

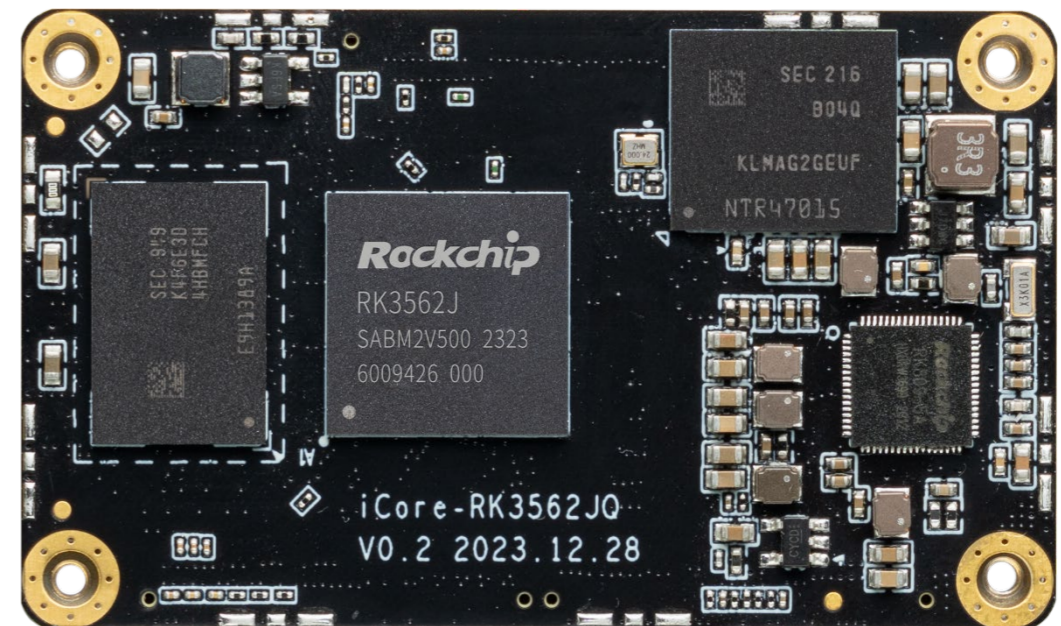


# iCore-3562JQ

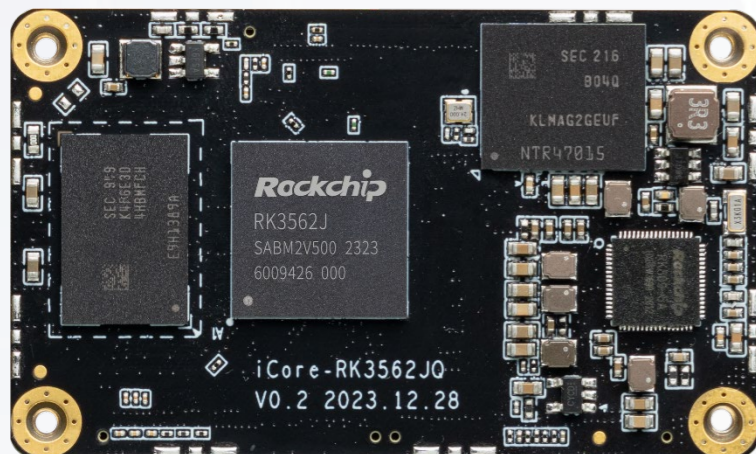
高性能工业级核心板

V0.2 2024-4-8

天启智能科技



# 产品特点 Product features



## 四核工业级高性能处理器

采用四核64位Cortex-A53工业级高性能处理器RK3562J  
主频最高1.2GHz



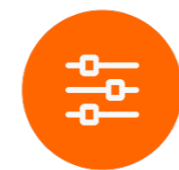
## 强大的网络通讯能力

集成PCIe/GMAC/SDIO3.0/USB3.0, 可扩展多路千兆以太网、WiFi6、蓝牙、5G/4G LTE, 网络通讯拥有更高的速率



## 100%国产化, 产品自主可控

可实现100%国产化硬件方案定制, 技术完全自主可控, 工业级产品质量, 稳定的供货周期, 满足各种行业的需求



## BTB封装, 丰富的扩展接口

核心板采用BTB接口, 支持多种外设接口: MIPI-CSI、MIPI-DSI、PCIe2.1、USB3.0、USB2.0、SDIO、I2C、I2S、SPI、CAN、UART、PWM、ADC



## 强大的图像处理能力

内置Mali-G52 GPU, 支持4K 30fps H.265/VP9和1080P 60fps H.264视频解码, 支持1080P 60fps H.264视频编码



## 多种显示接口

支持单路MIPI-DSI, 2048\*1080@60fps, 单通道LVDS, 支持800\*1280@60fps, 支持RGB接口, 拥有13M ISP图像信号处理器, 可支持双摄像头与HDR功能



## 支持多种操作系统

支持Linux OS (Ubuntu、Debian)、Buildroot+QT系统, 系统安全稳定, 满足不同需求



## 广泛的应用场景

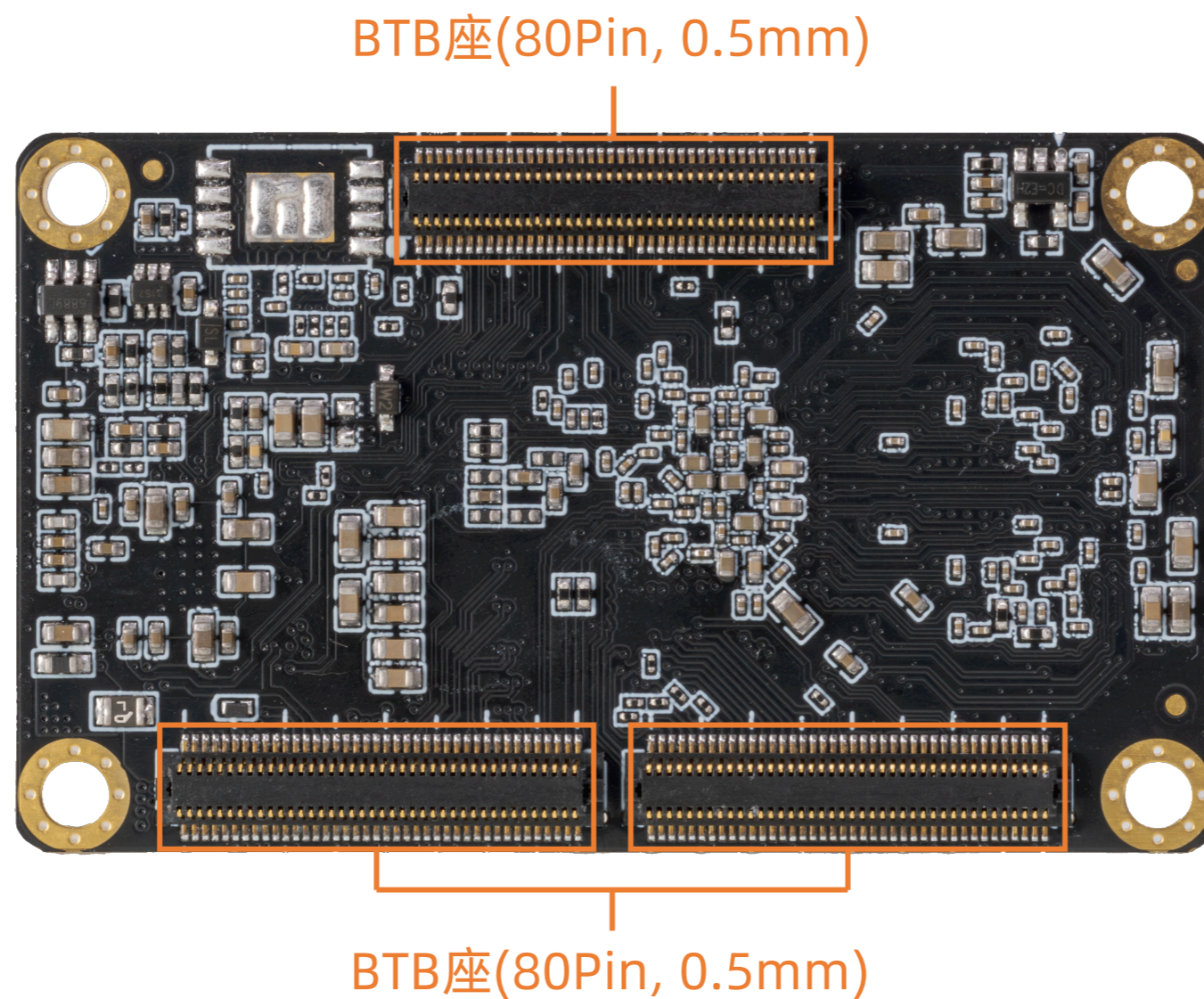
广泛适用于智慧商显、平板、视频会议、词典笔、扫地机、图像识别、医疗设备、工业HMI、PLC、边缘计算、电力配电、集中器等领域

# 规格参数 Specifications

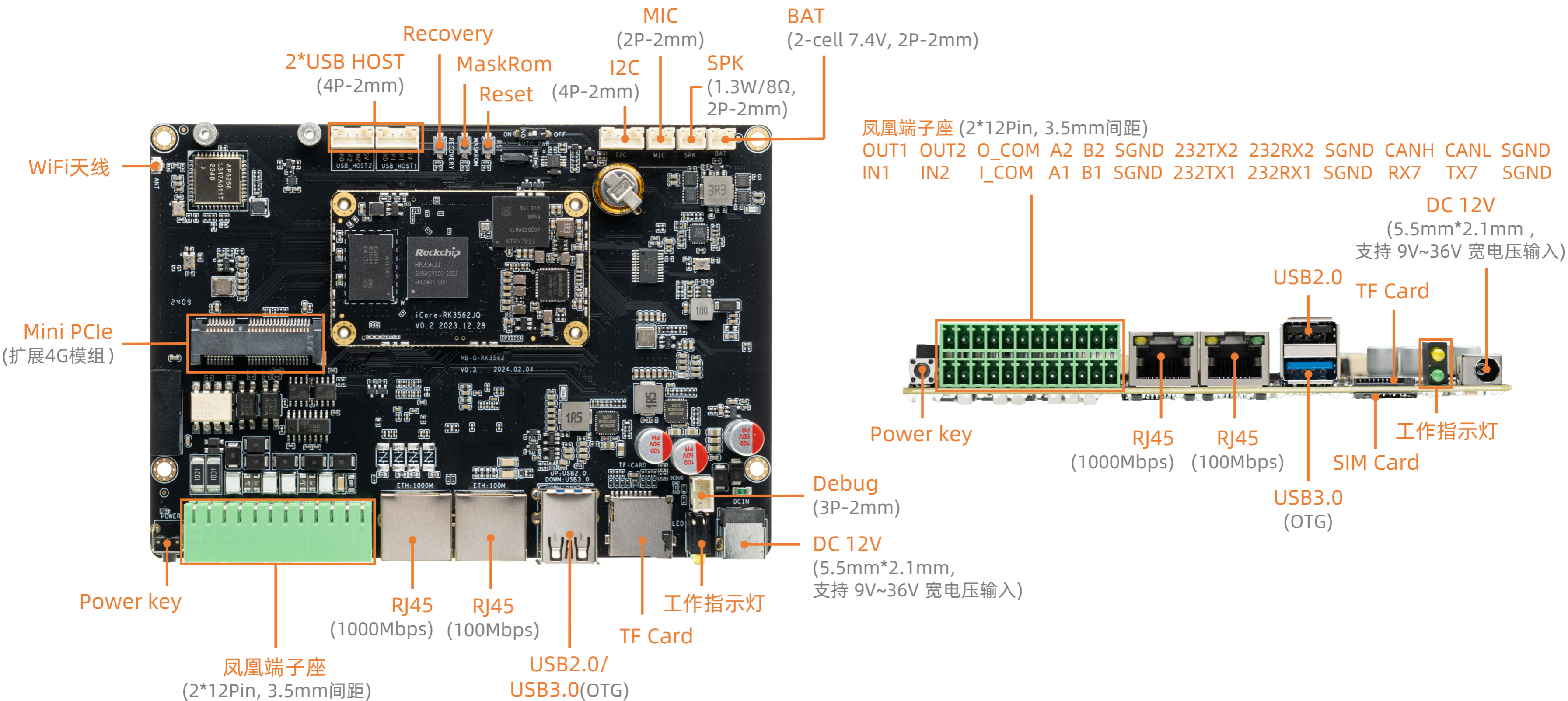


规格参数		
基本参数	SOC	Rockchip RK3562J
	CPU	四核64位Cortex-A53处理器, 主频最高1.2GHz
	GPU	ARM G52 2EE, 支持 OpenGL ES 1.1/2.0/3.2, OpenCL 2.0, Vulkan 1.1, 内嵌高性能 2D 加速硬件
	编解码	支持 4K 30fps H.265/VP9 和1080P 60fps H.264视频解码 支持 1080P 60fps H.264 视频编码 支持 13M ISP, 支持HDR
	内存	LPDDR4/LPDDR4x (2GB/4GB/8GB可选)
	存储	eMMC (16GB/32GB/16GB/32GB/64GB可选)
	电源	5.0V (电压误差 ± 5%)
	系统	Ubuntu、Debian、Buildroot+QT
	尺寸	60mm * 36mm
	重量	≈12g
	功耗	Normal:0.75W(5.0V/150mA); Max: 3.0W(5.0V/600mA); Min:0.025W(5.0V/5mA)
	环境	工作温度: -40°C- 85°C 存储湿度: 5% ~ 90%RH (无凝露)
接口参数	网络	集成1路RMII, 支持百兆以太网 (100 Mbps)、集成1路RGMII, 支持千兆以太网 (1000 Mbps) 支持WAN口+LAN口 双IP; 通过SDIO支持“WIFI+BT”二合一模块; 可USB扩展4G模组
	视频输入	支持 2 * MIPI CSI (4 Lanes) 或者4 * MIPI CSI (2 Lanes) 或者1 * MIPI CSI (4 Lanes) + 2 * MIPI CSI (2 Lanes)
	视频输出	支持 LVDS 800x1280@60Hz 或 MIPI-DSI 2048x1080@60Hz, 支持 RGB 2048x1080@60Hz
	音频输出	1 * SPDIF、1 * PDM (8 通道), 2 * DAC (I2S/PCM)
	USB	1 × USB3.0 OTG (与PCIe 2.1复用)、2 × USB2.0 HOST
	PCIE	1 × PCIe 2.1(1 lane, 与USB3.0复用)
	扩展接口	5 * I2C、10 * UART、2 * CAN、3 * SPI、13 * ADC、16 * PWM、1 * SDMMC、GPIOs
	接口类型	BTB连接器 (3 X 80 PIN, 0.5mm间距)
	PCB规格	板厚1.6mm, 6层板, 高Tg材质, 沉金工艺

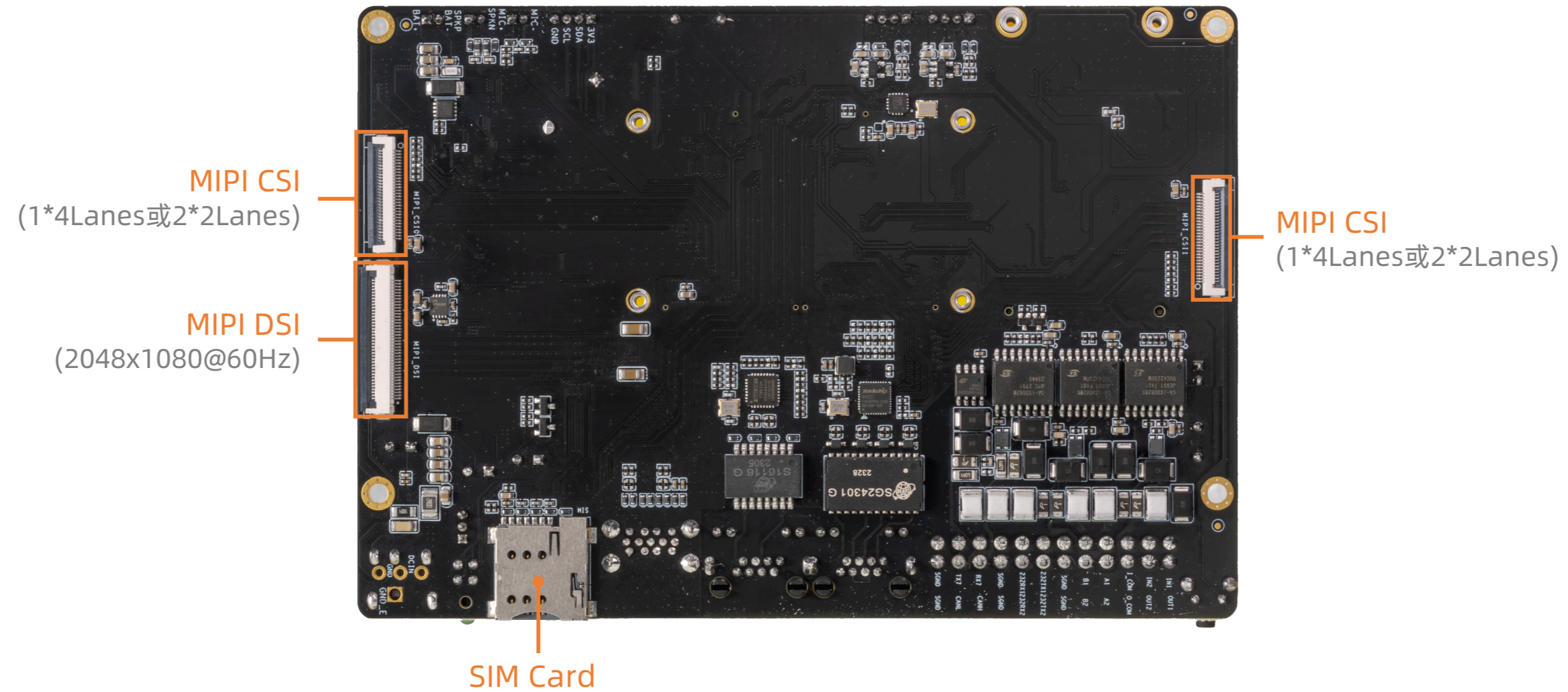
# 核心板接口描述 Core Board Interface description



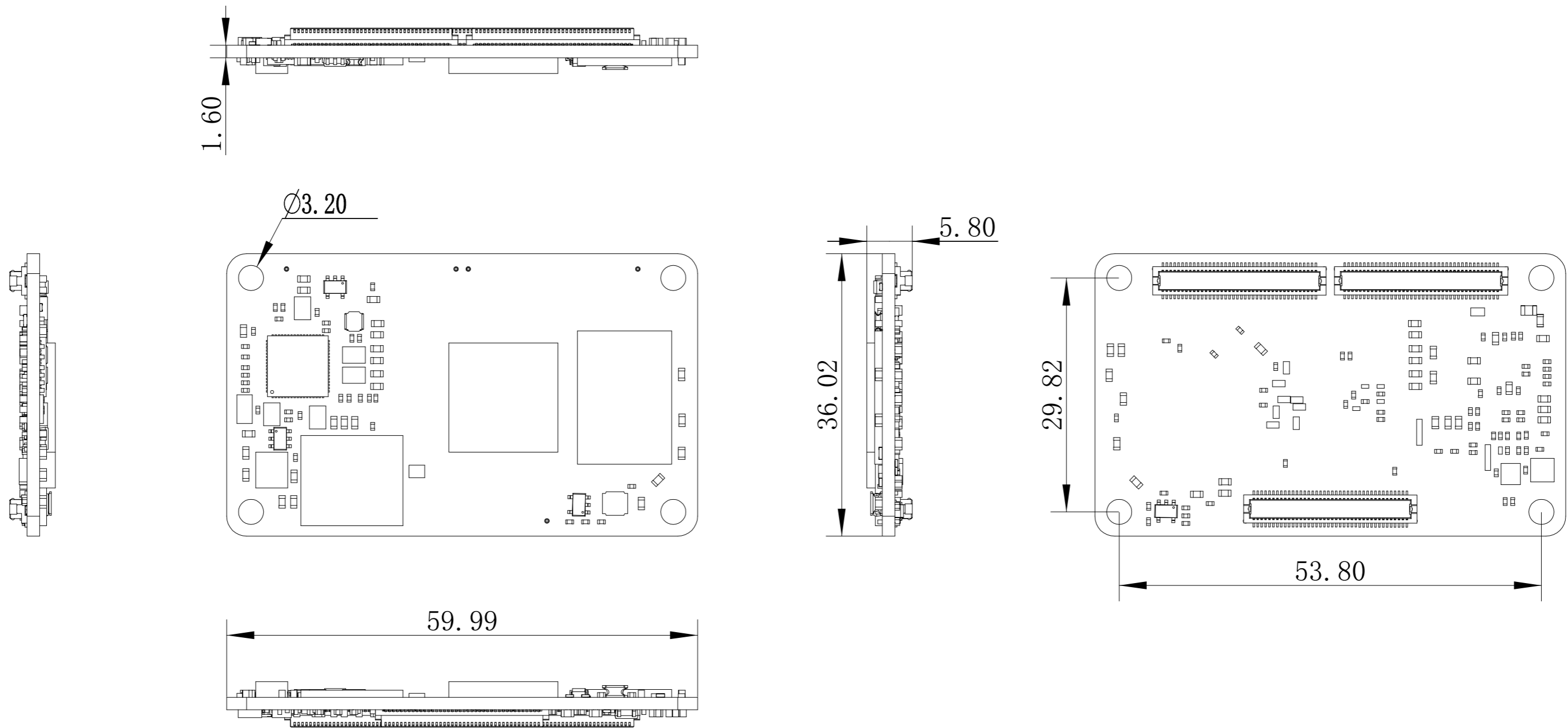
# 主板接口描述 Mainboard Interface description



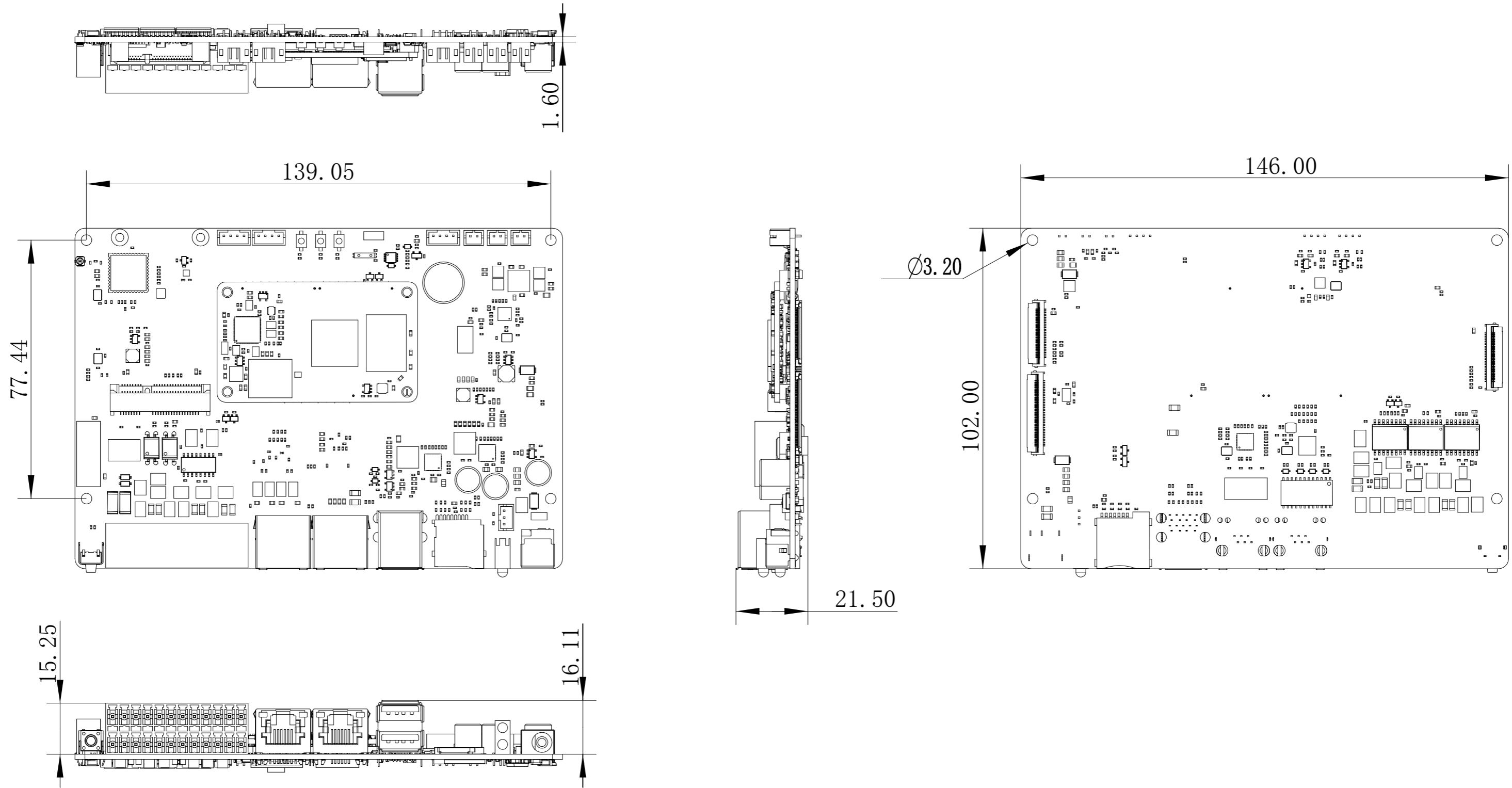
# 主板接口描述 Mainboard Interface description



# 核心板尺寸 Core Board Dimension



# 主板尺寸 Mainboard Dimension







# 接口定义 Interface definition

Notes1:  
 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 = Lowe Level H = High level”

PIN	iCoe-rk3562JQ(J1) iCoe-rk3562JQ board pin definition	Pad type	IO Pull	IO Power domain	RK3562 Pin Number	Function for Mainboard (MB-Q-RK3562)	Defual function description
1	VCCIO_6	P		1.8V/3.3V		VCC_1V8	VCC_1V8 (VCCIO_6 power input)
3	VCCIO_5	P		1.8V/3.3V		VCC_3V3	VCC_3V3 (VCCIO_5 power input)
5	GND	G				GND	GND
7	MIPI_CSI_RX0_CLK1P	I		-	1P7	MIPI_CSI_RX0_CLK1P	MIPI_CSI_RX0_CLK1P
9	MIPI_CSI_RX0_CLK1N	I		-	1R7	MIPI_CSI_RX0_CLK1N	MIPI_CSI_RX0_CLK1N
11	MIPI_CSI_RX0_D3P	I		-	AF5	MIPI_CSI_RX0_D3P	MIPI_CSI_RX0_D3P
13	MIPI_CSI_RX0_D3N	I		-	AG5	MIPI_CSI_RX0_D3N	MIPI_CSI_RX0_D3N
15	MIPI_CSI_RX0_D2P	I		-	AF6	MIPI_CSI_RX0_D2P	MIPI_CSI_RX0_D2P
17	MIPI_CSI_RX0_D2N	I		-	AG6	MIPI_CSI_RX0_D2N	MIPI_CSI_RX0_D2N
19	GND	G				GND	GND
21	MIPI_CSI_RX0_CLK0P	I		-	AF7	MIPI_CSI_RX0_CLK0P	MIPI_CSI_RX0_CLK0P
23	MIPI_CSI_RX0_CLK0N	I		-	AG7	MIPI_CSI_RX0_CLK0N	MIPI_CSI_RX0_CLK0N
25	GND	G				GND	GND
27	MIPI_CSI_RX0_D1P	I		-	AF8	MIPI_CSI_RX0_D1P	MIPI_CSI_RX0_D1P
29	MIPI_CSI_RX0_D1N	I		-	AG8	MIPI_CSI_RX0_D1N	MIPI_CSI_RX0_D1N



# 接口定义 Interface definition

31	MIPI_CSI_RX0_D0P	I		-	AF9	MIPI_CSI_RX0_D0P	MIPI_CSI_RX0_D0P
33	MIPI_CSI_RX0_D0N	I		-	AG9	MIPI_CSI_RX0_D0N	MIPI_CSI_RX0_D0N
35	GND	G				GND	GND
37	GND	G				GND	GND
39	GND	G				GND	GND
41	VCC_1V8	P		1.8V		VCC_1V8	VCC_1V8: 1.8V Output , Pin41/43 Total Max:500mA
43	VCC_1V8	P		1.8V		VCC_1V8	
45	GND	G				GND	GND
47	VCC_3V3	P		3.3V		VCC_3V3	VCC_3V3: 3.3V Output , Pin47/49 Total Max:500mA
49	VCC_3V3	P		3.3V		VCC_3V3	
51	NC					NC	this pin must be NC, cannot connect to GND!
53	VCCIO_ACODEC	P		3.3V		VCCIO_ACODEC	3.3V Output For codec, Max:200mA
55	VCCIO_ACODEC	P		3.3V		VCCIO_ACODEC	
57	VCC_RSV1	P		3.3V		VCC_RSV1	VCC_RSV1 Output (Max 200mA,Default:OFF)
59	VCC3V3_SD	P		3.3V		VCC3V3_SD	VCC3V3_SD Output ,For SD card
61	GND	G		GND		GND	GND
63	GND	G		GND		GND	
65	GND	G		GND		GND	



# 接口定义 Interface definition

67	GND	G		GND		GND	GND
69	GND	G		GND		GND	
71	5V0	P		5.0V		VCC5V0_CORE	<b>Core board Power supply Input: 5.0V +/-5%</b>
73	5V0	P		5.0V		VCC5V0_CORE	
75	5V0	P		5.0V		VCC5V0_CORE	
77	5V0	P		5.0V		VCC5V0_CORE	
79	5V0	P		5.0V		VCC5V0_CORE	
2	GND	G				GND	GND
4	GND	G				GND	GND
6	MIPI_DSI_TX_D3P/LVDS_TX_D3P	O		-	AG10	MIPI_DSI_TX_D3P/LVDS_TX_D3P	MIPI_DSI_TX_D3P/LVDS_TX_D3P
8	MIPI_DSI_TX_D3N/LVDS_TX_D3N	O		-	AF10	MIPI_DSI_TX_D3N/LVDS_TX_D3N	MIPI_DSI_TX_D3N/LVDS_TX_D3N
10	MIPI_DSI_TX_D2P/LVDS_TX_D2P	O		-	AF11	MIPI_DSI_TX_D2P/LVDS_TX_D2P	MIPI_DSI_TX_D2P/LVDS_TX_D2P
12	MIPI_DSI_TX_D2N/LVDS_TX_D2N	O		-	AG11	MIPI_DSI_TX_D2N/LVDS_TX_D2N	MIPI_DSI_TX_D2N/LVDS_TX_D2N
14	GND	G				GND	GND
16	MIPI_DSI_TX_CLKP/LVDS_TX_CLKP	O		-	AG12	MIPI_DSI_TX_CLKP/LVDS_TX_CLKP	MIPI_DSI_TX_CLKP/LVDS_TX_CLKP
18	MIPI_DSI_TX_CLKN/LVDS_TX_CLKN	O		-	AF12	MIPI_DSI_TX_CLKN/LVDS_TX_CLKN	MIPI_DSI_TX_CLKN/LVDS_TX_CLKN
20	GND	G				GND	GND
22	MIPI_DSI_TX_D1P/LVDS_TX_D1P	O		-	AF13	MIPI_DSI_TX_D1P/LVDS_TX_D1P	MIPI_DSI_TX_D1P/LVDS_TX_D1P



# 接口定义 Interface definition

24	MIPI_DSI_TX_D1N/LVDS_TX_D1N	O		-	AG13	MIPI_DSI_TX_D1N/LVDS_TX_D1N	MIPI_DSI_TX_D1N/LVDS_TX_D1N
26	MIPI_DSI_TX_D0P/LVDS_TX_D0P	O		-	AG14	MIPI_DSI_TX_D0P/LVDS_TX_D0P	MIPI_DSI_TX_D0P/LVDS_TX_D0P
28	MIPI_DSI_TX_D0N/LVDS_TX_D0N	O		-	AF14	MIPI_DSI_TX_D0N/LVDS_TX_D0N	MIPI_DSI_TX_D0N/LVDS_TX_D0N
30	GND	G		-		GND	GND
32	GND	G				GND	GND
34	GND	G				GND	GND
36	VCC_RSV2	P		1.8V/3.3V		VCC_LCD1V8	VCC_RSV2 Output (Default:1.8V)
38	VCCA_1V8	P		1.8V		VCCA_1V8	VCCA_1V8: 1.8V Output, Pin28/40 Max:200mA
40	VCCA_1V8	P		1.8V		VCCA_1V8	
42	GND	G				GND	GND
44	MIC2_IN	I		3.3V		MIC2_IN	MIC2_IN to RK809_pin42 core board series capacitance 0.1uF
46	MIC1_IN	I		3.3V		MIC1_IN	MIC1_IN to RK809_pin43 core board series capacitance 0.1uF
48	GND	G				GND	GND
50	GND	G				GND	GND
52	HPR_OUT	O		+/-2.7V		NC	NC (RK809 HPR_OUT)
54	HP_SNS	G				NC	NC (RK809 HP_SNS)
56	HPL_OUT	O		+/-2.7V		NC	NC (RK809 HPL_OUT)
58	GND	G				GND	GND



# 接口定义 Interface definition

60	SPKN_OUT	O		5.0V		SPKN_OUT	RK809 Speaker driver output- (1.3W/8Ω)
62	SPKP_OUT	O		5.0V		SPKP_OUT	RK809 Speaker driver output+(1.3W/8Ω)
64	GND	G		GND		GND	GND
66	GND	G		GND		GND	
68	GND	G		GND		GND	
70	GND	G		GND		GND	
72	5V0	P		5.0V		VCC5V0_CORE	<b>Core board Power supply Input: 5.0V +/-5%</b>
74	5V0	P		5.0V		VCC5V0_CORE	
76	5V0	P		5.0V		VCC5V0_CORE	
78	5V0	P		5.0V		VCC5V0_CORE	
80	5V0	P		5.0V		VCC5V0_CORE	
PIN	iCoe-rk3562JQ(J2) Core board pin definition	Pad type	IO Pull	IO Power domain	RK3562 Pin Number	Function for Mainboard (MB-Q-RK3562)	Defual function description
1	GND	G		GND			
3	GND	G		GND		GND	GND
5	SARADC1_IN7	I		1.8V	1E1	NC	NC (ADC1_7 Input)
7	SARADC1_IN1	I		1.8V	1J1	NC	NC (ADC1_1 Input)
9	SARADC1_IN3	I		1.8V	1J2	NC	NC (ADC1_3 Input)
11	VO_LCDC_D12/I2S1_SDI3_M0/UART7_RTSN_M0/SP I2_MOSI_M0/I2C2_SDA_M1/GPIO3_D3_d	I/O	DOWN	VCCIO_6	T3	LCD0_RST	LCD0_Reset Output, Active L



# 接口定义 Interface definition

13	I2S0_SDO3_M0/I2S0_SDI1_M0/PDM_SDI1_M0/PCIE20_PERSTN_M1/GPIO3_B0_d	I/O	DOWN	3.3V	1M2	SYS_PWR_EN	System Power_EN Output, Active H
15	VO_LCDC_D16/RGMII_RXER_M0/UART1_CTSN_M1/PDM_SDI1_M1/UART6_RX_M1/GPIO4_B0_d	I/O	DOWN	VCCIO_6	V3	SC8815_INT	SC8815_INT Input, Active L
17	I2C5_SDA_M0/ISP_FLASH_TRIGOUT/UART9_RX_M1/GPIO3_C3_d	I/O	DOWN	VCCIO_5	D3	UART9_RX_M1	UART9_RX_M1
19	I2C5_SCL_M0/ISP_PRELIGHT_TRIGOUT/UART9_TX_M1/GPIO3_C2_d	I/O	DOWN	VCCIO_5	E1	UART9_TX_M1	UART9_TX_M1
21	I2S1_SDI0_M1/ISP_FLASH_TRIGIN/UART3_RTSN_M1/GPIO3_C1_d	I/O	DOWN	VCCIO_5	E2	GPIO3_C1_d	GPIO3_C1_d
23	I2S1_SDO2_M1/I2S1_SDI2_M1/UART3_TX_M1/SPI0_CSN0_M1/I2C4_SDA_M0//CAN0_RX_M1/GPIO3_B7_d	I/O	DOWN	VCCIO_5	G2	CAN0_RX_M1	CAN0_RX_M1
25	I2S1_SDO1_M1/I2S1_SDI3_M1/UART3_CTSN_M1/SPI0_CSN1_M1/I2C4_SCL_M0/CAN0_TX_M1/GPIO3_B6_d	I/O	DOWN	VCCIO_5	G3	CAN0_TX_M1	CAN0_TX_M1
27	I2S1_SDO3_M1/I2S1_SDI1_M1/UART3_RX_M1/SPI0_MISO_M1/GPIO3_C0_d	I/O	DOWN	VCCIO_5	H2	GPIO3_C0_d	GPIO3_C0_d
29	I2S0_SDO1_M0/I2S0_SDI3_M0/PDM_CLK0_M0/PCIE20_CLKREQN_M1/UART5_TX_M1/GPIO3_A6_d	I/O	DOWN	VCCIO_5	J1	UART5_TX_M1	UART5_TX_M1
31	I2S0_SDO2_M0/I2S0_SDI2_M0/PDM_SDI2_M0/PCIE20_WAKEN_M1/UART5_RX_M1/GPIO3_A7_d	I/O	DOWN	VCCIO_5	L2	UART5_RX_M1	UART5_RX_M1
33	GND	G		GND		GND	GND
35	GND	G		GND		GND	GND
37	VO_LCDC_HSYNC/I2S1_SDO1_M0/UART9_CTSN_M0/SPI2_CSN1_M0/I2C1_SCL_M1/UART3_TX_M0/GPIO4_B4_d	I/O	DOWN	VCCIO_6	M2	I2C1_SCL_M1	I2C1_SCL_M1
39	VO_LCDC_VSYNC/I2S1_SDO2_M0/UART9_RTSN_M0/SPI2_CSN0_M0/I2C1_SDA_M1/UART3_RX_M0/GPIO4_B5_d	I/O	DOWN	VCCIO_6	M3	I2C1_SDA_M1	I2C1_SDA_M1
41	GND	G		GND		GND	GND
43	VO_LCDC_D17/ETH_CLK_25M_OUT_M0/CAM_CLK0_OUT_M1/I2S2_SCLK_M1/PDM_CLK1_M1/GPIO4_B1_d	I/O	DOWN	VCCIO_6	T2	CAM_CLK0_OUT_M1	CAM_CLK0_OUTPUT core board series resistance 22R
45	GND	G		GND		GND	GND



# 接口定义 Interface definition

47	VO_LCDC_CLK/RGMII_CLK_M0/CAM_CLK1_OUT_M1/PDM_CLK0_M1/GPIO4_B7_d	I/O	DOWN	VCCIO_6	U1	LCD_PWREN	LCD Power_EN Output, Active H
49	GND	G		GND		GND	GND
51	VO_LCDC_D21/RGMII_RXCLK_M0/I2S2_LRCK_M1/PWM12_M0/GPIO4_A1_d	I/O	DOWN	VCCIO_6	U1	RGMII_RXCLK_M0	RGMII_RXCLK_M0
53	VO_LCDC_D9/RGMII_RXDV_M0/UART1_RTSN_M1/PDM_SDI0_M1/UART6_TX_M1/GPIO4_A7_d	I/O	DOWN	VCCIO_6	V2	RGMII_RXDV_M0	RGMII_RXDV_M0
55	VO_LCDC_D1/RGMII_RXD0_M0/UART1_TX_M1/PDM_SDI2_M1/I2C3_SCL_M1/GPIO4_A5_d	I/O	DOWN	VCCIO_6	W3	RGMII_RXD0_M0	RGMII_RXD0_M0
57	VO_LCDC_D20/RGMII_RXD3_M0/UART8_RTSN_M1/SPI1_CSN1_M0/GPIO4_A0_d	I/O	DOWN	VCCIO_6	Y3	RGMII_RXD3_M0	RGMII_RXD3_M0
59	VO_LCDC_D8/RGMII_RXD1_M0/UART1_RX_M1/PDM_SDI3_M1/I2C3_SDA_M1/GPIO4_A6_d	I/O	DOWN	VCCIO_6	W1	RGMII_RXD1_M0	RGMII_RXD1_M0
61	VO_LCDC_D19/RGMII_RXD2_M0/UART8_CTSN_M1/SPI1_CSN0_M0/GPIO3_D7_d	I/O	DOWN	VCCIO_6	W2	RGMII_RXD2_M0	RGMII_RXD2_M0
63	VO_LCDC_D0/RGMII_TXEN_M0/PWM13_M0/GPIO4_A4_d	I/O	DOWN	VCCIO_6	AA3	RGMII_TXEN_M0	RGMII_TXEN_M0 core board series resistance 22R
65	VO_LCDC_D15/RGMII_TXCLK_M0/I2S2_MCLK_M1/SPI1_CLK_M0/GPIO3_D6_d	I/O	DOWN	VCCIO_6	Y2	RGMII_TXCLK_M0	RGMII_TXCLK_M0 core board series resistance 22R
67	VO_LCDC_D22/RGMII_TXD0_M0/UART6_CTSN_M1/SPI1_MOSI_M0/GPIO4_A2_d	I/O	DOWN	VCCIO_6	AA1	RGMII_TXD0_M0	RGMII_TXD0_M0 core board series resistance 22R
69	VO_LCDC_D23/RGMII_TXD1_M0/UART6_RTSN_M1/SPI1_MISO_M0/GPIO4_A3_d	I/O	DOWN	VCCIO_6	AA2	RGMII_TXD1_M0	RGMII_TXD1_M0 core board series resistance 22R
71	VO_LCDC_D13/RGMII_TXD2_M0/UART8_TX_M1/I2S2_SDI_M1/GPIO3_D4_d	I/O	DOWN	VCCIO_6	AB3	RGMII_TXD2_M0	RGMII_TXD2_M0 core board series resistance 22R
73	VO_LCDC_D14/RGMII_TXD3_M0/UART8_RX_M1/I2S2_SDO_M1/GPIO3_D5_d	I/O	DOWN	VCCIO_6	AB2	RGMII_TXD3_M0	RGMII_TXD3_M0 core board series resistance 22R
75	VO_LCDC_D2/RGMII_MDC_M0/UART9_TX_M0/GPIO4_B2_d	I/O	DOWN	VCCIO_6	AC1	RGMII_MDC_M0	RGMII_MDC_M0
77	VO_LCDC_D18/RGMII_MDIO_M0/UART9_RX_M0/GPIO4_B3_d	I/O	DOWN	VCCIO_6	AC2	RGMII_MDIO_M0	RGMII_MDIO_M0
79	GND	G		GND		GND	GND



# 接口定义 Interface definition

2	GND	G		GND		GND	GND
4	GND	G		GND		GND	GND
6	SARADC1_IN2	I/O	DOWN	1.8V	1F2	NC	NC (ADC1_2 Input)
8	SARADC1_IN5	I/O	DOWN	1.8V	1L2	NC	NC (ADC1_5 Input)
10	SARADC1_IN6	I/O	DOWN	1.8V	1K1	NC	NC (ADC1_6 Input)
12	VO_LCDC_D7/I2S1_SDI0_M0/UART4_TX_M0/GPIO3_D0_d	I/O	DOWN	VCCIO_6	R3	UART4_TX_M0	UART4_TX_M0
14	GND	G		GND		GND	GND
16	I2S1_SDO0_M1/CAM_CLK3_OUT/UART8_RTSN_M0/SPI0_CLK_M1/PWM13_M1/GPIO3_B5_d	I/O	DOWN	VCCIO_5	D1	LCD_BL_PWM	LCD_BL_PWM Output core board series resistance 22R
18	I2S1_LRCK_M1/CAM_CLK2_OUT/UART8_CTSN_M0/SPI0_MOSI_M1/PWM12_M1/GPIO3_B4_d	G	DOWN	VCCIO_5	F2	CAM_CLK2_OUT	CAM_CLK2_OUTPUT core board series resistance 22R
20	GND	G		GND		GND	GND
22	I2S1_SCLK_M1/CAM_CLK1_OUT_M0/UART8_RX_M0/GPIO3_B3_d	I/O	DOWN	VCCIO_5	G1	UART8_RX_M0	UART8_RX_M0 core board series resistance 22R
24	GND	G		GND		GND	GND
26	I2S1_MCLK_M1/CAM_CLK0_OUT_M0/UART8_TX_M0/GPIO3_B2_d	I/O	DOWN	VCCIO_5	H3	UART8_TX_M0	UART8_TX_M0 core board series resistance 22R
28	GND	G		GND		GND	GND
30	GND	G		GND		GND	GND
32	GND	G		GND		GND	GND
34	VO_LCDC_D3/I2S1_MCLK_M0/UART7_TX_M0/GPIO3_C4_d	I/O	DOWN	VCCIO_6	N1	UART7_TX_M0	UART7_TX_M0





# 接口定义 Interface definition

36	VO_LCDC_D4/I2S1_SCLK_M0/UART4_CTSN_M0/PWM14_M0/GPIO3_C5_d	I/O	DOWN	VCCIO_6	N2	UART4_CTSN_M0	UART4_CTSN_M0
38	VO_LCDC_DEN/I2S1_SDO3_M0/UART3_CTSN_M0/SPI2_CLK_M0/GPIO4_B6_d	I/O	DOWN	VCCIO_6	N3	TP_RST_L	TP_Reset Output, Active L
40	VO_LCDC_D6/I2S1_SDO0_M0/UART7_RX_M0/GPIO3_C7_d	I/O	DOWN	VCCIO_6	P2	UART7_RX_M0	UART7_RX_M0
42	VO_LCDC_D5/I2S1_LRCK_M0/UART4_RTSN_M0/PWM15_M0/GPIO3_C6_d	I/O	DOWN	VCCIO_6	P3	UART4_RTSN_M0	UART4_RTSN_M0
44	VO_LCDC_D10/I2S1_SDI1_M0/UART4_RX_M0/UART3_RTSN_M0/GPIO3_D1_d	I/O	DOWN	VCCIO_6	R1	UART4_RX_M0	UART4_RX_M0
46	VO_LCDC_D11/I2S1_SDI2_M0/UART7_CTSN_M0/SPI2_MISO_M0/I2C2_SCL_M1/GPIO3_D2_d	I/O	DOWN	VCCIO_6	R2	USB_OTG_PWREN_H	USB_OTG_POWER_EN Output, Active H
48	I2C3_SDA_M0/UART2_RX_M1/SPDIF_TX_M0/UART5_RTSN_M1/GPIO3_A1_d	I/O	DOWN	3.3V	1L1	RGMII_INT/PMEB	RGMII_INT Input, Active L
50	I2C3_SCL_M0/UART2_TX_M1/PDM_SDI3_M0/UART5_CTSN_M1/GPIO3_A0_d	I/O	DOWN	3.3V	1M1	RGMII_RSTn	RGMII_Reset Output, Active L
52	GND	G		GND		GND	GND
54	MIPI_CSI_RX1_CLK1N	I		-	1R3	MIPI_CSI_RX1_CLK1N	MIPI_CSI_RX1_CLK1N
56	MIPI_CSI_RX1_CLK1P	I		-	1P3	MIPI_CSI_RX1_CLK1P	MIPI_CSI_RX1_CLK1P
58	GND	G		GND		GND	GND
60	MIPI_CSI_RX1_D3N	I		-	AD2	MIPI_CSI_RX1_D3N	MIPI_CSI_RX1_D3N
62	MIPI_CSI_RX1_D3P	I		-	AD1	MIPI_CSI_RX1_D3P	MIPI_CSI_RX1_D3P
64	MIPI_CSI_RX1_D2N	I		-	AF1	MIPI_CSI_RX1_D2N	MIPI_CSI_RX1_D2N
66	MIPI_CSI_RX1_D2P	I		-	AE1	MIPI_CSI_RX1_D2P	MIPI_CSI_RX1_D2P
68	GND	G		GND		GND	GND
70	MIPI_CSI_RX1_CLK0N	I		-	AG2	MIPI_CSI_RX1_CLK0N	MIPI_CSI_RX1_CLK0N



# 接口定义 Interface definition

72	MIPI_CSI_RX1_CLK0P	I		-	AF2	MIPI_CSI_RX1_CLK0P	MIPI_CSI_RX1_CLK0P
74	MIPI_CSI_RX1_D1N	I		-	AG3	MIPI_CSI_RX1_D1N	MIPI_CSI_RX1_D1N
76	MIPI_CSI_RX1_D1P	I		-	AF3	MIPI_CSI_RX1_D1P	MIPI_CSI_RX1_D1P
78	MIPI_CSI_RX1_D0N	I		-	AG4	MIPI_CSI_RX1_D0N	MIPI_CSI_RX1_D0N
80	MIPI_CSI_RX1_D0P	I		-	AF4	MIPI_CSI_RX1_D0P	MIPI_CSI_RX1_D0P
PIN	iCoe-rk3562JQ(J3) Core board pin definition	Pad type	IO Pull	IO Power domain	RK3562 Pin Number	Function for Mainboard (MB-Q-RK3562)	Defual function description
1	PMIC_PWRON	I	UP	3.3V		PMIC_PWRON	PMIC Power_ON Input, Active L
3	PMIC_VDC	I		3.3V/5.0V		PMIC_VDC	RK809 VDC Input, Active H
5	PMIC_EXT_EN	O		3.3V		PMIC_EXT_EN	PMIC_EXT_EN Output, Active H
7	Npor	I	UP	3.3V		RESETn	System Reset Input, Core board Pull up resistance 10K
9	I2C1_SCL_M0/GPIO0_B3_d	I/O	DOWN	1.8V	AE17	WIFI_REG_ON_H	WIFI_EN Output, Active H
11	I2C1_SDA_M0/GPIO0_B4_d	I/O	DOWN	1.8V	AF18	WIFI_WAKE_HOST_H	WIFI_WAKE_HOST, Active H
13	UART6_RTSM_M0/PWM2_M0/SPI0_MISO_M0/GPIO0_C5_d	I/O	DOWN	1.8V	AE18	BT_REG_ON_H	BT_EN Output, Active H
15	UART6_CTSN_M0/PWM1_M0/SPI0_MOSI_M0/GPIO0_C4_d	I/O	DOWN	1.8V	AG19	BT_WAKE_HOST_H	BT_WAKE_HOST, Active H
17	UART6_TX_M0/GPIO0_C6_d	I/O	DOWN	1.8V	AF19	UART6_TX_M0	UART6_TX_M0
19	UART6_RX_M0/GPIO0_C7_d	I/O	DOWN	1.8V	AE19	UART6_RX_M0	UART6_RX_M0
21	UART0_RX_M0/JTAG_CPU_MCU_TMS_M0/GPIO0_D0_u	I/O	UP	1.8V	AF20	UART0_RX_M0_DEBUG	UART0_RX_M0_DEBUG
23	UART0_TX_M0/JTAG_CPU_MCU_TCK_M0/GPIO0_D1_u	I/O	UP	1.8V	AE20	UART0_TX_M0_DEBUG	UART0_TX_M0_DEBUG



# 接口定义 Interface definition

25	CLK_32K_IN/CLK0_32K_OUT/PCIE20_BUTTONRSTN/GPIO0_B0_d	I/O	DOWN	3.3V	AF21	GPIO0_B0_d	GPIO0_B0_d
27	SDMMC0_PWREN/I2C4_SCL_M1/PMU_DEBUG/GPIO0_A5_d	I/O	DOWN	3.3V	AE22	RTCIC_INT_L	RTC_INT Input, Active L
29	PCIE20_CLKREQN_M0/GPIO0_A6_d	I/O	DOWN	3.3V	AG24	RMII_RSTn	RMII_Reset Output, Active L
31	USB30_OTG0_VBUSDET	I		3.3V	1P14	USB30_OTG0_VBUSDET	USB30_OTG0_VBUS DET, Active H
33	REF_CLK_OUT/GPIO0_A0_d	I/O	DOWN	3.3V	AE24	GPIO0_A0_d	GPIO0_A0_d
35	SDMMC0_DETNI/I2C4_SDA_M1/GPIO0_A4_u	I/O	UP	3.3V	1R15	SDMMC0_DET_L	SDMMC0_DET Input, Active L
37	USB30_OTG0_ID	I	UP	3.3V	1P15	NC	NC (USB30_OTG0_ID Input)
39	SDMMC1_DETNI/RGMII_MDIO_M1/PWM3_M1/I2C5_SDA_M1/RMII_MDIO/GPIO1_D0_d	I/O	DOWN	VCCIO_4	V26	RMII_MDIO	RMII_MDIO
41	SDMMC1_PWREN/RGMII_MDC_M1/PWM2_M1/I2C5_SCL_M1/RMII_MDC/GPIO1_C7_d	I/O	DOWN	VCCIO_4	1J14	RMII_MDC	RMII_MDC
43	NC	NC		NC		NC	NC
45	GND	G		GND		GND	GND
47	I2S2_MCLK_M0/ETH_CLK_25M_OUT_M1/CLK1_32K_OUT/SPI2_CLK_M1/I2S0_SDO3_M1/GPIO2_A1_d	I/O	DOWN	VCCIO_4	W25	LCD1_TP_PWREN	LCD1_TP_Power_EN Output, Active H
49	GND	G		GND		GND	GND
51	PMIC_32KOUT	O	UP	VCCIO_4		PMIC_32KOUT	PMIC_32K OUTPUT To Wifi
53	SDMMC1_D1/RGMII_TXD3_M1/I2S0_SDI1_M1/PWM9_M1/GPIO1_C2_d	I/O	DOWN	VCCIO_4	V25	SDIO_D1	SDIO_D1 to WIFI
55	SDMMC1_D0/RGMII_TXD2_M1/I2S0_SDI0_M1/PWM8_M1/GPIO1_C1_d	I/O	DOWN	VCCIO_4	U26	SDIO_D0	SDIO_D0 to WIFI
57	SDMMC1_CLK/RGMII_RXCLK_M1/I2S0_MCLK_M1/PWM1_M1/GPIO1_C6_d	I/O	DOWN	VCCIO_4	U25	SDIO_CLK	SDIO_CLK to WIFI core board series resistance 22R
59	SDMMC1_CMD/RGMII_RXD3_M1/I2S0_SCLK_M1/PWM0_M1/GPIO1_C5_d	I/O	DOWN	VCCIO_4	T27	SDIO_CMD	SDIO_CMD to WIFI



# 接口定义 Interface definition

61	SDMMC1_D3/RGMII_RXD2_M1/I2S0_LRCK_M1/PWM11_M1/GPIO1_C4_d	I/O	DOWN	VCCIO_4	T26	SDIO_D3	SDIO_D3 to WIFI
63	SDMMC1_D2/RGMII_TXCLK_M1/I2S0_SDO0_M1/PWM10_M1/GPIO1_C3_d	I/O	DOWN	VCCIO_4	T25	SDIO_D2	SDIO_D2 to WIFI
65	GND	G		GND		GND	GND
67	SDMMC0_D1/UART0_TX_M1/UART7_TX_M1/SPI1_MISO_M1/DSM_AUD_LN/GPIO1_B4_u	I/O	UP	VCCIO_SD	R26	SDMMC0_D1	SDMMC0_D1 to SD Card
69	SDMMC0_D0/UART0_RX_M1/UART7_RX_M1/SPI1_MOSI_M1/DSM_AUD_LP/GPIO1_B3_u	I/O	UP	VCCIO_SD	R25	SDMMC0_D0	SDMMC0_D0 to SD Card
71	SDMMC0_CLK/TEST_CLK_OUT/UART5_TX_M0/SPI1_CLK_M1/GPIO1_C0_d	I/O	DOWN	VCCIO_SD	P27	SDMMC0_CLK	SDMMC0_CLK to SD Card core board series resistance 22R
73	SDMMC0_CMD/SPDIF_TX_M2/UART5_RX_M0/GPIO1_B7_u	I/O	UP	VCCIO_SD	P25	SDMMC0_CMD	SDMMC0_CMD to SD Card
75	SDMMC0_D3/JTAG_CPU_MCU_TMS_M1/UART5_RTSN_M0/SPI1_CSN0_M1/PWM11_M0/DSM_AUD_RN/GPIO1_B6_u	I/O	UP	VCCIO_SD	N26	SDMMC0_D3	SDMMC0_D3 to SD Card
77	SDMMC0_D2/JTAG_CPU_MCU_TCK_M1/UART5_CTSN_M0/SPI1_CSN1_M1/PWM10_M0/DSM_AUD_RP/GPIO1_B5_u	I/O	UP	VCCIO_SD	N25	SDMMC0_D2	SDMMC0_D2 to SD Card
79	GND	G		GND		GND	GND
<b>VCCIO_SD: 1.8V/3.3V auto</b>							
2	SPI0_CSN1_M0/PWM4_M0/CPU_AVS/SPDIF_TX_M1/GPIO0_B7_d	I/O	DOWN	1.8V	AF15	HOST_WAKE_BT_H	HOST_WAKE_BT, Active H
4	I2C2_SDA_M0/PCIE20_WAKEN_M0/GPIO0_B6_d	I/O	DOWN	1.8V	AE15	I2C2_SDA_TP	I2C2_SDA_TP
6	I2C2_SCL_M0/PCIE20_PERSTN_M0/GPIO0_B5_d	I/O	DOWN	1.8V	AF16	I2C2_SCL_TP	I2C2_SCL_TP
8	UART2_RTSN_M0/PWM0_M0/SPI0_CLK_M0/GPIO0_C3_d	I/O	DOWN	1.8V	AE16	TP_INT_L	TP_INT Input, Active L
10	UART2_CTSN_M0/PWM5_M0/SPI0_CSN0_M0/GPIO0_C2_d	I/O	DOWN	1.8V	AG17	GPIO0_C2_d	GPIO0_C2_d
12	UART2_TX_M0/PWM7_M0/GPU_AVS/GPIO0_C0_d	I/O	DOWN	1.8V	AF17	GPIO0_C0_d	GPIO0_C0_d
14	GND	G		GND		GND	GND



# 接口定义 Interface definition

16	USB30_OTG0_DM			-		USB30_OTG0_DM	USB30_OTG0_DM
18	USB30_OTG0_DP			-		USB30_OTG0_DP	USB30_OTG0_DP
20	GND	G		GND		GND	GND
22	USB20_HOST1_DM			-		USB20_HOST1_DM	USB20_HOST1_DM
24	USB20_HOST1_DP			-		USB20_HOST1_DP	USB20_HOST1_DP
26	GND	G		GND		GND	GND
28	USB30_OTG0_SSTXP/PCIE20_TXDP	O		-		USB30_OTG0_SSTXP	USB30_OTG0_SSTXP
30	USB30_OTG0_SSTXN/PCIE20_TXDN	O		-		USB30_OTG0_SSTXN	USB30_OTG0_SSTXN
32	GND	G		GND		GND	GND
34	PCIE20_REFCLKP	O		-		NC	NC (PCIE20_REFCLKP)
36	PCIE20_REFCLKN	O		-		NC	NC (PCIE20_REFCLKN)
38	GND	G		GND		GND	GND
40	USB30_OTG0_SSRXP/PCIE20_RXDP	I		-		USB30_OTG0_SSRXP	USB30_OTG0_SSRXP
42	USB30_OTG0_SSRXN/PCIE20_RXDN	I		-		USB30_OTG0_SSRXN	USB30_OTG0_SSRXN
44	GND	G		GND		GND	GND
46	UART1_RTSN_M0/RGMII_TXEN_M1/I2S0_SDI2_M1/PWM6_M1/RMII_TXEN/ GPIO1_D3_d	I/O	DOWN	VCCIO_4	AA25	RMII_TXEN	RMII_TXEN
48	UART1_CTSN_M0/RGMII_RXD0_M1/I2S0_SDI3_M1/PWM7_M1/RMII_RXD0/ GPIO1_D4_d	I/O	DOWN	VCCIO_4	Y27	RMII_RXD0	RMII_RXD0
50	UART1_TX_M0/RGMII_TXD1_M1/I2S0_SDO2_M1/PWM5_M1/RMII_TXD1/ GPIO1_D2_d	I/O	DOWN	VCCIO_4	Y26	RMII_TXD1	RMII_TXD1



# 接口定义 Interface definition

52	UART1_RX_M0/RGMII_TXD0_M1/I2S0_SDO1_M1/PWM4_M1/RMII_TXD0/GPIO1_D1_d	I/O	DOWN	VCCIO_4	Y25	RMII_TXD0	RMII_TXD0
54	I2S2_SDI_M0/RGMII_RXER_M1/UART4_CTSN_M1/SPI2_MISO_M1/PWM15_M1/RMII_RXER/GPIO2_A0_d	I/O	DOWN	VCCIO_4	1J15	RMII_RXER	RMII_RXER
56	I2S2_SDO_M0/RGMII_RXD1_M1/UART4_RTSN_M1/SPI2_MOSI_M1/PWM14_M1/RMII_RXD1/GPIO1_D7_d	I/O	DOWN	VCCIO_4	1H15	RMII_RXD1	RMII_RXD1
58	I2S2_SCLK_M0/RGMII_CLK_M1/UART4_RX_M1/SPI2_CSN1_M1/RMII_CLK/GPIO1_D5_d	I/O	DOWN	VCCIO_4	W26	RMII_CLK	RMII_CLK
60	I2S2_LRCK_M0/RGMII_RXDV_M1/UART4_TX_M1/SPI2_CSN0_M1/RMII_RXDV_CRS/GPIO1_D6_d	I/O	DOWN	VCCIO_4	V27	RMII_RXDV_CRS	RMII_RXDV_CRS
62	GND	G		GND		GND	GND
64	SARADC0_BOOT	I		1.8V		SARADC0_BOOT	ADC0_boot Input
66	SARADC0_IN4	I		1.8V		NC	NC (ADC0_4 Input)
68	SARADC0_IN5	I		1.8V		NC	NC (ADC0_5 Input)
70	SARADC0_IN6	I		1.8V		NC	NC (ADC0_6 Input)
72	SARADC0_IN3	I		1.8V		SARADC0_IN3_HW_ID	ADC0_3 Input
74	SARADC0_IN7	I		1.8V		NC	NC (ADC0_7 Input)
76	SARADC0_IN1	I		1.8V		RECOVERY	ADC0_1 Input (RECOVERY)
78	GND	G		GND		GND	GND
80	VCCIO_4	P		1.8V/3.3V		VCC_3V3	VCC_3V3 (VCCIO_4 Input)
VCCIO_4 /VCCIO_5/ VCCIO_6: 1.8V,3.3V option							



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