IDO-SOM3588-V1（B to B） -规格书

Industio 触觉智能

IDO-SOM3588-V1
(B to B)核心板规格书

深圳触觉智能科技有限公司

www.industio.cn

文档修订历史

版本	修订内容	修订	审核	日期
V1.0	创建文档			2022/09/6
V1.1	B TO B连接器封装优化，PCB版本号更新为IDO-SOM3588-V1B			2023/05/25

1. 产品概述

1.1 IDO-SOM3588-V1适用范围

IDO-SOM3588-1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-SOM3588-V1产品概述

IDO-SOM3588-V1采用瑞芯微最新旗舰SOC芯片RK3588。RK3588是一款采用ARM架构的通用型SoC，集成了四核Cortex-A76和四核Cortex-A55 CPU，G610 MP4 GPU，以及6 TOPs算力的NPU。内置多种功能强大的嵌入式硬件引擎，支持8K@60fps的H.265 和VP9解码器、8K@30fps的H.264 解码器和4K@60fps的AV1解码器；支持8K@30fps 的H.264和H.265编码器，高质量的JPEG编

码器/解码器，专门的图像预处理器和后处理器。RK3588还引入了新一代完全基于硬件的最大4800万像素ISP（图像信号处理器），实现了许多算法加速器，如HDR、3A、LSC、3DNR、2DNR、锐化、dehaze、鱼眼校正、伽马校正等，在图形后期处理方面拥有广泛应用。RK3588集成了瑞芯微自研的第三代NPU处理器，可支持 INT4/INT8/INT16/FP16 混合运算，其强大的兼容性，可以轻松转换基于TensorFlow / MXNet/PyTorch/Caffe 等一系列框架的网络模型。。RK3588 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，RK3588 SoC 内部组成：

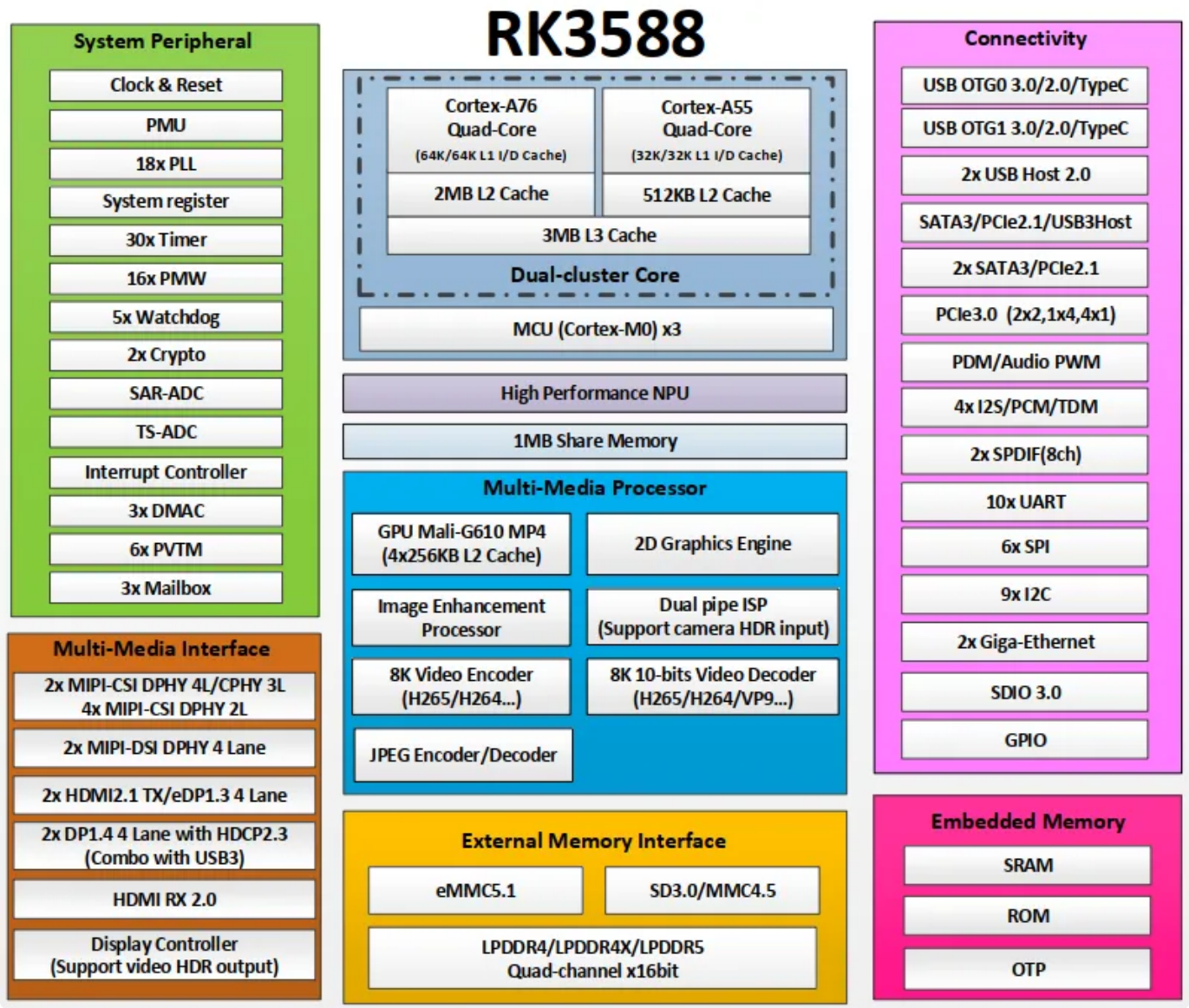

图1. RK3588 SoC框图

IDO-SOM3588-V1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-SOM3588-V1模块逻辑框图

1.3 IDO-SOM3588-V1产品特点

- 搭载RK3588高性能SOC，集成了四核Cortex-A76和四核Cortex-A55 CPU，主频高达2.4G；
- NPU算力高达6Tops，支持INT4/INT8/INT16/FP16混合运算，满足大多数人工智能模型的算力需求；
- 强大的编解码能力，最高支持8K@60fps；
- 5*6cm超小尺寸B to B接口，便于交付使用；
- 丰富的系统支持， Android 12，Ubuntu , Debian 全面支持。

1.4 IDO-SOM3588-V1产品图片

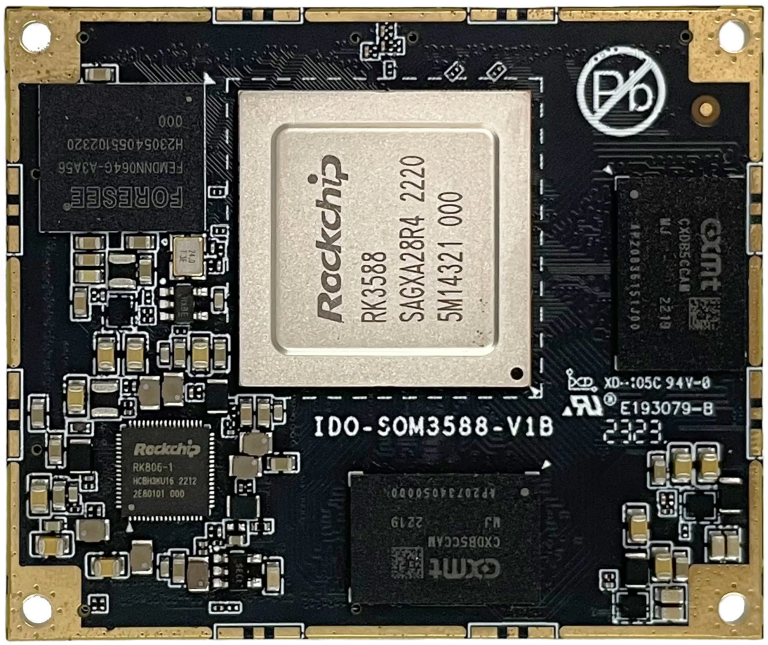

图3. IDO-SOM3588-V1核心板正面

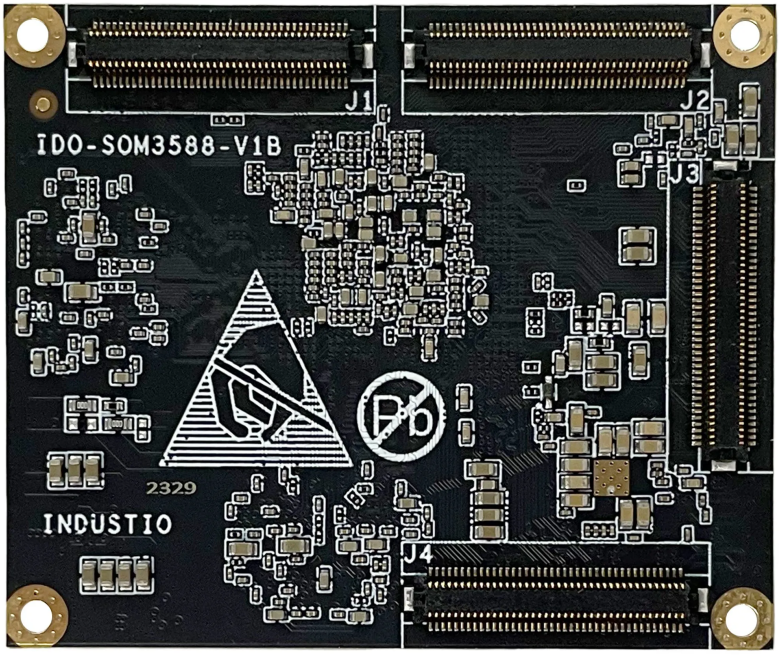

图4. IDO-SOM3588-V1核心板背面

2. 硬件参数规格

2.1 基本参数

基本参数	
SOC系统芯片	RockChip RK3588
CPU中央处理器	Quad-core Cortex-A76 and quad-core Cortex-A55，主频高达2.4GHz
GPU图形处理器	• Mali-G610 GPU • 支持OpenGL ES 3.2，OpenCL 2.2，Vulkan 1.1 • 内嵌高性能2D、3D加速硬件
NPU嵌入式神经网络处理器	支持6.0T算力，支持INT4/INT8/INT16/FP16运算

VPU视频处理单元	**视频解码** • H.265/AVS2/VP9, 8bits/10bits， 8K@60fps • H.264/AV1, 8bits/10bits， 8K@30fps • Multi-channel decoder in parallel for less resolution (4K/1080p/720p etc.) **视频编码** • H.265/H.264, 8K@30fps • Multi-channel encoder in parallel for less resolution (1080p/720p etc.) **Muti-format 视频解码** • H.265/H.264, 8K@30fps • 1080P@60fps video decoder for VP8/AVS1/AVS1+/MPEG-4
内存	4GB/8GB/16GB LPDDR4/4x
存储	32GB/64GB/128GB eMMC
硬件参数	
网络	集成 PCIe3.0/PCIe2.0/GMAC/SDIO3.0/USB3.0/USB2.0，可扩展千兆以太网、WiFi6/蓝牙， 5G/4G LTE
显示	视频输出： • 1x HDMI2.1接口，支持（8K/60fps或4K/120fps）输出 • 1x HDMI2.0接口，支持4K/60fps输出 • 2x MIPI DSI接口，支持4k@60fps输出 • 2x eDP接口，支持4K@60fps输出 • 2x DP接口，支持8k@30fp输出 视频输入： • 1x HDMI-IN，支持（4K/60fps，HDCP2.3） • 2x MIPI CSI（4Lane）或者4x MIPI CSI（2Lane） • 2x MIPI DC（4通道DPHY v2.0或者3通道CPHY v1.1） • 1x DVP（最高150MHz输入） 最多可支持4屏异显输出
音频	2 × 8 通道I2C 2 × 8 通道I2S 2 × SPDIF 2 × 8 通道PDM

USB	2 × USB3.0 OTG 1 × USB3.0 HOST 2 × USB2.0 HOST
PCIe/SATA	1 × PCIe3.0（1×4lanes，4×1lanes，2×2lanes） 3 × PCIe2.0（1lanes） 3 × SATA3.0
扩展接口	10 × UART 5 × SPI 3 × CAN 9 × I2C 3 × SDMMC 16 × PWM 4 × ADC 118 × GPIO
其他	
主板尺寸	5cm X 6cm
接口类型	320Pin 间距0.5 B to B连接器
PCB规格	板厚 1.6mm，10层板 高Tg材质，沉金工艺

2.2 工作环境

工作环境	
工作温度	0~70℃[商规型号]； -40~85℃ [工规型号]
存储温度	-40℃～85℃
存储湿度	10%~80%

2.3 系统支持

序号	**操作系统**	**支持**	**说明**

1	Android12	✅	
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

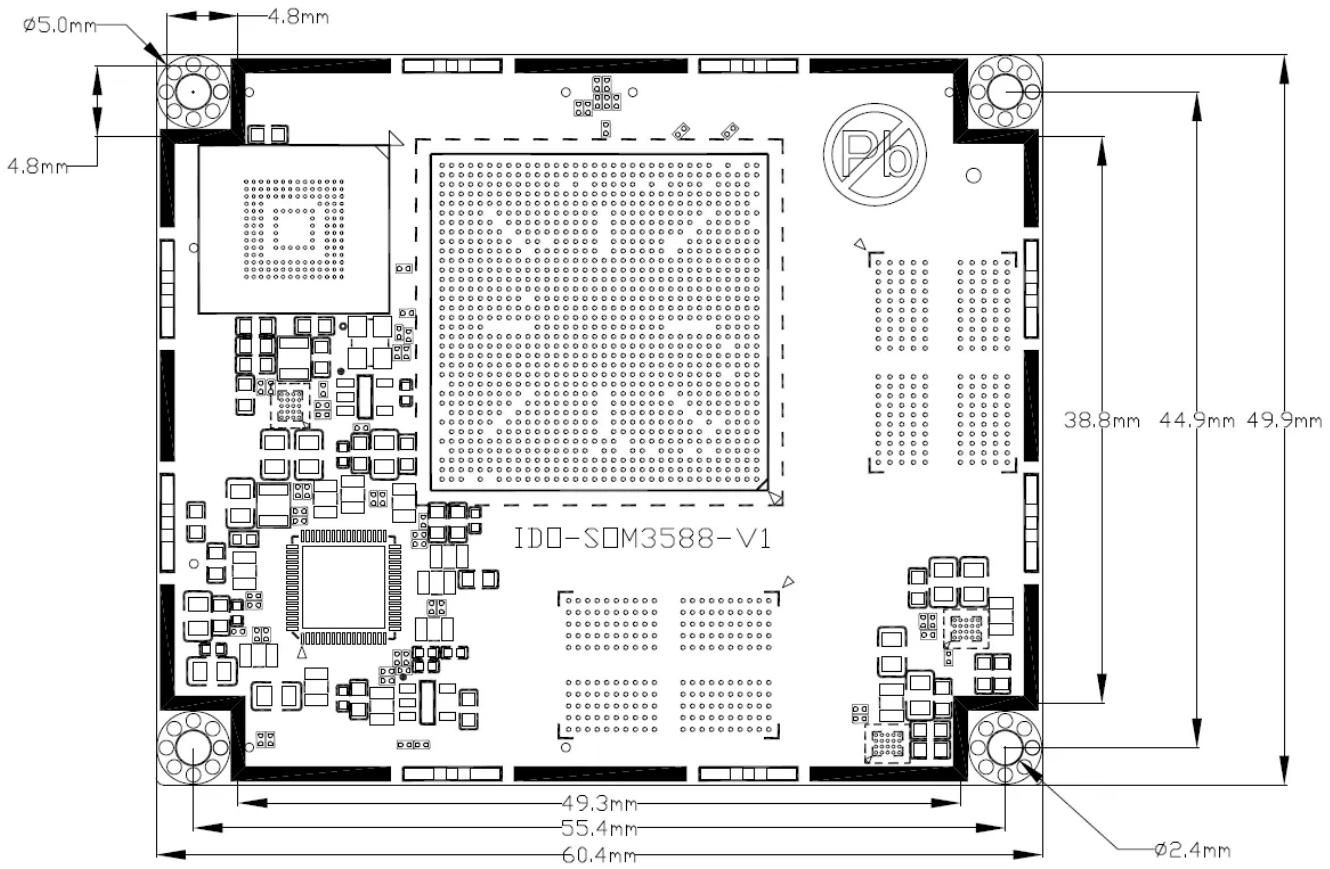

图5. IDO-SOM3588-V1核心板正面尺寸

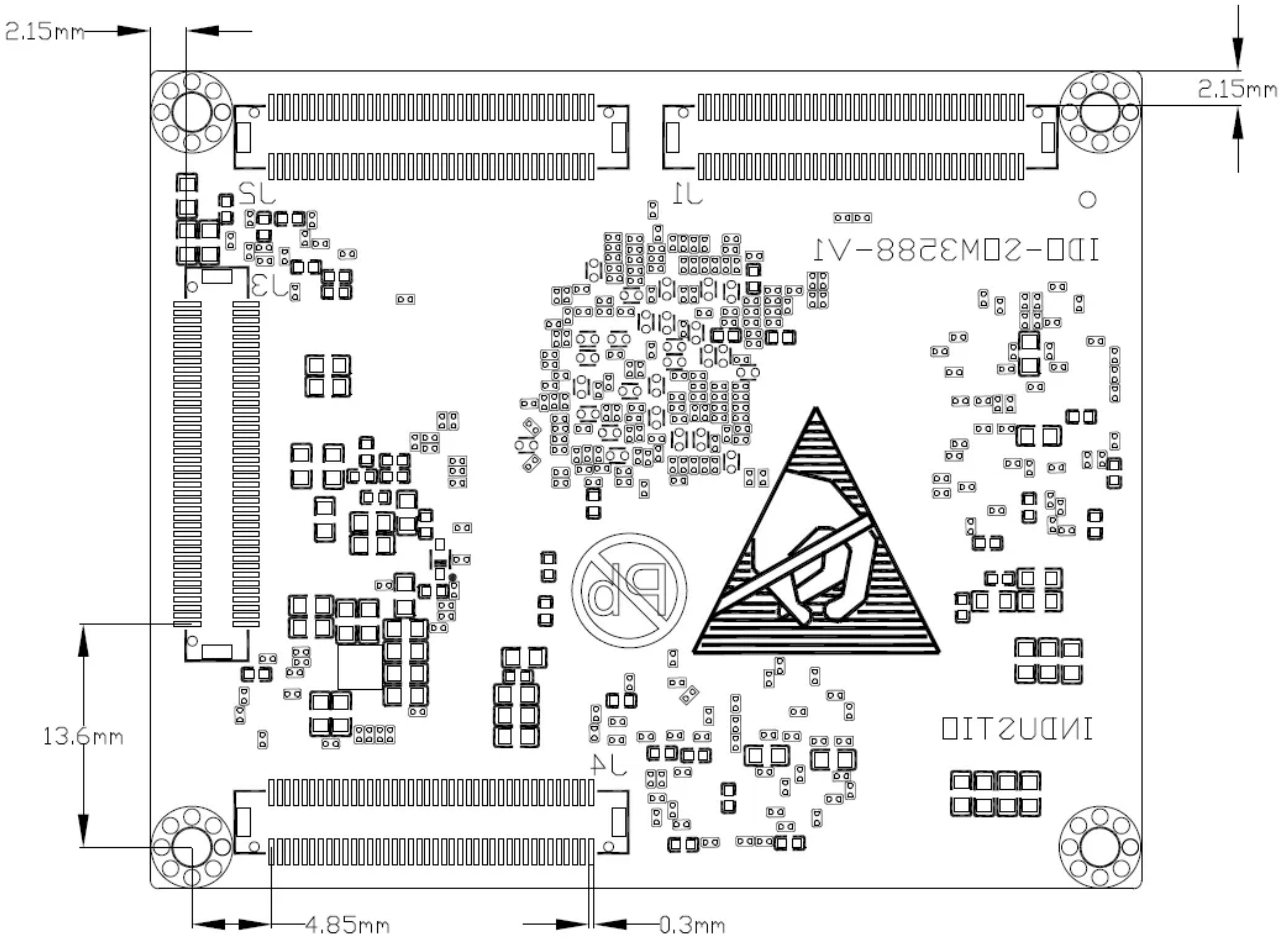

图6. IDO-SOM3588-V1核心板背面尺寸

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
VCC4V0_SYS	3.6V	4.0V	5.0V	4.0V/4000mA	4V/18mA	

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

VCC_1V8_S3	1.75V	1.8V	1.85V	300mA

4. 采购型号

采购型号	LPDDR4/4x	eMMC	标称工作温度
IDO-SOM3588-V1-D4E32	4GB	32GB	0~70℃
IDO-SOM3588-V1-D4E64	4GB	64GB	0~70℃
IDO-SOM3588-V1-D8E64	8GB	64GB	0~70℃
IDO-SOM3588-V1-D8E128	8GB	128GB	0~70℃
IDO-SOM3588J-V1-D4E64	4GB	64GB	-40~85℃
IDO-SOM3588J-V1-D8E64	8GB	64GB	-40~85℃
IDO-SOM3588J-V1-D8E128	8GB	128GB	-40~85℃

5. 引脚定义说明（Connector）

IDO-SOM3588-V1核心板可适配如下两个品牌型号连接器：

广濑（HRS）：

核心板连接器采用HRS的连接器 **DF12NA(3.0)-80DS-0.5V(51)**

📎DF12NA(3.0)-80DS-0.5V(51).pdf

底板对应采用HRS的连接器 **DF12NA(3.0)-80DP-0.5V(51)**📎DF12NA(3.0)-80DP-0.5V(51).pdf

维峰（WCON）：

核心板连接器采用WCON的连接器 3622-S080-022G1R-02📎3622-S080-022G1R-02.pdf

底板对应采用WCON的连接器 3622-P080-023G1R-02📎3622-P080-023G1R-02.pdf

注意：

广濑和维峰两个品牌的连接器不能混用，标准出货的连接器型号均采用广濑型号；需要采用维峰座子的模组需要定制生产，核心板和底板必须同时采用维峰的连接器。

5.1 核心板引脚示意图

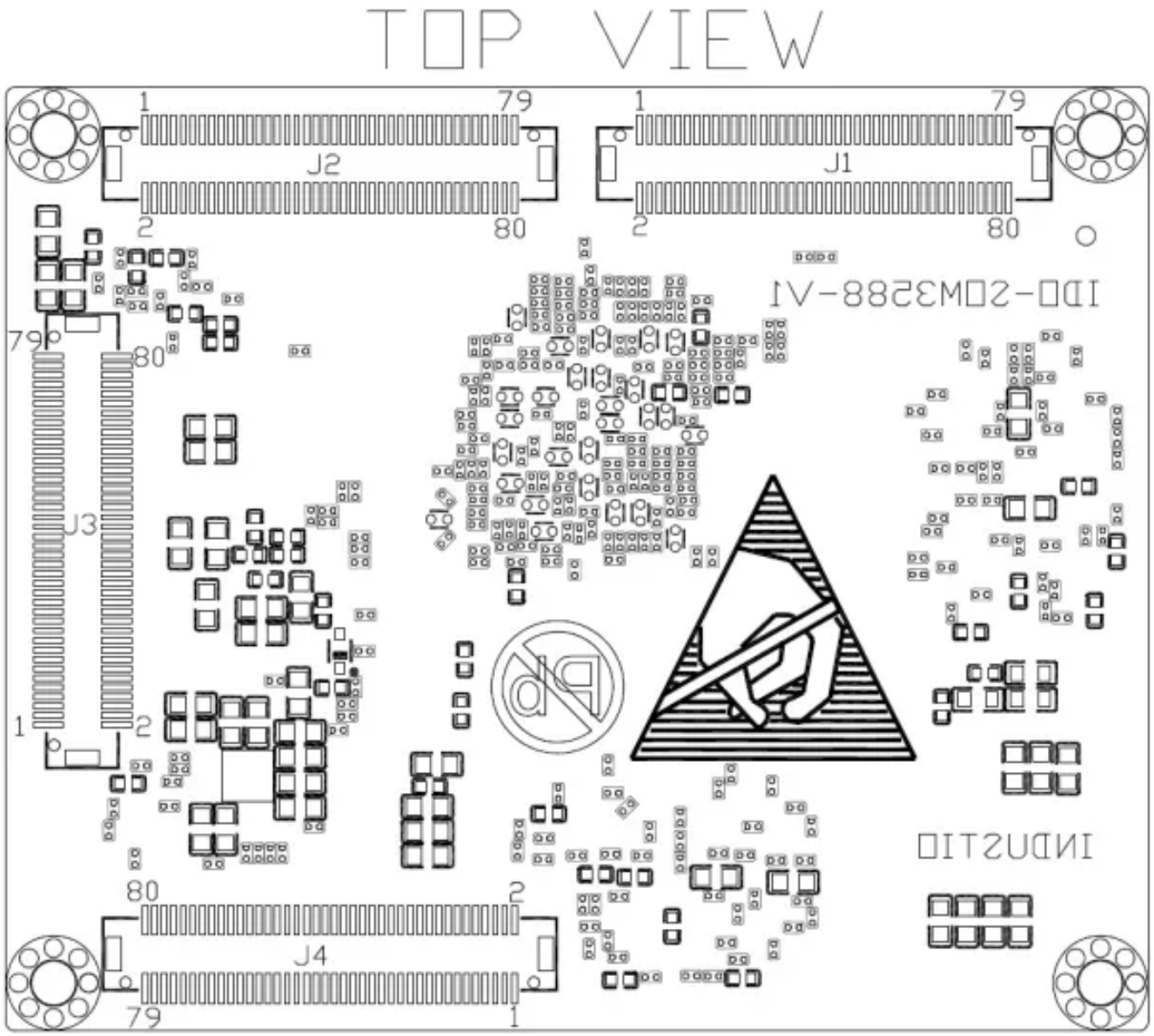

图7. IDO-SOM3588-V1核心板BTB连接器TOP VIEW

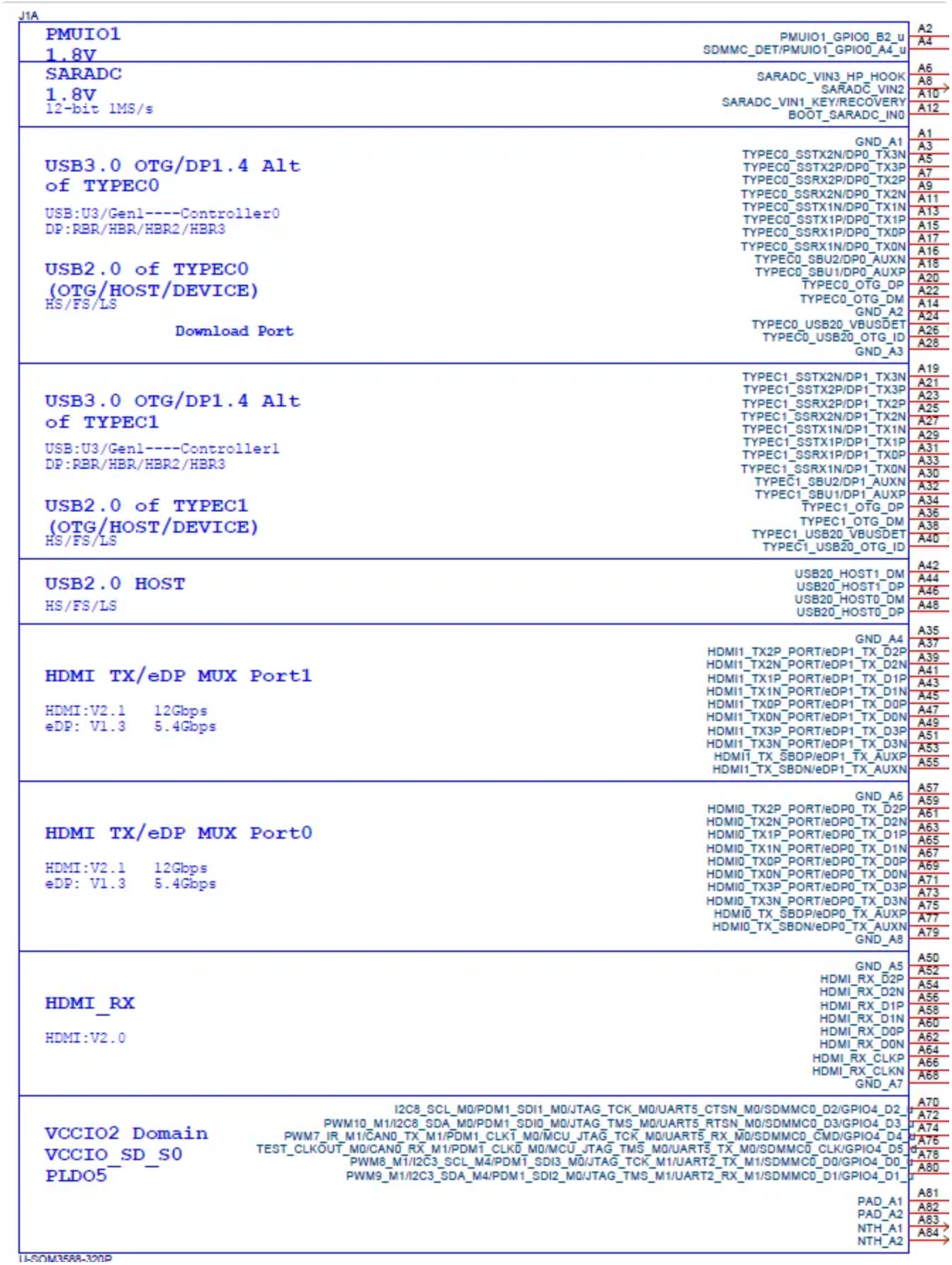

图8. IDO-SOM3588-V1核心板J1连接器引脚定义图

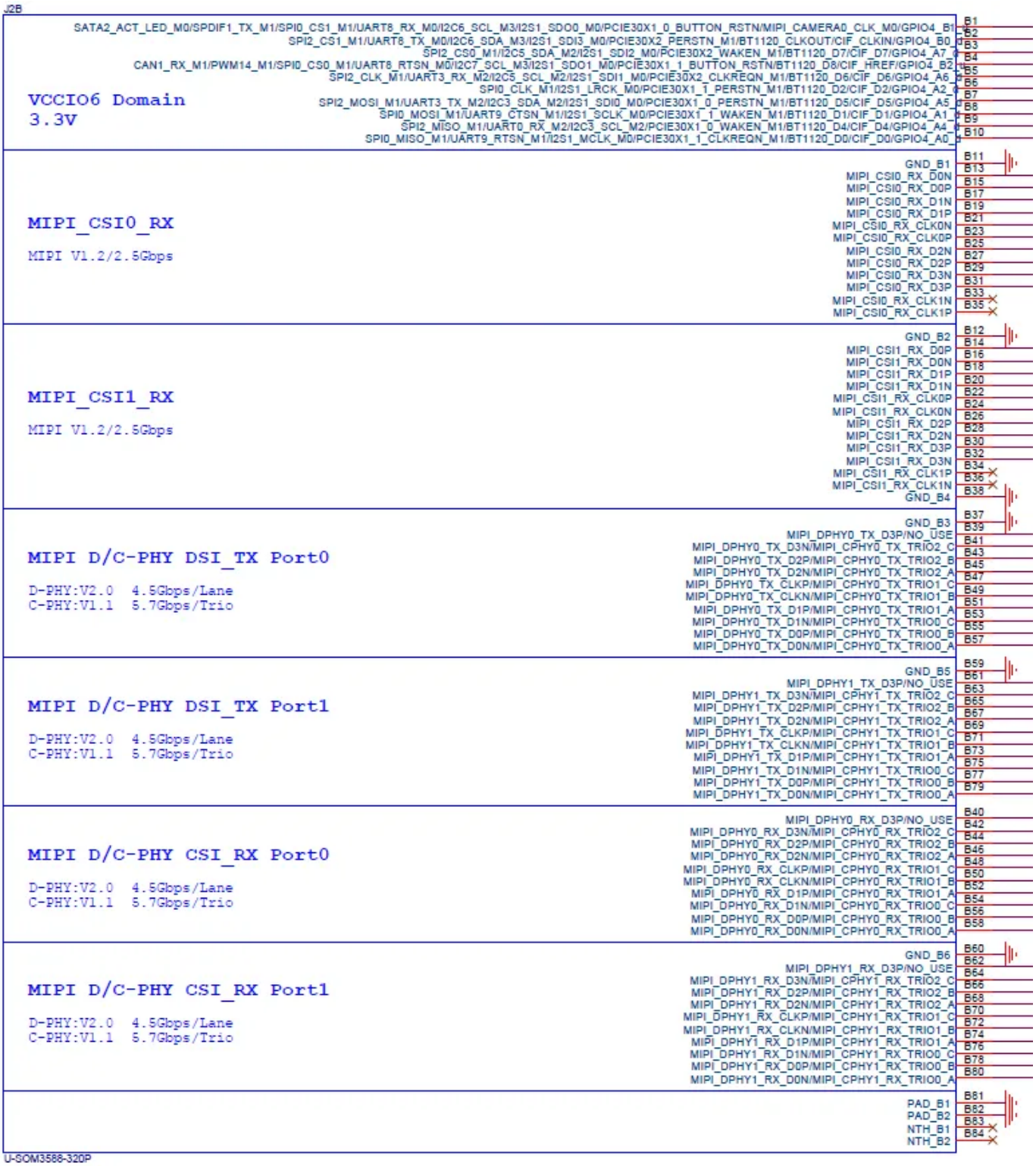

图9. IDO-SOM3588-V1核心板J1连接器引脚定义图

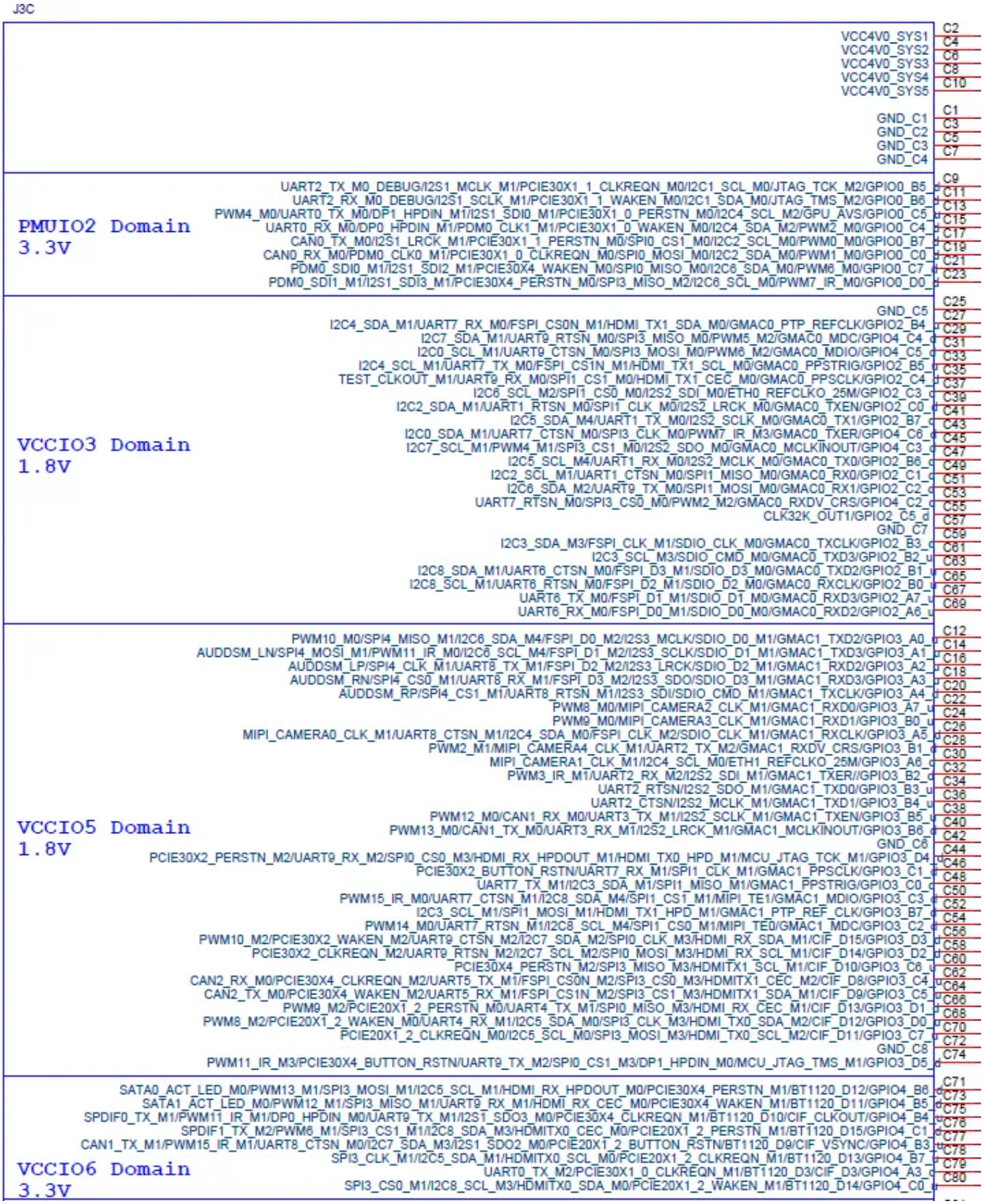

图10. IDO-SOM3588-V1核心板J3连接器引脚定义图

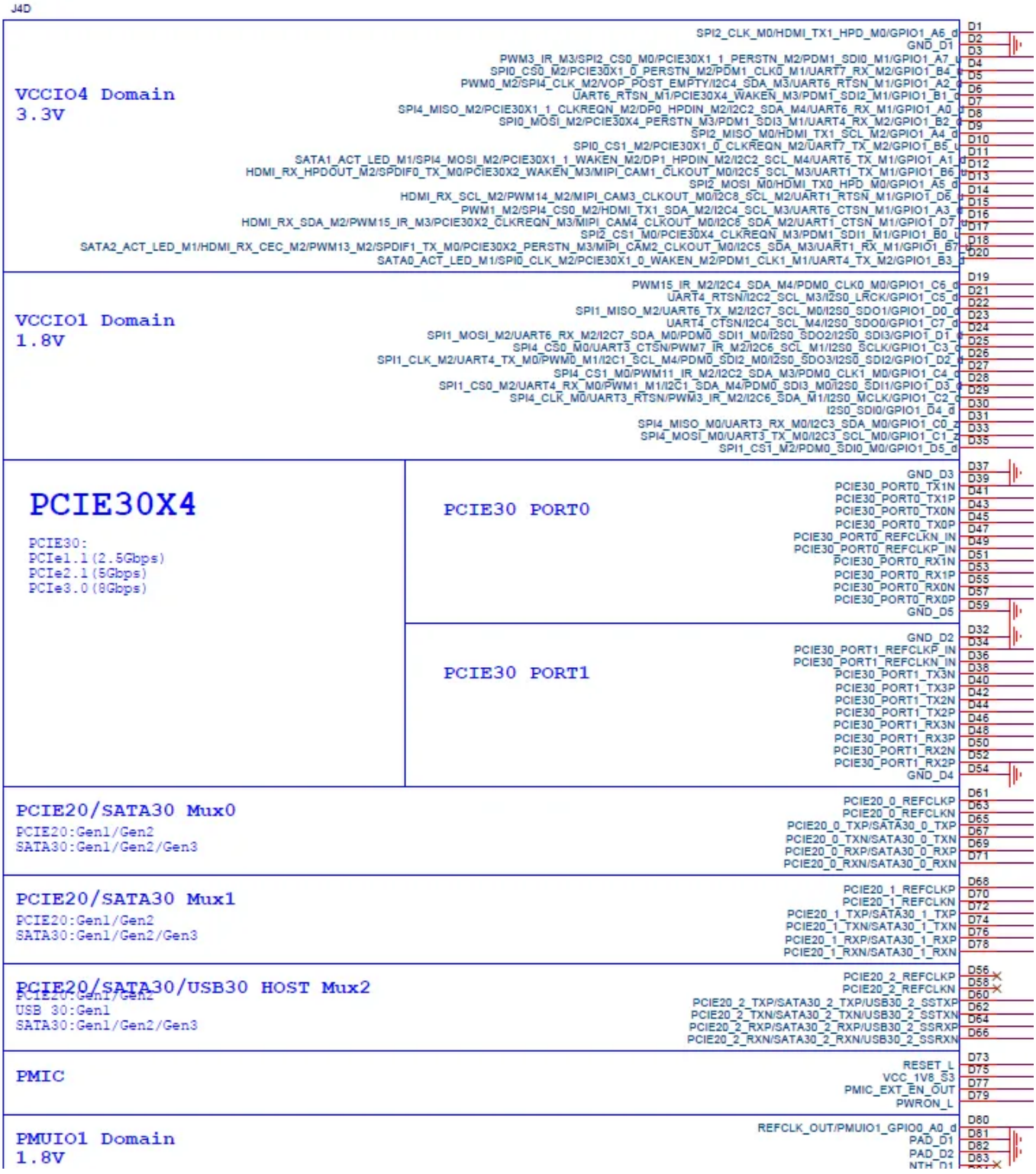

图11. IDO-SOM3588-V1核心板J4连接器引脚定义图

5.2 核心板引脚列表

5.2.1 J1连接器引脚定义

J1 DF12NA(3.0)-80DS-0.5V(51)			
Num	Pin Name	Signal Name	Power Rail
2	SDMMC_PWREN_GPIO0_B2	PMUIO1_GPIO0_B2_u	1.8V
4	SDMMC_DET_L_GPIO0_A4	SDMMC_DET	1.8V
		PMUIO1_GPIO0_A4_u	
6	SARADC_VIN3_HP_HOOK	SARADC_VIN3	1.8V
8		SARADC_VIN2	1.8V
10	SARADC_VIN1_KEY/RECOVERY	SARADC_VIN1_RECOVERY	1.8V
12	BOOT_SARADC_IN0	SARADC_IN0_BOOT	1.8V
1	GND	GND	GND
3	TYPEC0_SSTX2N	TYPEC0_SSTX2N	
		DP0_TX3N	
5	TYPEC0_SSTX2P	TYPEC0_SSTX2P	
		DP0_TX3P	
7	TYPEC0_SSRX2P	TYPEC0_SSRX2P	
		DP0_TX2P	
9	TYPEC0_SSRX2N	TYPEC0_SSRX2N	
		DP0_TX2N	
11	TYPEC0_SSTX1N	TYPEC0_SSTX1N	
		DP0_TX1N	
13	TYPEC0_SSTX1P	TYPEC0_SSTX1P	
		DP0_TX1P	
15	TYPEC0_SSRX1P	TYPEC0_SSRX1P	

		DP0_TX0P	
17	TYPEC0_SSRX1N	TYPEC0_SSRX1N	
		DP0_TX0N	
16	TYPEC0_SBU2	TYPEC0_SBU2	
		DP0_AUXN	
18	TYPEC0_SBU1	TYPEC0_SBU1	
		DP0_AUXP	
20	TYPEC0_OTG_DP	TYPEC0_OTG_DP	
22	TYPEC0_OTG_DM	TYPEC0_OTG_DM	
14	GND	GND	GND
24	TYPEC0_USB20_VBUSDET	TYPEC0_USB20_VBUSDET	3.3V
26	TYPEC0_USB20_OTG_ID	TYPEC0_USB20_OTG_ID	1.8V
28	GND	GND	GND
19	TYPEC1_SSTX2N	TYPEC1_SSTX2N	
		DP1_TX3N	
21	TYPEC1_SSTX2P	TYPEC1_SSTX2P	
		DP1_TX3P	
23	TYPEC1_SSRX2P	TYPEC1_SSRX2P	
		DP1_TX2P	
25	TYPEC1_SSRX2N	TYPEC1_SSRX2N	
		DP1_TX2N	
27	TYPEC1_SSTX1N	TYPEC1_SSTX1N	
		DP1_TX1N	
29	TYPEC1_SSTX1P	TYPEC1_SSTX1P	

		DP1_TX1P	
31	TYPEC1_SSRX1P	TYPEC1_SSRX1P	
		DP1_TX0P	
33	TYPEC1_SSRX1N	TYPEC1_SSRX1N	
		DP1_TX0N	
30	TYPEC1_SBU2	TYPEC1_SBU2	
		DP1_AUXN	
32	TYPEC1_SBU1	TYPEC1_SBU1	
		DP1_AUXP	
34	TYPEC1_OTG_DP	TYPEC1_OTG_DP	
36	TYPEC1_OTG_DM	TYPEC1_OTG_DM	
38	TYPEC1_USB20_VBUSDET	TYPEC1_USB20_VBUSDET	3.3V
40	TYPEC1_USB20_OTG_ID	TYPEC1_USB20_OTG_ID	1.8V
42	USB20_HOST1_DM	USB20_HOST1_DM	
44	USB20_HOST1_DP	USB20_HOST1_DP	
46	USB20_HOST0_DM	USB20_HOST0_DM	
48	USB20_HOST0_DP	USB20_HOST0_DP	
35	GND	GND	GND
37	HDMI1_TX2P_PORT	HDMI1_TX2P_PORT	
		eDP1_TX_D2P	
39	HDMI1_TX2N_PORT	HDMI1_TX2N_PORT	
		eDP1_TX_D2N	
41	HDMI1_TX1P_PORT	HDMI1_TX1P_PORT	
		eDP1_TX_D1P	

43	HDMI1_TX1N_PORT	HDMI1_TX1N_PORT	
		eDP1_TX_D1N	
45	HDMI1_TX0P_PORT	HDMI1_TX0P_PORT	
		eDP1_TX_D0P	
47	HDMI1_TX0P_PORT	HDMI1_TX0N_PORT	
		eDP1_TX_D0N	
49	HDMI1_TX3P_PORT	HDMI1_TX3P_PORT	
		eDP1_TX_D3P	
51	HDMI1_TX3N_PORT	HDMI1_TX3N_PORT	
		eDP1_TX_D3N	
53	HDMI1_TX_SBDP	HDMI1_TX_SBDP	
		eDP1_TX_AUXP	
55	HDMI1_TX_SBDN	HDMI1_TX_SBDN	
		eDP1_TX_AUXN	
57	GND	GND	GND
59	HDMI0_TX2P_PORT	HDMI0_TX2P_PORT	
		eDP0_TX_D2P	
61	HDMI0_TX2N_PORT	HDMI0_TX2N_PORT	
		eDP0_TX_D2N	
63	HDMI0_TX1P_PORT	HDMI0_TX1P_PORT	
		eDP0_TX_D1P	
65	HDMI0_TX1N_PORT	HDMI0_TX1N_PORT	
		eDP0_TX_D1N	
67	HDMI0_TX0P_PORT	HDMI0_TX0P_PORT	
		eDP0_TX_D0P	

69	HDMI0_TX0N_PORT	HDMI0_TX0N_PORT	
		eDP0_TX_D0N	
71	HDMI0_TX3P_PORT	HDMI0_TX3P_PORT	
		eDP0_TX_D3P	
73	HDMI0_TX3N_PORT	HDMI0_TX3N_PORT	
		eDP0_TX_D3N	
75	HDMI0_TX_SBDP	HDMI0_TX_SBDP	
		eDP0_TX_AUXP	
77	HDMI0_TX_SBDN	HDMI0_TX_SBDN	
		eDP0_TX_AUXN	
79	GND	GND	GND
50	GND	GND	GND
52	HDMI_RX_D2P	HDMI_RX_D2P	
54	HDMI_RX_D2N	HDMI_RX_D2N	
56	HDMI_RX_D1P	HDMI_RX_D1P	
58	HDMI_RX_D1N	HDMI_RX_D1N	
60	HDMI_RX_D1P	HDMI_RX_D1P	
62	HDMI_RX_D1N	HDMI_RX_D1N	
64	HDMI_RX_CLKP	HDMI_RX_CLKP	
66	HDMI_RX_CLKN	HDMI_RX_CLKN	
68	GND	GND	GND
70	SDMMC0_D2	I2C8_SCL_M0	3.3V
		PDM1_SDI1_M0	
		JTAG_TCK_M0	
		UART5_CTSN_M0	

		SDMMC0_D2	
		GPIO4_D2_u	
72	SDMMC0_D3	PWM10_M1	3.3V
		I2C8_SDA_M0	
		PDM1_SDI0_M0	
		JTAG_TMS_M0	
		UART5_RTSN_M0	
		SDMMC0_D3	
		GPIO4_D3_u	
74	SDMMC0_CMD	PWM7_IR_M1	3.3V
		CAN0_TX_M1	
		PDM1_CLK1_M0	
		MCU_JTAG_TCK_M0	
		UART5_RX_M0	
		SDMMC0_CMD	
		GPIO4_D4_u	
76	SDMMC0_CLK	TEST_CLKOUT_M0	3.3V
		CAN0_RX_M1	
		PDM1_CLK0_M0	
		MCU_JTAG_TMS_M0	
		UART5_TX_M0	
		SDMMC0_CLK	
		GPIO4_D5_d	
78	SDMMC0_D0	PWM8_M1	3.3V
		I2C3_SCL_M4	

		PDM1_SDI3_M0	
		JTAG_TCK_M1	
		UART2_TX_M1	
		SDMMC0_D0	
		GPIO4_D0_u	
80	SDMMC0_D1	PWM9_M1	3.3V
		I2C3_SDA_M4	
		PDM1_SDI2_M0	
		JTAG_TMS_M1	
		UART2_RX_M1	
		SDMMC0_D1	
		GPIO4_D1_u	

5.2.2 J2连接器引脚定义

J2　DF12NA(3.0)-80DS-0.5V(51)			
Num	**Pin Name**	**Signal Name**	**Power Rail**
1	HDMI0_TX_ON_H_GPIO4_B1	SATA2_ACT_LED_M0	3.3V
		SPDIF1_TX_M1	
		SPI0_CS1_M1	
		UART8_RX_M0	
		I2C6_SCL_M3	
		I2S1_SDO0_M0	
		PCIE30X1_0_BUTTON_RSTN	

		MIPI_CAMERA0_CLK_M0	
		GPIO4_B1_u	
2	HDMI1_TX_ON_H_GPIO4_B0	SPI2_CS1_M1	3.3V
		UART8_TX_M0	
		I2C6_SDA_M3	
		I2S1_SDI3_M0	
		PCIE30X2_PERSTN_M1	
		BT1120_CLKOUT	
		CIF_CLKIN	
		GPIO4_B0_d	
3	GMAC1_RSTn_GPIO4_A7	SPI2_CS0_M1	3.3V
		I2C5_SDA_M2	
		I2S1_SDI2_M0	
		PCIE30X2_WAKEN_M1	
		BT1120_D7	
		CIF_D7	
		GPIO4_A7_d	
4	TYPEC0_SBU2_DC	CAN1_RX_M1	3.3V
		PWM14_M1	
		SPI0_CS0_M1	
		UART8_RTSN_M0	
		I2C7_SCL_M3	
		I2S1_SDO1_M0	

		PCIE30X1_1_BUTTON_RSTN	
		BT1120_D8	
		CIF_HREF	
		GPIO4_B2_u	
5	SYS_LED_GPIO4_A6	SPI2_CLK_M1	3.3V
		UART3_RX_M2	
		I2C5_SCL_M2	
		I2S1_SDI1_M0	
		PCIE30X2_CLKREQN_M1	
		BT1120_D6	
		CIF_D6	
		GPIO4_A6_d	
6	PCIEX1_1_PERSTn_M1_L	SPI0_CLK_M1	3.3V
		I2S1_LRCK_M0	
		PCIE30X1_1_PERSTN_M1	
		BT1120_D2	
		CIF_D2	
		GPIO4_A2_d	
7	WDT_EN_GPIO4_A5	SPI2_MOSI_M1	3.3V
		UART3_TX_M2	
		I2C3_SDA_M2	
		I2S1_SDI0_M0	
		PCIE30X1_0_PERSTN_M1	

		BT1120_D5	
		CIF_D5	
		GPIO4_A5_d	
8	PCIEX1_1_WAKEn_M1_L	SPI0_MOSI_M1	3.3V
		UART9_CTSN_M1	
		I2S1_SCLK_M0	
		PCIE30X1_1_WAKEN_M1	
		BT1120_D1	
		CIF_D1	
		GPIO4_A1_d	
9	TYPEC1_SBU2_DC	SPI2_MISO_M1	3.3V
		UART0_RX_M2	
		I2C3_SCL_M2	
		PCIE30X1_0_WAKEN_M1	
		BT1120_D4	
		CIF_D4	
		GPIO4_A4_d	
10	PCIEX1_1_CLKREQn_M1_L	SPI0_MISO_M1	3.3V
		UART9_RTSN_M1	
		I2S1_MCLK_M0	
		PCIE30X1_1_CLKREQN_M1	
		BT1120_D0	
		CIF_D0	

		GPIO4_A0_d	
11	GND	GND	GND
13	MIPI_CSI0_RX_D0N	MIPI_CSI0_RX_D0N	
15	MIPI_CSI0_RX_D0P	MIPI_CSI0_RX_D0P	
17	MIPI_CSI0_RX_D1N	MIPI_CSI0_RX_D1N	
19	MIPI_CSI0_RX_D1P	MIPI_CSI0_RX_D1P	
21	MIPI_CSI0_RX_CLK0N	MIPI_CSI0_RX_CLK0N	
23	MIPI_CSI0_RX_CLK0P	MIPI_CSI0_RX_CLK0P	
25	MIPI_CSI0_RX_D2N	MIPI_CSI0_RX_D2N	
27	MIPI_CSI0_RX_D2P	MIPI_CSI0_RX_D2P	
29	MIPI_CSI0_RX_D3N	MIPI_CSI0_RX_D3N	
31	MIPI_CSI0_RX_D3P	MIPI_CSI0_RX_D3P	
33	MIPI_CSI0_RX_CLK1N	MIPI_CSI0_RX_CLK1N	
35	MIPI_CSI0_RX_CLK1P	MIPI_CSI0_RX_CLK1P	
12	GND	GND	GND
14	MIPI_CSI1_RX_D0P	MIPI_CSI1_RX_D0P	
16	MIPI_CSI1_RX_D0N	MIPI_CSI1_RX_D0N	
18	MIPI_CSI1_RX_D1P	MIPI_CSI1_RX_D1P	
20	MIPI_CSI1_RX_D1N	MIPI_CSI1_RX_D1N	
22	MIPI_CSI1_RX_CLK0P	MIPI_CSI1_RX_CLK0P	
24	MIPI_CSI1_RX_CLK0N	MIPI_CSI1_RX_CLK0N	

26	MIPI_CSI1_RX_D2P	MIPI_CSI1_RX_D2P	
28	MIPI_CSI1_RX_D2N	MIPI_CSI1_RX_D2N	
30	MIPI_CSI1_RX_D3P	MIPI_CSI1_RX_D3P	
32	MIPI_CSI1_RX_D3N	MIPI_CSI1_RX_D3N	
34	MIPI_CSI1_RX_CLK1P	MIPI_CSI1_RX_CLK1P	
36	MIPI_CSI1_RX_CLK1N	MIPI_CSI1_RX_CLK1N	
38	GND	GND	GND
37	GND	GND	GND
39	MIPI_DPHY0_TX_D3P	MIPI_DPHY0_TX_D3P	
41	MIPI_DPHY0_TX_D3N	MIPI_DPHY0_TX_D3N	
		MIPI_CPHY0_TX_TRIO2_C	
43	MIPI_DPHY0_TX_D2P	MIPI_DPHY0_TX_D2P	
		MIPI_CPHY0_TX_TRIO2_B	
45	MIPI_DPHY0_TX_D2N	MIPI_DPHY0_TX_D2N	
		MIPI_CPHY0_TX_TRIO2_A	
47	MIPI_DPHY0_TX_CLKP	MIPI_DPHY0_TX_CLKP	
		MIPI_CPHY0_TX_TRIO1_C	
49	MIPI_DPHY0_TX_CLKN	MIPI_DPHY0_TX_CLKN	

		MIPI_CPHY0_TX_TRIO1_B	
51	MIPI_DPHY0_TX_D1P	MIPI_DPHY0_TX_D1P	
		MIPI_CPHY0_TX_TRIO1_A	
53	MIPI_DPHY0_TX_D1N	MIPI_DPHY0_TX_D1N	
		MIPI_CPHY0_TX_TRIO0_C	
55	MIPI_DPHY0_TX_D0P	MIPI_DPHY0_TX_D0P	
		MIPI_CPHY0_TX_TRIO0_B	
57	MIPI_DPHY0_TX_D0N	MIPI_DPHY0_TX_D0N	
		MIPI_CPHY0_TX_TRIO0_A	
59	GND	GND	GND
61	MIPI_DPHY1_TX_D3P	MIPI_DPHY1_TX_D3P	
63	MIPI_DPHY1_TX_D3N	MIPI_DPHY1_TX_D3N	
		MIPI_CPHY1_TX_TRIO2_C	
65	MIPI_DPHY1_TX_D2P	MIPI_DPHY1_TX_D2P	
		MIPI_CPHY1_TX_TRIO2_B	
67	MIPI_DPHY1_TX_D2N	MIPI_DPHY1_TX_D2N	
		MIPI_CPHY1_TX_TRIO2_A	
69	MIPI_DPHY1_TX_CLKP	MIPI_DPHY1_TX_CLKP	

		MIPI_CPHY1_TX_TRIO1_C	
71	MIPI_DPHY1_TX_CLKN	MIPI_DPHY1_TX_CLKN	
		MIPI_CPHY1_TX_TRIO1_B	
73	MIPI_DPHY1_TX_D1P	MIPI_DPHY1_TX_D1P	
		MIPI_CPHY1_TX_TRIO1_A	
75	MIPI_DPHY1_TX_D1N	MIPI_DPHY1_TX_D1N	
		MIPI_CPHY1_TX_TRIO0_C	
77	MIPI_DPHY1_TX_D0P	MIPI_DPHY1_TX_D0P	
		MIPI_CPHY1_TX_TRIO0_B	
79	MIPI_DPHY1_TX_D0N	MIPI_DPHY1_TX_D0N	
		MIPI_CPHY1_TX_TRIO0_A	
40	MIPI_DPHY0_RX_D3P	MIPI_DPHY0_RX_D3P	
42	MIPI_DPHY0_RX_D3N	MIPI_DPHY0_RX_D3N	
		MIPI_CPHY0_RX_TRIO2_C	
44	MIPI_DPHY0_RX_D2P	MIPI_DPHY0_RX_D2P	
		MIPI_CPHY0_RX_TRIO2_B	

46	MIPI_DPHY0_RX_D2N	MIPI_DPHY0_RX_D2N	
		MIPI_CPHY0_RX_TRIO2_A	
48	MIPI_DPHY0_RX_CLKP	MIPI_DPHY0_RX_CLKP	
		MIPI_CPHY0_RX_TRIO1_C	
50	MIPI_DPHY0_RX_CLKN	MIPI_DPHY0_RX_CLKN	
		MIPI_CPHY0_RX_TRIO1_B	
52	MIPI_DPHY0_RX_D1P	MIPI_DPHY0_RX_D1P	
		MIPI_CPHY0_RX_TRIO1_A	
54	MIPI_DPHY0_RX_D1N	MIPI_DPHY0_RX_D1N	
		MIPI_CPHY0_RX_TRIO0_C	
56	MIPI_DPHY0_RX_D0P	MIPI_DPHY0_RX_D0P	
		MIPI_CPHY0_RX_TRIO0_B	
58	MIPI_DPHY0_RX_D0N	MIPI_DPHY0_RX_D0N	
		MIPI_CPHY0_RX_TRIO0_A	
60	GND	GND	GND
62	MIPI_DPHY1_RX_D3P	MIPI_DPHY1_RX_D3P	
64	MIPI_DPHY1_RX_D3N	MIPI_DPHY1_RX_D3N	

		MIPI_CPHY1_RX_TRIO2_C	
66	MIPI_DPHY1_RX_D2P	MIPI_DPHY1_RX_D2P	
		MIPI_CPHY1_RX_TRIO2_B	
68	MIPI_DPHY1_RX_D2N	MIPI_DPHY1_RX_D2N	
		MIPI_CPHY1_RX_TRIO2_A	
70	MIPI_DPHY1_RX_CLKP	MIPI_DPHY1_RX_CLKP	
		MIPI_CPHY1_RX_TRIO1_C	
72	MIPI_DPHY1_RX_CLKN	MIPI_DPHY1_RX_CLKN	
		MIPI_CPHY1_RX_TRIO1_B	
74	MIPI_DPHY1_RX_D1P	MIPI_DPHY1_RX_D1P	
		MIPI_CPHY1_RX_TRIO1_A	
76	MIPI_DPHY1_RX_D1N	MIPI_DPHY1_RX_D1N	
		MIPI_CPHY1_RX_TRIO0_C	
78	MIPI_DPHY1_RX_D0P	MIPI_DPHY1_RX_D0P	
		MIPI_CPHY1_RX_TRIO0_B	
80	MIPI_DPHY1_RX_D0N	MIPI_DPHY1_RX_D0N	
		MIPI_CPHY1_RX_TRIO0_A	

5.2.3 J3连接器引脚定义

J3 DF12NA(3.0)-80DS-0.5V(51)			
Num	Pin Name	Signal Name	Power Rail
2	VCC4V0_SYS	VCC4V0_SYS	4.0V/input
4	VCC4V0_SYS	VCC4V0_SYS	
6	VCC4V0_SYS	VCC4V0_SYS	
8	VCC4V0_SYS	VCC4V0_SYS	
10	VCC4V0_SYS	VCC4V0_SYS	
1	GND	GND	GND
3	GND	GND	
5	GND	GND	
7	GND	GND	
9	UART2_TX_M0_DEBUG	UART2_TX_M0_DEBUG	3.3V
		I2S1_MCLK_M1	
		PCIE30X1_1_CLKREQN_M0	
		I2C1_SCL_M0	
		JTAG_TCK_M2	
		GPIO0_B5_d	
11	UART2_RX_M0_DEBUG	UART2_RX_M0_DEBUG	3.3V
		I2S1_SCLK_M1	
		PCIE30X1_1_WAKEN_M0	
		I2C1_SDA_M0	

		JTAG_TMS_M2	
		GPIO0_B6_d	
13	I2C4_SCL_M2	PWM4_M0	3.3V
		UART0_TX_M0	
		DP1_HPDIN_M1	
		I2S1_SDI0_M1	
		PCIE30X1_0_PERSTN_M0	
		I2C4_SCL_M2	
		GPU_AVS	
		GPIO0_C5_u	
15	I2C4_SDA_M2	UART0_RX_M0	3.3V
		DP0_HPDIN_M1	
		PDM0_CLK1_M1	
		PCIE30X1_0_WAKEN_M0	
		I2C4_SDA_M2	
		PWM2_M0	
		GPIO0_C4_d	
17	I2C2_SCL_M0	CAN0_TX_M0	3.3V
		I2S1_LRCK_M1	
		PCIE30X1_1_PERSTN_M0	
		SPI0_CS1_M0	
		I2C2_SCL_M0	
		PWM0_M0	

		GPIO0_B7_d	
19	I2C2_SDA_M0	CAN0_RX_M0	3.3V
		PDM0_CLK0_M1	
		PCIE30X1_0_CLKREQN_M0	
		SPI0_MOSI_M0	
		I2C2_SDA_M0	
		PWM1_M0	
		GPIO0_C0_d	
21	PWM6_M0	PDM0_SDI0_M1	3.3V
		I2S1_SDI2_M1	
		PCIE30X4_WAKEN_M0	
		SPI0_MISO_M0	
		I2C6_SDA_M0	
		PWM6_M0	
		GPIO0_C7_d	
23	PWM7_IR_M0	PDM0_SDI1_M1	3.3V
		I2S1_SDI3_M1	
		PCIE30X4_PERSTN_M0	
		SPI3_MISO_M2	
		I2C6_SCL_M0	
		PWM7_IR_M0	
		GPIO0_D0_d	
25	GND	GND	GND

27	WIFI_REG_ON_H_GPIO2_B4	I2C4_SDA_M1	1.8V
		UART7_RX_M0	
		FSPI_CS0N_M1	
		HDMI_TX1_SDA_M0	
		GMAC0_PTP_REFCLK	
		GPIO2_B4_u	
29	UART9_RTSn_M0_BT	I2C7_SDA_M1	1.8V
		UART9_RTSN_M0	
		SPI3_MISO_M0	
		PWM5_M2	
		GMAC0_MDC	
		GPIO4_C4_d	
31	UART9_CTSn_M0_BT	I2C0_SCL_M1	1.8V
		UART9_CTSN_M0	
		SPI3_MOSI_M0	
		PWM6_M2	
		GMAC0_MDIO	
		GPIO4_C5_d	
33	BT_REG_ON_H_GPIO2_B5	I2C4_SCL_M1	1.8V
		UART7_TX_M0	
		FSPI_CS1N_M1	
		HDMI_TX1_SCL_M0	
		GMAC0_PPSTRIG	
		GPIO2_B5_u	
35	UART9_RX_M0_BT	TEST_CLKOUT_M1	1.8V

		UART9_RX_M0	
		SPI1_CS1_M0	
		HDMI_TX1_CEC_M0	
		GMAC0_PPSCLK	
		GPIO2_C4_d	
37	TYPEC1_CC_INT_L_GPIO2_C3	I2C6_SCL_M2	1.8V
		SPI1_CS0_M0	
		I2S2_SDI_M0	
		ETH0_REFCLKO_25M	
		GPIO2_C3_d	
39	TYPEC0_CC_INT_L_GPIO2_C0	I2C2_SDA_M1	1.8V
		UART1_RTSN_M0	
		SPI1_CLK_M0	
		I2S2_LRCK_M0	
		GMAC0_TXEN	
		GPIO2_C0_d	
41	TYPEC0_5V_PWREN_H_GPIO2_B7	I2C5_SDA_M4	1.8V
		UART1_TX_M0	
		I2S2_SCLK_M0	
		GMAC0_TX1	
		GPIO2_B7_d	
43	PCA9539PW_RESET_L_GPIO4_C6	I2C0_SDA_M1	1.8V
		UART7_CTSN_M0	
		SPI3_CLK_M0	
		PWM7_IR_M3	

		GMAC0_TXER	
		GPIO4_C6_d	
45	WIFI_WAKE_HOST_H_GPIO4_C3	I2C7_SCL_M1	1.8V
		PWM4_M1	
		SPI3_CS1_M0	
		I2S2_SDO_M0	
		GMAC0_MCLKINOUT	
		GPIO4_C3_d	
47	HOST_WAKE_BT_H_GPIO2_B6	I2C5_SCL_M4	1.8V
		UART1_RX_M0	
		I2S2_MCLK_M0	
		GMAC0_TX0	
		GPIO2_B6_d	
49	BT_WAKE_HOST_H_GPIO2_C1	I2C2_SCL_M1	1.8V
		UART1_CTSN_M0	
		SPI1_MISO_M0	
		GMAC0_RX0	
		GPIO2_C1_d	
51	UART9_TX_M0_BT	I2C6_SDA_M2	1.8V
		UART9_TX_M0	
		SPI1_MOSI_M0	
		GMAC0_RX1	
		GPIO2_C2_d	
53	PCA9539_INT_L_GPIO4_C2	UART7_RTSN_M0	1.8V
		SPI3_CS0_M0	

		PWM2_M2	
		GMAC0_RXDV_CRS	
		GPIO4_C2_d	
55	SOC_CLK32K_OUT1	CLK32K_OUT1	1.8V
		GPIO2_C5_d	
57	GND	GND	GND
59	SDIO_CLK_M0_WIFI	I2C3_SDA_M3	1.8V
		FSPI_CLK_M1	
		SDIO_CLK_M0	
		GMAC0_TXCLK	
		GPIO2_B3_d	
61	SDIO_CMD_M0_WIFI	I2C3_SCL_M3	1.8V
		SDIO_CMD_M0	
		GMAC0_TXD3	
		GPIO2_B2_u	
63	SDIO_D3_M0_WIFI	I2C8_SDA_M1	1.8V
		UART6_CTSN_M0	
		FSPI_D3_M1	
		SDIO_D3_M0	
		GMAC0_TXD2	
		GPIO2_B1_u	
65	SDIO_D2_M0_WIFI	I2C8_SCL_M1	1.8V
		UART6_RTSN_M0	
		FSPI_D2_M1	
		SDIO_D2_M0	

		GMAC0_RXCLK	
		GPIO2_B0_u	
67	SDIO_D1_M0_WIFI	UART6_TX_M0	1.8V
		FSPI_D1_M1	
		SDIO_D1_M0	
		GMAC0_RXD3	
		GPIO2_A7_u	
69	SDIO_D0_M0_WIFI	UART6_RX_M0	1.8V
		FSPI_D0_M1	
		SDIO_D0_M0	
		GMAC0_RXD2	
		GPIO2_A6_u	
12	GMAC1_TXD2	PWM10_M0	1.8V
		SPI4_MISO_M1	
		I2C6_SDA_M4	
		FSPI_D0_M2	
		I2S3_MCLK	
		SDIO_D0_M1	
		GMAC1_TXD2	
		GPIO3_A0_u	
14	GMAC1_TXD3	AUDDSM_LN	1.8V
		SPI4_MOSI_M1	
		PWM11_IR_M0	
		I2C6_SCL_M4	
		FSPI_D1_M2	

		I2S3_SCLK	
		SDIO_D1_M1	
		GMAC1_TXD3	
		GPIO3_A1_u	
16	GMAC1_RXD2	AUDDSM_LP	1.8V
		SPI4_CLK_M1	
		UART8_TX_M1	
		FSPI_D2_M2	
		I2S3_LRCK	
		SDIO_D2_M1	
		GMAC1_RXD2	
		GPIO3_A2_u	
18	GMAC1_RXD3	AUDDSM_RN	1.8V
		SPI4_CS0_M1	
		UART8_RX_M1	
		FSPI_D3_M2	
		I2S3_SDO	
		SDIO_D3_M1	
		GMAC1_RXD3	
		GPIO3_A3_u	
20	GMAC1_TXCLK	AUDDSM_RP	1.8V
		SPI4_CS1_M1	
		UART8_RTSN_M1	
		I2S3_SDI	
		SDIO_CMD_M1	

		GMAC1_TXCLK	
		GPIO3_A4_d	
22	GMAC1_RXD0	PWM8_M0	1.8V
		MIPI_CAMERA2_CLK_M1	
		GMAC1_RXD0	
		GPIO3_A7_u	
24	GMAC1_RXD1	PWM9_M0	1.8V
		MIPI_CAMERA3_CLK_M1	
		GMAC1_RXD1	
		GPIO3_B0_u	
26	GMAC1_RXCLK	MIPI_CAMERA0_CLK_M1	1.8V
		UART8_CTSN_M1	
		I2C4_SDA_M0	
		FSPI_CLK_M2	
		SDIO_CLK_M1	
		GMAC1_RXCLK	
		GPIO3_A5_d	
28	GMAC1_RXDV_CRS	PWM2_M1	1.8V
		MIPI_CAMERA4_CLK_M1	
		UART2_TX_M2	
		GMAC1_RXDV_CRS	
		GPIO3_B1_d	

30	MIPI_CAM1_PDN_L_GPIO2_B4	MIPI_CAMERA1_CLK_M1	1.8V
		I2C4_SCL_M0	
		ETH1_REFCLKO_25M	
		GPIO3_A6_d	
32	MIPI_CAM1_RESET_L_GPIO4_C6	PWM3_IR_M1	1.8V
		UART2_RX_M2	
		I2S2_SDI_M1	
		GMAC1_TXER	
		GPIO3_B2_d	
34	GMAC1_TXD0	UART2_RTSN	1.8V
		I2S2_SDO_M1	
		GMAC1_TXD0	
		GPIO3_B3_u	
36	GMAC1_TXD1	UART2_CTSN	1.8V
		I2S2_MCLK_M1	
		GMAC1_TXD1	
		GPIO3_B4_u	
38	GMAC1_TXEN	PWM12_M0	1.8V
		CAN1_RX_M0	
		UART3_TX_M1	
		I2S2_SCLK_M1	
		GMAC1_TXEN	
		GPIO3_B5_u	
40	GMAC1_MCLKINOUT	PWM13_M0	1.8V

		CAN1_TX_M0	
		UART3_RX_M1	
		I2S2_LRCK_M1	
		GMAC1_MCLKINOUT	
		GPIO3_B6_d	
42	GND	GND	GND
44	HDMI_RX_HPDOUT_H_M1	PCIE30X2_PERSTN_M2	1.8V
		UART9_RX_M2	
		SPI0_CS0_M3	
		HDMI_RX_HPDOUT_M1	
		HDMI_TX0_HPD_M1	
		MCU_JTAG_TCK_M1	
		GPIO3_D4_d	
46	MIPI_CAM2_PDN_L_GPIO2_B5	PCIE30X2_BUTTON_RSTN	1.8V
		UART7_RX_M1	
		SPI1_CLK_M1	
		GMAC1_PPSCLK	
		GPIO3_C1_d	
48	MIPI_CAM2_RESET_L_GPIO2_B6	UART7_TX_M1	1.8V
		I2C3_SDA_M1	
		SPI1_MISO_M1	
		GMAC1_PPSTRIG	
		GPIO3_C0_d	

50	GMAC1_MDIO	PWM15_IR_M0	1.8V
		UART7_CTSN_M1	
		I2C8_SDA_M4	
		SPI1_CS1_M1	
		MIPI_TE1	
		GMAC1_MDIO	
		GPIO3_C3_d	
52	HDMITX1_HPDIN_M1	I2C3_SCL_M1	1.8V
		SPI1_MOSI_M1	
		HDMI_TX1_HPD_M1	
		GMAC1_PTP_REF_CLK	
		GPIO3_B7_d	
54	GMAC1_MDC	PWM14_M0	1.8V
		UART7_RTSN_M1	
		I2C8_SCL_M4	
		SPI1_CS0_M1	
		MIPI_TE0	
		GMAC1_MDC	
		GPIO3_C2_d	
56	HDMI_RX_SDA_M1	PWM10_M2	1.8V
		PCIE30X2_WAKEN_M2	
		UART9_CTSN_M2	
		I2C7_SDA_M2	
		SPI0_CLK_M3	

		HDMI_RX_SDA_M1	
		CIF_D15	
		GPIO3_D3_d	
58	HDMI_RX_SCL_M1	PCIE30X2_CLKREQN_M2	1.8V
		UART9_RTSN_M2	
		I2C7_SCL_M2	
		SPI0_MOSI_M3	
		HDMI_RX_SCL_M1	
		CIF_D14	
		GPIO3_D2_d	
60	HDMITX1_SCL_M1	PCIE30X4_PERSTN_M2	1.8V
		SPI3_MISO_M3	
		HDMITX1_SCL_M1	
		CIF_D10	
		GPIO3_C6_u	
62	HDMITX1_CEC_M2	CAN2_RX_M0	1.8V
		PCIE30X4_CLKREQN_M2	
		UART5_TX_M1	
		FSPI_CS0N_M2	
		SPI3_CS0_M3	
		HDMITX1_CEC_M2	
		CIF_D8	
		GPIO3_C4_u	

64	HDMITX1_SDA_M1	CAN2_TX_M0	1.8V
		PCIE30X4_WAKEN_M2	
		UART5_RX_M1	
		FSPI_CS1N_M2	
		SPI3_CS1_M3	
		HDMITX1_SDA_M1	
		CIF_D9	
		GPIO3_C5_u	
66	HDMI_RX_CEC_M1	PWM9_M2	1.8V
		PCIE20X1_2_PERSTN_M0	
		UART4_TX_M1	
		SPI0_MISO_M3	
		HDMI_RX_CEC_M1	
		CIF_D13	
		GPIO3_D1_d	
68	SPK_CTL_H_GPIO3_D0	PWM8_M2	1.8V
		PCIE20X1_2_WAKEN_M0	
		UART4_RX_M1	
		I2C5_SDA_M0	
		SPI3_CLK_M3	
		HDMI_TX0_SDA_M2	
		CIF_D12	
		GPIO3_D0_u	

70	SPK_MUTE_H_GPIO3_C7	PCIE20X1_2_CLKREQN_M0	1.8V
		I2C5_SCL_M0	
		SPI3_MOSI_M3	
		HDMI_TX0_SCL_M2	
		CIF_D11	
		GPIO3_C7_u	
72	GND	GND	GND
74	SENSOR_INT_L_GPIO3_D5	PWM11_IR_M3	1.8V
		PCIE30X4_BUTTON_RSTN	
		UART9_TX_M2	
		SPI0_CS1_M3	
		DP1_HPDIN_M0	
		MCU_JTAG_TMS_M1	
		GPIO3_D5_d	
71	PCIE30X4_PERSTn_M1_L_GPIO4_B6	SATA0_ACT_LED_M0	3.3V
		PWM13_M1	
		SPI3_MOSI_M1	
		I2C5_SCL_M1	
		HDMI_RX_HPDOUT_M0	
		PCIE30X4_PERSTN_M1	
		BT1120_D12	
		GPIO4_B6_d	

73	PCIE30X4_WAKEn_M1_L_GPIO4_B5	SATA1_ACT_LED_M0	3.3V
		PWM12_M1	
		SPI3_MISO_M1	
		UART9_RX_M1	
		HDMI_RX_CEC_M0	
		PCIE30X4_WAKEN_M1	
		BT1120_D11	
		GPIO4_B5_d	
75	PCIE30X4_CLKREQn_M1_L_GPIO4_B4	SPDIF0_TX_M1	3.3V
		PWM11_IR_M1	
		DP0_HPDIN_M0	
		UART9_TX_M1	
		I2S1_SDO3_M0	
		PCIE30X4_CLKREQN_M1	
		BT1120_D10	
		CIF_CLKOUT	
		GPIO4_B4_u	
76	HDMITX0_CEC_M0	SPDIF1_TX_M2	3.3V
		PWM6_M1	
		SPI3_CS1_M1	
		I2C8_SDA_M3	
		HDMITX0_CEC_M0	
		PCIE20X1_2_PERSTN_M1	

		BT1120_D15	
		GPIO4_C1_d	
77	TYPEC0_SBU1_DC	CAN1_TX_M1	3.3V
		PWM15_IR_M1	
		UART8_CTSN_M0	
		I2C7_SDA_M3	
		I2S1_SDO2_M0	
		PCIE20X1_2_BUTTON_RSTN	
		BT1120_D9	
		CIF_VSYNC	
		GPIO4_B3_u	
78	HDMITX0_SCL_M0	SPI3_CLK_M1	3.3V
		I2C5_SDA_M1	
		HDMITX0_SCL_M0	
		PCIE20X1_2_CLKREQN_M1	
		BT1120_D13	
		GPIO4_B7_u	
79	TYPEC1_SBU1_DC	UART0_TX_M2	3.3V
		PCIE30X1_0_CLKREQN_M1	
		BT1120_D3	
		CIF_D3	
		GPIO4_A3_d	
80	HDMITX0_SDA_M0	SPI3_CS0_M1	3.3V

		I2C8_SCL_M3	
		HDMITX0_SDA_M0	
		PCIE20X1_2_WAKEN_M1	
		BT1120_D14	
		GPIO4_C0_u	

5.2.4 J4连接器引脚定义

J4 DF12NA(3.0)-80DS-0.5V(51)			
Num	Pin Name	Signal Name	Power Rail
1	MIPI_DPHY_TX1_RST_GPIO1_A6	SPI2_CLK_M0	3.3V
		HDMI_TX1_HPD_M0	
		GPIO1_A6_d	
2	GND	GND	GND
3	LVDS_ON_H_GPIO1_A7	PWM3_IR_M3	3.3V
		SPI2_CS0_M0	
		PCIE30X1_1_PERSTN_M2	
		PDM1_SDI0_M1	
		GPIO1_A7_u	
4	UART7_RX_M2	SPI0_CS0_M2	3.3V
		PCIE30X1_0_PERSTN_M2	
		PDM1_CLK0_M1	
		UART7_RX_M2	

		GPIO1_B4_u	
5	PWM0_M2	PWM0_M2	3.3V
		SPI4_CLK_M2	
		VOP_POST_EMPTY	
		I2C4_SDA_M3	
		UART6_RTSN_M1	
		GPIO1_A2_d	
6	TP_RST_L_GPIO1_B1	UART6_RTSN_M1	3.3V
		PCIE30X4_WAKEN_M3	
		PDM1_SDI2_M1	
		GPIO1_B1_d	
7	UART6_RX_M1	SPI4_MISO_M2	3.3V
		PCIE30X1_1_CLKREQN_M2	
		DP0_HPDIN_M2	
		I2C2_SDA_M4	
		UART6_RX_M1	
		GPIO1_A0_d	
8	UART4_RX_M2	SPI0_MOSI_M2	3.3V
		PCIE30X4_PERSTN_M3	
		PDM1_SDI3_M1	
		UART4_RX_M2	
		GPIO1_B2_d	
9	RS485_DIR4_GPIO1_A4	SPI2_MISO_M0	3.3V

		HDMI_TX1_SCL_M2	
		GPIO1_A4_d	
10	UART7_TX_M2	SPI0_CS1_M2	3.3V
		PCIE30X1_0_CLKREQN_M2	
		UART7_TX_M2	
		GPIO1_B5_u	
11	UART6_TX_M1	SATA1_ACT_LED_M1	3.3V
		SPI4_MOSI_M2	
		PCIE30X1_1_WAKEN_M2	
		DP1_HPDIN_M2	
		I2C2_SCL_M4	
		UART6_TX_M1	
		GPIO1_A1_d	
12	MIPI_CAM1_CLKOUT_M0	HDMI_RX_HPDOUT_M2	3.3V
		SPDIF0_TX_M0	
		PCIE30X2_WAKEN_M3	
		MIPI_CAM1_CLKOUT_M0	
		I2C5_SCL_M3	
		UART1_TX_M1	
		GPIO1_B6_u	
13	HDMITX0_HPDIN_M0	SPI2_MOSI_M0	3.3V
		HDMI_TX0_HPD_M0	

		GPIO1_A5_d	
14	I2C8_SCL_M2	HDMI_RX_SCL_M2	3.3V
		PWM14_M2	
		MIPI_CAM3_CLKOUT_M0	
		I2C8_SCL_M2	
		UART1_RTSN_M1	
		GPIO1_D6_u	
15	PWM1_M2	PWM1_M2	3.3V
		SPI4_CS0_M2	
		HDMI_TX1_SDA_M2	
		I2C4_SCL_M3	
		UART6_CTSN_M1	
		GPIO1_A3_d	
16	I2C8_SDA_M2	HDMI_RX_SDA_M2	3.3V
		PWM15_IR_M3	
		PCIE30X2_CLKREQN_M3	
		MIPI_CAM4_CLKOUT_M0	
		I2C8_SDA_M2	
		UART1_CTSN_M1	
		GPIO1_D7_u	
17	TP_INT_L_GPIO1_B0	SPI2_CS1_M0	3.3V
		PCIE30X4_CLKREQN_M3	
		PDM1_SDI1_M1	

		GPIO1_B0_u	
18	MIPI_CAM2_CLKOUT_M0	SATA2_ACT_LED_M1	3.3V
		HDMI_RX_CEC_M2	
		PWM13_M2	
		SPDIF1_TX_M0	
		PCIE30X2_PERSTN_M3	
		MIPI_CAM2_CLKOUT_M0	
		I2C5_SDA_M3	
		UART1_RX_M1	
		GPIO1_B7_u	
20	UART4_TX_M2	SATA0_ACT_LED_M1	3.3V
		SPI0_CLK_M2	
		PCIE30X1_0_WAKEN_M2	
		PDM1_CLK1_M1	
		UART4_TX_M2	
		GPIO1_B3_d	
19	4G_PERSTn_H_GPIO1_C6	PWM15_IR_M2	1.8V
		I2C4_SDA_M4	
		PDM0_CLK0_M0	
		GPIO1_C6_d	
21	I2S0_LRCK	UART4_RTSN	1.8V
		I2C2_SCL_M3	
		I2S0_LRCK	

		GPIO1_C5_d	
22	I2C7_SCL_M0_CODEC	SPI1_MISO_M2	1.8V
		UART6_TX_M2	
		I2C7_SCL_M0	
		I2S0_SDO1	
		GPIO1_D0_d	
23	I2S0_SDO0	UART4_CTSN	1.8V
		I2C4_SCL_M4	
		I2S0_SDO0	
		GPIO1_C7_d	
24	I2C7_SDA_M0_CODEC	SPI1_MOSI_M2	1.8V
		UART6_RX_M2	
		I2C7_SDA_M0	
		PDM0_SDI1_M0	
		I2S0_SDO2	
		I2S0_SDI3	
		GPIO1_D1_d	
25	I2S0_SCLK	SPI4_CS0_M0	1.8V
		UART3_CTSN	
		PWM7_IR_M2	
		I2C6_SCL_M1	
		I2S0_SCLK	
		GPIO1_C3_d	
26	I2C1_SCL_M4_MIPI	SPI1_CLK_M2	1.8V
		UART4_TX_M0	

		PWM0_M1	
		I2C1_SCL_M4	
		PDM0_SDI2_M0	
		I2S0_SDO3	
		I2S0_SDI2	
		GPIO1_D2_d	
27	LCM_VIO_EN_H_GPIO1_C4	SPI4_CS1_M0	1.8V
		PWM11_IR_M2	
		I2C2_SDA_M3	
		PDM0_CLK1_M0	
		GPIO1_C4_d	
28	I2C1_SDA_M4_MIPI	SPI1_CS0_M2	1.8V
		UART4_RX_M0	
		PWM1_M1	
		I2C1_SDA_M4	
		PDM0_SDI3_M0	
		I2S0_SDI1	
		GPIO1_D3_d	
29	I2S0_MCLK	SPI4_CLK_M0	1.8V
		UART3_RTSN	
		PWM3_IR_M2	
		I2C6_SDA_M1	
		I2S0_MCLK	
		GPIO1_C2_d	
30	I2S0_SDI0	I2S0_SDI0	1.8V

		GPIO1_D4_d	
31	I2C3_SDA_M0_MIPI	SPI4_MISO_M0	1.8V
		UART3_RX_M0	
		I2C3_SDA_M0	
		GPIO1_C0_z	
33	I2C3_SCL_M0_MIPI	SPI4_MOSI_M0	1.8V
		UART3_TX_M0	
		I2C3_SCL_M0	
		GPIO1_C1_z	
35	HDMIIRX_DET_L_GPIO1_D5	SPI1_CS1_M2	1.8V
		PDM0_SDI0_M0	
		GPIO1_D5_d	
37	GND	GND	GND
39	PCIE30_PORT0_TX1N	PCIE30_PORT0_TX1N	
41	PCIE30_PORT0_TX1P	PCIE30_PORT0_TX1P	
43	PCIE30_PORT0_TX0N	PCIE30_PORT0_TX0N	
45	PCIE30_PORT0_TX0P	PCIE30_PORT0_TX0P	
47	PCIE30_PORT0_REFCLKN_IN	PCIE30_PORT0_REFCLKN_IN	
49	PCIE30_PORT0_REFCLKP_IN	PCIE30_PORT0_REFCLKP_IN	
51	PCIE30_PORT0_RX1N	PCIE30_PORT0_RX1N	

53	PCIE30_PORT0_RX1P	PCIE30_PORT0_RX1P	
55	PCIE30_PORT0_RX0N	PCIE30_PORT0_RX0N	
57	PCIE30_PORT0_RX0P	PCIE30_PORT0_RX0P	
59	GND	GND	GND
32	GND	GND	GND
34	PCIE30_PORT1_REFCLKP_IN	PCIE30_PORT1_REFCLKP_IN	
36	PCIE30_PORT1_REFCLKN_IN	PCIE30_PORT1_REFCLKN_IN	
38	PCIE30_PORT1_TX3N	PCIE30_PORT1_TX3N	
40	PCIE30_PORT1_TX3P	PCIE30_PORT1_TX3P	
42	PCIE30_PORT1_TX2N	PCIE30_PORT1_TX2N	
44	PCIE30_PORT1_TX2P	PCIE30_PORT1_TX2P	
46	PCIE30_PORT1_RX3N	PCIE30_PORT1_RX3N	
48	PCIE30_PORT1_RX3P	PCIE30_PORT1_RX3P	
50	PCIE30_PORT1_RX2N	PCIE30_PORT1_RX2N	
52	PCIE30_PORT1_RX2P	PCIE30_PORT1_RX2P	
54	GND	GND	GND

61	PCIE20_0_REFCLKP	PCIE20_0_REFCLKP	
63	PCIE20_0_REFCLKN	PCIE20_0_REFCLKN	
65	PCIE20_0_TXP	PCIE20_0_TXP	
		SATA30_0_TXP	
67	PCIE20_0_TXN	PCIE20_0_TXN	
		SATA30_0_TXN	
69	PCIE20_0_RXP	PCIE20_0_RXP	
		SATA30_0_RXP	
71	PCIE20_0_RXN	PCIE20_0_RXN	
		SATA30_0_RXN	
68	PCIE20_1_REFCLKP	PCIE20_1_REFCLKP	
70	PCIE20_1_REFCLKN	PCIE20_1_REFCLKN	
72	PCIE20_1_TXP	PCIE20_1_TXP	
		SATA30_1_TXP	
74	PCIE20_1_TXN	PCIE20_1_TXN	
		SATA30_1_TXN	
76	PCIE20_1_RXP	PCIE20_1_RXP	
		SATA30_1_RXP	
78	PCIE20_1_RXN	PCIE20_1_RXN	
		SATA30_1_RXN	
56	PCIE20_2_REFCLKP	PCIE20_2_REFCLKP	
58	PCIE20_2_REFCLKN	PCIE20_2_REFCLKN	
60	USB30_2_SSTXP	PCIE20_2_TXP	
		SATA30_2_TXP	
		USB30_2_SSTXP	

62	USB30_2_SSTXN	PCIE20_2_TXN	
		SATA30_2_TXN	
		USB30_2_SSTXN	
64	USB30_2_SSRXP	PCIE20_2_RXP	
		SATA30_2_RXP	
		USB30_2_SSRXP	
66	USB30_2_SSRXN	PCIE20_2_RXN	
		SATA30_2_RXN	
		USB30_2_SSRXN	
73	RESET_L	RESET_L	1.8V
75	VCC_1V8_S3	VCC_1V8_S3	1.8V/output
77	PMIC_EXT_EN_OUT	PMIC_EXT_EN_OUT	4.0V
79	PWRON_L	PWRON_L	4.0V
80	LED_GPIO0_A0	REFCLK_OUT	1.8V
		PMUIO1_GPIO0_A0_d	