5.1 电源供电拓扑图

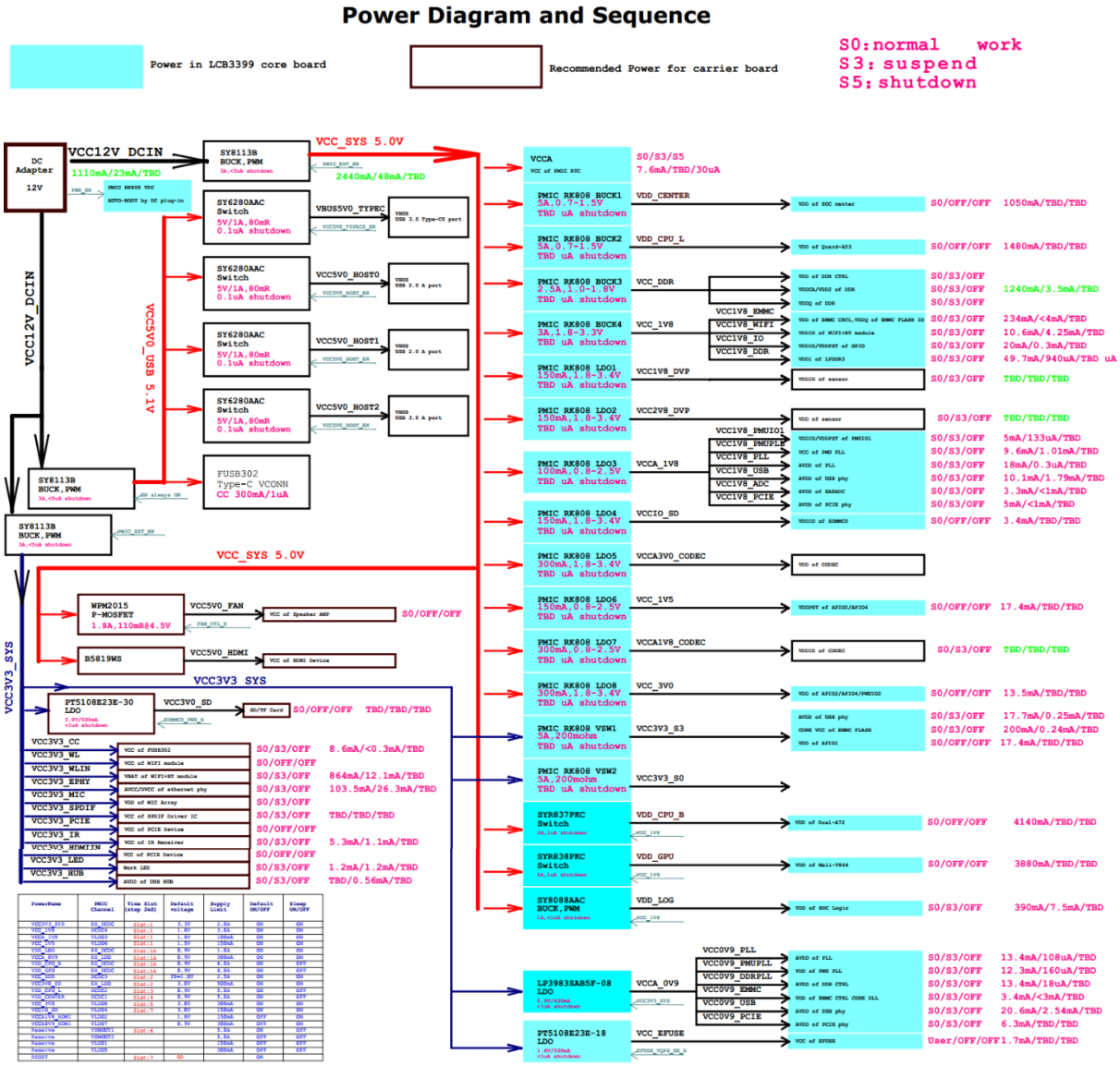


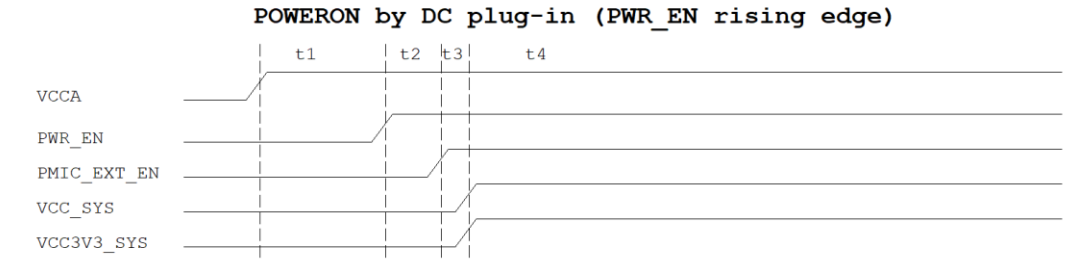
图 5-1

5.2 电压参数

Symbol	Parameter	Current	Voltage		
		Typ	Min（V）	Typ（V）	Max（V）
VCC_SYS	Main power input for LCB3399	3A	3.5	5	5.5
VCCA	Backup voltage input for RTC and power on detect	60uA	VCC_SYS-0.5	VCC_SYS	5.5
VCC3V3_SYS	3.3V power input for LCB3399	2A	3.2	3.3	3.4

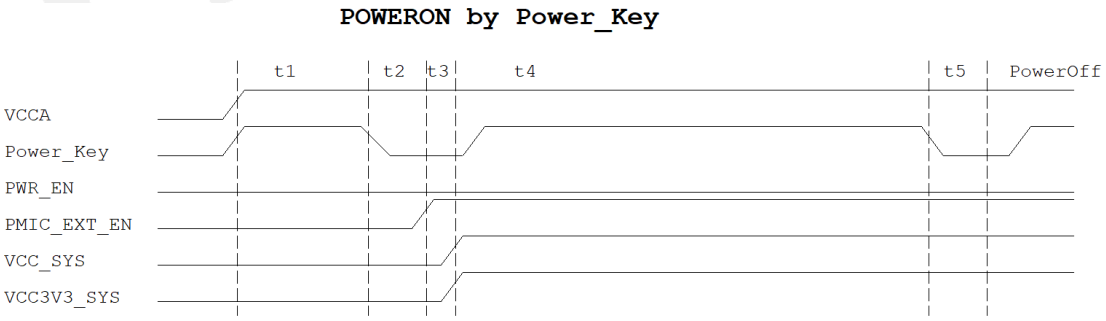
VCC3V3_S3	3.3V output for carrier board use	0.5A	3.2	3.3	3.4
VCC_3V0	3.0V output for carrier board use	0.25A	2.9	3.0	3.1
VCC_1V8	1.8V output for carrier board use	0.5A	1.7	1.8	1.9
VCC1V8_S3	1.8V output for carrier board use	0.5A	1.7	1.8	1.9
VCC1V8_DVP	1.8V output for carrier board use	0.1A	1.7	1.8	1.9
VCC2V8_DVP	2.8V output for carrier board use	0.15A	2.7	2.8	2.9
VCCA1V8_CODEC	1.8V output for carrier board use	0.2A	1.7	1.8	1.9
VCCA3V0_CODEC	3.0V output for carrier board use	0.3A	2.9	3.0	3.1
PMIC_EXT_EN	Output enable for external BUCK	-	0	VCCA	VCCA+0.3
PWR_EN (threshold)	System Power on signal input	-	3	5	12

5.3 开机时序



t1 waiting for PWR_EN signal input to power on system
t2 100 ms
t3 2 ms
t4 system power on by PWR_EN ,cannot be PowerOff when PWR_EN maintain HIGH

图 5-3



t1 waiting for power key signal input to power on system
t2 500 ms
t3 2 ms
t4 system power on by Power_Key, PWR_EN should be LOW or system cannot be PowerOff
t5 3 s

图 5-4

6 应用场景

6.1 应用示例

图 6-1

6.2 应用框图

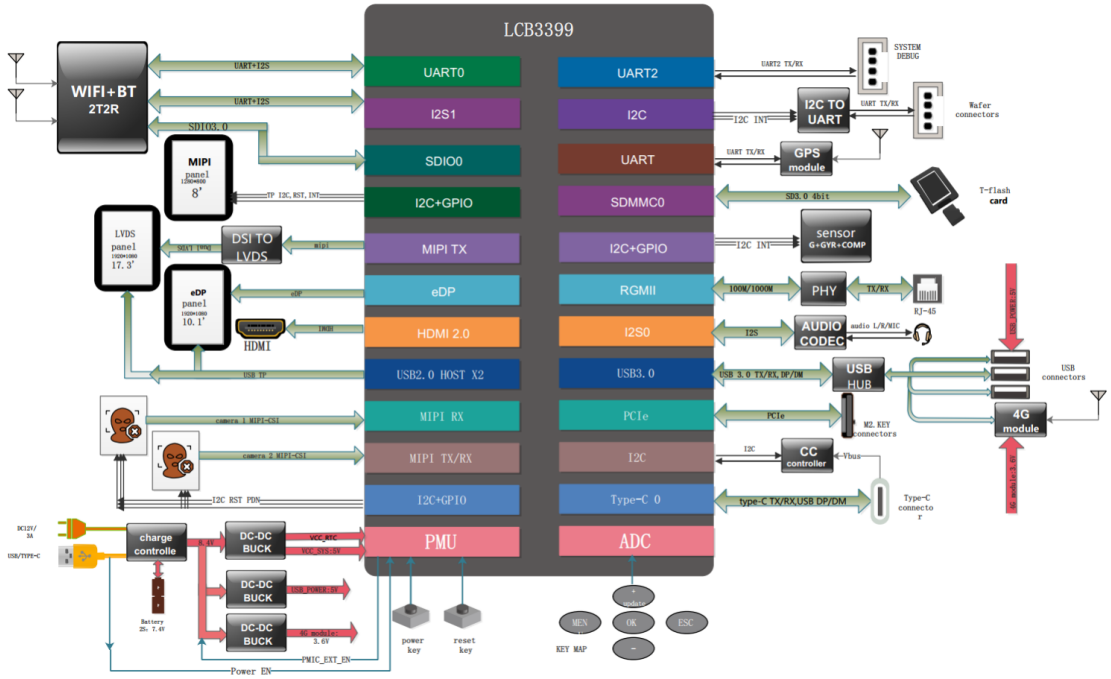

LCB3399
UART0
UART2
I2S1
I2C
SDIO0
UART
I2C+GPIO
SDMMC0
MIPI TX
I2C+GPIO
eDP
RGMII
HDMI 2.0
I2S0
USB2.0 HOST X2
USB3.0
MIPI RX
PCIe
MIPI TX/RX
I2C
I2C+GPIO
Type-C 0
PMU
ADC
WIFI+BT 2T2R
MIPI panel
LVDS panel
DSI TO LVDS
eDP panel
HDMI
I2C TO UART
GPS module
sensor G+GYR+COMP
T-flash card
PHY
AUDIO CODEC
USB HUB
CC controller
4G module
charge controlle
DC-DC BUCK
DC-DC BUCK
DC-DC BUCK
power key
reset key
KEY MAP
MEN
OK
ESC

图 6-2

7 支持与服务

7.1 技术支持

- 为客户提供开发相关的技术咨询；
- 为签约客户提供相关设计资料的检查工作；

7.2 售后服务

- 按照国家规定提供产品售后服务；
- 为客户提供个性化定制服务，如有任何需求，请联系我司；