



R1-358801

核心板
USER Manual V1.0

USER MANUAL 用户手册

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安全须知

1	产品使用前，务必仔细阅读产品说明书。
2	对未准备安装的板卡，应将其保存在防静电保护袋中。
3	在从包装袋中拿板卡前，应将手先置于接地金属物体上一会儿，以释放身体及手中的静电。
4	在拿板卡时，需佩戴静电保护手套，并且应该养成只触及边缘部份的习惯。
5	主板与电源连接时，请确认电源电压。
6	为避免人本被电击或产品被损坏，在每次对主板、板卡进行拔插或生新配置时须先关闭交流电源或将交流电源线从电源插座中拔掉。
7	在对板卡进行搬动前，先将交流电源线从电源插座中拔掉。
8	当您需连接或拔除任何设备前，须确定所有的电源线事先已被拔掉。
9	为避免频繁开关机对产品造成不必要的损伤,关机后,应至少等待30秒后再开机。
10	设备在使用过程时出现异常情况，请找专业人员处理。

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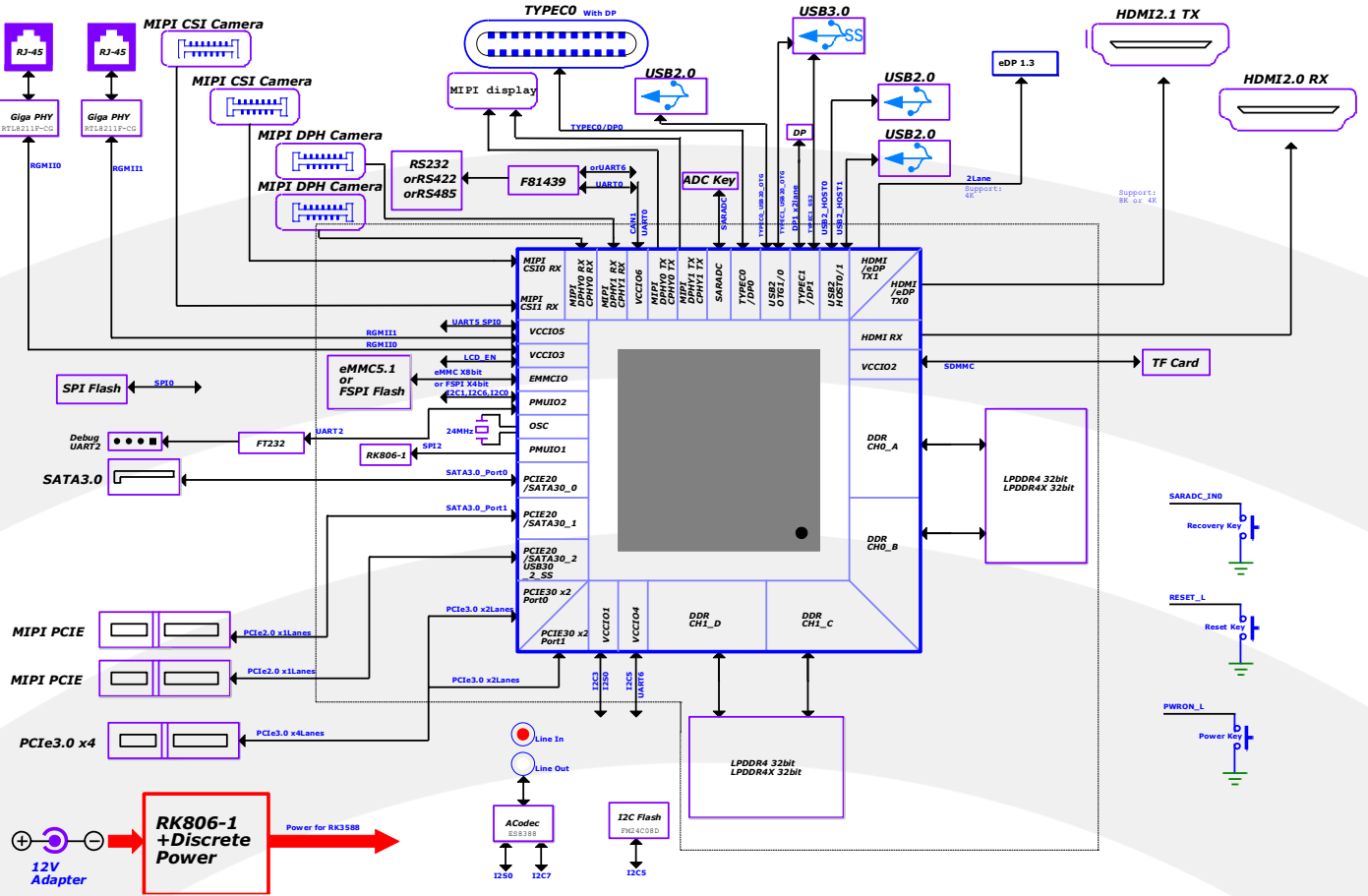
第一章 产品介绍

1.1 产品规格

Model		R1-RK358801
配置 Item	规格 Specification	描述 Describe
处理器 Processor System	处理器 CPU	RK3588
	内核数 Core Number	八核 64 位(4*Cortex-A76+4*Cortex-A55)
	工艺 technology	8nm
	最高主频 Max. Speed	2.4GHz
	功耗 TDP (W)	0.4~12W
显示 Display	视频输出 Video Output	1*HDMI2.1 1*MIPI-DSI
	分辨率 Resolution	HDMI2.1:8K@60fps or 4K@120fps MIPI-DSI:4K@60fps
	视频输入 Video Output	HDMI 2.0
内存 Memory	LDDR4X	2*2GB
存储 Storage	eMMC	32GB
内部接口 Internal Connector	SATA	3*SATA3.0
	网口 Lan	2*GMAC
	USB 3.0	3*USB3.1(Gen1)
	USB 2.0	2*USB2.0 Host 2*USB2.0 OTG
	音频 Audio	1*2 通道 I2S
	PCIe	PCIe3.0 (2*2Lanes,1*4Lanes,4*1Lanes)
	GPIO	15*GPIO
	看门狗 Watch Dog	独立看门狗

	SDMMC	1*SDMMC
	I2C	4*I2C
	UART	8*UART
	PWM	3*PWM
电源 Power Requirements	直流电源	4V(电压误差±5%)
	连接器 Connector type	底板供电
物理特性 Physical	尺寸 Dimensions	66*50mm
	PCB 颜色 Color	Green
环境 Environment	工作温度 Operating Temperature	0~60°C
	存储温度 Storage Temperature	-20~70°C
	工作湿度 Operating Humidity	5%~85% Humidity, (0~45°C) non-condensing
	存储湿度 Storage Humidity	5%~95% Humidity, (-40~85°C) non-condensing
操作系统 OS	Android	Support
	Linux	Support

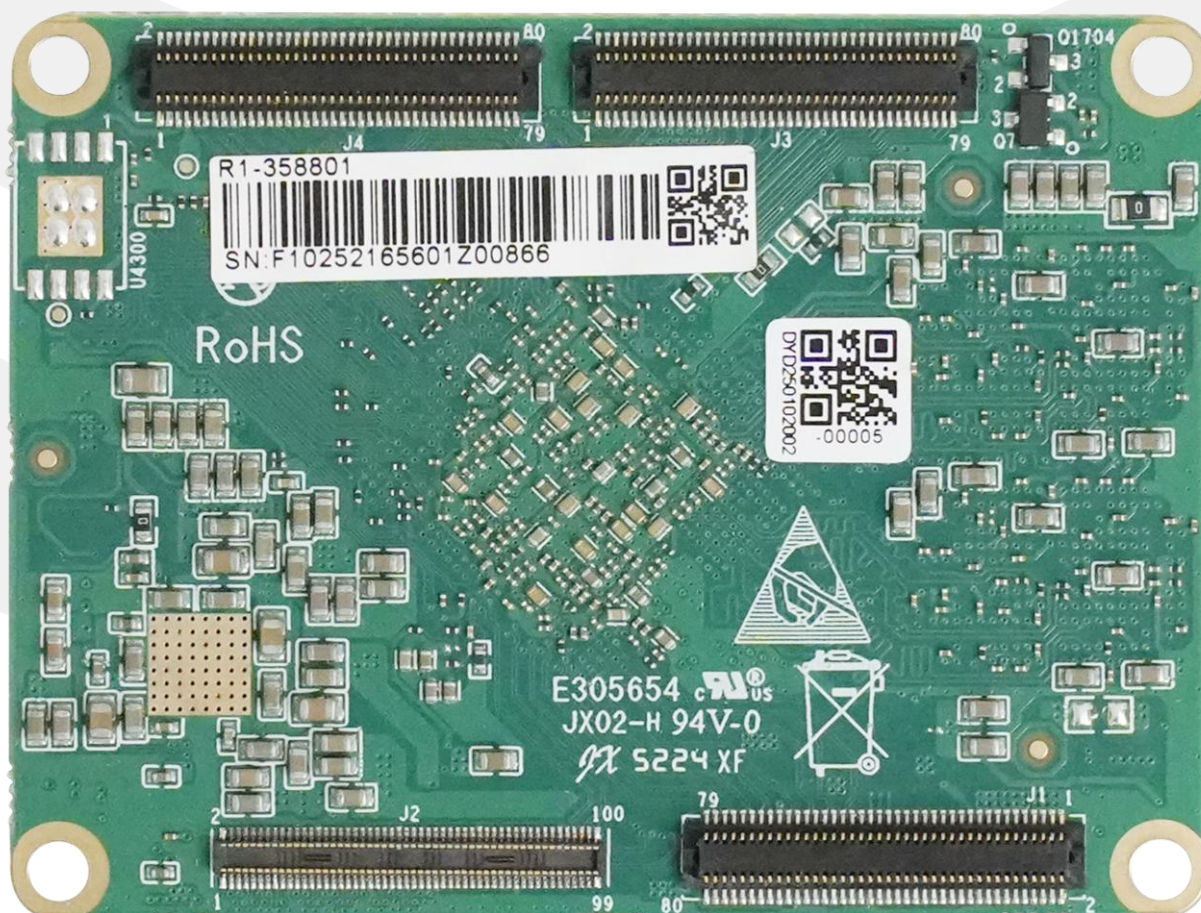
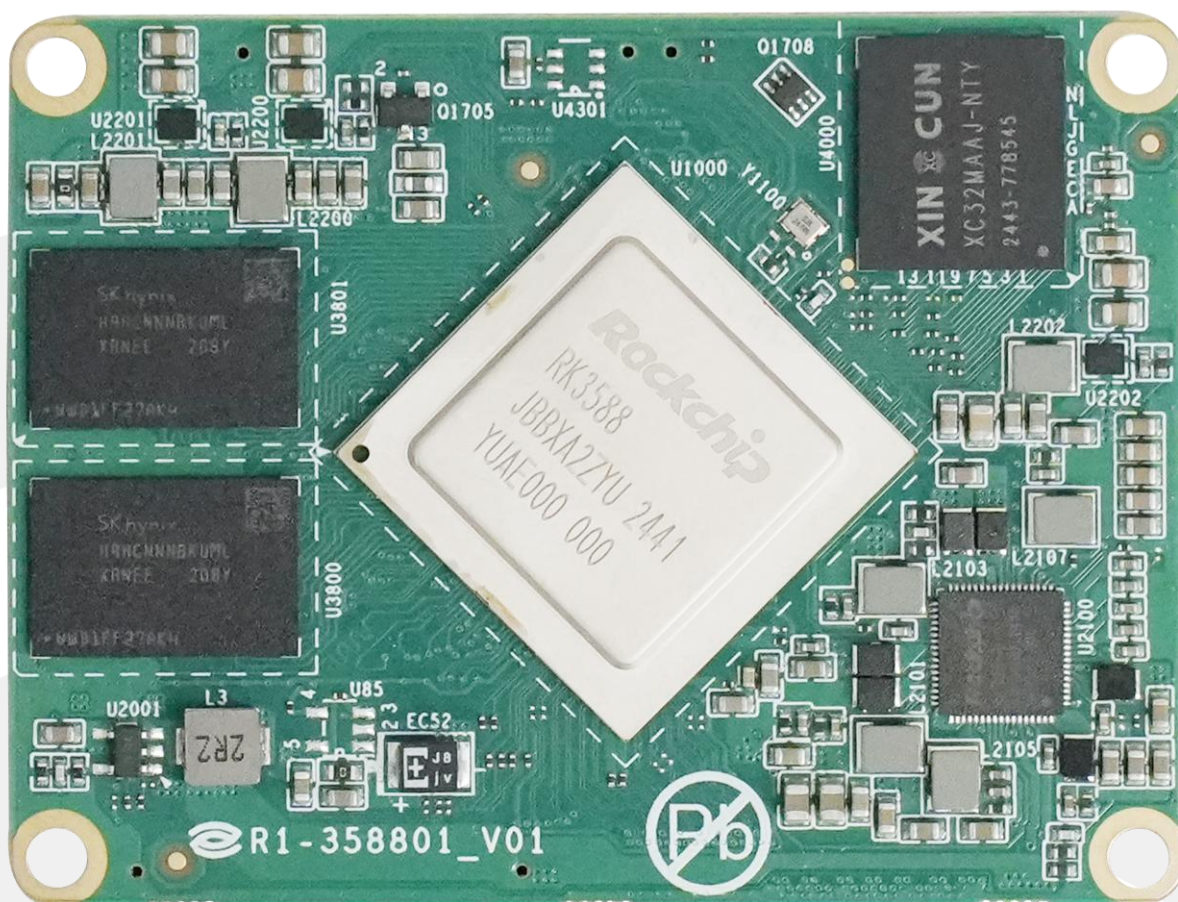
1.2 功能框图



1.3 产品料号

Model Name	Part Number	Specification
R1-358801	8.ZRT.52-1656-01-LEF	SMD_80p_p0.50x3+SMD_100p_p0.40x1+LPDDR4Xx2+RK806-1+EMMC64G-SMD

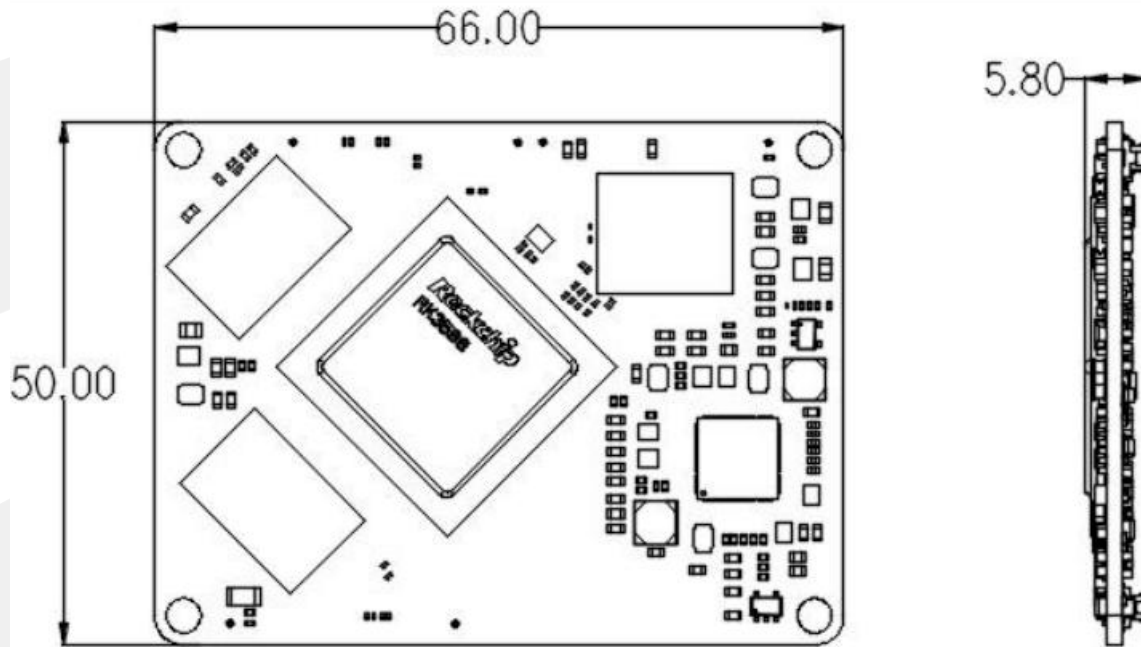
1.4 产品照片



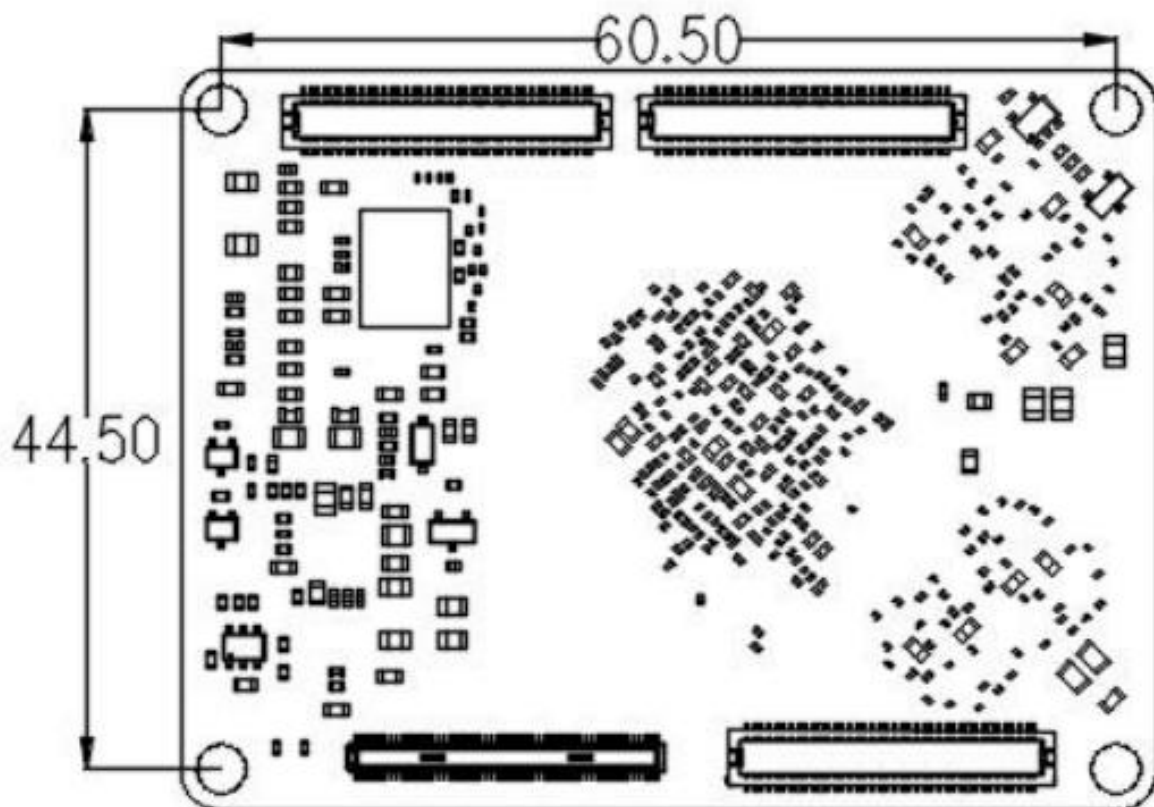
第二章 安装说明

2.1 尺寸图与安装流程

安装设备时, 请对照此示意图并详细阅读下面的说明, 安装组件过程中必须小心, 对于有些部件, 如果安装不正确, 设备将不能正常工作。



TOP Side



Bottom Side

2.2 硬件安装

⚠ 注意：操作时，请戴上防静电手套，因为静电有可能会损坏部件。

本主板关键元器件都是集成电路，而这些元件很容易因为遭受静电的影响而损坏。因此，请在正式安装主板之前，请先做好以下的准备：

1. 拿主板时手握板边，尽可能不触及元器件和插头插座的引脚。
2. 接触集成路元件（如 CPU、RAM 等）时，最好戴上防静电手环/手套。
3. 在集成电路元件未安装前，需将元件放在防静电垫或防静电袋内。
4. 在确认电源的开关处于断开位置后，再插上电源插头。

2.3 接口引脚定义

①: Pad types: I = input, O = output, I/O = input/output (bidirectional), G = Ground, P = power supply, DOWN = Internal pull down, UP = Internal pull up, L = Low Level, H = High level"

PIN	(J1) R1-358801 pin definition	Pad type	IO Pull	Function for Mainboard (MB-Q-RK3588)	Defual function description	IO Power domain	RK3588 Pin Number
1	GND	G				GND	
3	GND	G				GND	
5	GND	G				GND	
7	GND	G				GND	
9	VCC4V0_SYS	P				4.0V	
11	VCC4V0_SYS	P				4.0V	
13	VCC4V0_SYS	P				4.0V	
15	VCC4V0_SYS	P				4.0V	
17	VCC4V0_SYS	P				4.0V	
19	VCC4V0_SYS	P				4.0V	
21	VCCA_3V3_S0	P		VCCA_3V3_S0	3.3V Output (Max:300mA)	3.3V	
23	MIPI_CAMERA0_CLK_M0/SPDIF1_TX_M1/I2S1_SDO0_M0/PCIE30X1_0_BUTTON_RSTN/SATA2_ACT_LED_M0/I2C6_SCL_M3/UART8_RX_M0/SP10_CS1_M1/GPIO4_B1_u	I/O	UP	I2S1_SDO_M0_BT	I2S1_SDO_M0_BT	3.3V	AL24
25	BT1120_D15/SPDIF1_TX_M2/PCIE20X1_2_PERSTN_M1/HDMI_TX0_CEC_M0/I2C8_SDA_M3/PWM6_M1/SPI3_CS1_M1/GPIO4_C1_d	I/O	DOWN	HDMITX0_CEC_M0	HDMITX0_CEC_M0	3.3V	AK24
27	BT1120_D14/PCIE20X1_2_WAKEN_M1/HDMI_TX0_SDA_M0/I2C8_SCL_M3/SPI3_CS0_M1/GPIO4_C0_u	I/O	UP	HDMITX0_SDA_M0	HDMITX0_SDA_M0	3.3V	AJ25
29	BT1120_D13/PCIE20X1_2_CLKREQN_M1/HDMI_TX0_SCL_M0/I2C5_SDA_M1/SPI3_CLK_M1/GPIO4_B7_u	I/O	UP	HDMITX0_SCL_M0	HDMITX0_SCL_M0	3.3V	AJ28
31	TYPEC1_USB20_OTG_ID	I		NC	NC	1.8V	AK8
33	TYPEC1_USB20_VBUSDET	I		NC	NC	3.3V	AL8
35	TYPEC0_USB20_OTG_ID	I		NC	NC	1.8V	AL14
37	TYPEC0_USB20_VBUSDET	I		TYPEC0_USB20_VBUSDET	TYPEC0_USB20_VBUS DET,Active H	3.3V	AM14
39	CIF_D14/PCIE30X2_CLKREQN_M2/HDMI_RX_SCL_M1/I2C7_SCL_M2/UART9_RTSN_M2/SPI0_MOSI_M3/GPIO3_D2_d	I/O	DOWN	HDMI_RX_SCL_M1	HDMI_RX_SCL_M1	VCCIO5	AG25
41	CIF_D15/PCIE30X2_WAKEN_M2/HDMI_RX_SDA_M1/I2C7_SDA_M2/UART9_CTSN_M2/PWM10_M2/SPI0_CLK_M3/GPIO3_D3_d	I/O	DOWN	HDMI_RX_SDA_M1	HDMI_RX_SDA_M1	VCCIO5	AG24
43	CIF_D13/PCIE20X1_2_PERSTN_M0/HDMI_RX_CEC_M1/UART4_TX_M1/PWM9_M2/SPI0_MISO_M3/GPIO3_D1_d	I/O	DOWN	HDMI_RX_CEC	HDMI_RX_CEC	VCCIO5	AG23
45	GND	G				GND	
47	HDMI_RX_CLKN	I		HDMI_RX_CLKN	HDMI_RX_CLKN		AF5
49	HDMI_RX_CLKP	I		HDMI_RX_CLKP	HDMI_RX_CLKP		AF6
51	HDMI_RX_D0N	I		HDMI_RX_D0N	HDMI_RX_D0N		AG4
53	HDMI_RX_D0P	I		HDMI_RX_D0P	HDMI_RX_D0P		AG5
55	HDMI_RX_D1N	I		HDMI_RX_D1N	HDMI_RX_D1N		AH5
57	HDMI_RX_D1P	I		HDMI_RX_D1P	HDMI_RX_D1P		AH6
59	HDMI_RX_D2N	I		HDMI_RX_D2N	HDMI_RX_D2N		AJ4
61	HDMI_RX_D2P	I		HDMI_RX_D2P	HDMI_RX_D2P		AJ5
63	GND	G				GND	
65	USB20_HOST0_DP	I/O		USB20_HOST0_DP	USB20_HOST0_DP		AK8
67	USB20_HOST0_DM	I/O		USB20_HOST0_DM	USB20_HOST0_DM		AL6
69	USB20_HOST1_DP	I/O		USB20_HOST1_DP	USB20_HOST1_DP		AL7
71	USB20_HOST1_DM	I/O		USB20_HOST1_DM	USB20_HOST1_DM		AM7
73	TYPEC1_USB20_OTG_DP	I/O		TYPEC1_OTG_DP	TYPEC1_OTG_DP		AK9
75	TYPEC1_USB20_OTG_DM	I/O		TYPEC1_OTG_DM	TYPEC1_OTG_DM		AL9
77	TYPEC1_SBU1/DP1_AUXP	I/O		DP1_AUXP	DP1_AUXP	1.8V	AL10
79	TYPEC1_SBU2/DP1_AUXN	I/O		DP1_AUXN	DP1_AUXN	1.8V	AM10
PIN	(J1) R1-358801 pin definition	Pad type	IO Pull	Function for Mainboard (MB-Q-RK3588)	Defual function description	IO Power domain	RK3588 Pin Number
2	GND	G				GND	
4	GND	G				GND	
6	GND	G				GND	
8	GND	G				GND	
10	VCC4V0_SYS	P				4.0V	
12	VCC4V0_SYS	P				4.0V	
14	VCC4V0_SYS	P				4.0V	
16	VCC4V0_SYS	P				4.0V	
18	VCC4V0_SYS	P				4.0V	
20	VCC4V0_SYS	P				4.0V	
22	CIF_HREF/BT1120_D8/I2S1_SDO1_M0/PCIE30X1_1_BUTTON_RSTN/I2C7_SCL_M3/UART8_RTSN_M0/PWM14_M1/SPI0_CS0_M1/CAN1_RX_M1/GPIO4_B2_u	I/O	UP	CAN1_RX_M1/GPIO4_B2	CAN1_RX_M1/GPIO4_B2	3.3V	AK25
24	CIF_D9/FSPI_CS1N_M2/PCIE30X4_WAKEN_M2/HDMI_TX1_SDA_M1/CAN2_TX_M0/UART5_RX_M1/SPI3_CS1_M3/GPIO3_C5_u	I/O	UP	UART5_RX_M1	UART5_RX_M1	VCCIO5	AH25
26	CIF_D10/PCIE30X4_PERSTN_M2/HDMI_TX1_SCL_M1/SPI3_MISO_M3/GPIO3_C6_u	I/O	UP	TP1_INT_L	TP1_INT Input, Active L	VCCIO5	AG26
28	CIF_D8/FSPI_CS0N_M2/PCIE30X4_CLKREQN_M2/HDMI_TX1_CEC_M2/CAN2_RX_M0/UART5_TX_M1/SPI3_CS0_M3/GPIO3_C4_u	I/O	UP	UART5_TX_M1	UART5_TX_M1	VCCIO5	AH26
30	CIF_CLKOUT/BT1120_D10/I2S1_SDO3_M0/PCIE30X4_CLKREQN_M1/DP0_HPDIN_M0/SPDIF0_TX_M1/UART9_TX_M1/PWM11_IR_M1/GPIO4_B4_u	I/O	UP	PCIE30X4_CLKREQN_M1_L	PCIE30X4_CLKREQN_M1_L	3.3V	AL26
32	CIF_D0/BT1120_D0/I2S1_MCLK_M0/PCIE30X1_1_CLKREQN_M1/UART9_RTSN_M1/SPI0_MISO_M1/GPIO4_A0_d	I/O	DOWN	HDMI0_TX_ON_H	HDMI0_TX_ON EN, Active H	3.3V	AK30

34	CIF_D1/BT1120_D1/I2S1_SCLK_M0/PCIE30X1_1_WAKEN_M1/UART9_C_TSN_M1/SPI0_MOSI_M1/GPIO4_A1_d	I/O	DOWN	I2S1_SCLK_M0_BT	I2S1_SCLK_M0_BT	3.3V	AL30
36	BT1120_D12/PCIE30X4_PERSTN_M1/HDMI_RX_HPDUOT_M0/SATA0_A_CT_LED_M0/I2C5_SCL_M1/PWM13_M1/SPI3_MOSI_M1/GPIO4_B6_d	I/O	DOWN	PCIE30X4_PERSTN_M1_L	PCIE30X4_PERSTN_M1_L	3.3V	AJ27
38	BT1120_D11/PCIE30X4_WAKEN_M1/HDMI_RX_CEC_M0/SATA1_ACT_L_ED_M0/UART9_RX_M1/PWM12_M1/SPI3_MISO_M1/GPIO4_B5_d	I/O	DOWN	PCIE30X4_WAKEN_M1_L/GPIO4_B5	PCIE30X4_WAKEN_M1_L/GPIO4_B5	3.3V	AJ26
40	CIF_D2/BT1120_D2/I2S1_LRCK_M0/PCIE30X1_1_PERSTN_M1/SPI0_CLK_M1/GPIO4_A2_d	I/O	DOWN	I2S1_LRCK_M0_BT	I2S1_LRCK_M0_BT	3.3V	AM29
42	CIF_CLKIN/BT1120_CLKOUT/I2S1_SD3_M0/PCIE30X2_PERSTN_M1/I2C6_SDA_M3/UART8_TX_M0/SPI2_CS1_M1/GPIO4_B0_d	I/O	DOWN	PHONE_CTL	PHONE_Output EN , Active H	3.3V	AK26
44	GND	G		GND	GND	GND	
46	SDMMC_DET/GPIO0_A4_u	I/O	UP	SDMMC_DET_L	SDMMC_DET Input , Active L Core board Pull up resistance 100K	1.8V	P31
48	SDMMC_D1/PDM1_SD12_M0/JTAG_TMS_M1/I2C3_SDA_M4/UART2_RX_M1/PWM9_M1/GPIO4_D1_u	I/O	UP	SDMMC0_D1	SDMMC0_D1/UART2_RX_M1 Core board Pull up resistance 10K	VCCIO_SD_S0	AD1
50	SDMMC_D0/PDM1_SD13_M0/JTAG_TCK_M1/I2C3_SCL_M4/UART2_TX_M1/PWM8_M1/GPIO4_D0_u	I/O	UP	SDMMC0_D0/UART2_TX_M1	SDMMC0_D0/UART2_TX_M1 Core board Pull up resistance 10K	VCCIO_SD_S0	AD2
52	SDMMC_CLK/PDM1_CLK0_M0/TEST_CLKOUT_M0/MCU_JTAG_TMS_M0/CAN0_RX_M1/UART5_TX_M0/GPIO4_D5_d	I/O	DOWN	SDMMC_CLK	SDMMC_CLK Core board Pull up resistance 10K	VCCIO_SD_S0	AE1
54	SDMMC_CMD/PDM1_CLK1_M0/MCU_JTAG_TCK_M0/CAN0_TX_M1/UART5_RX_M0/PWM7_IR_M1/GPIO4_D4_u	I/O	UP	SDMMC_CMD	SDMMC_CMD Core board Pull up resistance 10K	VCCIO_SD_S0	AE2
56	SDMMC_D3/PDM1_SD10_M0/JTAG_TMS_M0/I2C8_SDA_M0/UART5_RX_TSN_M0/PWM10_M1/GPIO4_D3_u	I/O	UP	SDMMC_D3	SDMMC_D3 Core board Pull up resistance 10K	VCCIO_SD_S0	AF1
58	SDMMC_D2/PDM1_SD11_M0/JTAG_TCK_M0/I2C8_SCL_M0/UART5_CTSN_M0/GPIO4_D2_u	I/O	UP	SDMMC_D2	SDMMC_D2 Core board Pull up resistance 10K	VCCIO_SD_S0	AF2
60	GND	G		GND	GND	GND	
62	CIF_D7/BT1120_D7/I2S1_SD12_M0/PCIE30X2_WAKEN_M1/I2C5_SDA_M2/SPI2_CS0_M1/GPIO4_A7_d	I/O	DOWN	PCIE30X2_WAKEN_M1	PCIE30X2_WAKEN_M1	3.3V	AM27
64	CIF_D6/BT1120_D6/I2S1_SD11_M0/PCIE30X2_CLKREQN_M1/I2C5_SCL_M2/UART3_RX_M2/SPI2_CLK_M1/GPIO4_A6_d	I/O	DOWN	PCIE30X2_CLKREQN_M1	PCIE30X2_CLKREQN_M1	3.3V	AL27
66	TYPEC1_SSRX1P/DP1_TX0P	I		TYPEC1_SSRX1P	TYPEC1_SSRX1P		AN8
68	TYPEC1_SSRX1N/DP1_TX0N	I		TYPEC1_SSRX1N	TYPEC1_SSRX1N		AP8
70	TYPEC1_SSTX1N/DP1_TX1N	O		TYPEC1_SSTX1N	TYPEC1_SSTX1N		AN9
72	TYPEC1_SSTX1P/DP1_TX1P	O		TYPEC1_SSTX1P	TYPEC1_SSTX1P		AP9
74	TYPEC1_SSRX2P/DP1_TX2P	O		DP1_TX2P	DP1_TX2P		AN10
76	TYPEC1_SSRX2N/DP1_TX2N	O		DP1_TX2N	DP1_TX2N		AP10
78	TYPEC1_SSTX2N/DP1_TX3N	O		DP1_TX3N	DP1_TX3N		AN11
80	TYPEC1_SSTX2P/DP1_TX3P	O		DP1_TX3P	DP1_TX3P		AP11

VCCIO_SD_S0 (1.8V/3.3V auto switch): 1.8V--SDIO3.0; 3.3V--SDIO2.0

PIN	(J2) R1-358801 pin definition	Pad type	IO Pull	Function for Mainboard (MB-Q-RK3588)	Default function description(功能描述)	IO Power domain	RK3588 Pin Number
1	MIPI_DPHY0_TX_D2P/MIPI_CPHY0_TX_TRIO2_B	O		MIPI_DPHY0_TX_D2P	MIPI_DPHY0_TX_D2P		AN27
3	MIPI_DPHY0_TX_D2N/MIPI_CPHY0_TX_TRIO2_A	O		MIPI_DPHY0_TX_D2N	MIPI_DPHY0_TX_D2N		AP27
5	MIPI_DPHY0_TX_CLKP/MIPI_CPHY0_TX_TRIO1_C	O		MIPI_DPHY0_TX_CLKP	MIPI_DPHY0_TX_CLKP		AN26
7	MIPI_DPHY0_TX_CLKN/MIPI_CPHY0_TX_TRIO1_B	O		MIPI_DPHY0_TX_CLKN	MIPI_DPHY0_TX_CLKN		AP26
9	MIPI_DPHY0_TX_D1P/MIPI_CPHY0_TX_TRIO1_A	O		MIPI_DPHY0_TX_D1P	MIPI_DPHY0_TX_D1P		AN25
11	MIPI_DPHY0_TX_D1N/MIPI_CPHY0_TX_TRIO0_C	O		MIPI_DPHY0_TX_D1N	MIPI_DPHY0_TX_D1N		AP25
13	MIPI_DPHY0_TX_D0P/MIPI_CPHY0_TX_TRIO0_B	O		MIPI_DPHY0_TX_D0P	MIPI_DPHY0_TX_D0P		AN24
15	MIPI_DPHY0_TX_D0N/MIPI_CPHY0_TX_TRIO0_A	O		MIPI_DPHY0_TX_D0N	MIPI_DPHY0_TX_D0N		AP24
17	GND	G		GND	GND	GND	
19	MIPI_DPHY1_TX_D3N/MIPI_CPHY1_TX_TRIO2_C	O		MIPI_DPHY1_TX_D3N	MIPI_DPHY1_TX_D3N		AP22
21	MIPI_DPHY1_TX_D3P/NO_USE	O		MIPI_DPHY1_TX_D3P	MIPI_DPHY1_TX_D3P		AN22
23	MIPI_DPHY1_TX_D2N/MIPI_CPHY1_TX_TRIO2_A	O		MIPI_DPHY1_TX_D2N	MIPI_DPHY1_TX_D2N		AP21
25	MIPI_DPHY1_TX_D2P/MIPI_CPHY1_TX_TRIO2_B	O		MIPI_DPHY1_TX_D2P	MIPI_DPHY1_TX_D2P		AN21
27	MIPI_DPHY1_TX_CLKN/MIPI_CPHY1_TX_TRIO1_B	O		MIPI_DPHY1_TX_CLKN	MIPI_DPHY1_TX_CLKN		AP20
29	MIPI_DPHY1_TX_CLKP/MIPI_CPHY1_TX_TRIO1_C	O		MIPI_DPHY1_TX_CLKP	MIPI_DPHY1_TX_CLKP		AN20
31	MIPI_DPHY1_TX_D1N/MIPI_CPHY1_TX_TRIO0_C	O		MIPI_DPHY1_TX_D1N	MIPI_DPHY1_TX_D1N		AP19
33	MIPI_DPHY1_TX_D1P/MIPI_CPHY1_TX_TRIO1_A	O		MIPI_DPHY1_TX_D1P	MIPI_DPHY1_TX_D1P		AN19
35	MIPI_DPHY1_TX_D0N/MIPI_CPHY1_TX_TRIO0_A	O		MIPI_DPHY1_TX_D0N	MIPI_DPHY1_TX_D0N		AP18
37	MIPI_DPHY1_TX_D0P/MIPI_CPHY1_TX_TRIO0_B	O		MIPI_DPHY1_TX_D0P	MIPI_DPHY1_TX_D0P		AN18
39	GND	G		GND	GND	GND	
41	TYPEC0_SSTX2P/DP0_TX3P	O		TYPEC0_SSTX2P	TYPEC0_SSTX2P		AP16
43	TYPEC0_SSTX2N/DP0_TX3N	O		TYPEC0_SSTX2N	TYPEC0_SSTX2N		AN16
45	TYPEC0_SSRX2N/DP0_TX2N	I		TYPEC0_SSRX2N	TYPEC0_SSRX2N		AP15
47	TYPEC0_SSRX2P/DP0_TX2P	I		TYPEC0_SSRX2P	TYPEC0_SSRX2P		AN15
49	TYPEC0_SSTX1P/DP0_TX1P	O		TYPEC0_SSTX1P	TYPEC0_SSTX1P		AP14
51	TYPEC0_SSTX1N/DP0_TX1N	O		TYPEC0_SSTX1N	TYPEC0_SSTX1N		AN14
53	TYPEC0_SSRX1N/DP0_TX0N	I		TYPEC0_SSRX1N	TYPEC0_SSRX1N		AP13
55	TYPEC0_SSRX1P/DP0_TX0P	I		TYPEC0_SSRX1P	TYPEC0_SSRX1P		AN13
57	GND	G		GND	GND	GND	
59	HDMI_TX1_D2N/EDP_TX1_D2N	O		NC	NC		AP6
61	HDMI_TX1_D2P/EDP_TX1_D2P	O		NC	NC		AN6
63	HDMI_TX1_D1N/EDP_TX1_D1N	O		HDMI1_TX1N_PORT/EDP1_TX_D1N	HDMI1_TX1N_PORT/EDP1_TX_D1N		AN5
65	HDMI_TX1_D1P/EDP_TX1_D1P	O		HDMI1_TX1P_PORT/EDP1_TX_D1P	HDMI1_TX1P_PORT/EDP1_TX_D1P		AM5
67	HDMI_TX1_D0N/EDP_TX1_D0N	O		HDMI1_TX0N_PORT/EDP1_TX_D0N	HDMI1_TX0N_PORT/EDP1_TX_D0N		AP4
69	HDMI_TX1_D0P/EDP_TX1_D0P	O		HDMI1_TX0P_PORT/EDP1_TX_D0P	HDMI1_TX0P_PORT/EDP1_TX_D0P		AN4
71	HDMI_TX1_D3N/EDP_TX1_D3N	O		NC	NC		AN3
73	HDMI_TX1_D3P/EDP_TX1_D3P	O		NC	NC		AM3
75	HDMI_TX1_SBDN/EDP_TX1_AUXN	I/O		HDMI1_TX_SBDN/EDP1_TX_AUXN	HDMI1_TX_SBDN/EDP1_TX_AUXN		AP2
77	HDMI_TX1_SBDP/EDP_TX1_AUXP	I/O		HDMI1_TX_SBDP/EDP1_TX_AUXP	HDMI1_TX_SBDP/EDP1_TX_AUXP		AN2
79	GND	G		GND	GND	GND	
81	HDMI_TX0_D2P/EDP_TX0_D2P	O		HDMI0_TX2P_PORT/EDP0_TX_D2P	HDMI0_TX2P_PORT/EDP0_TX_D2P		AL2
83	HDMI_TX0_D2N/EDP_TX0_D2N	O		HDMI0_TX2N_PORT/EDP0_TX_D2N	HDMI0_TX2N_PORT/EDP0_TX_D2N		AL1
85	HDMI_TX0_D1P/EDP_TX0_D1P	O		HDMI0_TX1P_PORT/EDP0_TX_D1P	HDMI0_TX1P_PORT/EDP0_TX_D1P		AK3
87	HDMI_TX0_D1N/EDP_TX0_D1N	O		HDMI0_TX1N_PORT/EDP0_TX_D1N	HDMI0_TX1N_PORT/EDP0_TX_D1N		AK2
89	HDMI_TX0_D0P/EDP_TX0_D0P	O		HDMI0_TX0P_PORT/EDP0_TX_D0P	HDMI0_TX0P_PORT/EDP0_TX_D0P		AJ2
91	HDMI_TX0_D0N/EDP_TX0_D0N	O		HDMI0_TX0N_PORT/EDP0_TX_D0N	HDMI0_TX0N_PORT/EDP0_TX_D0N		AJ1
93	HDMI_TX0_D3P/EDP_TX0_D3P	O		HDMI0_TX3P_PORT/EDP0_TX_D3P	HDMI0_TX3P_PORT/EDP0_TX_D3P		AH3
95	HDMI_TX0_D3N/EDP_TX0_D3N	O		HDMI0_TX3N_PORT/EDP0_TX_D3N	HDMI0_TX3N_PORT/EDP0_TX_D3N		AH2
97	HDMI_TX0_SBDP/EDP_TX0_AUXP	I/O		HDMI0_TX_SBDP/EDP0_TX_AUXP	HDMI0_TX_SBDP/EDP0_TX_AUXP		AG2
99	HDMI_TX0_SBDN/EDP_TX0_AUXN	I/O		HDMI0_TX_SBDN/EDP0_TX_AUXN	HDMI0_TX_SBDN/EDP0_TX_AUXN		AG1

PIN	(J2) R1-358801 pin definition	Pad type	IO Pull	Function for Mainboard (MB-Q-RK3588)	Defual function description	IO Power domain	RK3588 Pin Number
2	MIPI_DPHY0_RX_D3P/NO_USE	I		MIPI_DPHY0_RX_D3P	MIPI_DPHY0_RX_D3P		AN34
4	MIPI_DPHY0_RX_D3N/MIPI_CPHY0_RX_TRIO2_C	I		MIPI_DPHY0_RX_D3N	MIPI_DPHY0_RX_D3N		AP33
6	MIPI_DPHY0_RX_D2P/MIPI_CPHY0_RX_TRIO2_B	I		MIPI_DPHY0_RX_D2P	MIPI_DPHY0_RX_D2P		AN33
8	MIPI_DPHY0_RX_D2N/MIPI_CPHY0_RX_TRIO2_A	I		MIPI_DPHY0_RX_D2N	MIPI_DPHY0_RX_D2N		AP32
10	MIPI_DPHY0_RX_CLKP/MIPI_CPHY0_RX_TRIO1_C	I		MIPI_DPHY0_RX_CLKP	MIPI_DPHY0_RX_CLKP		AN32
12	MIPI_DPHY0_RX_CLKN/MIPI_CPHY0_RX_TRIO1_B	I		MIPI_DPHY0_RX_CLKN	MIPI_DPHY0_RX_CLKN		AP31
14	MIPI_DPHY0_RX_D1P/MIPI_CPHY0_RX_TRIO1_A	I		MIPI_DPHY0_RX_D1P	MIPI_DPHY0_RX_D1P		AN30
16	MIPI_DPHY0_RX_D1N/MIPI_CPHY0_RX_TRIO0_C	I		MIPI_DPHY0_RX_D1N	MIPI_DPHY0_RX_D1N		AP30
18	MIPI_DPHY0_RX_D0P/MIPI_CPHY0_RX_TRIO0_B	I		MIPI_DPHY0_RX_D0P	MIPI_DPHY0_RX_D0P		AN29
20	MIPI_DPHY0_RX_D0N/MIPI_CPHY0_RX_TRIO0_A	I		MIPI_DPHY0_RX_D0N	MIPI_DPHY0_RX_D0N		AP29
22	MIPI_DPHY0_TX_D3P/NO_USE	O		MIPI_DPHY0_TX_D3P	MIPI_DPHY0_TX_D3P		AN28
24	MIPI_DPHY0_TX_D3N/MIPI_CPHY0_TX_TRIO2_C	O		MIPI_DPHY0_TX_D3N	MIPI_DPHY0_TX_D3N		AP28
26	GND	G		GND	GND	GND	
28	PCIE30_PORT0_RX0P	I		PCIE30_PORT0_RX0P	PCIE30_PORT0_RX0P		G33
30	PCIE30_PORT0_RX0N	I		PCIE30_PORT0_RX0N	PCIE30_PORT0_RX0N		G34
32	PCIE30_PORT0_TX0P	O		PCIE30_PORT0_TX0P	PCIE30_PORT0_TX0P		D32
34	PCIE30_PORT0_TX0N	O		PCIE30_PORT0_TX0N	PCIE30_PORT0_TX0N		D33
36	PCIE30_PORT0_RX1P	I		PCIE30_PORT0_RX1P	PCIE30_PORT0_RX1P		F32
38	PCIE30_PORT0_RX1N	I		PCIE30_PORT0_RX1N	PCIE30_PORT0_RX1N		F33
40	PCIE30_PORT0_TX1P	O		PCIE30_PORT0_TX1P	PCIE30_PORT0_TX1P		C33
42	PCIE30_PORT0_TX1N	O		PCIE30_PORT0_TX1N	PCIE30_PORT0_TX1N		C34
44	PCIE30_PORT0_REF_CLKN	I		PCIE30_PORT0_REFCLKN_IN	PCIE30_PORT0_REFCLKN_IN		E34
46	PCIE30_PORT0_REF_CLKP	I		PCIE30_PORT0_REFCLKP_IN	PCIE30_PORT0_REFCLKP_IN		E33
48	GND	G		GND	GND	GND	
50	PCIE30_PORT1_RX0P	I		PCIE30_PORT1_RX2P	PCIE30_PORT1_RX2P		B32
52	PCIE30_PORT1_RX0N	I		PCIE30_PORT1_RX2N	PCIE30_PORT1_RX2N		A32
54	PCIE30_PORT1_TX0P	O		PCIE30_PORT1_TX2P	PCIE30_PORT1_TX2P		B30
56	PCIE30_PORT1_TX0N	O		PCIE30_PORT1_TX2N	PCIE30_PORT1_TX2N		A30
58	PCIE30_PORT1_RX1P	I		PCIE30_PORT1_RX3P	PCIE30_PORT1_RX3P		C31
60	PCIE30_PORT1_RX1N	I		PCIE30_PORT1_RX3N	PCIE30_PORT1_RX3N		B31
62	PCIE30_PORT1_TX1P	O		PCIE30_PORT1_TX3P	PCIE30_PORT1_TX3P		C29
64	PCIE30_PORT1_TX1N	O		PCIE30_PORT1_TX3N	PCIE30_PORT1_TX3N		B29
66	PCIE30_PORT1_REF_CLKP	I		PCIE30_PORT1_REFCLKP_IN	PCIE30_PORT1_REFCLKP_IN		A28
68	PCIE30_PORT1_REF_CLKN	I		PCIE30_PORT1_REFCLKN_IN	PCIE30_PORT1_REFCLKN_IN		B28
70	GND	G		GND	GND	GND	
72	MIPI_DPHY1_RX_D3N/MIPI_CPHY1_RX_TRIO2_C	I		MIPI_DPHY1_RX_D3N	MIPI_DPHY1_RX_D3N		AL22
74	MIPI_DPHY1_RX_D3P/NO_USE	I		MIPI_DPHY1_RX_D3P	MIPI_DPHY1_RX_D3P		AK22
76	MIPI_DPHY1_RX_D2N/MIPI_CPHY1_RX_TRIO2_A	I		MIPI_DPHY1_RX_D2N	MIPI_DPHY1_RX_D2N		AL21
78	MIPI_DPHY1_RX_D2P/MIPI_CPHY1_RX_TRIO2_B	I		MIPI_DPHY1_RX_D2P	MIPI_DPHY1_RX_D2P		AK21
80	MIPI_DPHY1_TX_CLKN/MIPI_CPHY1_TX_TRIO1_B	I		MIPI_DPHY1_RX_CLKN	MIPI_DPHY1_RX_CLKN		AL20
82	MIPI_DPHY1_TX_CLKP/MIPI_CPHY1_TX_TRIO1_C	I		MIPI_DPHY1_RX_CLKP	MIPI_DPHY1_RX_CLKP		AK20
84	MIPI_DPHY1_RX_D1N/MIPI_CPHY1_RX_TRIO0_C	I		MIPI_DPHY1_RX_D1N	MIPI_DPHY1_RX_D1N		AL19
86	MIPI_DPHY1_RX_D1P/MIPI_CPHY1_RX_TRIO1_A	I		MIPI_DPHY1_RX_D1P	MIPI_DPHY1_RX_D1P		AK19
88	MIPI_DPHY1_RX_D0N/MIPI_CPHY1_RX_TRIO0_A	I		MIPI_DPHY1_RX_D0N	MIPI_DPHY1_RX_D0N		AL18
90	MIPI_DPHY1_RX_D0P/MIPI_CPHY1_RX_TRIO0_B	I		MIPI_DPHY1_RX_D0P	MIPI_DPHY1_RX_D0P		AK18
92	GND	G		GND	GND	GND	
94	TYPECO_SBU2/DP0_AUXN	I/O		TYPECO_SBU2	TYPECO_SBU2	1.8V	AM15
96	TYPECO_SBU1/DP0_AUXP	I/O		TYPECO_SBU1	TYPECO_SBU1	1.8V	AL15
98	TYPECO_USB20_OTG_DM	I/O		TYPECO_OTG_DM	TYPECO_OTG_DM		AM12
100	TYPECO_USB20_OTG_DP	I/O		TYPECO_OTG_DP	TYPECO_OTG_DP		AL12
PIN	(J3) R1-358801 pin definition	Pad type	IO Pull	Function for Mainboard (MB-Q-RK3588)	Defual function description	IO Power domain	RK3588 Pin Number
1	GND	G		GND	GND	GND	
3	PCIE20_0_RXP/SATA30_0_RXP	I		PCIE20_0_RXP/SATA30_0_RXP	PCIE20_0_RXP/SATA30_0_RXP		N33
5	PCIE20_0_RXN/SATA30_0_RXN	I		PCIE20_0_RXN/SATA30_0_RXN	PCIE20_0_RXN/SATA30_0_RXN		N34
7	PCIE20_0_TXN/SATA30_0_TXN	O		PCIE20_0_TXN/SATA30_0_TXN	PCIE20_0_TXN/SATA30_0_TXN		M33
9	PCIE20_0_TXP/SATA30_0_TXP	O		PCIE20_0_TXP/SATA30_0_TXP	PCIE20_0_TXP/SATA30_0_TXP		M34
11	PCIE20_0_REFCLKP	O		PCIE20_0_TXP	PCIE20_0_TXP		L32
13	PCIE20_0_REFCLKN	O		PCIE20_0_TXN	PCIE20_0_TXN		L33
15	PCIE20_1_TXP/SATA30_1_TXP	O		PCIE20_1_TXP/SATA30_1_TXP	PCIE20_1_TXP/SATA30_1_TXP		K33
17	PCIE20_1_TXN/SATA30_1_TXN	O		PCIE20_1_TXN/SATA30_1_TXN	PCIE20_1_TXN/SATA30_1_TXN		K34
19	PCIE20_1_RXP/SATA30_1_RXP	I		PCIE20_1_RXP/SATA30_1_RXP	PCIE20_1_RXP/SATA30_1_RXP		J33
21	PCIE20_1_RXN/SATA30_1_RXN	I		PCIE20_1_RXN/SATA30_1_RXN	PCIE20_1_RXN/SATA30_1_RXN		J34
23	PCIE20_1_REFCLKP	O		PCIE20_1_REFCLKP	PCIE20_1_REFCLKP		H32
25	PCIE20_1_REFCLKN	O		PCIE20_1_REFCLKN	PCIE20_1_REFCLKN		H33
27	PCIE20_2_RXP/SATA30_2_RXP/USB30_2_SSRXP	I		PCIE20_2_RXP/SATA30_2_RXP	PCIE20_2_RXP/SATA30_2_RXP		J31
29	PCIE20_2_RXN/SATA30_2_RXN/USB30_2_SSRXN	I		PCIE20_2_RXN/SATA30_2_RXN	PCIE20_2_RXN/SATA30_2_RXN		J30
31	PCIE20_2_TXP/SATA30_2_TXP/USB30_2_SSTXP	O		PCIE20_2_TXP/SATA30_2_TXP	PCIE20_2_TXP/SATA30_2_TXP		H30
33	PCIE20_2_TXN/SATA30_2_TXN/USB30_2_SSTXN	O		PCIE20_2_TXN/SATA30_2_TXN	PCIE20_2_TXN/SATA30_2_TXN		H29
35	PCIE20_2_REFCLKP	O		NC	NC		G31
37	PCIE20_2_REFCLKN	O		NC	NC		G30
39	GND	G		GND	GND	GND	
41	GMAC0_PTP_REFCLK/FSPI_CS0N_M1/HDMI_TX1_SDA_M0/I2C4_SDA_M1/UART7_RX_M0/GPIO2_B4_u	I/O	UP	LCD0_RESET_L	LCD0_RESET Output, Active L	1.8V	AB31
43	I2S0_MCLK/I2C6_SDA_M1/UART3_RTSN/PWM3_IR_M2/SP14_CLK_M0/GPIO1_C2_d	I/O	DOWN	I2S0_MCLK	I2S0_MCLK	1.8V	F30
45	I2S0_SDO0/I2C4_SCL_M4/UART4_CTSN/GPIO1_C7_d	I/O	DOWN	I2S0_SDO0	I2S0_SDO0	1.8V	E29
47	I2S0_SCLK/I2C6_SCL_M1/UART3_CTSN/PWM7_IR_M2/SP14_CS0_M0/GPIO1_C3_d	I/O	DOWN	I2S0_SCLK_TX	I2S0_SCLK Output	1.8V	E31
49	I2S0_LRCK/I2C2_SCL_M3/UART4_RTSN/GPIO1_C5_d	I/O	DOWN	I2S0_LRCK_TX	I2S0_LRCK Output	1.8V	D30
51	I2S0_SDIO/GPIO1_D4_d	I/O	DOWN	I2S0_SDIO	I2S0_SDIO	1.8V	D28
53	PDM0_CLK0_M0/I2C4_SDA_M4/PWM15_IR_M2/GPIO1_C6_d	I/O	DOWN	PWM15_M2	PWM15_M2	1.8V	D29

55	PDM0_CLK1_M0/I2C2_SDA_M3/PWM11_IR_M2/SPI4_CS1_M0/GPIO1_C4_d	I/O	DOWN	HP_DET_L	HP_DET, Active L	1.8V	E30
57	MIPI_CAMERA2_CLK_M0/SPDIF1_TX_M0/PCIE30X2_PERSTN_M3/HDMI_RX_CEC_M2/SATA2_ACT_LED_M1/I2C5_SDA_M3/UART1_RX_M1/PWM13_M2/GPIO1_B7_u	I/O	UP	I2C5_SDA_M3/UART1_RX_M1	I2C5_SDA_M3/UART1_RX_M1	1.8V	E27
59	MIPI_CAMERA1_CLK_M0/SPDIF0_TX_M0/PCIE30X2_WAKEN_M3/HDMI_RX_HPDOUT_M2/I2C5_SCL_M3/UART1_TX_M1/GPIO1_B6_u	I/O	UP	I2C5_SCL_M3/UART1_TX_M1	I2C5_SCL_M3/UART1_TX_M1	1.8V	E26
61	MIPI_CAMERA4_CLK_M0/PCIE30X2_CLKREQN_M3/HDMI_RX_SDA_M2/I2C8_SDA_M2/UART1_CTSN_M1/PWM15_IR_M3/GPIO1_D7_u	I/O	UP	MIPI_CAM4_CLKOUT	MIPI_CAM4_CLK Output	1.8V	F25
63	MIPI_CAMERA3_CLK_M0/HDMI_RX_SCL_M2/I2C8_SCL_M2/UART1_RT_SN_M1/PWM14_M2/GPIO1_D6_u	I/O	UP	MIPI_CAM3_CLKOUT	MIPI_CAM3_CLK Output	1.8V	F24
65	GND	G		GND	GND	GND	
67	PCIE30X4_BUTTON_RSTN/DP1_HPDIN_M0/MCU_JTAG_TMS_M1/UART9_TX_M2/PWM11_IR_M3/SPI0_CS1_M3/GPIO3_D5_d	I/O	DOWN	DP1_HPDIN_M0	DP1_HPDIN_M0	VCCIO5	AB28
69	GMACO_PPSTRIG/FSP1_CS1N_M1/HDMI_TX1_SCL_M0/I2C4_SCL_M1/UART7_TX_M0/GPIO2_B5_u	I/O	UP	LCD_BL_EN_H	LCD0_BL_EN, Active H	1.8V	AB30
71	GMACO_PPCLK/TEST_CLKOUT_M1/HDMI_TX1_CEC_M0/UART9_RX_M0/SPI1_CS1_M0/GPIO2_C4_d	I/O	DOWN	GPI02_C4_d	GPI02_C4	1.8V	AC30
73	PDM1_SDI2_M1/PCIE30X4_WAKEN_M3/SPI0_MISO_M2/GPIO1_B1_d	I/O	DOWN	MIPI_CAM4_PWREN_H	MIPI_CAM4_Power EN, Active H	1.8V	D25
75	PDM1_SDI0_M1/PCIE30X1_1_PERSTN_M2/PWM3_IR_M3/SPI2_CS0_M0/GPIO1_A7_u	I/O	UP	PWM11_M3	PWM11_M3 Output	1.8V	C25
77	HDMI_TX1_HPD_M0/SPI2_CLK_M0/GPIO1_A6_d	I/O	DOWN	MIPI_CAM3_PDN_L	MIPI_CAM3_PDN_L	1.8V	C24
79	PDM1_CLK0_M1/PCIE30X1_0_PERSTN_M2/UART7_RX_M2/SPI0_CS0_M2/GPIO1_B4_u	I/O	UP	PCIE1_0_PERSTN_M1_L	PCIE1_0_PERSTN_M1_L	1.8V	E24
PIN	(J3) R1-358801 pin definition	Pad type	IO Pull	Function for Mainboard (MB-Q-RK3588)	Defual function description	IO Power domain	RK3588 Pin Number
2	CIF_D4/BT1120_D4/PCIE30X1_0_WAKEN_M1/I2C3_SCL_M2/UART0_RX_M2/SPI2_MISO_M1/GPIO4_A4_d	I/O	DOWN	UART0_RX_M2	UART0_RX_M2	3.3V	AL28
4	CIF_D3/BT1120_D3/PCIE30X1_0_CLKREQN_M1/UART0_TX_M2/GPIO4_A3_d	I/O	DOWN	UART0_TX_M2	UART0_TX_M2	3.3V	AL29
6	I2S1_SDI2_M1/PDM0_SDI0_M1/I2C6_SDA_M0/UART1_RT_SN_M2/PWM6_M0/SPI0_MISO_M0/PCIE30X4_WAKEN_M0/GPIO0_C7_d	I/O	DOWN	I2C6_SDA_M0	I2C6_SDA_M0 Core board Pull up resistance 2.2K	1.8V	V31
8	I2S1_SDI3_M1/PDM0_SDI1_M1/I2C6_SCL_M0/UART1_CTSN_M2/PWM7_IR_M0/SPI3_MISO_M2/PCIE30X4_PERSTN_M0/GPIO0_D0_d	I/O	DOWN	I2C6_SCL_M0	I2C6_SCL_M0 Core board Pull up resistance 2.2K	1.8V	W31
10	PDM0_CLK0_M1/PWM1_M0/I2C2_SDA_M0/CAN0_RX_M0/SPI0_MOSI_M0/PCIE30X1_0_CLKREQN_M0/GPIO0_C0_d	I/O	DOWN	GMAC1_INT/PMEB_1	GMAC1_INT/PMEB_1 Core board Pull up resistance 2.2K	1.8V	T31
12	I2S1_LRCK_M1/PWM0_M0/I2C2_SCL_M0/CAN0_TX_M0/SPI0_CS1_M0/PCIE30X1_1_PERSTN_M0/GPIO0_B7_d	I/O	DOWN	GMACO_INT/PMEB_1	GMACO_INT/PMEB_1 Core board Pull up resistance 2.2K	1.8V	T28
14	I2S1_SDO3_M1/CPU_BIG1_AVS/I2C1_SDA_M2/CAN2_TX_M1/HDMI_TX0_SCL_M1/SPI3_CS1_M2/SATA_MP_SWITCH/GPIO0_D5_u	I/O	UP	I2C1_SDA_M2_TP	I2C1_SDA_M2_TP Core board Pull up resistance 2.2K	1.8V	V28
16	I2S1_SDO2_M1/PDM0_SDI2_M1/PWM3_IR_M0/I2C1_SCL_M2/CAN2_RX_M1/HDMI_TX0_SDA_M1/SPI3_CS0_M2/PCIE30X2_PERSTN_M0/SATA_CPDDET/GPIO0_D4_u	I/O	UP	I2C1_SCL_M2_TP	I2C1_SCL_M2_TP Core board Pull up resistance 2.2K	1.8V	V29
18	I2S1_SDI1_M1/NPU_AVS/UART0_RTSN/PWM5_M1/SPI0_CLK_M0/PCIE30X4_CLKREQN_M0/SATA_CP_POD/GPIO0_C6_u	I/O	UP	BT_REG_ON_H	BT_EN Output, Active H	1.8V	T29
20	GMAC1_PPSTRIG/I2C3_SDA_M1/UART7_TX_M1/SPI1_MISO_M1/GPIO3_C0_d	I/O	DOWN	TP_INT_L	TP0_INT Input, Active L	VCCIO5	Y29
22	HDMI_TX0_HPD_M1/PCIE30X2_PERSTN_M2/HDMI_RX_HPDOUT_M1/MCU_JTAG_TCK_M1/UART9_RX_M2/SPI0_CS0_M3/GPIO3_D4_d	I/O	DOWN	HDMIIRX_HPDOUT_H	HDMIIRX_HPD Output,, Active H	VCCIO5	AA27
24	I2C3_SDA_M0/UART3_RX_M0/SPI4_MISO_M0/GPIO1_C0_z	I/O		I2C3_SDA_M0_MIPI	I2C3_SDA_M0_MIPI Core board Pull up resistance 2.2K	1.8V	G29
26	I2C3_SCL_M0/UART3_TX_M0/SPI4_MOSI_M0/GPIO1_C1_z	I/O		I2C3_SCL_M0_MIPI	I2C3_SCL_M0_MIPI Core board Pull up resistance 2.2K	1.8V	G27
28	I2S1_SCLK_M1/JTAG_TMS_M2/I2C1_SDA_M0/UART2_RX_M0/PCIE30X1_1_WAKEN_M0/GPIO0_B6_d	I/O	DOWN	UART2_RX_M0_DEBUG	UART2_RX_M0 (System DEBUG)	1.8V	R29
30	I2S1_MCLK_M1/JTAG_TCK_M2/I2C1_SCL_M0/UART2_TX_M0/PCIE30X1_1_CLKREQN_M0/GPIO0_B5_d	I/O	DOWN	UART2_TX_M0_DEBUG	UART2_TX_M0 (System DEBUG)	1.8V	P29
32	GMAC1_PPCLK/PCIE30X2_BUTTON_RSTN/UART7_RX_M1/SPI1_CLK_M1/GPIO3_C1_d	I/O	DOWN	TP_RST_L	TP0_RST Input, Active L	VCCIO5	Y27
34	PDM0_CLK1_M1/PWM2_M0/UART0_RX_M0/I2C4_SDA_M2/DP0_HPDIN_M1/PCIE30X1_0_WAKEN_M0/GPIO0_C4_d	I/O	DOWN	WIFI_REG_ON_H	WIFI_EN Output, Active H	1.8V	R30
36	I2S1_SDI0_M1/GPU_AVS/UART0_TX_M0/I2C4_SCL_M2/DP1_HPDIN_M1/PWM4_M0/PCIE30X1_0_PERSTN_M0/GPIO0_C5_u	I/O	UP	HOST_WAKE_BT_H	HOST_WAKE_BT_H	1.8V	P30
38	CLK32K_IN/CLK32K_OUT0/GPIO0_B2_u	I/O	UP	WIFI_WAKE_HOST_H	WIFI_WAKE_HOST_H	1.8V	K29
40	SPI2_CS1_M2/I2C1_SCL_M1/UART0_RX_M1/GPIO0_B0_z	I/O		RTC_INT_L	RTC_INT Input, Active L	1.8V	L30
42	REFCLK_OUT/GPIO0_A0_d	I/O	DOWN	BT_WAKE_HOST_H	BT_WAKE_HOST_H	1.8V	P33
44	HDMI_TX1_SDA_M2/I2C4_SCL_M3/UART6_CTSN_M1/PWM1_M2/SPI4_CS0_M2/GPIO1_A3_d	I/O	DOWN	UART6_CTSN_M1_BT	UART6_CTSN_M1_BT	1.8V	A27
46	HDMI_TX0_HPD_M0/SPI2_MOSI_M0/GPIO1_A5_d	I/O	DOWN	HDMITX0_HPDIN_M0	HDMITX0_HPD Input, Active H	1.8V	B26
48	VOP_POST_EMPTY/I2C4_SDA_M3/UART6_RTSN_M1/PWM0_M2/SPI4_CLK_M2/GPIO1_A2_d	I/O	DOWN	UART6_RTSN_M1_BT	UART6_RTSN_M1_BT	1.8V	A26
50	HDMI_TX1_SCL_M2/SPI2_MISO_M0/GPIO1_A4_d	I/O	DOWN	VGA_HPDIN_L	VGA_HPD Input, Active L	1.8V	B25
52	PCIE30X1_1_WAKEN_M2/DP1_HPDIN_M2/SATA1_ACT_LED_M1/I2C2_SCL_M4/UART6_TX_M1/SPI4_MOSI_M2/GPIO1_A1_d	I/O	DOWN	UART6_TX_M1_BT	UART6_TX_M1_BT Core board Pull up resistance 2.2K	1.8V	A25
54	PCIE30X1_1_CLKREQN_M2/DP0_HPDIN_M2/I2C2_SDA_M4/UART6_RX_M1/SPI4_MISO_M2/GPIO1_A0_d	I/O	DOWN	UART6_RX_M1_BT	UART6_RX_M1_BT Core board Pull up resistance 2.2K	1.8V	A24
56	I2S0_SDO3/I2S0_SDI2/PDM0_SDI2_M0/I2C1_SCL_M4/UART4_TX_M0/PWM0_M1/SPI1_CLK_M2/GPIO1_D2_d	I/O	DOWN	SPI1_CLK_M2/UART4_TX_M0/I2C1_SCL_M4	SPI1_CLK_M2/UART4_TX_M0/I2C1_SCL_M4	1.8V	F28
58	PDM0_SDI0_M0/SPI1_CS1_M2/GPIO1_D5_d	I/O	DOWN	HDMIIRX_DET_L	HDMIIRX_DET Input, Active L	1.8V	G26
60	I2S0_SDI1/PDM0_SDI3_M0/I2C1_SDA_M4/UART4_RX_M0/PWM1_M1/SPI1_CS0_M2/GPIO1_D3_d	I/O	DOWN	SPI1_CS0_M2/UART4_RX_M0/I2C1_SDA_M4	SPI1_CS0_M2/UART4_RX_M0/I2C1_SDA_M4	1.8V	E28
62	I2S0_SDO2/I2S0_SDI3/PDM0_SDI1_M0/I2C7_SDA_M0/UART6_RX_M2/SPI1_MOSI_M2/GPIO1_D1_d	I/O	DOWN	SPI1_MOSI_M2/UART6_RX_M2/I2C7_SDA_M0	SPI1_MOSI_M2/UART6_RX_M2/I2C7_SDA_M0 Core board Pull up resistance 2.2K	1.8V	F27
64	I2S0_SDO1/I2C7_SCL_M0/UART6_TX_M2/SPI1_MISO_M2/GPIO1_D0_d	I/O	DOWN	SPI1_MISO_M2/UART6_TX_M2/I2C7_SCL_M0	SPI1_MISO_M2/UART6_TX_M2/I2C7_SCL_M0 Core board Pull up resistance 2.2K	1.8V	F26

66	PDM1_SD11_M1/PCIE30X4_CLKREQN_M3/SPI2_CS1_M0/GPIO1_B0_u	I/O	UP	RESET0_CAM	Mipi Camera Reset Output, Active L	1.8V	C27
68	PDM1_CLK1_M1/PCIE30X1_0_WAKEN_M2/SATA0_ACT_LED_M1/UART4_TX_M2/SPI0_CLK_M2/GPIO1_B3_d	I/O	DOWN	PCIE1_0_WAKEN_M1_L/GPIO1_B3	PCIE1_0_WAKEN_M1_L/GPIO1_B3	1.8V	D27
70	PDM1_SD13_M1/PCIE30X4_PERSTN_M3/UART4_RX_M2/SPI0_MOSI_M2/GPIO1_B2_d	I/O	DOWN	MIPI_CAM3_PWREN_H	MIPI_CAM3_Power EN, Active H	1.8V	D26
72	PCIE30X1_0_CLKREQN_M2/UART7_TX_M2/SPI0_CS1_M2/GPIO1_B5_u	I/O	UP	PCIE1_0_CLKREQN_M1_L	PCIE1_0_CLKREQN_M1_L	1.8V	E25
74	GMAC1_TXER/I2S2_SDI_M1/UART2_RX_M2/PWM3_IR_M1/GPIO3_B2_d	I/O	DOWN	WORK_LED	WORK_LED_EN, Active H	VCCIO5	AE28
76	CIF_D11/PCIE20X1_2_CLKREQN_M0/HDMI_TX0_SCL_M2/I2C5_SCL_M0/SPI3_MOSI_M3/GPIO3_C7_u	I/O	UP	GMAC0_RSTN_L_GPIO3_C7	GMAC0_RSTN_L_GPIO3_C7	VCCIO5	AJ24
78	CIF_D12/PCIE20X1_2_WAKEN_M0/HDMI_TX0_SDA_M2/I2C5_SDA_M0/UART4_RX_M1/PWM8_M2/SPI3_CLK_M3/GPIO3_D0_u	I/O	UP	EDP_BL_PWM1	EDP_BL_PWM1 Output	VCCIO5	AH24
80	VCCIO5_CTRL	O		NC	H:VCCIO5=3.3V; (NC) L: VCCIO5=1.8V,	3.3V	
PIN	(J4) R1-358801 pin definition	Pad type	IO Pull	Function for Mainboard (MB-Q-RK3588)	Defual function description	IO Power domain	RK3588 Pin Number
1	VCC_1V8_S3	P		VCC_1V8_S3	1.8V Output (Pin1/3 Total Max:500mA)	1.8V	
3	VCC_1V8_S3	P		VCC_1V8_S3	1.8V Output (Pin1/3 Total Max:500mA)	1.8V	
5	VCCA_RK806	O		VCCA_RK806	Power supply input (RK806's boot up circuit)	5.0V	
7	GND	G		GND	GND	GND	
9	MIPI_CS11_RX_CLK1P	I		MIPI_CS11_RX_CLK1P	MIPI_CS11_RX_CLK1P		AM31
11	MIPI_CS11_RX_CLK1N	I		MIPI_CS11_RX_CLK1N	MIPI_CS11_RX_CLK1N		AM32
13	MIPI_CS11_RX_D3P	I		MIPI_CS11_RX_D3P	MIPI_CS11_RX_D3P		AL31
15	MIPI_CS11_RX_D3N	I		MIPI_CS11_RX_D3N	MIPI_CS11_RX_D3N		AL32
17	MIPI_CS11_RX_D2P	I		MIPI_CS11_RX_D2P	MIPI_CS11_RX_D2P		AK31
19	MIPI_CS11_RX_D2N	I		MIPI_CS11_RX_D2N	MIPI_CS11_RX_D2N		AK32
21	MIPI_CS11_RX_CLK0P	I		MIPI_CS11_RX_CLK0P	MIPI_CS11_RX_CLK0P		AJ31
23	MIPI_CS11_RX_CLK0N	I		MIPI_CS11_RX_CLK0N	MIPI_CS11_RX_CLK0N		AJ32
25	MIPI_CS11_RX_D1P	I		MIPI_CS11_RX_D1P	MIPI_CS11_RX_D1P		AH31
27	MIPI_CS11_RX_D1N	I		MIPI_CS11_RX_D1N	MIPI_CS11_RX_D1N		AH32
29	MIPI_CS11_RX_D0P	I		MIPI_CS11_RX_D0P	MIPI_CS11_RX_D0P		AG31
31	MIPI_CS11_RX_D0N	I		MIPI_CS11_RX_D0N	MIPI_CS11_RX_D0N		AG32
33	GND	G		GND	GND	GND	
35	SARADC_IN3	O		SARADC_VIN3_HP_HOOK	ADC3 Input	1.8V	AN17
37	SARADC_IN0_BOOT	I		BOOT_SARADC_IN0	ADC0 Input (BOOT Mode: L---Maskrom) Core board Pull up resistance 100K	1.8V	AM16
39	SARADC_IN1	I		SARADC_VIN1_KEY/RECOVERY	ADC1 Input/RECOVERY_KEY,Active L Core board Pull up resistance 10K	1.8V	AL16
41	SARADC_IN6	O		SARADC_IN6	ADC6 Input	1.8V	AK17
43	CIF_D5/BT1120_D5/I2S1_SDIO_M0/PCIE30X1_0_PERSTN_M1/I2C3_SDA_M2/UART3_TX_M2/SPI2_MOSI_M1/GPIO4_A5_d	I/O	DOWN	I2S1_SDI_M0_BT	I2S1_SDI_M0_BT	3.3V	AK27
45	GND	G		GND	GND	GND	
47	GMAC0_TXCLK/SDIO_CLK_M0/FSPI_CLK_M1/I2C3_SDA_M3/GPIO2_B3_d	I/O	DOWN	GMAC0_TXCLK	GMAC0_TXCLK	1.8V	AE33
49	GMAC0_TXEN/I2S2_LRCK_M0/I2C2_SDA_M1/UART1_RTSN_M0/SPI1_CLK_M0/GPIO2_C0_d	I/O	DOWN	GMAC0_TXEN	GMAC0_TXEN	1.8V	AE34
51	GMAC0_TXD0/I2S2_MCLK_M0/I2C5_SCL_M4/UART1_RX_M0/GPIO2_B6_d	I/O	DOWN	GMAC0_TXD0	GMAC0_TXD0	1.8V	AD33
53	GMAC0_TXD1/I2S2_SCLK_M0/I2C5_SDA_M4/UART1_TX_M0/GPIO2_B7_d	I/O	DOWN	GMAC0_TXD1	GMAC0_TXD1	1.8V	AD34
55	GMAC0_TXD2/SDIO_D3_M0/FSPI_D3_M1/I2C8_SDA_M1/UART6_CTSN_M0/GPIO2_B1_u	I/O	UP	GMAC0_TXD2	GMAC0_TXD2	1.8V	AC33
57	GMAC0_TXD3/SDIO_CMD_M0/I2C3_SCL_M3/GPIO2_B2_u	I/O	UP	GMAC0_TXD3	GMAC0_TXD3	1.8V	AC34
59	GMAC1_RXCLK/SDIO_CLK_M1/MIPI_CAMERA0_CLK_M1/FSPI_CLK_M2/I2C4_SDA_M0/UART8_CTSN_M1/GPIO3_A5_d	I/O	DOWN	GMAC1_RXCLK	GMAC1_RXCLK	VCCIO5	AH30
61	GMAC1_RXDV_CRS/MIPI_CAMERA4_CLK_M1/UART2_TX_M2/PWM2_M1/GPIO3_B1_d	I/O	DOWN	GMAC1_RXDV_CRS	GMAC1_RXDV_CRS	VCCIO5	AH29
63	GMAC1_RXD0/MIPI_CAMERA2_CLK_M1/PWM8_M0/GPIO3_A7_u	I/O	UP	GMAC1_RXD0	GMAC1_RXD0	VCCIO5	AG29
65	GMAC1_RXD1/MIPI_CAMERA3_CLK_M1/PWM9_M0/GPIO3_B0_u	I/O	UP	GMAC1_RXD1	GMAC1_RXD1	VCCIO5	AG28
67	GMAC1_RXD3/SDIO_D3_M1/I2S3_SDO/AUDDSM_RN/FSPI_D3_M2/UART8_RX_M1/SPI4_CS0_M1/GPIO3_A3_u	I/O	UP	GMAC1_RXD3	GMAC1_RXD3	VCCIO5	AE27
69	GMAC1_RXD2/SDIO_D2_M1/I2S3_LRCK/AUDDSM_LP/FSPI_D2_M2/UART8_TX_M1/SPI4_CLK_M1/GPIO3_A2_u	I/O	UP	GMAC1_RXD2	GMAC1_RXD2	VCCIO5	AD27
71	GMAC1_TXCLK/SDIO_CMD_M1/I2S3_SDI/AUDDSM_RP/UART8_RTSN_M1/SPI4_CS1_M1/GPIO3_A4_d	I/O	DOWN	GMAC1_TXCLK	GMAC1_TXCLK	VCCIO5	AD28
73	GMAC1_TXD0/I2S2_SDO_M1/UART2_RTSN/GPIO3_B3_u	I/O	UP	GMAC1_TXD0	GMAC1_TXD0	VCCIO5	AC28
75	GMAC1_TXD1/I2S2_MCLK_M1/UART2_CTSN/GPIO3_B4_u	I/O	UP	GMAC1_TXD1	GMAC1_TXD1	VCCIO5	AC29
77	GMAC1_TXD3/SDIO_D1_M1/I2S3_SCLK/AUDDSM_LN/FSPI_D1_M2/I2C6_SCL_M4/PWM11_IR_M0/SPI4_MOSI_M1/GPIO3_A1_u	I/O	UP	GMAC1_TXD3	GMAC1_TXD3	VCCIO5	AA30
79	GMAC1_TXD2/SDIO_D0_M1/I2S3_MCLK/FSPI_D0_M2/I2C6_SDA_M4/PWM10_M0/SPI4_MISO_M1/GPIO3_A0_u	I/O	UP	GMAC1_TXD2	GMAC1_TXD2	VCCIO5	AA29

PIN	(J4) R1-358801 pin definition	Pad type	IO Pull	Function for Mainboard (MB-Q-RK3588)	Defual function description	IO Power domain	RK3588 Pin Number
2	VCC_3V3_S3	P		VCC_3V3_S3	3.3V Output (Pin2/4 Total Max:800mA)	3.3V	
4	VCC_3V3_S3	P				3.3V	
6	VDC_EXT	O		VDC_EXT	VDC power on signal Input, (auto power on)	5.0V	
8	GND	G		GND	GND	GND	
10	MIPI_CSIO_CLK1P	I		MIPI_CSIO_RX_CLK1P	MIPI_CSIO_RX_CLK1P		AM33
12	MIPI_CSIO_CLK1N	I		MIPI_CSIO_RX_CLK1N	MIPI_CSIO_RX_CLK1N		AM34
14	MIPI_CSIO_D3P	I		MIPI_CSIO_RX_D3P	MIPI_CSIO_RX_D3P		AL33
16	MIPI_CSIO_D3N	I		MIPI_CSIO_RX_D3N	MIPI_CSIO_RX_D3N		AL34
18	MIPI_CSIO_D2P	I		MIPI_CSIO_RX_D2P	MIPI_CSIO_RX_D2P		AK33
20	MIPI_CSIO_D2N	I		MIPI_CSIO_RX_D2N	MIPI_CSIO_RX_D2N		AK34
22	MIPI_CSIO_CLK0P	I		MIPI_CSIO_RX_CLK0P	MIPI_CSIO_RX_CLK0P		AJ33
24	MIPI_CSIO_CLK0N	I		MIPI_CSIO_RX_CLK0N	MIPI_CSIO_RX_CLK0N		AJ34
26	MIPI_CSIO_D1P	I		MIPI_CSIO_RX_D1P	MIPI_CSIO_RX_D1P		AH33
28	MIPI_CSIO_D1N	I		MIPI_CSIO_RX_D1N	MIPI_CSIO_RX_D1N		AH34
30	MIPI_CSIO_D0P	I		MIPI_CSIO_RX_D0P	MIPI_CSIO_RX_D0P		AG33
32	MIPI_CSIO_D0N	I		MIPI_CSIO_RX_D0N	MIPI_CSIO_RX_D0N		AG34
34	GND	G		GND	GND	GND	
36	PMIC_EXT_EN	O		PMIC_EXT_EN_OUT	PMIC_EXT_EN_Output, Active H Core board Pull up resistance 10K	5.0V	
38	LITCPU_AVS/SPI3_CLK_M2/GPIO0_D3_u	I/O	UP	CC_INT_L	CC_INT_L	1.8V	U33
40	GMAC0_TXER/I2C0_SDA_M1/UART7_CTSN_M0/PWM7_IR_M3/SPI3_CLK_M0/GPIO4_C6_d	I/O	DOWN	PCIE_PWREN_H	PCIE_Power_EN Output, Active H	1.8V	AF33
42	NPOR	I		RESET_L	System Reset Input, Active L Core board Pull up resistance 10K	1.8V	M31
44	PWRON_L(RK806-1)	I		PWRON_L	Power_Key Input, Active L Core board Pull up resistance 10K	VCCA_RK806	
46	CIF_VSYNCR/BT1120_D9/I2S1_SDO2_M0/PCIE20X1_2_BUTT_ON_RSTN/I2C7_SDA_M3/UART8_CTSN_M0/PWM15_IR_M1/CAN1_TX_M1/GPIO4_B3_u	I/O	UP	CAN1_TX_M1/GPIO4_B3	CAN1_TX_M1/GPIO4_B3	3.3V	AM25
48	GND	G		GND	GND	GND	
50	ETH0_REFCLK0_25M/I2S2_SDI_M0/I2C6_SCL_M2/SPI1_CS0_M0/GPIO2_C3_d	I/O	DOWN	ETH0_REFCLK0_25M	GPIO2_C3	1.8V	AD30
52	GMAC0_RXDV_CRS/UART7_RTSN_M0/PWM2_M2/SPI3_CS0_M0/GPIO4_C2_d	I/O	DOWN	GMAC0_RXDV_CRS	GMAC0_RXDV_CRS	1.8V	AE31
54	GMAC0_RXCLK/SPIO_D2_M0/FSPI_D2_M1/I2C8_SCL_M1/UART6_RTSN_M0/GPIO2_B0_u	I/O	UP	GMAC0_RXCLK	GMAC0_RXCLK	1.8V	AE32
56	GMAC0_RXD1/I2C6_SDA_M2/UART9_TX_M0/SPI1_MOSI_M0/GPIO2_C2_d	I/O	DOWN	GMAC0_RXD1	GMAC0_RXD1	1.8V	AD31
58	GMAC0_RXD0/I2C2_SCL_M1/UART1_CTSN_M0/SPI1_MISO_M0/GPIO2_C1_d	I/O	DOWN	GMAC0_RXD0	GMAC0_RXD0	1.8V	AD32
60	GMAC0_RXD3/SPIO_D1_M0/FSPI_D1_M1/UART6_TX_M0/GPIO2_A7_u	I/O	UP	GMAC0_RXD3	GMAC0_RXD3	1.8V	AC31
62	GMAC0_RXD2/SPIO_D0_M0/FSPI_D0_M1/UART6_RX_M0/GPIO2_A6_u	I/O	UP	GMAC0_RXD2	GMAC0_RXD2	1.8V	AC32
64	GMAC0_MCLKINOUT/I2S2_SDO_M0/I2C7_SCL_M1/PWM4_M1/SPI3_CS1_M0/GPIO4_C3_d	I/O	DOWN	GMAC0_MCLKINOUT	GMAC0_MCLK Input/Output	1.8V	AF34
66	ETH1_REFCLK0_25M/MIPI_CAMERA1_CLK_M1/I2C4_SCL_M0/GPIO3_A6_d	I/O	DOWN	GPIO3_A6	GPIO3_A6	VCCIO5	AH27
68	GMAC0_MDIO/I2C0_SCL_M1/UART9_CTSN_M0/PWM6_M2/SPI3_MOSI_M0/GPIO4_C5_d	I/O	DOWN	GMAC0_MDIO	GMAC0_MDIO	1.8V	AB33
70	GMAC0_MDC/I2C7_SDA_M1/UART9_RTSN_M0/PWM5_M2/SPI3_MISO_M0/GPIO4_C4_d	I/O	DOWN	GMAC0_MDC	GMAC0_MDC	1.8V	AB34
72	GMAC1_MCLKINOUT/I2S2_LRCK_M1/CAN1_TX_M0/UART3_RX_M1/PWM13_M0/GPIO3_B6_d	I/O	DOWN	GMAC1_MCLKINOUT	GMAC1_MCLK Input/Output	VCCIO5	AE29
74	GMAC1_TXEN/I2S2_SCLK_M1/CAN1_RX_M0/UART3_TX_M1/PWM12_M0/GPIO3_B5_u	I/O	UP	GMAC1_TXEN	GMAC1_TXEN	VCCIO5	AD29
76	GMAC1_MDC/MIPI_TE0/I2C8_SCL_M4/UART7_RTSN_M1/PWM14_M0/SPI1_CS0_M1/GPIO3_C2_d	I/O	DOWN	GMAC1_MDC	GMAC1_MDC	VCCIO5	Y31
78	GMAC1_MDIO/MIPI_TE1/I2C8_SDA_M4/UART7_CTSN_M1/PWM15_IR_M0/SPI1_CS1_M1/GPIO3_C3_d	I/O	DOWN	GMAC1_MDIO	GMAC1_MDIO	VCCIO5	Y30
80	GMAC1_PTP_REF_CLK/HDMI_TX1_HPD_M1/I2C3_SCL_M1/SPI1_MOSI_M1/GPIO3_B7_d	I/O	DOWN	GMAC1_RSTN_L_GPIO3_B7	GMAC1_Rreset ,Active L	VCCIO5	AA28

*Notes: VCCIO5_CTL is High: VCCIO5=3.3V;
VCCIO5_CTL is Low(Or NC): VCCIO5=1.8V---Default

深圳智锐通科技有限公司
Shenzhen Zrt Co., Ltd.



智锐通公众号

&



智锐通抖音号

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