

IDO-SOM3568-V2 核心板规格书

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IDO-SOM3568-V2

(金手指)核心板规格书

深圳触觉智能科技有限公司

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文档修订历史

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1. 产品概述

1.1 IDO-SOM3568-V2适用范围

IDO-SOM3568-V2适用于工业主机，边缘计算网关、嵌入式智能设备、人机交互、广告一体机、互动自助终端，教学实验平台、显示控制等多个领域。

1.2 IDO-SOM3568-V2产品概述

IDO-SOM3568-V2采用 Rockchip 新一代 64 位处理器 RK3568 (Quad-core ARM Cortex-A55, Neon and FPU, 主频最高 2.0GHz, 22nm 工艺)，集成双核心架构 GPU 以及高效能 NPU；最大支持 8GB 内存；内置独立的 NPU，可用于轻量级人工智能应用。RK3568 拥有 SATA/PCIE/USB3.0/双千兆等各类型接口，支持多种视频输入输出接口，可应用于物联网网关、智能 NVR、工控平板、工业检测、工控盒、智慧城市、云终端、车载中控等行业定制市场。丰富的外部接口支持，RK3568 SoC 内部组成：

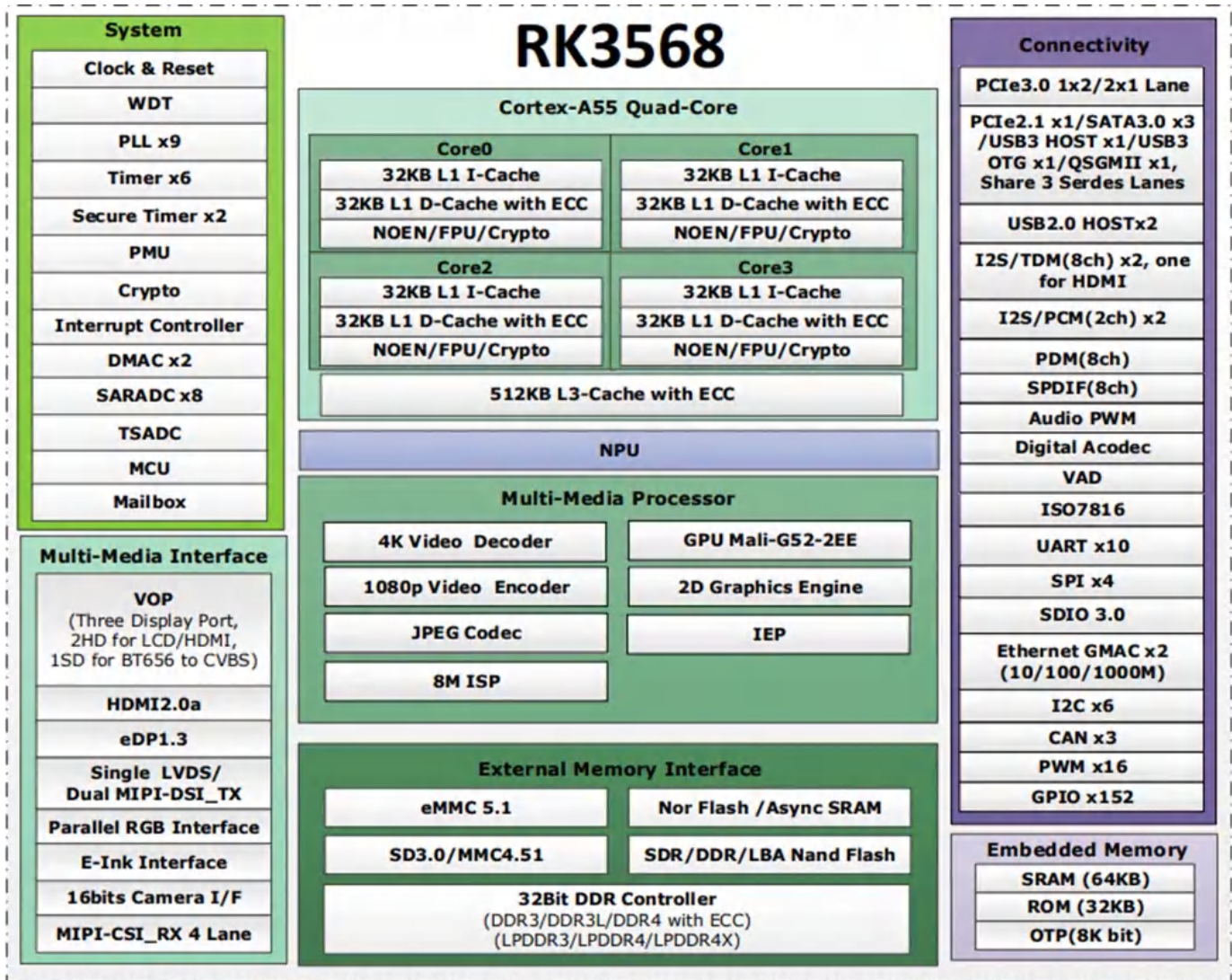


图1. RK3568 SoC框图

IDO-SOM3568-V2核心板进行了严格的电源完整性和信号完整性仿真设计，通过各项电磁兼容、温度冲击、高温高湿老化、长时间存储压力等测试，稳定可靠，批量供货。用户仅需设计外围电路即可快速实现项目的稳定量产。

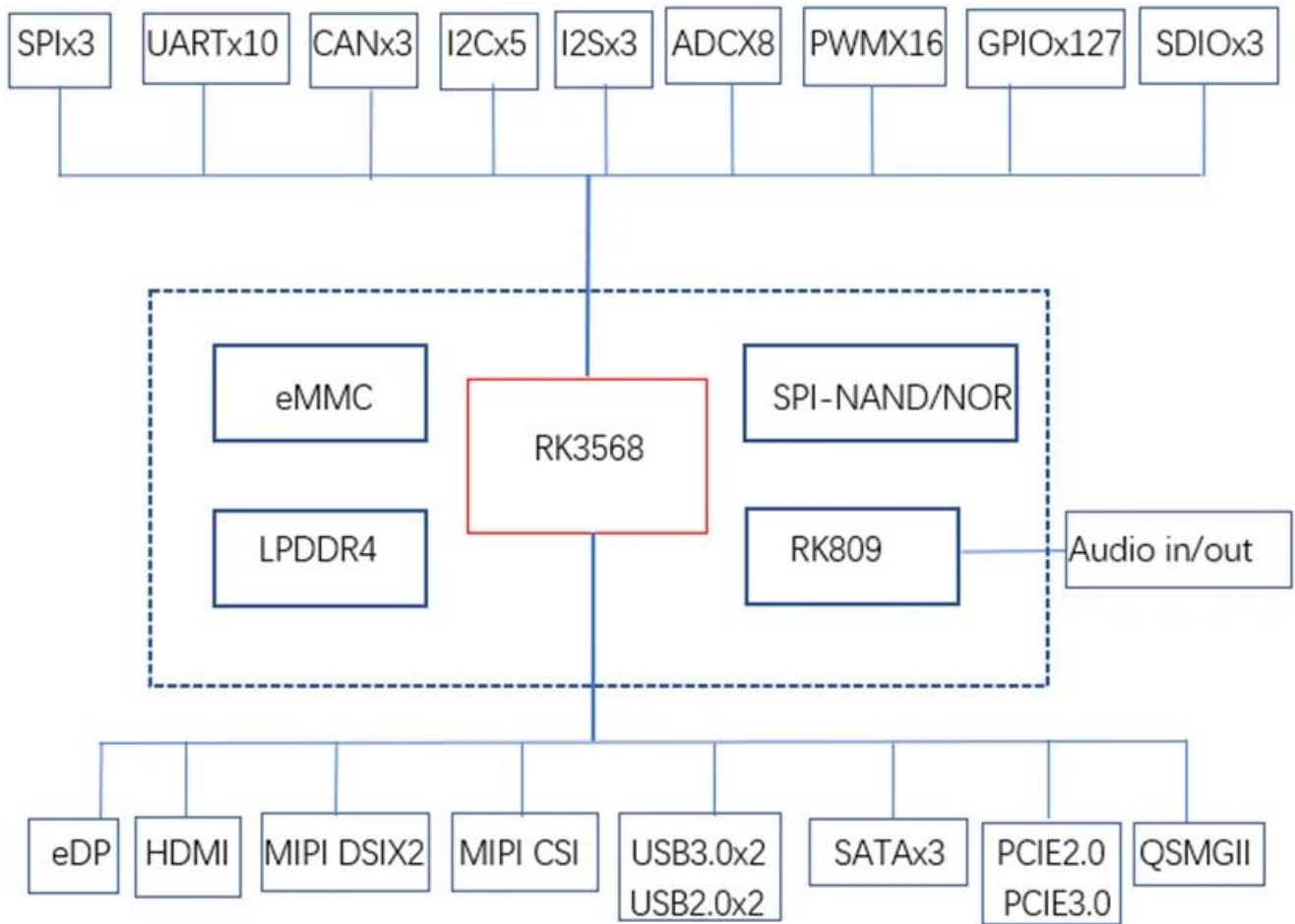


图2. IDO-SOM3568-V2模块逻辑框图

1.3 IDO-SOM3568-V2产品特点

- 32Bit位宽LPDDR4/LPDDR4x，频率最高可达1600MHz，支持全链路ECC
- 4.5*6.9 cm超小尺寸，高集成度，优化产品体积。
- 采用标准DDR4 260Pin SODIMM 金手指连接器，高速信号稳定可靠。
- 丰富的系统支持， Android 11, Ubuntu , Debian 全面支持。

1.4 IDO-SOM3568-V2产品图片

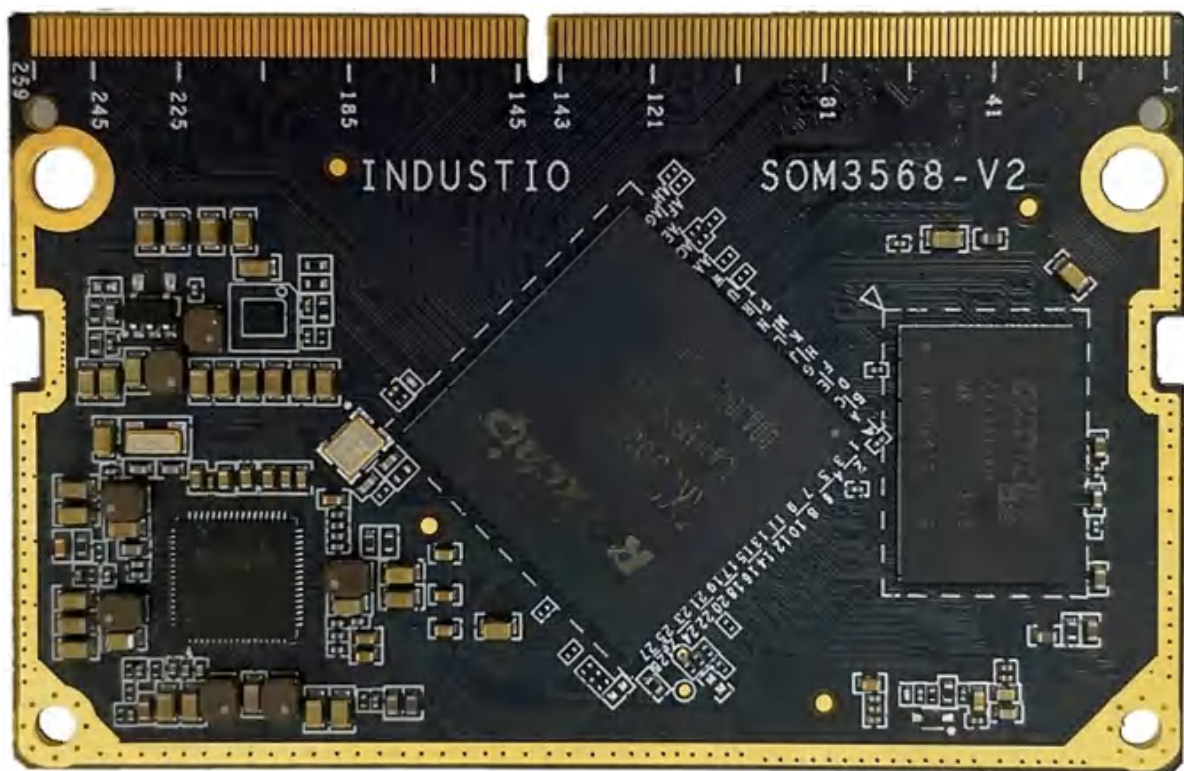


图3. IDO-SOM3568-V2核心板正面

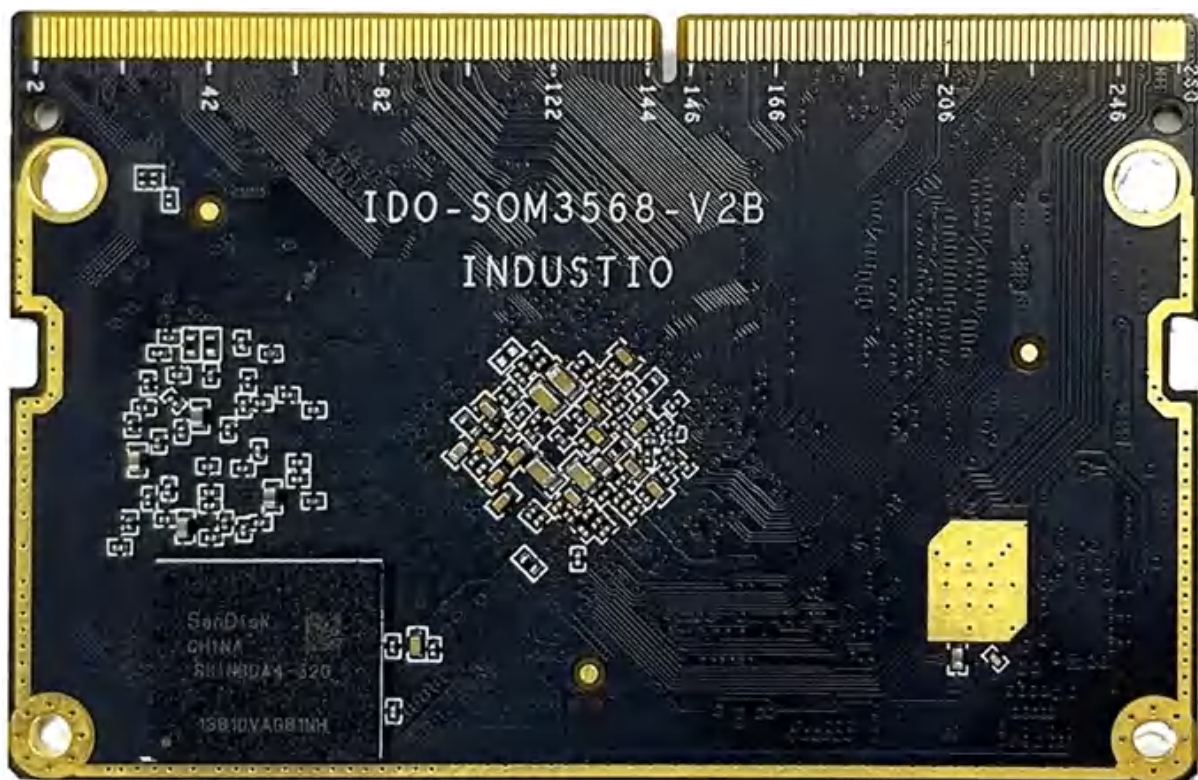


图4. IDO-SOM3568-V2核心板背面

2. 硬件参数规格

2.1 基本参数

基本参数	
SOC	RockChip RK3568
CPU	四核 64 位Cortex-A55 处理器，22nm 先进工艺，主频最高2.0GHz
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
NPU	0.8Tops@INT8 性能，集成高效能AI 加速器RKNN NPU 支持Caffe/TensorFlow/TFLite/ONNX/PyTorch/Keras/Darknet 主流架构模型的一键转换
VPU	支持 4K 60fps H.265/H.264/VP9 视频解码 支持 1080P 100fps H.265/H.264 视频编码 支持 8M ISP，支持HDR
内存	2GB / 4GB / 8GB LPDDR4 32Bit 位宽，频率高达1600MHz，支持全链路ECC
存储	16GB / 32GB / 64GB / 128GB eMMC
硬件参数	
以太网	集成双GMAC 以太网控制器，支持双千兆以太网（1000 M bps）
显示接口	1 × HDMI2.0，支持4K@60fps 输出 2 × MIPI DSI，支持1920*1080@60fps 输出（或双通道1 × MIPI DSI 2560*1440@60fps） 1 × 双LVDS ，支持 1920*1080@60fps 输出（LVDS0和MIPI-DSI0复用，LVDS1和MIPI-DSI1复用） 1 × eDP1.3 ，支持 2560*1600@60fps 输出 最多可支持三屏异显输出
摄像头	1 × MIPI-CSI 摄像头接口（1x 4-Lane可支持13M 或 2x 2-Lane可支持2x5M） 1 × DVP 摄像头接口（支持 5Mpixel）

音频接口	1 × HDMI 音频输出 1 × HPR/L, 双声道耳机输出 1 × MIC输入
USB	1 × USB3.0 OTG 1 × USB3.0 HOST 2 × USB 2.0 HOST
PCIe/SATA	1 × PCIe2.0 1 × PCIe3.0 3 × SATA3.0
扩展接口	10 × UART 4 × SPI 3 × CAN 5 × I2C 3 × I2S 3 × SDIO3.0 16 × PWM 8 × ADC 127 × GPIO
其他	
主板尺寸	69.6mm × 45.0mm
接口类型	260PIN DDR4-STD连接器
PCB规格	板厚 1.2mm , 8 层板 高Tg材质, 沉金工艺

2.2 工作环境

工作环境	
工作温度	标称0~70 °C ,扩展工作温度 -20~70°C
工作湿度	5%~90% RH 非冷凝
存储温度	-40°C~85°C

2.3 系统支持

序号	操作系统	支持	说明
1	Android11	✓	
2	Debian10	✓	
3	Ubuntu20	✓	
4	Buildroot	✓	
5	麒麟OS	✓	
6	鸿蒙OpenHamoney	✓	

3. PCB 尺寸和电气参数

3.1 PCB尺寸

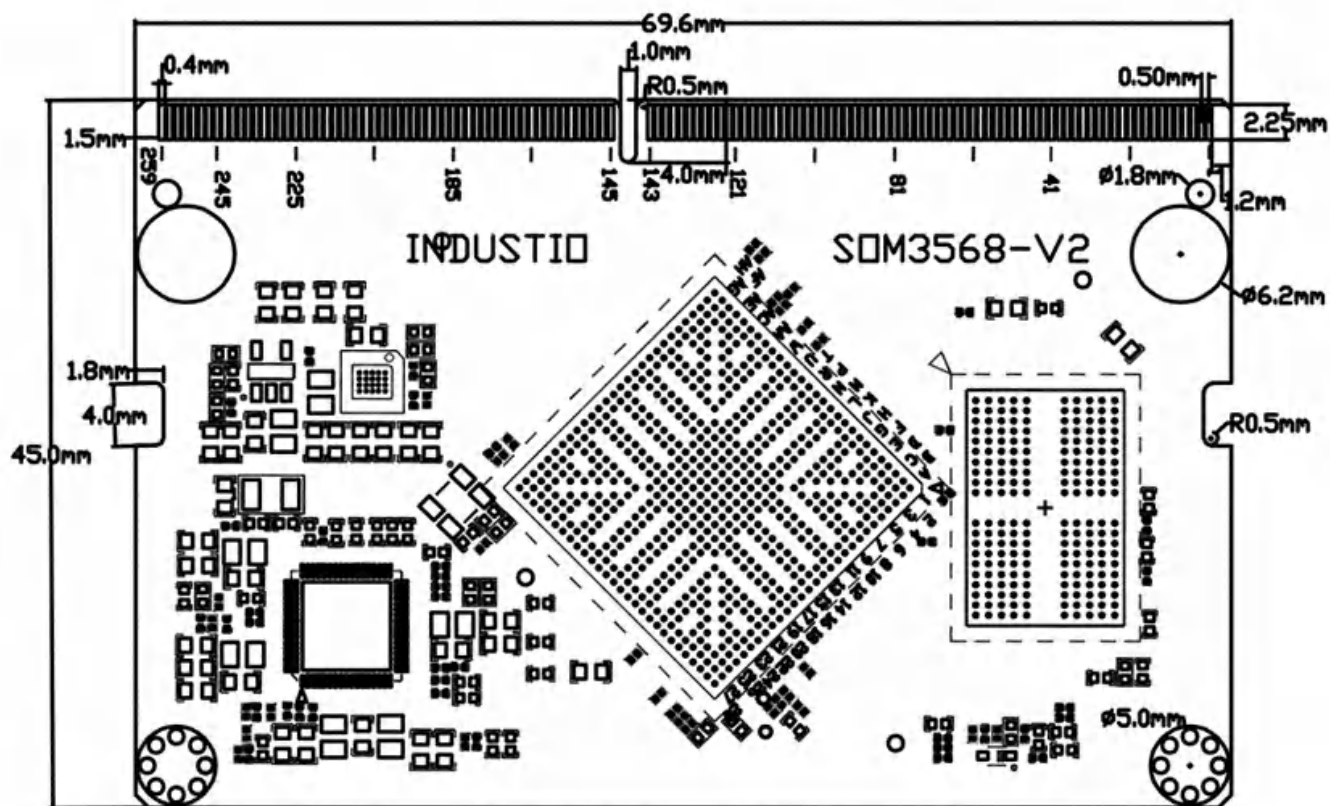


图5. IDO-SOM3568-V2核心板正面尺寸

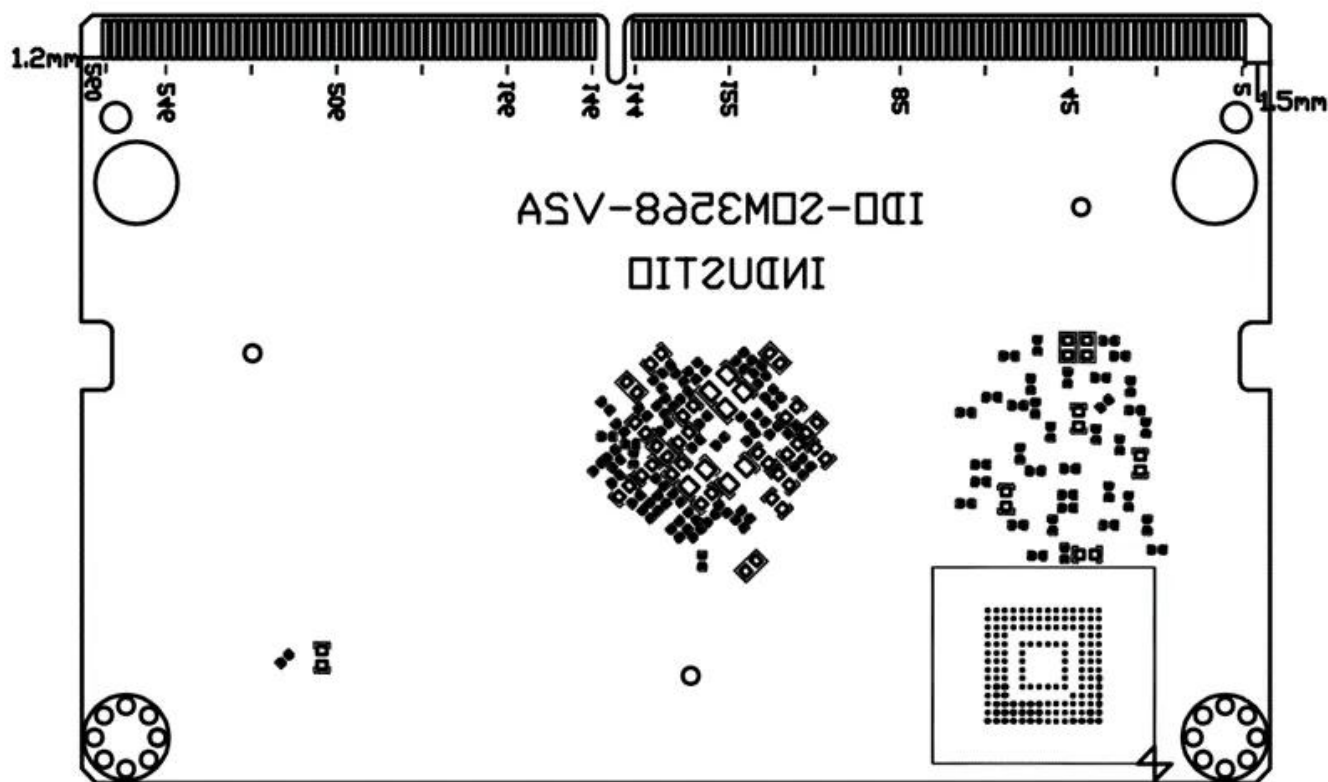


图6. IDO-SOM3568-V2核心板背面尺寸

3.2 电气参数

3.2.1 电源输入

电源名称	最小电压	标称值	最大电压	峰值电流	待机电流	关机电流
VCC5V0_S YS	3.6V	5.0V	5.5V	0.7A (不考虑输出电压)	7mA	1mA

3.2.2 电源输出

电源名称	最小电压	标称值	最大电压	限制电流
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VCC_1V8	1.75V	1.8V	1.85V	300mA
VCC_3V3	2.95V	3.3V	3.4V	300mA
VCC_3V3_SD	3.0V	3.0V	3.3V	300mA

4. 采购型号

采购型号	LPDDR4	eMMC	标称工作温度
IDO-SOM3568-V2-D2E16	2GB	16GB	0~+70 °C
IDO-SOM3568-V2-D4E32	4GB	32GB	0~+70 °C

5. 引脚定义说明

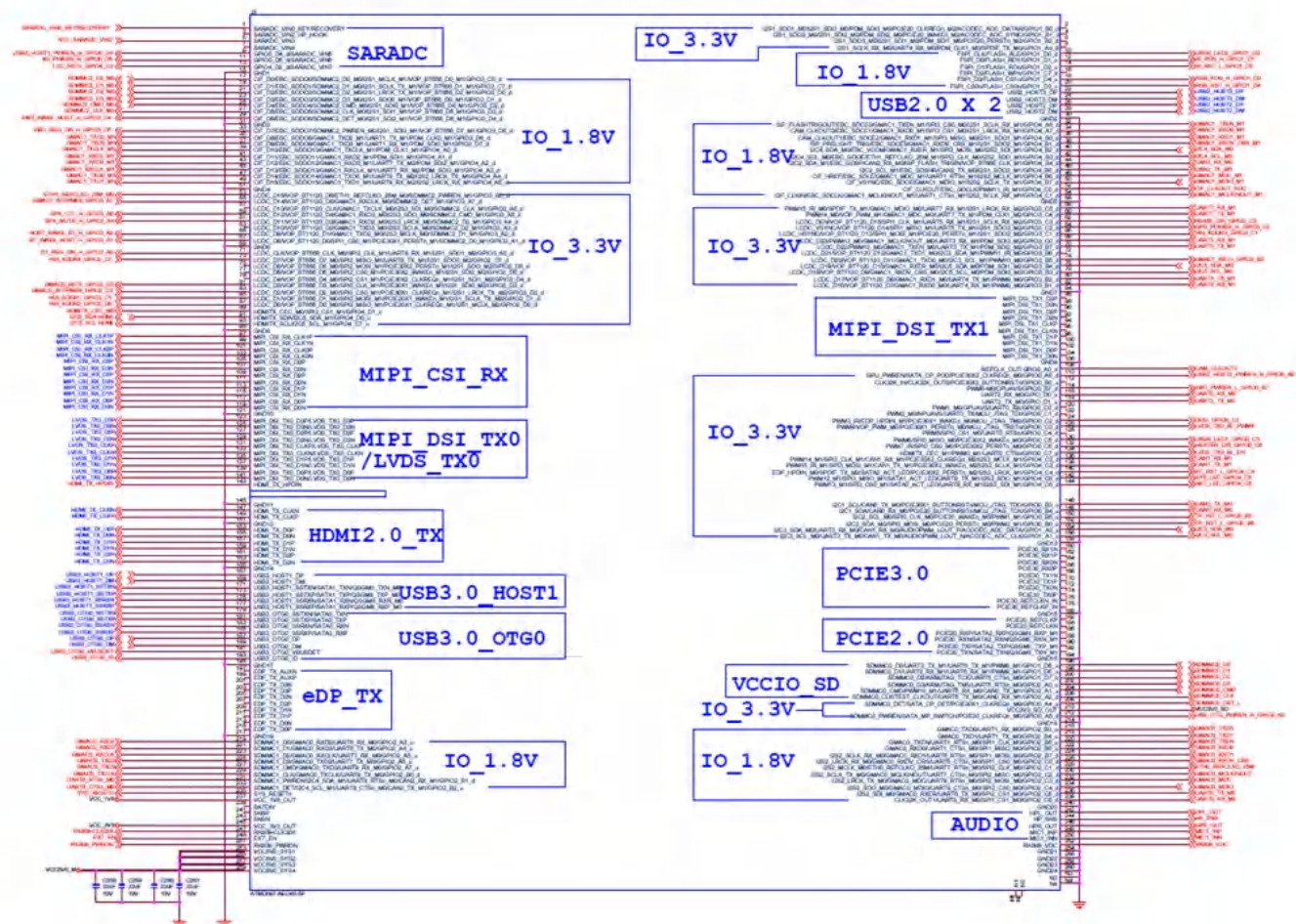


图7. IDO-SOM3568-V2核心板引脚示意图

序号	引脚名	复用功能	电源域	说明
1	SARADC_VINO_K EY /RECOVERY	SARADC_VINO_K EY /RECOVERY	1.8V	
3	SARADC_VIN2 /HP_HOOK	SARADC_VIN2 /HP_HOOK	1.8V	
5	SARADC_VIN3	SARADC_VIN3	1.8V	
7	SARADC_VIN4	SARADC_VIN4	1.8V	
9	GPIO0_D4_d /SARADC_VIN5	SARADC_VIN5	Default:1.8V	
		GPIO0_D4_d	1.8V/3.3V	

11	GPIO0_D5_d /SARADC_VIN6	SARADC_VIN6	Default:1.8V 1.8V/3.3V	
		GPIO0_D5_d		
13	GPIO4_D2_d /SARADC_VIN7	SARADC_VIN7	Default:1.8V 1.8V/3.3V	
		GPIO4_D2_d		
15	GND1	GND	GND	
17	GPIO3_C6_d	CIF_D0	Default:1.8V 1.8V/3.3V	
		EBC_SDDO0		
		SDMMC2_D0_M0		
		I2S1_MCLK_M1		
		VOP_BT656_D0_M1		
		GPIO3_C6_d		
19	GPIO3_C7_d	CIF_D1	Default:1.8V 1.8V/3.3V	
		EBC_SDDO1		
		SDMMC2_D1_M0		
		I2S1_SCLK_TX_M1		
		VOP_BT656_D1_M1		
		GPIO3_C7_d		
21	GPIO3_D0_d	CIF_D2	Default:1.8V 1.8V/3.3V	
		EBC_SDDO2		
		SDMMC2_D2_M0		
		I2S1_LRCK_TX_M1		
		VOP_BT656_D2_M1		

		GPIO3_D0_d		
23	GPIO3_D1_d	CIF_D3	Default:1.8V 1.8V/3.3V	
		EBC_SDDO3		
		SDMMC2_D3_M0		
		I2S1_SDO0_M1		
		VOP_BT656_D3_M1		
		GPIO3_D1_d		
25	GPIO3_D2_d	CIF_D4	Default:1.8V 1.8V/3.3V	
		EBC_SDDO4		
		SDMMC2_CMD_M0		
		I2S1_SDI0_M1		
		VOP_BT656_D4_M1		
		GPIO3_D2_d		
27	GPIO3_D3_d	CIF_D5	Default:1.8V 1.8V/3.3V	
		EBC_SDDO5		
		SDMMC2_CLK_M0		
		I2S1_SDI1_M1		
		VOP_BT656_D5_M1		
		GPIO3_D3_d		
29	GPIO3_D4_d	CIF_D6	Default:1.8V 1.8V/3.3V	
		EBC_SDDO6		

		SDMMC2_DET_M0		
		I2S1_SDI2_M1		
		VOP_BT656_D6_M1		
		GPIO3_D4_d		
31	GND3	GND	GND	
33	GPIO3_D5_d	CIF_D7	Default:1.8V 1.8V/3.3V	
		EBC_SDDO7		
		SDMMC2_PWREN_M0		
		I2S1_SDI3_M1		
		VOP_BT656_D7_M1		
		GPIO3_D5_d		
35	GPIO3_D6_d	CIF_D8	Default:1.8V 1.8V/3.3V	
		EBC_SDDO8		
		GMAC1_TXD2_M1		
		UART1_TX_M1		
		PDM_CLK0_M1		
		GPIO3_D6_d		
37	GPIO3_D7_d	CIF_D9	Default:1.8V 1.8V/3.3V	
		EBC_SDDO9		
		GMAC1_TXD3_M1		
		UART1_RX_M1		
		DM_SDI0_M1		
		GPIO3_D7_d		

39	GPIO4_A0_d	CIF_D10	Default:1.8V 1.8V/3.3V	
		EBC_SDDO10		
		GMAC1_TXCLK_M1		
		PDM_CLK1_M1		
		GPIO4_A0_d		
41	GPIO4_A1_d	CIF_D11	Default:1.8V 1.8V/3.3V	
		EBC_SDDO11		
		GMAC1_RXD2_M1		
		PDM_SDI1_M1		
		GPIO4_A1_d		
43	GPIO4_A2_d	CIF_D12	Default:1.8V 1.8V/3.3V	
		EBC_SDDO12		
		GMAC1_RXD3_M1		
		UART7_TX_M2		
		PDM_SDI2_M1		
		GPIO4_A2_d		
45	GPIO4_A3_d	CIF_D13	Default:1.8V 1.8V/3.3V	
		EBC_SDDO13		
		GMAC1_RXCLK_M1		
		UART7_RX_M2		
		PDM_SDI3_M1		
		GPIO4_A3_d		
47	GPIO4_A4_d	CIF_D14	Default:1.8V 1.8V/3.3V	
		EBC_SDDO14		

		GMAC1_TXD0_M1		
		UART9_TX_M2		
		I2S2_LRCK_TX_M1		
		GPIO4_A4_d		
49	GPIO4_A5_d	CIF_D15	Default:1.8V 1.8V/3.3V	
		EBC_SDDO15		
		GMAC1_TXD1_M1		
		UART9_RX_M2		
		I2S2_LRCK_RX_M1		
		GPIO4_A5_d		
51	GND4	GND	GND	
53	GPIO3_B0_d	LCDC_D15	3.3V	
		VOP_BT1120_D6		
		ETH1_REFCLKO_25M_M0		
		SDMMC2_PWREN_M1		
		GPIO3_B0_d		
55	GPIO3_A7_d	LCDC_D14	3.3V	
		VOP_BT1120_D5		
		GMAC1_RXCLK_M0		
		SDMMC2_DET_M1		
		GPIO3_A7_d		

57	GPIO3_A6_d	LCDC_D13	3.3V	
		VOP_BT1120_CLK		
		GMAC1_TXCLK_M0		
		I2S3_SDI_M0		
		SDMMC2_CLK_M1		
		GPIO3_A6_d		
59	GPIO3_A5_d	LCDC_D12	3.3V	
		VOP_BT1120_D4		
		GMAC1_RXD3_M0		
		I2S3_SDO_M0		
		SDMMC2_CMD_M1		
		GPIO3_A5_d		
61	GPIO3_A4_d	LCDC_D11	3.3V	
		VOP_BT1120_D3		
		GMAC1_RXD2_M0		
		I2S3_LRCK_M0		
		SDMMC2_D3_M1		
		GPIO3_A4_d		
63	GPIO3_A3_d	LCDC_D10	3.3V	
		VOP_BT1120_D2		
		GMAC1_TXD3_M0		

		I2S3_SCLK_M0		
		SDMMC2_D2_M1		
		GPIO3_A3_d		
65	GPIO3_A2_d	LCDC_D9	3.3V	
		VOP_BT1120_D1		
		GMAC1_TXD2_M0		
		I2S3_MCLK_M0		
		SDMMC2_D1_M1		
		GPIO3_A2_d		
67	GPIO3_A1_d	LCDC_D8	3.3V	
		VOP_BT1120_D0		
		SPI1_CS0_M1		
		PCIE30X1_PERSTn_M1		
		SDMMC2_D0_M1		
		GPIO3_A1_d		
69	GND6	GND	GND	
71	GPIO3_A0_d	LCDC_CLK	3.3V	
		VOP_BT656_CLK_M0		
		SPI2_CLK_M1		
		UART8_RX_M1		
		I2S1_SDO1_M2		
		GPIO3_A0_d		
73	GPIO2_D7_d	LCDC_D7	3.3V	

		VOP_BT656_D7_M0		
		SPI2_MISO_M1		
		UART8_TX_M1		
		I2S1_SDO0_M2		
		GPIO2_D7_d		
75	GPIO2_D6_d	LCDC_D6	3.3V	
		VOP_BT656_D6_M0		
		SPI2_MOSI_M1		
		PCIE30X2_PERS_Tn_M1		
		I2S1_SDI3_M2		
		GPIO2_D6_d		
77	GPIO2_D5_d	LCDC_D5	3.3V	
		VOP_BT656_D5_M0		
		SPI2_CS0_M1		
		PCIE30X2_WAKE_n_M1		
		I2S1_SDI2_M2		
		GPIO2_D5_d		
79	GPIO2_D4_d	LCDC_D4	3.3V	
		VOP_BT656_D4_M0		
		SPI2_CS1_M1		
		PCIE30X2_CLKR_EQn_M1		

		I2S1_SDI1_M2		
		GPIO2_D4_d		
81	GPIO2_D3_d	LCDC_D3	3.3V	
		VOP_BT656_D3_M0		
		SPI0_CLK_M1		
		PCIE30X1_WAKEn_M1		
		I2S1_SDI0_M2		
		GPIO2_D3_d		
83	GPIO2_D2_d	LCDC_D2	3.3V	
		VOP_BT656_D2_M0		
		SPI0_CS0_M1		
		PCIE30X1_CLKREQn_M1		
		I2S1_LRCK_TX_M2		
		GPIO2_D2_d		
85	GPIO2_D1_d	LCDC_D1	3.3V	
		VOP_BT656_D1_M0		
		SPI0_MOSI_M1		
		PCIE20_WAKEn_M1		
		I2S1_SCLK_TX_M2		
		GPIO2_D1_d		

87	GPIO2_D0_d	LCDC_D0	3.3V	
		VOP_BT656_D0_M0		
		SPI0_MISO_M1		
		/PCIE20_CLKRE Qn_M1		
		I2S1_MCLK_M2		
		GPIO2_D0_d		
89	HDMITX_CEC_M0	HDMITX_CEC_M0	3.3V	
		SPI3_CS1_M1		
		GPIO4_D1_u		
91	HDMITX_SDA	HDMITX_SDA	3.3V	
		I2C5_SDA_M1		
		GPIO4_D0_u		
93	HDMITX_SCL	HDMITX_SCL	3.3V	
		I2C5_SCL_M1		
		GPIO4_C7_u		
95	GND8	GND	GND	
97	MIPI_CSI_RX_CL K1P	MIPI_CSI_RX_CL K1P	/	
99	MIPI_CSI_RX_CL K1N	MIPI_CSI_RX_CL K1N	/	
101	MIPI_CSI_RX_CL K0P	MIPI_CSI_RX_CL K1P	/	
103	MIPI_CSI_RX_CL K0N	MIPI_CSI_RX_CL K1N	/	

105	MIPI_CSI_RX_D3P	MIPI_CSI_RX_D3P	/	
107	MIPI_CSI_RX_D3N	MIPI_CSI_RX_D3N	/	
109	MIPI_CSI_RX_D2P	MIPI_CSI_RX_D2P	/	
111	MIPI_CSI_RX_D2N	MIPI_CSI_RX_D2N	/	
113	MIPI_CSI_RX_D1P	MIPI_CSI_RX_D1P	/	
115	MIPI_CSI_RX_D1N	MIPI_CSI_RX_D1N	/	
117	MIPI_CSI_RX_D0P	MIPI_CSI_RX_D0P	/	
119	MIPI_CSI_RX_D0N	MIPI_CSI_RX_D0N	/	
121	GND10	GND	GND	
123	MIPI_DSI_TX0_D3P	MIPI_DSI_TX0_D3P	/	
		LVDS_TX0_D3P		
125	MIPI_DSI_TX0_D3N	MIPI_DSI_TX0_D3N	/	
		LVDS_TX0_D3N		
127	MIPI_DSI_TX0_D2P	MIPI_DSI_TX0_D2P	/	
		LVDS_TX0_D2P		
129	MIPI_DSI_TX0_D2N	MIPI_DSI_TX0_D2N	/	
		LVDS_TX0_D2N		
131	MIPI_DSI_TX0_CLKP	MIPI_DSI_TX0_CLKP	/	

		LVDS_TX0_CLKP		
133	MIPI_DSI_TX0_CLKN	MIPI_DSI_TX0_CLKN	/	
		LVDS_TX0_CLKN		
135	MIPI_DSI_TX0_D1P	MIPI_DSI_TX0_D1P	/	
		LVDS_TX0_D1P		
137	MIPI_DSI_TX0_D1N	MIPI_DSI_TX0_D1N	/	
		LVDS_TX0_D1N		
139	MIPI_DSI_TX0_D0P	MIPI_DSI_TX0_D0P	/	
		LVDS_TX0_D0P		
141	MIPI_DSI_TX0_D0N	MIPI_DSI_TX0_D0N	/	
		LVDS_TX0_D0N		
143	HDMI_TX_HPDIN	HDMI_TX_HPDIN	/	
145	GND11	GND	GND	
147	HDMI_TX_CLKN	HDMI_TX_CLKN	/	
149	HDMI_TX_CLKP	HDMI_TX_CLKP	/	
151	GND12	GND	GND	
153	HDMI_TX_D0P	HDMI_TX_D0P	/	
155	HDMI_TX_D0N	HDMI_TX_D0N	/	
157	HDMI_TX_D1P	HDMI_TX_D1P	/	
159	HDMI_TX_D1N	HDMI_TX_D1N	/	
161	HDMI_TX_D2P	HDMI_TX_D2P	/	
163	HDMI_TX_D2N	HDMI_TX_D2N	/	

165	GND14	GND	GND	
167	USB3_HOST1_DP	USB3_HOST1_DP	/	
169	USB3_HOST1_DM	USB3_HOST1_DM	/	
171	USB3_HOST1_SS TXN	USB3_HOST1_SS TXN	/	
		SATA1_TXN		
		QSGMII_TXN_M0		
173	USB3_HOST1_SS TXP	USB3_HOST1_SS TXP	/	
		SATA1_TXP		
		QSGMII_TXP_M0		
175	USB3_HOST1_SS RXN	USB3_HOST1_SS RXN	/	
		SATA1_RXN		
		QSGMII_RXN_M0		
177	USB3_HOST1_SS RXP	USB3_HOST1_SS RXP	/	
		SATA1_RXP		
		QSGMII_RXP_M0		
179	USB3_OTG0_SST XN	USB3_OTG0_SST XN	/	
		SATA0_TXN		
181	USB3_OTG0_SST XP	USB3_OTG0_SST XP	/	
		SATA0_TXP		
183	USB3_OTG0_SSR XN	USB3_OTG0_SSR XN	/	

		SATA0_RXN		
185	USB3_OTG0_SSR XP	USB3_OTG0_SSR XP	/	
		SATA0_RXP		
187	USB3_OTG0_DP	USB3_OTG0_DP	/	
189	USB3_OTG0_DM	USB3_OTG0_DM	/	
191	USB3_OTG0_VBU SDET	USB3_OTG0_VB USDET	3.3V	
193	USB3_OTG0_ID	USB3_OTG0_ID	3.3V	
195	GND17	GND	GND	
197	EDP_TX_AUXN	EDP_TX_AUXN	/	
199	EDP_TX_AUXP	EDP_TX_AUXP	/	
201	EDP_TX_D3N	EDP_TX_D3N	/	
203	EDP_TX_D3P	EDP_TX_D3P	/	
205	EDP_TX_D2N	EDP_TX_D2N	/	
207	EDP_TX_D2P	EDP_TX_D2P	/	
209	EDP_TX_D1N	EDP_TX_D1N	/	
211	EDP_TX_D1P	EDP_TX_D1P	/	
213	EDP_TX_D0N	EDP_TX_D0N	/	
215	EDP_TX_D0P	EDP_TX_D0P	/	
217	GND19	GND	GND	
219	GPIO2_A3_u	SDMMC1_D0	Default:1.8V 1.8V/3.3V	
		GMAC0_RXD2		
		UART6_RX_M0		
		GPIO2_A3_u		
221	GPIO2_A4_u	SDMMC1_D1	Default:1.8V	

		GMAC0_RXD3	1.8V/3.3V	
		UART6_TX_M0		
		GPIO2_A4_u		
223	GPIO2_A5_u	SDMMC1_D2	Default:1.8V 1.8V/3.3V	
		GMAC0_RXCLK		
		UART7_RX_M0		
		GPIO2_A5_u		
225	GPIO2_A6_u	SDMMC1_D3	Default:1.8V 1.8V/3.3V	
		GMAC0_TXD2		
		UART7_TX_M0		
		GPIO2_A6_u		
227	GPIO2_A7_u	SDMMC1_CMD	Default:1.8V 1.8V/3.3V	
		GMAC0_TXD3		
		UART9_RX_M0		
		GPIO2_A7_u		
229	GPIO2_B0_d	SDMMC1_CLK	Default:1.8V 1.8V/3.3V	
		GMAC0_TXCLK		
		UART9_TX_M0		
		GPIO2_B0_d		
231	GPIO2_B1_d	SDMMC1_PWREN	Default:1.8V 1.8V/3.3V	
		I2C4_SDA_M1		
		UART8_RTSn_M0		
		CAN2_RX_M1		
		GPIO2_B1_d		
233	GPIO2_B2_u	SDMMC1_DET	Default:1.8V	

		I2C4_SCL_M1	1.8V/3.3V	
		UART8_CTSn_M0		
		CAN2_TX_M1		
		GPIO2_B2_u		
235	SYS_RESETh	SYS_RESETh		
237	VCC_1V8	VCC_1V8	1.8V/400mA OUTPUT	
239	BATDIV	BATDIV		
241	SNSP	SNSP		
243	SNSN	SNSN		
245	VCC_3V3	VCC_3V3	3.3V/400mA OUTPUT	
247	RK809-CLK32K	RK809-CLK32K		RK809-CLK32K
249	EXT_EN	EXT_EN		
251	RK809-PWRON	RK809-PWRON		
253	VCC5V0_SYS	VCC5V0_SYS/M ain_power	5V/2A/INPUT	
255	VCC5V0_SYS	VCC5V0_SYS/M ain_power	5V/2A/INPUT	
257	VCC5V0_SYS	VCC5V0_SYS/M ain_power	5V/2A/INPUT	
259	VCC5V0_SYS	VCC5V0_SYS/M ain_power	5V/2A/INPUT	
2	GPIO1_B0_d	I2S1_SDO1_M0	Default:3.3V 1.8V/3.3V	
		I2S1_SDI3_M0		
		PDM_SDI3_M0		

		PCIE20_CLKREQn_M2		
		ACODEC_DAC_DATAR		
		PDM_SDI3_M0		
		GPIO1_B0_d		
4	GPIO1_B1_d	I2S1_SDO2_M0	Default:3.3V 1.8V/3.3V	
		I2S1_SDI2_M0		
		PDM_SDI2_M0		
		PCIE20_WAKEn_M2		
		ACODEC_ADC_SYNC		
		PDM_SDI2_M0		
		GPIO1_B1_d		
6	GPIO1_B2_d	I2S1_SDO3_M0	Default:3.3V 1.8V/3.3V	
		I2S1_SDI1_M0		
		PDM_SDI1_M0		
		PCIE20_PERSTn_M2		
		PDM_SDI1_M0		
		GPIO1_B2_d		
8	GPIO1_A4_d	I2S1_SCLK_RX_M0	Default:3.3V 1.8V/3.3V	
		UART4_RX_M0		
		PDM_CLK1_M0		
		SPDIF_TX_M0		

		GPIO1_A4_d		
10	GPIO1_D0_d	FSPI_CLK	Default:1.8V 1.8V/3.3V	
		FLASH_ALE		
		GPIO1_D0_d		
12	GPIO1_D1_u	FSPI_D0	Default:1.8V 1.8V/3.3V	
		FLASH_RDY		
		GPIO1_D1_u		
14	GPIO1_D2_u	FSPI_D1	Default:1.8V 1.8V/3.3V	
		FLASH_RDn		
		GPIO1_D2_u		
16	GPIO1_C7_d	EMMC_RSTn	Default:1.8V 1.8V/3.3V	
		FSPI_D2		
		FLASH_WPn		
		GPIO1_C7_d		
18	GPIO1_D4_u	FSPI_D3	Default:1.8V 1.8V/3.3V	
		FLASH_CS1n		
		GPIO1_D4_u		
20	GPIO1_D3_u	FSPI_CS0n	Default:1.8V 1.8V/3.3V	
		FLASH_CS0n		
		GPIO1_D3_u		
22	USB2_HOST3_DP	USB2_HOST3_DP	/	
24	USB2_HOST3_D M	USB2_HOST3_D M	/	
26	USB2_HOST2_DP	USB2_HOST2_DP	/	
28	USB2_HOST2_D M	USB2_HOST2_D M	/	

30	GND2	GND	GND	
32	GPIO4_A6_d	ISP_FLASHTRIGO UT	Default:1.8V 1.8V/3.3V	
		EBC_SDCE0		
		GMAC1_TXEN_M1		
		SPI3_CS0_M0		
		I2S1_SCLK_RX_M 1		
		GPIO4_A6_d		
34	GPIO4_A7_d	CAM_CLKOUT0	Default:1.8V 1.8V/3.3V	
		EBC_SDCE1		
		GMAC1_RXD0_M1		
		SPI3_CS1_M0		
		I2S1_LRCK_RX_M 1		
		GPIO4_A7_d		
36	GPIO4_B0_d	CAM_CLKOUT1	Default:1.8V 1.8V/3.3V	
		EBC_SDCE2		
		SPI3_MISO_M0		
		I2S1_SDO1_M1		
		GPIO4_B0_d		
38	GPIO4_B1_d	ISP_PRELIGHT_T RIG	Default:1.8V 1.8V/3.3V	
		EBC_SDCE3		
		GMAC1_RXDV_C RS_M1		
		I2S1_SDO2_M1		

		GPIO4_B1_d		
40	GPIO4_B2_d	I2C4_SDA_M0	Default:1.8V 1.8V/3.3V	
		EBC_VCOM		
		SPI3_MOSI_M0		
		I2S2_SDI_M1		
		GPIO4_B2_d		
42	GPIO4_B3_d	I2S1_SCLK_RX_M0	Default:1.8V 1.8V/3.3V	
		EBC_GDOE		
		ETH1_REFCLKO_25M_M1		
		I2S2_SDO_M1		
		GPIO4_B3_d		
44	I2C2_SDA_M1	I2C2_SDA_M1	Default:1.8V 1.8V/3.3V	
		EBC_GDSP		
		CAN2_RX_M0		
		ISP_FLASH_TRIGN		
		VOP_BT656_CLK_M1		
		GPIO4_B4_d		
46	I2C2_SCL_M1	I2C2_SCL_M1	Default:1.8V 1.8V/3.3V	
		EBC_SDSHR		
		CAN2_TX_M0		
		I2S1_SDO3_M1		
		GPIO4_B5_d		
48	GPIO4_B6_d	CIF_HREF	Default:1.8V	

		EBC_SDLE	1.8V/3.3V	
		GMAC1_MDC_M1		
		UART1_RTSn_M1		
		I2S2_MCLK_M1		
		GPIO4_B6_d		
50	GPIO4_B7_d	CIF_VSYNC	Default:1.8V 1.8V/3.3V	
		EBC_SDOE		
		GMAC1_MDIO_M1		
		I2S2_SCLK_TX_M1		
		GPIO4_B7_d		
52	GPIO4_C0_d	CIF_CLKOUT	Default:1.8V 1.8V/3.3V	
		EBC_GDCLK		
		PWM11_IR_M1		
		GPIO4_C0_d		
54	GMAC1_MCLKIN OUT_M1	CIF_CLKIN	Default:1.8V 1.8V/3.3V	
		EBC_SDCLK		
		GMAC1_MCLKIN OUT_M1		
		UART1_CTSn_M1		
		I2S2_SCLK_RX_M1		
		GPIO4_C1_d		
56	GND5	GND	GND	
58	GPIO3_C5_d	PWM15_IR_M0	3.3V	
		SPDIF_TX_M1		

		GMAC1_MDIO_M0		
		UART7_RX_M1		
		I2S1_LRCK_RX_M2		
		GPIO3_C5_d		
60	GPIO3_C4_d	PWM14_M0	3.3V	
		VOP_PWM_M1		
		GMAC1_MDC_M0		
		UART7_TX_M1		
		PDM_CLK1_M2		
		GPIO3_C4_d		
62	GPIO3_C3_d	LCDC_DEN	3.3V	
		VOP_BT1120_D15		
		SPI1_CLK_M1		
		UART5_RX_M1		
		I2S1_SCLK_RX_M2		
		GPIO3_C3_d		
64	GPIO3_C2_d	LCDC_VSYNC	3.3V	
		VOP_BT1120_D14		
		SPI1_MISO_M1		
		UART5_TX_M1		
		I2S1_SDO3_M2		
		GPIO3_C2_d		
66	GPIO3_C1_d	LCDC_HSYNC	3.3V	

		VOP_BT1120_D13		
		SPI1_MOSI_M1		
		PCIE20_PERSTn_M1		
		I2S1_SDO2_M2		
		GPIO3_C1_d		
68	GPIO3_C0_d	LCDC_D23	3.3V	
		PWM13_M0		
		GMAC1_MCLKIN_OUT_M0		
		UART3_RX_M1		
		PDM_SDI3_M2		
		GPIO3_C0_d		
70	GPIO3_B7_d	LCDC_D22	3.3V	
		PWM12_M0		
		GMAC1_TXEN_M0		
		UART3_TX_M1		
		PDM_SDI2_M2		
		GPIO3_B7_d		
72	GPIO3_B6_d	LCDC_D21	3.3V	
		VOP_BT1120_D12		
		GMAC1_TXD1_M0		
		I2C3_SDA_M1		
		PWM11_IR_M0		
		GPIO3_B6_d		

74	GPIO3_B5_d	LCDC_D20	3.3V	
		VOP_BT1120_D11		
		GMAC1_TXD0_M0		
		I2C3_SCL_M1		
		PWM10_M0		
		GPIO3_B5_d		
76	GPIO3_B4_d	LCDC_D19	3.3V	
		VOP_BT1120_D10		
		GMAC1_RXER_M0		
		I2C5_SDA_M0		
		PDM_SDI1_M2		
		GPIO3_B4_d		
78	GPIO3_B3_d	LCDC_D18	3.3V	
		VOP_BT1120_D9		
		GMAC1_RXDV_CRS_M0		
		I2C5_SCL_M0		
		PDM_SDI0_M2		
		GPIO3_B3_d		
80	GPIO3_B2_d	LCDC_D17	3.3V	
		VOP_BT1120_D8		
		GMAC1_RXD1_M0		
		UART4_TX_M1		
		PWM9_M0		

		GPIO3_B2_d		
82	GPIO3_B1_d	LCDC_D16	3.3V	
		VOP_BT1120_D7		
		GMAC1_RXD0_M0		
		UART4_RX_M1		
		PWM8_M0		
		GPIO3_B1_d		
84	GND7	GND	GND	
86	MIPI_DSI_TX1_D3P	MIPI_DSI_TX1_D3P	/	
88	MIPI_DSI_TX1_D3N	MIPI_DSI_TX1_D3N	/	
90	MIPI_DSI_TX1_D2P	MIPI_DSI_TX1_D2P	/	
92	MIPI_DSI_TX1_D2N	MIPI_DSI_TX1_D2N	/	
94	MIPI_DSI_TX1_CLKP	MIPI_DSI_TX1_CLKP	/	
96	MIPI_DSI_TX1_CLKN	MIPI_DSI_TX1_CLKN	/	
98	MIPI_DSI_TX1_D1P	MIPI_DSI_TX1_D1P	/	
100	MIPI_DSI_TX1_D1N	MIPI_DSI_TX1_D1N	/	
102	MIPI_DSI_TX1_D0P	MIPI_DSI_TX1_D0P	/	
104	MIPI_DSI_TX1_D0N	MIPI_DSI_TX1_D0N	/	

106	GND9	GND	GND	
108	GPIO0_A0_d	REFCLK_OUT	3.3V	
		GPIO0_A0_d		
110	GPIO0_A6_d	GPU_PWREN	3.3V	
		SATA_CP_POD		
		PCIE30X2_CLKR EQn_M0		
		GPIO0_A6_d		
112	GPIO0_B0_u	CLK32K_IN	3.3V	
		CLK32K_OUT0		
		PCIE30X2_BUTT ONRSTn		
		GPIO0_B0_u		
114	GPIO0_B7_d	PWM0_M0	3.3V	
		CPUAVS		
		PCIE30X2_BUTT ONRSTn		
		GPIO0_B7_d		
116	UART2_RX_M0	UART2_RX_M0	3.3V	
		GPIO0_D0_u		
118	UART2_TX_M0	UART2_TX_M0	3.3V	
		GPIO0_D1_u		
120	GPIO0_C0_d	PWM1_M0	3.3V	
		GPUAVS		
		UART0_RX		
		GPIO0_C0_d		

122	PWM2_M0	PWM2_M0	3.3V	
		NPUAVS		
		UART0_TX		
		MCU_JTAG_TDI		
		GPIO0_C1_d		
124	EDP_HPDI_M1	PWM3_IR	3.3V	
		EDP_HPDI_M1		
		PCIE30X1_WAKE n_M0		
		MCU_JTAG_TMS		
		GPIO0_C2_d		
126	PWM4	PWM4	3.3V	
		VOP_PWM_M0		
		PCIE30X1_PERST n_M0		
		MCU_JTAG_TRS Tn		
		GPIO0_C3_d		
128	GPIO0_C4_d	PWM5	3.3V	
		SPI0_CS1_M0		
		UART0_RTSn		
		GPIO0_C4_d		
130	GPIO0_C5_d	PWM6	3.3V	
		SPI0_MISO_M0		
		PCIE30X2_WAKE n_M0		
		GPIO0_C5_d		

132	GPIO0_C6_d	PWM7_IR	3.3V	
		SPI0_CS0_M0		
		PCIE30X2_PERS Tn_M0		
		GPIO0_C6_d		
134	GPIO0_C7_d	HDMITX_CEC_M1	3.3V	
		PWM0_M1		
		UART0_CTSn		
		GPIO0_C7_d		
136	GPIO4_C2_d	PWM14_M1	3.3V	
		SPI3_CLK_M1		
		CAN1_RX_M1		
		PCIE30X2_CLKR EQn_M2		
		I2S3_MCLK_M1		
		GPIO4_C2_d		
138	GPIO4_C3_d	PWM15_IR_M1	3.3V	
		SPI3_MOSI_M1		
		CAN1_TX_M1		
		PCIE30X2_WAKE n_M2		
		I2S3_SCLK_M1		
		GPIO4_C3_d		
140	GPIO4_C4_d	EDP_HPDIN_M0	3.3V	
		SPDIF_TX_M2		
		SATA2_ACT_LED		

		PCIE30X2_PERS Tn_M2		
		I2S3_LRCK_M1		
		GPIO4_C4_d		
142	GPIO4_C5_d	PWM12_M1	3.3V	
		SPI3_MISO_M1		
		SATA1_ACT_LED		
		UART9_TX_M1		
		I2S3_SDO_M1		
		GPIO4_C5_d		
144	GPIO4_C6_d	PWM13_M1	3.3V	
		SPI3_CS0_M		
		SATA0_ACT_LED		
		UART9_RX_M1		
		I2S3_SDI_M1		
		GPIO4_C6_d		
146	I2C1_SCL	I2C1_SCL	3.3V	
		CAN0_TX_M0		
		PCIE30X1_BUTTON ONRSTn		
		MCU_JTAG_TDO		
		GPIO0_B3_u		
148	I2C1_SDA	I2C1_SDA	3.3V	
		CAN0_RX_M0		
		PCIE20_BUTTON RSTn		

		MCU_JTAG_TCK		
		GPIO0_B4_u		
150	GPIO0_B5_u	I2C2_SCL_M0	3.3V	
		SPI0_CLK_M0		
		PCIE20_WAKEn_M0		
		PWM1_M1		
		GPIO0_B5_u		
152	GPIO0_B6_u	I2C2_SDA_M0	3.3V	
		SPI0_MOSI_M0		
		PCIE20_PERSTn_M0		
		PWM2_M1		
		GPIO0_B6_u		
154	GPIO1_A0_u	I2C3_SDA_M0	3.3V	
		UART3_RX_M0		
		CAN1_RX_M0		
		AUDIOPWM_LOUT_P		
		ACODEC_ADC_DATA		
		GPIO1_A0_u		
156	GPIO1_A1_u	I2C3_SCL_M0	3.3V	
		UART3_TX_M0		
		CAN1_TX_M0		
		AUDIOPWM_LOUT_N		

		ACODEC_ADC_C LK		
		GPIO1_A1_u		
158	GND13	GND	GND	
160	PCIE30_RX1N	PCIE30_RX1N	/	
162	PCIE30_RX1P	PCIE30_RX1P	/	
164	PCIE30_RX0N	PCIE30_RX0N	/	
166	PCIE30_RX0P	PCIE30_RX0P	/	
168	PCIE30_TX1N	PCIE30_TX1N	/	
170	PCIE30_TX1P	PCIE30_TX1P	/	
172	PCIE30_TX0N	PCIE30_TX0N	/	
174	PCIE30_TX0P	PCIE30_TX0P	/	
176	PCIE30_REFCLK N_IN	PCIE30_REFCLK N_IN	/	
178	PCIE30_REFCLK P_IN	PCIE30_REFCLK P_IN	/	
180	GND16	GND	GND	
182	PCIE20_REFCLK P	PCIE20_REFCLK P	/	
184	PCIE20_REFCLK N	PCIE20_REFCLK N	/	
186	PCIE20_RXP	MIPI_CSI_RX_CL K1P	/	
188	PCIE20_RXN	PCIE20_REFCLK P	/	
190	PCIE20_TXP	PCIE20_REFCLK N	/	

192	PCIE20_TXN	MIPI_CSI_RX_CL K1P	/	
194	GND16	GND	GND	
196	SDMMC0_D0	SDMMC0_D0	Default:3.3V 1.8V/3.3V	
		UART2_TX_M1		
		UART6_TX_M1		
		PWM8_M1		
		GPIO1_D5_u		
198	SDMMC0_D1	SDMMC0_D1	Default:3.3V 1.8V/3.3V	
		UART2_RX_M1		
		UART6_RX_M1		
		PWM9_M1		
		GPIO1_D6_u		
200	SDMMC0_D2	SDMMC0_D2	Default:3.3V 1.8V/3.3V	
		ARMJTAG_TCK		
		UART5_CTSn_M0		
		GPIO1_D7_u		
202	SDMMC0_D3	SDMMC0_D3	Default:3.3V 1.8V/3.3V	
		ARMJTAG_TMS		
		UART5_RTSn_M0		
		GPIO2_A0_u		
204	SDMMC0_CMD	SDMMC0_CMD	Default:3.3V 1.8V/3.3V	
		PWM10_M1		
		UART5_RX_M0		
		CAN0_TX_M1		
		GPIO2_A1_u		

206	SDMMC0_CLK	SDMMC0_CLK	Default:3.3V 1.8V/3.3V	
		TEST_CLKOUT		
		UART5_TX_M0		
		CAN0_RX_M1		
		GPIO2_A2_d		
208	SDMMC0_DET	SDMMC0_DET	Default:3.3V 1.8V/3.3V	
		SATA_CP_DET		
		PCIE30X1_CLKRE Qn_M0		
		GPIO0_A4_u		
210	VCC3V3_SD	VCC3V3_SD for tf_card	3.3V/400mA OUTPUT	
212	SDMMC0_PWRE N	SDMMC0_PWRE N	Default:3.3V 1.8V/3.3V	
		SATA_MP_SWITC H		
		PCIE20_CLKREQ n_M0		
		GPIO0_A5_d		
214	GND18	GND	GND	
216	GPIO2_B3_u	GMAC0_TXD0	Default:1.8V 1.8V/3.3V	
		UART1_RX_M0		
		GPIO2_B3_u		
218	GPIO2_B4_u	GMAC0_TXD1	Default:1.8V 1.8V/3.3V	
		UART1_TX_M0		
		GPIO2_B4_u		
220	GPIO2_B5_u	GMAC0_TXEN	Default:1.8V	

		UART1_RTSn_M0	1.8V/3.3V	
		SPI1_CLK_M0		
		GPIO2_B5_u		
222	GPIO2_B6_u	GMAC0_RXD0	Default:1.8V 1.8V/3.3V	
		UART1_CTSn_M0		
		SPI1_MISO_M0		
		GPIO2_B6_u		
224	GPIO2_B7_d	I2S2_SCLK_RX_M0	Default:1.8V 1.8V/3.3V	
		GMAC0_RXD1		
		UART6_RTSn_M0		
		SPI1_MOSI_M0		
		GPIO2_B7_u		
226	GPIO2_C0_d	I2S2_LRCK_RX_M0	Default:1.8V 1.8V/3.3V	
		GMAC0_RXDV_CRS		
		UART6_CTSn_M0		
		SPI1_CS0_M0		
		GPIO2_C0_d		
228	GPIO2_C1_d	I2S2_MCLK_M0	Default:1.8V 1.8V/3.3V	
		ETH0_REFCLKO_25M		
		UART7_RTSn_M0		
		SPI2_CLK_M0		
		GPIO2_C1_d		

230	GPIO2_C2_d	I2S2_SCLK_TX_M0	Default:1.8V 1.8V/3.3V	
		GMAC0_MCLKIN OUT		
		UART7_CTSn_M0		
		SPI2_MISO_M0		
		GPIO2_C2_d		
232	GPIO2_C3_d	I2S2_LRCK_TX_M0	Default:1.8V 1.8V/3.3V	
		GMAC0_MDC		
		UART9_RTSn_M0		
		SPI2_MOSI_M0		
		GPIO2_C3_d		
234	GPIO2_C4_d	I2S2_SDO_M0	Default:1.8V 1.8V/3.3V	
		GMAC0_MDIO		
		UART9_CTSn_M0		
		SPI2_CS0_M0		
		GPIO2_C4_d		
236	GPIO2_C5_d	I2S2_SDI_M0	Default:1.8V 1.8V/3.3V	
		GMAC0_RXER		
		UART8_TX_M0		
		SPI2_CS1_M0		
		GPIO2_C5_d		
238	GPIO2_C6_d	CLK32K_OUT1	Default:1.8V 1.8V/3.3V	
		UART8_RX_M0		
		SPI1_CS1_M0		

		GPIO2_C6_d		
240	GND20	GND	GND	
242	HPL_OUT	HPL_OUT	/	RK809-5
244	HP_SNS	HP_SNS	/	RK809-5
246	HPR_OUT	HPR_OUT	/	RK809-5
248	MIC1_INP	MIC1_INP	/	RK809-5
250	MIC1_INN	MIC1_INN	/	RK809-5
252	RK809_VDC	RK809_VDC	/	
254	GND21	GND	GND	
256	GND22	GND	GND	
258	GND23	GND	GND	
260	GND24	GND	GND	