IAC-RK3576-CM SOM Module

Hardware Manual

Version No.：V1.3

2026.01

Company Profile

Founded in 2007 in Hangzhou, Zhejiang Qiyang Intelligent Technology Co., Ltd. is a national high-tech enterprise focusing on the research, development, production and sales of ARM embedded products. more than 10 years of accumulation and precipitation, and successfully built the product from development to mass production of the service chain.

As the core of the company, Qiyang R&D team consists of more than 30 embedded engineers, dedicated to providing users with easy-to-use embedded hardware, software tools and customized product solutions. It has been widely used in industrial control, Internet of Things, new retail, medical, electric power, environmental monitoring, charging pile and other fields.

The production base in Zhuji provides a strong guarantee for Qiyang, covering an area of 5,000 square meters, with two SMT production lines, through and strictly follow the ISO9001 quality management system certification to guide production. Relying on the strong production strength, the annual production capacity of up to 1 million sets, to ensure that the user delivery, to solve the worries.

Qiyang has a perfect sales and marketing network, professional sales and after-sales team to provide users with a full range of technical support and services. Our business has spread to more than 120 countries and regions, and we have successfully helped more than 2,000 users to bring their products to the market quickly and efficiently.

The combination and extension of R&D, production capacity and market has laid a solid foundation for Qiyang Intelligence to become a specialized and globalized embedded hardware and software supplier.

We offer you:

- **Multi-platform software/hardware products**

NXP, Rockchip, MTK, Renesas, TI, Atmel, Cirrus Logic and other multi-platform ARM development boards/core boards/industrial control boards and peripheral hardware products, as well as supporting the user to support rapid secondary development of supporting tools and software resources.

- **Customized services**

Give full play to the accumulated technology on ARM platform and Linux, Android, Ubuntu, Debian operating systems to provide users with customized embedded product services (OEM/ODM).

Thank you for using Qiyang Intelligence's products, we will do our best to provide you with technical assistance! We wish you good luck in your work!

Technical Support

If you have questions about the documentation, you can contact us during office hours (Monday - Friday 8:30-12:00, 13:30-17:30) by one of the following methods:

Technical e-mail: supports@qiyangtech.com

Technical Support Tel: 0571-87858811-805

Website: www.qiytech.com(Chinese)/www.qiyangtech.com(English)

Updates and access to information

1. Updating of information

The information about the product is constantly being improved and updated, so please make sure that it is up to date when you use the content.

2、Update notification

Please note that Qiyang Intelligence's products update are notified via WeChat.

3. Access to information

After product purchase, please contact our business staff to get it.

4. Provision of information

Software: factory image, related kernel source code, interface test source code, cross-compiler

Hardware: Corresponding baseboard schematics, PCB source files (Allegro 16.6)

Documentation: Hardware manual, test manual, user manual, environment construction manual, IO pin comparison table, core board, chassis structure dimension drawing (dxf), original chip information, etc.

Recommendations for use

1) Before using the development board, be sure to read the hardware manual first;

2) Before use, please check the packing list in detail and test the information CD-ROM for missing documents;

3) Understand the basic structure and composition of the development board, including the allocation of hardware resources, the SOMand the base board of each pin definition, as well as the definition of the expansion pin and so on;

4) If you need to burn images, development board function test, etc., you also need to read the user manual and test manuals

5) IAC-RK3576-CM SOM module, bulk order accepted.

Version Record

Version No.	Hardware Platform	Date	Revision	Revised by
V1.0	IAC-RK3576-CM V1_00	2025-07	Initial Version	Maoh
V1.1	IAC-RK3576-CM V1_00	2025-12	Add the SOM module's receptacle information	Maoh
V1.2	IAC-RK3576-CM V1_00	2026-01	Add the multiplexing signals' information, electrical characteristic	Maoh

Contents

Note: This manual mainly introduces the hardware interface of the System On Module.

I. System Composition

1.1.Chip Overview

With integrated quad-core Cortex-A72, quad-core Cortex-A53, and NEON co-processor, the RK3576 is a low-power, high-performance ARM architecture processor for ARM-based PCs, edge computing devices, personal mobile Internet devices, and other digital multimedia applications.

RK3576 video codec supports up to 8K@30fps or 4K@120fps H.264, H.265, VP9, AV1, AVS2, etc. decoding, up to 4K@60fps H.264 and H.265 encoding.JPEG codec supports up to 4K@60fps.

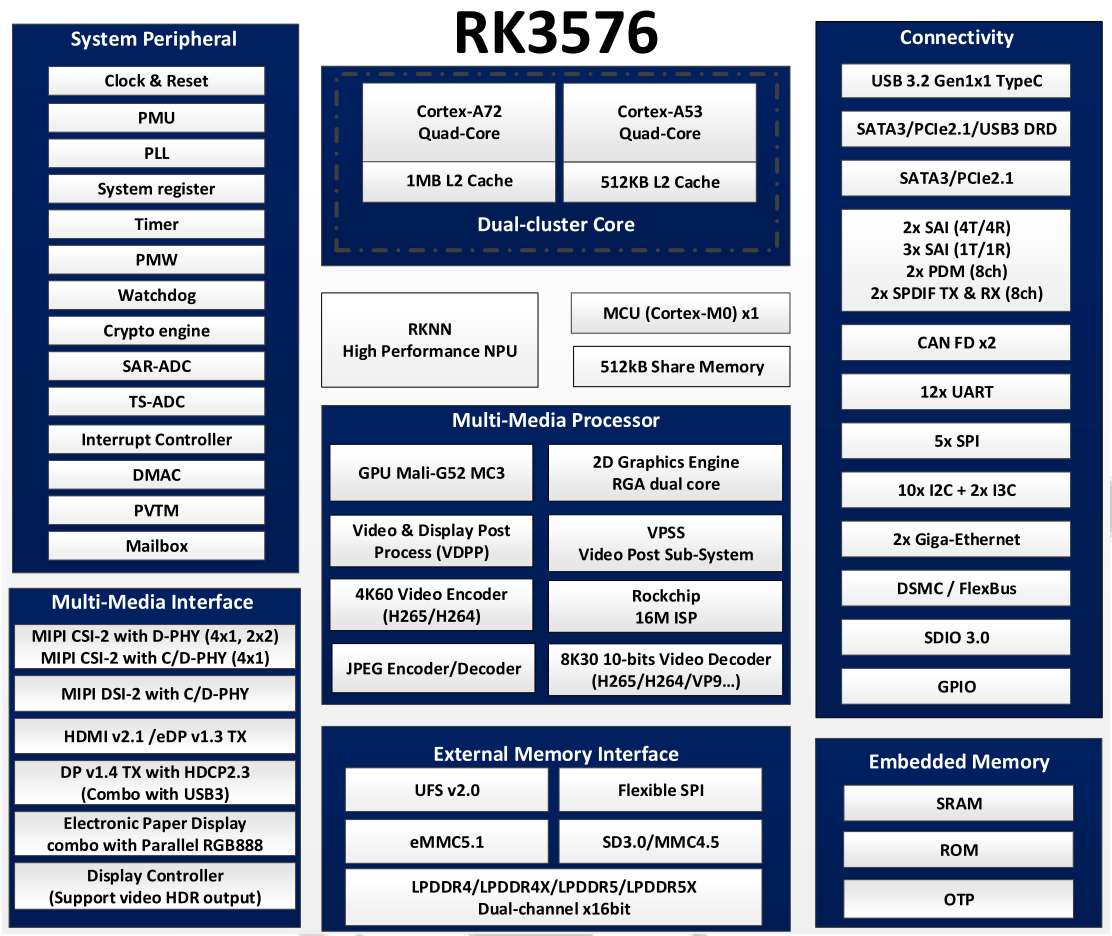
The integrated embedded 3D GPU makes the RK3576 a perfect fit for OpenGL ES 1.1, 2.0, and 3.2, OpenCL 2.0, and Vulkan 1.1. The dedicated 2D hardware engine with MMU will maximize display performance and provide smooth operation.

RK3576 introduces a new generation of 1600W pixel ISP (Image Signal Processor). It implements many algorithmic gas pedals such as HDR, 3A, CAC, 3DNR, 2DNR, sharpening, deblurring, enhancement, denoising, and small angle lens distortion correction.

The built-in NPU supports INT4/INT8/INT16/FP16/BF16/TF32 mixed operation, and also supports easy conversion such as TensorFlow/MXNet/PyTorch/Caffe.

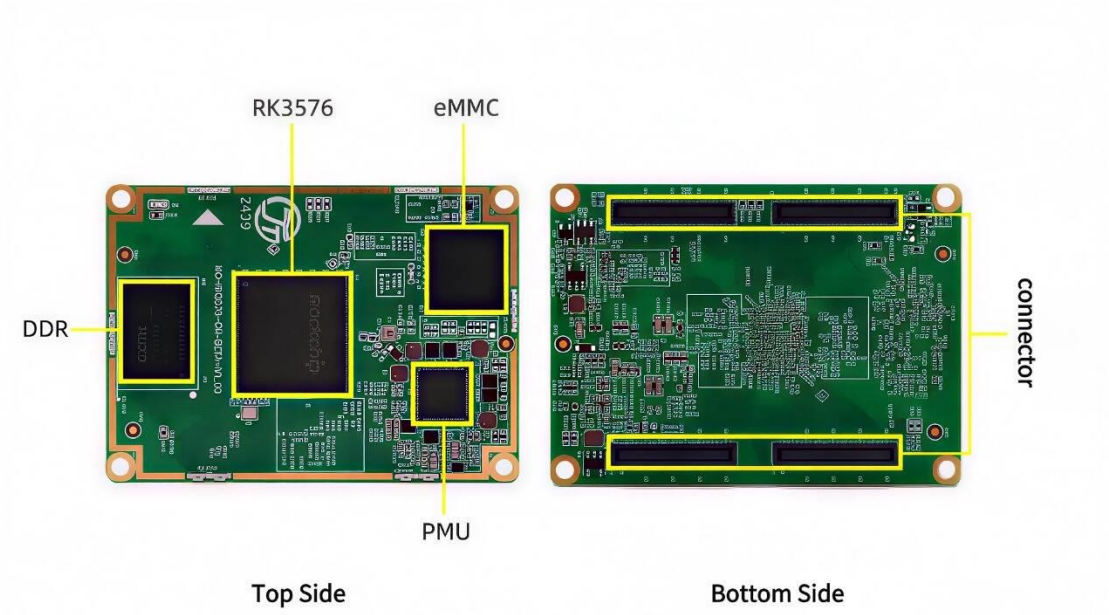
The RK3576 supports high-performance dual-channel external memory interfaces such as (LPDDR4/LPDDR4X/LPDDR5/LPDDR5X), providing a complete set of peripheral interfaces to support flexible applications.

The processor block diagram is shown below:



1.2.SOM Overview

IAC-RK3576-CM SOM adopts 8-layer PCB board with high-precision gold immersion process and high TG board, which has reliable electrical performance and anti-interference performance; it integrates CPU, LPDDR4, eMMC, power management chip, etc.; it adopts board-to-board connector to lead out up to 320 pins, which fully expands the hardware resources of RK3576, and it can be reused and combined with different interfaces according to the pinning situation. The RK3576 hardware resources can be fully expanded by using the board-to-board connector, and different interfaces can be multiplexed and combined according to the pin conditions to create a baseboard that meets the requirements.



◆Onboard RockChip RK3576 processor;

◆Onboard 4GB LPDDR4, 32GB eMMC (default configuration);

◆The SOM adopts 8-layer PCB board with high-precision gold immersion process;

◆ SOM size: 45mm*62mm, it is suitable for various embedded occasions;

◆The SOM adopts 4x 80-Pin board-to-board connectors to derive SOM resources;

◆Using 5V power supply, on-board power management chip;

◆ Linux6.1, Debian12

◆ Android 14;

1.3.SOM Module Resources

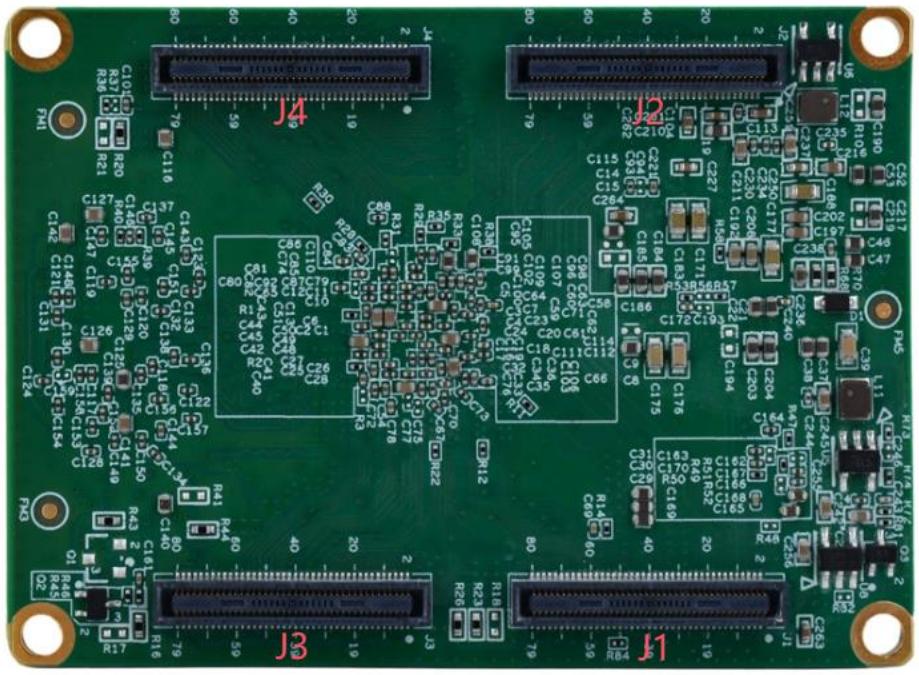
Hardware resource	CPU	RockChip RK3576 Processor
	Processor	Quad ARM® Cortex™-A72 core+ Quad ARM® Cortex™-A53 core, Rk3576 up to 2.2GHz, ARM® Cortex™-A53 up to 2.0GHz
	GPU	ARM Mail G52 MC3 OpenGL ES 1.1 2.0 3.2, Vulkan 1.1, Open CL 2.0FP
	VPU	Support 4K60fps, H.265/4, AVS2, VP9, AV1 video decoding Support 4K60fps, H.265/4 video encoding
	NPU	Neuro processor unit: up to 6 TOPS for INT8 available
	ISP	Dual Image Signal Processors (ISP): up to 16 MP resolution
	RAM	4GB LPDDR4 (8GB in max.), it is available to be replaced by LPDDR5.
	FLASH	32GB eMMC (64GB eMMC, 128GB eMMC optional)
	PMIC	RockChip RK806S Power Management Unit

	ETHERNET	2x10M/100m/1000Mbps Ethernet, support RGMII perfectly.
	Connectivity	4xUART, including 2xDebug UART which the CPU UART rate supports 4Mbps in max.
		2xSDIO, supporting SDIO3.0
		1xPCIE 2.1
		2xCANFD
	Display	1x4-lane MIPI_DSI interface, the resolution is up to 2560x1600@60fps.
		1xHDMI interface (Includes eARC function), the resolution is up to 4K@120fps.
	Audio	1xSAI
	USB	1xUSB3.0 OTG
	Camera	3xMIPI-CSI(4-lane), it supports three camera input simultaneously.
	Input	I2C*4 SPI*1
	Others	Several GPIO (1.8V) 1xUFS 2xPWM(3V)
	Power Input	+5V DC
Electrical Characteristics	Layer/Size	SOM Size: 45mm*62mm, 8-layer high precision gold immersion technology
	Power Consumption	Whole board power consumption 0.54W (Non-loaded)
	Operation Temperature	0℃ ~ +70℃
	Storage Temperatur	0℃ ~ +85℃

	e	
	Humidity	5% to 95%, non-condensing
	SOM Option	Default option :4GB DDR/32GB eMMC（0℃ ~ +70℃）
		Selectable option:8GB DDR/64GB eMMC（-40℃ ~ +85℃）

1.4. Pin Definition

SOM Module ---Board-To-Board Connector Distribution Diagram:



Black color: The pins' type is signal

Green color:The pins are of the special usage, not recommended for other using.

Orange color: The pins are for system reset.

Red color: The pins are for power

J1->U1A：

Pin#	Signal Name（Default）	CPU Multiplexing	Power Domain	Remark
1	VCC_IO_3V3_S0	/	/	PMU OUT
2	VCC_IO_1V8_S0	/	/	PMU OUT
3	GND	/	/	
4	GND	/	/	
5	PCIE0_RXP	PCIE0_RXP	/	
6	PCIE0_REFCLKP	PCIE0_REFCLKP	/	
7	PCIE0_RXN	PCIE0_RXN	/	
8	PCIE0_REFCLKN	PCIE0_REFCLKN	/	

9	GND	/	/	
10	GND	/	/	
11	PCIE0_TXN	PCIE0_TXN	/	
12	PCIE1_CLKP	PCIE1_REFCLKP	/	
13	PCIE0_TXP	PCIE0_TXP	/	
14	PCIE1_CLKN	PCIE1_REFCLKN	/	
15	GND	/	/	
16	GND	/	/	
17	USB3_HOST1_SSTXP	USB3_OTG1_SSTXP/PCIE1_TXP/SATA1_TXP/USB3_OTG1_SSTXP	/	
18	MIPI_DPHY_CSI4_RX_CLKP	MIPI_DPHY_CSI4_RX_CLKP	/	
19	USB3_HOST1_SSTXN	USB3_OTG1_SSTXN/PCIE1_TXN/SATA1_TXN/USB3_OTG1_SSTX N	/	
20	MIPI_DPHY_CSI4_RX_CLKN	MIPI_DPHY_CSI4_RX_CLKN	/	
21	GND	/	/	
22	GND	/	/	
23	USB3_HOST1_SSRXP	USB3_OTG1_SSRXP/PCIE1_RXP/SATA1_RXP/USB3_OTG1_SSRX P	/	
24	MIPI_DPHY_CSI3/4_RX_D3N /D1N	MIPI_DPHY_CSI3_RX_D3N/MIPI_DPHY_CSI4_RX_D1N	/	
25	USB3_HOST1_SSRXN	PCIE1_RXN/SATA1_RXN/USB3_OTG1_SSRXN	/	
26	MIPI_DPHY_CSI3/4_RX_D3P	MIPI_DPHY_CSI3_RX_D3P/MIPI_DPHY_CSI4_RX_D1P	/	

	/D1P			
27	GND	/	/	
28	GND	/	/	
29	PWM1_CH4_M1	PWM1_CH4_M1/I3C0_SDA_M1/SAI2_SDI_M0/ETH1_MDIO_M1/GPIO1_D3_d	VCCIO3	
30	MIPI_DPHY_CSI3/4_RX_D2N /D0N 2N	MIPI_DPHY_CSI3_RX_D2N/MIPI_DPHY_CSI4_RX_D0N	/	
31	PWM1_CH3_M1	PWM1_CH3_M1/I3C0_SCL_M1/SAI2_LRCK_M0/ETH1_MDC_M1/GPIO1_D2_d	VCCIO3	
32	MIPI_DPHY_CSI3/4_RX_D2P /D0P	MIPI_DPHY_CSI3_RX_D2P/MIPI_DPHY_CSI4_RX_D0P	/	
33	UART10_TX_M1	UART10_TX_M1/SAI2_SDO_M0/ETH1_RXD1_M1/GPIO1_D0_d	VCCIO3	
34	GND	/	/	
35	UART10_RX_M1	I3C0_SDA_PU_M1/UART10_RX_M1/SAI2_SCLK_M0/ETH1_RXCTL_M1/GPIO1_D1_d	VCCIO3	
36	MIPI_DPHY_CSI3_RX_CLKN	MIPI_DPHY_CSI3_RX_CLKN	/	
37	UART2_RX_M0	SATA_CPDET/I2C8_SDA_M1/UART2_RX_M0/PDM0_SDI1_M2/FSPI1_D3_M1/ETH1_RXD0_M1/GPIO1_C7_d	VCCIO3	
38	MIPI_DPHY_CSI3_RX_CLKP	MIPI_DPHY_CSI3_RX_CLKP	/	
39	UART2_TX_M0	SATA_CPPOD/I2C8_SCL_M1/UART2_TX_M0/PDM0_SDI0_M2/FSPI1_D2_M1/ETH1_TXCTL_M1/GPIO1_C6_d	VCCIO3	

40	GND	/	/	
41	I2C5_SDA_M1	CLK1_32K_OUT/SATA_MPSWIT/SPI2_CLK_M1/I2C5_SDA_M1/ UART10_CTSN_M1/SPDIF_TX1_M2/PDM0_CLK1_M2/FSPI1_CLK _M1/ETH_CLK1_25M_OUT_M1/GPIO1_D5_d	VCCIO3	
42	MIPI_DPHY_CSI3_RX_D1N	MIPI_DPHY_CSI3_RX_D1N	/	
43	I2C5_SCL_M1	I2C5_SCL_M1/UART10_RTSN_M1/SPDIF_RX1_M2/PDM0_SDI3_M 2/SAI2_MCLK_M0/ETH1_MCLK_M1/GPIO1_D4_d	VCCIO3	
44	MIPI_DPHY_CSI3_RX_D1P	MIPI_DPHY_CSI3_RX_D1P	/	
45	UART4_RTSN_M1	PWM1_CH2_M1/SPI2_CSN1_M1/I2C6_SCL_M1/UART4_RTSN_M1 /FSPI1_CSN1_M1/FSPI1_RSTN_M1/SDMMC1_PWREN_M0/	VCCIO3	
46	GND	/	/	
47	UART4_CTSN_M1	SPI2_CSN0_M1/I2C6_SDA_M1/UART4_CTSN_M1/FSPI1_CSN0_M 1/SDMMC1_DETN_M0/ETH1_PPSTRIG_M1/GPIO1_C3_u	VCCIO3	
48	MIPI_DPHY_CSI3_RX_D0N	MIPI_DPHY_CSI3_RX_D0N	/	
49	UART4_RX_M1	PCIE1_BUTTONRSTN/SPI2_MISO_M1/UART2_CTSN_M0/UART4_ RX_M1/FSPI1_D1_M1/ETH1_TXD1_M1/GPIO1_C5_d	VCCIO3	
50	MIPI_DPHY_CSI3_RX_D0P	MIPI_DPHY_CSI3_RX_D0P	/	
51	UART4_TX_M1	PCIE0_BUTTONRSTN/SPI2_MOSI_M1/UART2_RTSN_M0/UART4_ TX_M1/FSPI1_D0_M1/ETH1_TXD0_M1/GPIO1_C4_d	VCCIO3	
52	GND	/	/	
53	GND	/	/	

54	SARADC_IN1_RECOVERY	SARADC_IN1_RECOVERY	1.8V	
55	SDMMC1_CLK_M0	UART3_RX_M2/PDM0_CLK0_M2/SAI3_MCLK_M1/SDMMC1_CLK_M0/ETH1_TXCLK_M1/GPIO1_C1_d	VCCIO3	
56	SARADC_IN7	SARADC_IN7	1.8V	
57	SDMMC1_D1_M0	PWM1_CH1_M1/SPI1_MOSI_M0/I2C9_SCL_M1/SAI3_LRCK_M1/SDMMC1_D1_M0/ETH1_RXD3_M1/GPIO1_B5_d	VCCIO3	
58	SARADC_IN5	SARADC_IN5	1.8V	
59	SDMMC1_D0_M0	PWM1_CH0_M1/PCIE1_CLKREQN_M1/SPI1_CLK_M0/I2C9_SDA_M1/SAI3_SCLK_M1/SDMMC1_D0_M0/ETH1_RXD2_M1/GPIO1_B4_d	VCCIO3	
60	SARADC_IN6	SARADC_IN6	1.8V	
61	SDMMC1_D2_M0	PCIE0_CLKREQN_M1/SPI1_MISO_M0/UART3_CTSN_M2/SAI3_SDO_M1/SDMMC1_D2_M0/ETH1_RXCLK_M1/GPIO1_B6_d	VCCIO3	
62	SARADC_IN2	SARADC_IN2	1.8V	
63	SDMMC1_D3_M0	SPI1_CSN0_M0/UART3_RTSN_M2/SAI3_SDI_M1/SDMMC1_D3_M0/ETH1_TXD2_M1/GPIO1_B7_d	VCCIO3	
64	SARADC_IN3	SARADC_IN3	1.8V	
65	SDMMC1_CMD_M0	PWM0_CH0_M1/SPI1_CSN1_M0/UART3_TX_M2/PDM0_SDI2_M2/SDMMC1_CMD_M0/ETH1_TXD3_M1/ GPIO1_C0_d	VCCIO3	
66	SARADC_IN4	SARADC_IN4	1.8V	
67	GND	/	/	

68	GND	/	/	
69	SDMMC0_D1	PWM2_CH3_M0/CAN0_TX_M0/SPI0_MISO_M1/I2C8_SDA_M0/UART7_TX_M2/UART0_TX_M1/SAI3_MCLK_M3/DSM_AUD_LN_M0/FSPI1_D1_M0/SDMMC0_D1/GPIO2_A1_d	VCCIO1	
70	UART7_TX_M0	I2C8_SCL_M2/UART8_RTSN_M1/UART7_TX_M0/SAI0_SCLK_M0/ETH0_RXD3_M1/ETH1_PTP_REFCLK_M1/VI_CIF_D7/GPIO2_B6_d	VCCIO4	
71	SDMMC0_D0	PWM2_CH2_M0/CAN0_RX_M0/SPI0_MOSI_M1/I2C8_SCL_M0/UART7_RX_M2/UART0_RX_M1/DSM_AUD_LP_M0/FSPI1_D0_M0/SDMMC0_D0/GPIO2_A0_d	VCCIO1	
72	UART7_RX_M0	I2C8_SDA_M2/UART8_CTSN_M1/UART7_RX_M0/SAI0_LRCK_M0/ETH0_RXD2_M1/VI_CIF_D6/GPIO2_B7_d	VCCIO4	
73	SDMMC0_CMD	PWM2_CH4_M0/SPI0_CSN0_M1/I2C5_SDA_M0/UART5_RX_M2/SAI3_SDO_M3/FSPI1_CSN0_M0/SDMMC0_CMD/GPIO2_A4_d	VCCIO1	
74	UART7_RTSN_M0	SATA1_ACTLED_M0/SPI4_MISO_M3/UART7_RTSN_M0/PDM0_CLK0_M3/SAI0_MCLK_M0/ETH0_RXCLK_M1/SDMMC1_DETN_M1/VI_CIF_D8/GPIO2_B5_d	VCCIO4	
75	SDMMC0_D3	I3C1_SDA_M1/CAN1_TX_M0/UART5_CTSN_M2/JTAG_TMS_M0/SAI3_SDI_M3/DSM_AUD_RN_M0/FSPI1_D3_M0/SDMMC0_D3/GPIO2_A3_d	VCCIO1	
76	UART7_CTSN_M0	SATA0_ACTLED_M0/SPI4_MOSI_M3/UART7_CTSN_M0/PDM0_SDI0_M3/SAI0_SDI3_M0/ETH0_TXD2_M1/SDMMC1_PWREN_M1/	VCCIO4	

		VI_CIF_D9/GPIO2_B4_d		
77	SDMMC0_D2	I3C1_SCL_M1/CAN1_RX_M0/SPI0_CSN1_M1/UART5_RTSN_M2/ JTAG_TCK_M0/SAI3_LRCK_M3/DSM_AUD_RP_M0/FSPI1_D2_M0 /SDMMC0_D2/GPIO2_A2_d	VCCIO1	
78	CAN1_RX_M3	CAN1_RX_M3/SPI3_CSN0_M0/UART3_RTSN_M0/SPDIF_TX1_M1 /SAI3_SDI_M2/ETH0_RXD1_M1/ETH1_PTP_REFCLK_M0/VI_CIF_ CLKI/GPIO3_A3_d	VCCIO4	
79	SDMMC0_CLK	I3C1_SDA_PU_M1/SPI0_CLK_M1/I2C5_SCL_M0/UART5_TX_M2/ TEST_CLK_OUT/SAI3_SCLK_M3/FSPI1_CLK_M0/SDMMC0_CLK /GPIO2_A5_d	VCCIO1	
80	CAN1_TX_M3	MIPI_TE_M1/CAN1_TX_M3/SPI3_MISO_M0/UART3_CTSN_M0/S PDIF_RX1_M1/SAI3_SDO_M2/ETH0_RXCTL_M1/ETH1_PPSCLK_ M0/VI_CIF_CLKO/GPIO3_A2_d	VCCIO4	

J2->U1B：

Pin#	Signal Name（Default）	CPU Multiplexing	Power Domain	Remark
1	VCC_SYS_5V0_S5	/	/	PMU IN
2	VCC_SYS_5V0_S5	/	/	PMU IN
3	VCC_SYS_5V0_S5	/	/	PMU IN
4	VCC_SYS_5V0_S5	/	/	PMU IN
5	VCC_SYS_5V0_S5	/	/	PMU IN

6	VCC_SYS_5V0_S5	/	/	PMU IN
7	VCC_SYS_5V0_S5	/	/	PMU IN
8	VCC_SYS_5V0_S5	/	/	PMU IN
9	VCC_SYS_5V0_S5	/	/	PMU IN
10	VCC_SYS_5V0_S5	/	/	PMU IN
11	VCC_SYS_5V0_S5	/	/	PMU IN
12	VCC_SYS_5V0_S5	/	/	PMU IN
13	VCC_SYS_5V0_S5	/	/	PMU IN
14	VCC_SYS_5V0_S5	/	/	PMU IN
15	GND	/	/	
16	GND	/	/	
17	GND	/	/	
18	GND	/	/	
19	GND	/	/	
20	GND	/	/	
21	VCC_BUCK8_IO_1V8_S3	/	/	PMU OUT
22	SYS_RESETn	/	/	
23	VCC_BUCK4_IO_3V3_S3	/	/	PMU OUT
24	GND	/	/	
25	GND	/	/	
26	PMIC_PWRON	/	PMUIO0	

27	REF_CLK0_OUT	AUPLL_CLK_IN_M0/REF_CLK0_OUT/GPIO0_A0_d	PMUIO0	
28	PMIC_EXT_EN	/	/	/
29	SDMMC0_DET_L	SPI2_CSN1_M0/SDMMC0_DETN/GPIO0_A7_u	PMUIO0	
30	GPIO0_A5_d	I2C6_SDA_M0/PWR_CTRL3/GPIO0_A5_d	PMUIO0	
31	I2C0_SDA_M0	I2C0_SDA_M0/SPI2_MISO_M0/GPIO0_B1_z	PMUIO0	
32	PWM1_CH2_M0	PWM1_CH2_M0/EDP_TX_HPDIN_M1/HDMI_TX_HPDIN_M1/SDMMC1_DETN_M2/SDMMC0_PWREN/GPIO0_B6_d	PMUIO1	/
33	I2C0_SCL_M0	I2C0_SCL_M0/SPI2_CSN0_M0/AUPLL_CLK_IN_M1/GPIO0_B0_z	PMUIO0	
34	PWM0_CH0_M0	PWM0_CH0_M0/UART10_TX_M2/PDM0_CLK0_M0/SAI0_MCLK_M1/GPIO0_C4_d	PMUIO1	
35	CLK0_32K_OUT	I2C6_SCL_M0/CLK0_32K_OUT/CLK_32K_IN/GPIO0_A2_d	PMUIO0	
36	PWM0_CH1_M0	PWM0_CH1_M0/SPI0_CSN1_M0/HDMI_TX_CEC_M1/PDM0_CLK1_M0/GPIO0_C3_d	PMUIO1	
37	UART0_TX_M0	JTAG_TCK_M1/UART0_TX_M0/GPIO0_D4_u	PMUIO1	
38	UART1_CTSN_M0	UART1_CTSN_M0/PWM1_CH5_M0/CPUBIG_AVS/I2C4_SCL_M0/PDM0_SDI2_M0/SAI0_SDO2_M1/SAI0_SDI2_M1/GPIO0_D2_d	PMUIO1	
39	UART0_RX_M0	JTAG_TMS_M1/UART0_RX_M0/GPIO0_D5_u	PMUIO1	
40	UART1_RTSN_M0	UART1_RTSN_M0/PWM2_CH0_M0/GPU_AVS/I2C4_SDA_M0/PDM0_SDI3_M0/SAI0_SDO1_M1/SAI0_SDI3_M1/GPIO0_D3_d	PMUIO1	
41	SPI0_MISO_M0	SPI0_MISO_M0/PDM0_SDI1_M0/SAI0_SDO3_M1/SAI0_SDI1_M1/GPIO0_D1_d	PMUIO1	

42	I3C0_SDA_PU_M0	I3C0_SDA_PU_M0/UART10_RX_M2/DP_HPDIN_M1/SAI0_SDO0_M1/GPIO0_C5_d	PMUIO1	
43	SPI0_MOSI_M0	SPI0_MOSI_M0/PDM0_SDI0_M0/SAI0_SDI0_M1/GPIO0_D0_d	PMUIO1	
44	I3C0_SDA_M0	I3C0_SDA_M0/UART8_RX_M2/I2C0_SDA_M1/GPIO0_C2_d	PMUIO1	
45	SPI0_CSN0_M0	SPI0_CSN0_M0/I2C3_SCL_M1/SAI0_SCLK_M1/GPIO0_C6_d	PMUIO1	
46	I3C0_SCL_M0	I3C0_SCL_M0/UART8_TX_M2/I2C0_SCL_M1/GPIO0_C1_d	PMUIO1	
47	SPI0_CLK_M0	SPI0_CLK_M0/I2C3_SDA_M1/SAI0_LRCK_M1/GPIO0_C7_d	PMUIO1	
48	UART1_RX_M0	PWM1_CH3_M0/CPULIT_AVS/UART1_RX_M0/I2C2_SDA_M0/GPIO0_C0_d	PMUIO1	
49	GND	/	/	
50	UART1_TX_M0	PWM1_CH4_M0/NPU_AVS/UART1_TX_M0/I2C2_SCL_M0/GPIO0_B7_d	PMUIO1	
51	MIPI_CSI1_RX_D0P	MIPI_DPHY_CSI1_RX_D0P	/	
52	GPIO0_B4_d	PWM1_CH0_M0/UART4_TX_M2/I2C1_SCL_M1/REF_CLK1_OUT/GPIO0_B4_d	PMUIO1	
53	MIPI_CSI1_RX_D0N	MIPI_DPHY_CSI1_RX_D0N	/	
54	GPIO0_B5_d	PWM1_CH1_M0/UART4_RX_M2/I2C1_SDA_M1/REF_CLK2_OUT/GPIO0_B5_d	PMUIO1	
55	MIPI_CSI1_RX_D1P	MIPI_DPHY_CSI1_RX_D1P	/	
56	GND	/	/	
57	MIPI_CSI1_RX_D1N	MIPI_DPHY_CSI1_RX_D1N	/	

58	HDMI_TX_D1P	HDMI_TX_D1P/EDP_TX_D1P	/	
59	GND	/	/	
60	HDMI_TX_D1N	HDMI_TX_D1N /EDP_TX_D1N	/	
61	MIPI_CSI1_RX_CLKP	MIPI_DPHY_CSI1_RX_CLKP	/	
62	HDMI_TX_D2P	HDMI_TX_D2P/EDP_TX_D2P	/	
63	MIPI_CSI1_RX_CLKN	MIPI_DPHY_CSI1_RX_CLKN	/	
64	HDMI_TX_D2N	HDMI_TX_D2N/EDP_TX_D2N	/	
65	GND	/	/	
66	GND	/	/	
67	MIPI_CSI1_RX_D2P	MIPI_DPHY_CSI2_RX_D0P/MIPI_DPHY_CSI1_RX_D2P	/	
68	HDMI_TX_D0P	HDMI_TX_D0P/EDP_TX_D0P	/	
69	MIPI_CSI1_RX_D2N	MIPI_DPHY_CSI2_RX_D0N/MIPI_DPHY_CSI1_RX_D2N	/	
70	HDMI_TX_D0N	HDMI_TX_D0N/EDP_TX_D0N	/	
71	MIPI_CSI1_RX_D3P	MIPI_DPHY_CSI2_RX_D3P/ MIPI_DPHY_CSI2_RX_D1P	/	
72	HDMI_TX_D3P	HDMI_TX_D3P/EDP_TX_D3P	/	
73	MIPI_CSI1_RX_D3N	MIPI_DPHY_CSI1_RX_D3N/MIPI_DPHY_CSI2_RX_D1N	/	
74	HDMI_TX_D3N	HDMI_TX_D3N/EDP_TX_D3N	/	
75	GND	/	/	
76	GND	/	/	
77	CSI2_CLKN	MIPI_DPHY_CSI2_RX_CLKN	/	
78	HDMI_TX_SBDP	HDMI_TX_SBDP/EDP_TX_AUXP	/	

79	CSI2_CLKP	MIPI_DPHY_CSI2_RX_CLKP	/	
80	HDMI_TX_SBDN	HDMI_TX_SBDN/ EDP_TX_AUXN	/	

J3->U1C：

Pin#	Signal Name（Default）	CPU Multiplexing	Power Domain	Remark
1	GND	/	/	
2	GPIO_BT_nINT	I2C7_SCL_M1/SPI3_CLK_M0/UART3_TX_M0/SAI3_SCLK_M2/ ETH0_MDIO_M1/VI_CIF_HREF/GPIO3_A0_d	VCCIO4	
3	GPIO_GMAC1_nRST	PWM2_CH6_M2/I3C1_SDA_PU_M0/UART9_RTSN_M0/ SPDIF_RX0_M2/SAI3_MCLK_M2/ETH0_MCLK_M1/ ETH_CLK1_25M_OUT_M0/CAM_CLK1_OUT_M1/GPIO2_D6_d	VCCIO4	
4	GPIO_BT_REG_ON	I2C7_SDA_M1/SPI3_MOSI_M0/UART3_RX_M0/SAI3_LRCK_M2/ ETH0_MDC_M1/ETH1_PPSTRIG_M0/VI_CIF_VSYNC/GPIO3_A1_d	VCCIO4	
5	GND	/	/	
6	PCIE0_WAKEn	UART1_TX_M1/PDM0_SDI3_M3/SAI0_SDI0_M0/ETH0_TXD1_M1/ SDMMC1_D2_M1/VI_CIF_D13/GPIO2_B0_d	VCCIO4	
7	GPIO_GMAC1_nINT	PWM2_CH7_M2/SPI3_CSN1_M0/UART9_CTSN_M0/ SPDIF_TX0_M2/SAI0_SDO3_M0/ETH_CLK0_25M_OUT_M1/ ETH1_MCLK_M0/CAM_CLK2_OUT_M1/GPIO2_D7_d	VCCIO4	
8	PCIE0_PERSTn	UART1_RX_M1/PDM0_SDI2_M3/SAI0_SDI1_M0/ETH0_TXD0_M1/ SDMMC1_D3_M1/VI_CIF_D12/GPIO2_B1_d	VCCIO4	

9	GND	/	/	
10	I2C4_SCL	I2C4_SCL_M2/SPI4_CSN1_M3/UART8_TX_M1/SAI0_SDO0_M0/ ETH0_RXD0_M1/SDMMC1_D0_M1/VI_CIF_D15/GPIO2_A6_d	VCCIO4	
11	GMAC1_RXCLK	PWM1_CH2_M2/SPI1_MOSI_M1/UART11_CTSN_M1/ PDM1_SDI2_M0/SAI2_SCLK_M1/ETH0_PPSTRIG_M1/ ETH1_RXCLK_M0/VI_CIF_D3/GPIO2_C2_d	VCCIO4	
12	I2C4_SDA	I2C4_SDA_M2/UART8_RX_M1/SAI0_SDO1_M0/ETH0_TXCTL_M1/ SDMMC1_D1_M1/VI_CIF_D14/GPIO2_A7_d	VCCIO4	
13	GMAC1_RXDV_CRS	PWM2_CH3_M2/I3C1_SDA_M0/UART6_RX_M1/ETH1_RXCTL_M0/ GPIO2_D3_d	VCCIO4	
14	PCIE0_CLKREQn	PCIE0_CLKREQN_M0/SPI4_CSN0_M3/UART1_CTSN_M1/ PDM0_SDI1_M3/SAI0_SDI2_M0/ETH0_TXD3_M1/ SDMMC1_CMD_M1/VI_CIF_D11/GPIO2_B2_d	VCCIO4	
15	GMAC1_RXD0	PWM2_CH1_M2/I2C6_SDA_M2/UART4_RX_M0/SAI4_SDO_M3/ ETH1_RXD0_M0/GPIO2_D1_d	VCCIO4	
16	GPIO_HUB_nRST	PCIE1_CLKREQN_M0/SPI4_CLK_M3/UART1_RTSN_M1/ PDM0_CLK1_M3/SAI0_SDO2_M0/ETH0_TXCLK_M1/ SDMMC1_CLK_M1/VI_CIF_D10/GPIO2_B3_d	VCCIO4	
17	GMAC1_RXD1	PWM2_CH2_M2/I3C1_SCL_M0/UART6_TX_M1/SAI4_MCLK_M3/ ETH1_RXD1_M0/CAM_CLK0_OUT_M1/GPIO2_D2_d	VCCIO4	
18	GND	/	/	

19	GMAC1_RXD3	PWM1_CH1_M2/SPI1_CSN1_M1/UART9_TX_M0/PDM1_CLK1_M0/ SAI2_MCLK_M1/ETH0_PPSCLK_M1/ETH1_RXD3_M0/VI_CIF_D4/ GPIO2_C1_d	VCCIO4	
20	GMAC1_TXEN	PWM2_CH0_M2/I2C6_SCL_M2/UART4_TX_M0/SAI4_SDI_M3/ ETH1_TXCTL_M0/GPIO2_D0_d	VCCIO4	
21	GMAC1_RXD2	PWM1_CH0_M2/UART9_RX_M0/PDM1_SDI1_M0/ETH0_PTP_REFC LK_M1/ETH1_RXD2_M0/VI_CIF_D5/GPIO2_C0_d	VCCIO4	
22	GMAC1_TXD2	PWM0_CH0_M2/SPI1_MISO_M1/UART11_RTSN_M1/PDM1_SDI3_ M0/SAI2_LRCK_M1/ETH1_TXD2_M0/VI_CIF_D2/GPIO2_C3_d	VCCIO4	
23	GND	/	/	
24	GMAC1_TXD0	PWM1_CH5_M2/I2C5_SCL_M2/UART4_CTSN_M0/SAI4_SCLK_M3/ ETH1_TXD0_M0/GPIO2_C6_d	VCCIO4	
25	GMAC1_MDC	PWM2_CH4_M2/I2C9_SDA_M2/UART6_RTSN_M1/ETH1_MDC_M0/ ISP_PRELIGHT_TRIG_M0/GPIO2_D4_d	VCCIO4	
26	GMAC1_TXD3	PWM1_CH3_M2/SPI1_CSN0_M1/UART11_TX_M1/PDM1_SDI0_M0/ SAI2_SDO_M1/ETH1_TXD3_M0/VI_CIF_D1/GPIO2_C4_d	VCCIO4	
27	GMAC1_MDIO	PWM2_CH5_M2/I2C9_SCL_M2/UART6_CTSN_M1/ ETH1_MDIO_M0/ISP_FLASH_TRIGOUT_M0/GPIO2_D5_d	VCCIO4	
28	GMAC1_TXD1	PWM0_CH1_M2/I2C5_SDA_M2/UART4_RTSN_M0/SAI4_LRCK_M3/ ETH1_TXD1_M0/GPIO2_C7_d	VCCIO4	/
29	GND	/	/	

30	GMAC1_TXCLK	PWM1_CH4_M2/SPI1_CLK_M1/UART11_RX_M1/PDM1_CLK0_M0/ SAI2_SDI_M1/ETH1_TXCLK_M0/VI_CIF_D0/GPIO2_C5_d	VCCIO4	
31	GMAC0_RXCLK	I3C1_SDA_PU_M2/SPI4_CLK_M1/FLEXBUS1_CSN_M2/ FLEXBUS0_D11/DSMC_CSN2/SAI2_MCLK_M2/ETH0_RXCLK_M0/ VO_EBC_SDDO2/VO_LCDC_D2/GPIO3_D1_d	VCCIO5	
32	GND	/	/	/
33	GMAC0_RXDV_CRS	UART10_RTSN_M0/UART1_TX_M2/FLEXBUS0_D5/ DSMC_DATA13/PDM1_CLK1_M2/ETH0_RXCTL_M0/ VO_EBC_VCOM/VO_LCDC_D20/GPIO3_A7_d	VCCIO5	
34	GPIO_GMAC0_nRST	PWM1_CH0_M3/SPI2_CLK_M2/UART1_CTSN_M2/ FLEXBUS0_CSN_M0/FLEXBUS1_D11/DSMC_RDYN/SAI4_SDI_M1/ ETH_CLK0_25M_OUT_M0/VO_EBC_SDSHR/VO_LCDC_D23/ GPIO3_A4_d	VCCIO5	
35	GMAC0_RXD0	I2C8_SDA_M3/UART9_RX_M1/FLEXBUS0_D3/DSMC_DATA11/ PDM1_SDI1_M2/ETH0_RXD0_M0/VO_EBC_SDCE1/VO_LCDC_D17/ GPIO3_B2_d	VCCIO5	
36	GND	/	/	
37	GMAC0_RXD1	PWM1_CH3_M3/SPI4_CSN0_M1/UART10_TX_M0/FLEXBUS0_D4/ DSMC_DATA12/PDM1_CLK0_M2/ETH0_RXD1_M0/ VO_EBC_SDCE2/VO_LCDC_D18/GPIO3_B1_d	VCCIO5	
38	GPIO_TYPEC_PWREN	I2C4_SDA_M3/UART3_CTSN_M1/UART2_RX_M2/ FLEXBUS1_CSN_M0/FLEXBUS1_D10/DSMC_DQS0/SAI1_SDI0_M1/	VCCIO5	

		ETH0_PPSTRIG_M0/VO_EBC_SDDO12/VO_LCDC_D12/ GPIO3_B7_d		
39	GMAC0_RXD2	PWM2_CH5_M3/I3C1_SCL_M2/UART2_CTSN_M2/FLEXBUS1_D2/ DSMC_CSN0/SAI2_SDO_M2/ETH0_RXD2_M0/VO_EBC_SDDO0/ VO_LCDC_D0/GPIO3_D3_d	VCCIO5	
40	GPIO_4G/5G_PWR_EN	MIPI_TE_M2/ I2C7_SCL_M2/SPI1_CSN1_M2/UART3_TX_M1/ FLEXBUS1_CSN_M3/FLEXBUS1_D14_M0/FLEXBUS0_D13_M0/DS MC_INT0/SAI4_LRCK_M1/CAM_CLK1_OUT_M0/SPDIF_RX0_M1/G PIO4_A0_d	VCCIO5	
41	GMAC0_RXD3	PWM2_CH4_M3/I3C1_SDA_M2/SPI4_CSN1_M1/UART2_RTSN_M2 /FLEXBUS0_CSN_M3/FLEXBUS1_D15_M0/FLEXBUS0_D1/DSMC_ CSN3/SAI2_SDI_M2/ETH0_RXD3_M0/VO_EBC_SDDO1/VO_LCDC_ D1/GPIO3_D2_d	VCCIO5	
42	GPIO_4G/5G_nRST	CAN0_RX_M3/I2C5_SDA_M3/SPI2_MISO_M2/UART11_RX_M0 /FLEXBUS1_D8/DSMC_DATA6/SAI1_SDO2_M1/ETH0_PTP_REFCL K_M0/VO_EBC_SDDO10/VO_LCDC_D10/GPIO3_C1_d	VCCIO5	
43	GND	/	/	
44	GPIO_4G/5G_ON_OFF	I2C4_SCL_M3/UART3_RTSN_M1/UART2_TX_M2/FLEXBUS1_D9 /DSMC_DATA7/SAI1_SDO3_M1/ETH0_PPSCLK_M0/VO_EBC_SDD O11/VO_LCDC_D11/GPIO3_C0_d	VCCIO5	
45	GPIO_GMAC0_nINT	PWM0_CH0_M3/SPI2_MOSI_M2/UART10_RX_M0/FLEXBUS0_D8 /DSMC_CSN1/SAI4_MCLK_M1/ETH0_MCLK_M0/VO_EBC_SDCE3	VCCIO5	

		/VO_LCDC_D19 /GPIO3_B0_d		
46	GPIO_4G/5G_DISEN	CAN0_TX_M3/I2C5_SCL_M3/SPI2_CSN0_M2/UART11_TX_M0/FLEXBUS1_D7/DSMC_DATA5/SAI1_SDO1_M1/VO_EBC_SDDO7\VO_LCDC_D7/GPIO3_C4_d	VCCIO5	
47	GND	/	/	
48	GPIO_CC_nINT	I2C7_SDA_M2/UART3_RX_M1/FLEXBUS0_CSN_M1/FLEXBUS1_D13_M0/FLEXBUS0_D14_M0/DSMC_INT2/SAI4_SDO_M1/CAM_CLK2_OUT_M0/SPDIF_TX0_M1/VO_POST_EMPTY/GPIO4_A1_d	VCCIO5	
49	GMAC0_TXCLK	PWM0_CH1_M3/SPI3_CSN0_M1/FLEXBUS0_CLK/DSMC_DQS1/ETH0_TXCLK_M0/VO_EBC_SDDO13/VO_LCDC_D13/GPIO3_B6_d	VCCIO5	
50	GND	/	/	
51	GMAC0_TXEN	I2C8_SCL_M3/UART9_TX_M/FLEXBUS0_D2/DSMC_DATA10/PDM1_SDI0_M2/ETH0_TXCTL_M0/VO_EBC_SDCE0/VO_LCDC_D16/GPIO3_B3_d	VCCIO5	
52	SAI1_MCLK	PWM2_CH5_M0/AUPLL_CLK_IN_M2/SAI4_MCLK_M0/SAI1_MCLK_M0/GPIO4_A2_d	VCCIO5	
53	GMAC0_TXD0	PWM1_CH5_M3/UART9_CTSN_M1/FLEXBUS0_D0/DSMC_DATA8/SPDIF_TX1_M0/ETH0_TXD0_M0/VO_EBC_SDDO14/VO_LCDC_D14/ GPIO3_B5_d	VCCIO5	

54	SAI1_LRCK	PCIE1_CLKREQN_M2/I2C2_SDA_M2/UART5_CTSN_M1/SPI4_CSN1_M2/FLEXBUS1_D12_M1/SAI1_LRCK_M0/GPIO4_A5_d	VCCIO5	
55	GMAC0_TXD1	PWM1_CH4_M3/UART9_RTSN_M1/FLEXBUS0_D1/DSMC_DATA9/SPDIF_RX1_M0/ETH0_TXD1_M0/VO_EBC_SDDO15/VO_LCDC_D1/GPIO3_B4_d	VCCIO5	
56	SAI1_SCLK	PWM2_CH4_M1/I2C2_SCL_M2/UART5_RTSN_M1/SPI3_CSN0_M2/FLEXBUS1_CSN_M4/SAI1_SCLK_M0/GPIO4_A3_d	VCCIO5	
57	GMAC0_TXD2	PWM2_CH1_M3/I2C9_SDA_M3/SPI4_MOSI_M1/UART11_CTSN_M0/FLEXBUS0_CSN_M2/FLEXBUS0_D10/DSMC_INT3/SAI2_LRCK_M2/ETH0_TXD2_M0/VO_EBC_SDDO8/VO_LCDC_D8/GPIO3_C3_d	VCCIO5	
58	SAI1_SDI0	PWM2_CH7_M0/SPI3_CSN1_M2/SPI4_CSN0_M2/PDM1_SDI0_M1/SAI4_SDO_M0/SAI1_SDI0_M0/GPIO4_B3_d	VCCIO5	
59	GMAC0_TXD3	PWM2_CH0_M3/I2C9_SCL_M3/SPI4_MISO_M1/UART11_RTSN_M0/FLEXBUS0_D9/DSMC_INT1/SAI2_SCLK_M2/ETH0_TXD3_M0/VO_EBC_SDDO9/VO_LCDC_D9/GPIO3_C2_d	VCCIO5	
60	SAI1_SDO2	UART2_CTSN_M1/UART6_CTSN_M0/UART5_RX_M1/SPI4_MOSI_M2/FLEXBUS1_D14_M1/PDM1_SDI2_M1/SAI1_SDI2_M0/SAI1_SDO2_M0/GPIO4_B1_d	VCCIO5	
61	GND	/	/	
62	GPIO_HP_DET_L	PWM2_CH6_M0/SPI3_CLK_M2/SAI4_SDI_M0/SAI1_SDO0_M0/GPIO4_A7_d	VCCIO5	
63	GMAC0_MDIO	PWM1_CH1_M3/SPI2_CSN1_M2/UART1_RTSN_M2/FLEXBUS0_D7	VCCIO5	

		/DSMC_DATA15/PDM1_SDI3_M2/ETH0_MDIO_M0/VO_EBC_GDSP /VO_LCDC_D22/GPIO3_A5_d		
64	GPIO_DP_AUXN_DC	UART2_RTSN_M1/UART6_RTSN_M0/UART5_TX_M1/SPI4_CLK_M 2/FLEXBUS1_D13_M1/PDM1_CLK1_M1/SAI1_SDI3_M0/SAI1_SDO1 _M0/GPIO4_B0_d	VCCIO5	
65	GMAC0_MDC	PWM1_CH2_M3/UART10_CTSN_M0/UART1_RX_M2/FLEXBUS0_D 6/DSMC_DATA14/PDM1_SDI2_M2/ETH0_MDC_M0/VO_EBC_GDO E/VO_LCDC_D21/GPIO3_A6_d	VCCIO5	
66	GPIO_DP_AUXP_DC	MIPI_TE_M0/ SPI4_MISO_M2/FLEXBUS1_D15_M1/PDM1_SDI1_M1 /SAI1_SDI1_M0/SAI1_SDO3_M0/GPIO4_B2_d	VCCIO5	
67	GND	/	/	
68	I2C3_SDA	CAN1_RX_M2/I2C3_SDA_M0/UART2_RX_M1/FLEXBUS0_CSN_M4 /SPDIF_RX0_M0 | GPIO4_B4_d	VCCIO5	
69	UART5_RXD	I2C3_SCL_M2/SPI3_CLK_M1/UART5_RX_M0/FLEXBUS1_D1/DSM C_DATA0/SAI1_SDI1_M1/VO_EBC_SDLE/VO_LCDC_DEN/GPIO3_ D4_d	VCCIO5	
70	I2C3_SCL	CAN1_TX_M2/PCIE0_CLKREQN_M2/I2C3_SCL_M0/UART2_TX_M 1/FLEXBUS0_D15_M1/SPDIF_TX0_M0/GPIO4_B5_d	VCCIO5	
71	UART5_TXD	I2C3_SDA_M2/SPI3_MISO_M1/UART5_TX_M0/FLEXBUS1_D0/DS MC_CLK/SAI1_SDI2_M1/VO_EBC_GDCLK/VO_LCDC_HSYNC/GPI O3_D5_d	VCCIO5	
72	CAN0_RXD	CAN0_RX_M2/I2C4_SDA_M1/UART6_RX_M0/SPI3_MISO_M2/FLE	VCCIO5	

		XBUS0_D14_M1/PDM1_CLK0_M1/SAI4_LRCK_M0/GPIO4_A6_d		
73	GPIO_TP_nINT	PWM2_CH6_M3/SPI3_MOSI_M1/UART5_CTSN_M0/FLEXBUS1_CLK/DSMC_CLKN/SAI1_SDI3_M1/VO_EBC_SDCLK/VO_LCDC_VSYNC/GPIO3_D6_d	VCCIO5	
74	CAN0_TXD	CAN0_TX_M2/I2C4_SCL_M1/UART6_TX_M0/SPI3_MOSI_M2/FLEXBUS0_D13_M1/PDM1_SDI3_M1/SAI4_SCLK_M0/GPIO4_A4_d	VCCIO5	
75	GPIO_TP_nRST	PWM2_CH7_M3/SPI3_CSN1_M1/UART5_RTSN_M0/FLEXBUS1_CSN_M1/FLEXBUS1_D12_M0/FLEXBUS0_D15_M0/DSMC_RESETN/SAI4_SCLK_M1/CAM_CLK0_OUT_M0/VO_EBC_SDOE/VO_LCDC_CLK/GPIO3_D7_d	VCCIO5	
76	GND	/	/	
77	UART8_RXD	PWM2_CH2_M3/SPI1_MISO_M2/UART8_RX_M0/FLEXBUS1_D6/DSMC_DATA4/SAI1_SDO0_M1/VO_EBC_SDDO6/VO_LCDC_D6/GPIO3_C5_d	VCCIO5	
78	GPIO_CTRL/TP_nINT	SPI1_CLK_M2/UART8_RTSN_M0/FLEXBUS1_D4/DSMC_DATA2/SAI1_SCLK_M1/VO_EBC_SDDO4/VO_LCDC_D4/GPIO3_C7_d	VCCIO5	
79	UART8_TXD	SPI1_MOSI_M2/UART8_TX_M0/FLEXBUS1_D5/DSMC_DATA3/SAI1_LRCK_M1/VO_EBC_SDDO5/VO_LCDC_D5/GPIO3_C6_d	VCCIO5	
80	GPIO_CTRL/TP_nRST	PWM2_CH3_M3/SPI1_CSN0_M2/UART8_CTSN_M0/FLEXBUS1_D3/DSMC_DATA1/SAI1_MCLK_M1/VO_EBC_SDDO3/VO_LCDC_D3/GPIO3_D0_d	VCCIO5	

J4->U1D：

Pin#	Signal Name（Default）	CPU Multiplexing	Power Domain	Remark
1	GND	/	/	
2	GND	/	/	
3	MIPI_CSI0_RX_D3P	MIPI_DPHY_CSI0_RX_D3P	/	
4	MIPI_DSI_TX_D3P	MIPI_DPHY_DSI_TX_D3P	/	
5	MIPI_CSI0_RX_D3N	MIPI_DPHY_CSI0_RX_D3N/MIPI_CPHY_CSI_RX_TRIO2_C	/	
6	MIPI_DSI_TX_D3N	MIPI_DPHY_DSI_TX_D3N/MIPI_CPHY_DSI_TX_TRIO2_C	/	
7	GND	/	/	
8	GND	/	/	
9	MIPI_CSI0_RX_D2P	MIPI_DPHY_CSI0_RX_D2P/MIPI_CPHY_CSI_RX_TRIO2_B	/	
10	MIPI_DSI_TX_D2P	MIPI_DPHY_DSI_TX_D2P/MIPI_CPHY_DSI_TX_TRIO2_B	/	
11	MIPI_CSI0_RX_D2N	MIPI_DPHY_CSI0_RX_D2N/MIPI_CPHY_CSI_RX_TRIO2_A	/	
12	MIPI_DSI_TX_D2N	MIPI_DPHY_DSI_TX_D2N/MIPI_CPHY_DSI_TX_TRIO2_A	/	
13	GND	/	/	
14	GND	/	/	
15	MIPI_CSI0_RX_CLKP	MIPI_DPHY_CSI0_RX_CLKP/MIPI_CPHY_CSI_RX_TRIO1_C	/	
16	MIPI_DSI_TX_CLKP	MIPI_DPHY_DSI_TX_CLKP/MIPI_CPHY_DSI_TX_TRIO1_C	/	
17	MIPI_CSI0_RX_CLKN	MIPI_DPHY_CSI0_RX_CLKN/MIPI_CPHY_CSI_RX_TRIO1_B	/	
18	MIPI_DSI_TX_CLKN	MIPI_DPHY_DSI_TX_CLKN/MIPI_CPHY_DSI_TX_TRIO1_B	/	

19	GND	/	/	
20	GND	/	/	
21	MIPI_CSI0_RX_D1P	MIPI_DPHY_CSI0_RX_D1P/ MIPI_CPHY_CSI_RX_TRIO1_A	/	
22	MIPI_DSI_TX_D1P	MIPI_DPHY_DSI_TX_D1P/MIPI_CPHY_DSI_TX_TRIO1_A	/	
23	MIPI_CSI0_RX_D1N	MIPI_DPHY_CSI0_RX_D1N/MIPI_CPHY_CSI_RX_TRIO0_C	/	
24	MIPI_DSI_TX_D1N	MIPI_DPHY_DSI_TX_D1N/MIPI_CPHY_DSI_TX_TRIO0_C	/	
25	GND	/	/	
26	GND	/	/	
27	MIPI_CSI0_RX_D0P	MIPI_DPHY_CSI0_RX_D0P/MIPI_CPHY_CSI_RX_TRIO0_B	/	
28	MIPI_DSI_TX_D0P	MIPI_DPHY_DSI_TX_D0P/MIPI_CPHY_DSI_TX_TRIO0_B	/	/
29	MIPI_CSI0_RX_D0N	MIPI_DPHY_CSI0_RX_D0N/MIPI_CPHY_CSI_RX_TRIO0_A	/	
30	MIPI_DSI_TX_D0N	MIPI_DPHY_DSI_TX_D0N/MIPI_CPHY_DSI_TX_TRIO0_A	/	
31	GND	/	/	
32	GND	/	/	/
33	USB2_OTG1_DM	USB2_OTG1_DM	/	
34	TYPEC_OTG0_SSTX2N	USB3_OTG0_SSTX2N/DP_TX_D3N	/	
35	USB2_OTG1_DP	USB2_OTG1_DP	/	
36	TYPEC_OTG0_SSTX2P	USB3_OTG0_SSTX2P/DP_TX_D3P	/	
37	GND	/	/	
38	GND	/	/	
39	USB2_OTG0_DM	USB2_OTG0_DM	/	

40	TYPEC_OTG0_SSRX2P	USB3_OTG0_SSRX2P/DP_TX_D2P	/	
41	USB2_OTG0_DP	USB2_OTG0_DP	/	
42	TYPEC_OTG0_SSRX2N	USB3_OTG0_SSRX2N/DP_TX_D2N	/	
43	GND	/	/	
44	GND	/	/	
45	USB2_OTG0_ID	USB2_OTG0_ID	/	
46	TYPEC_OTG0_SSTX1N	USB3_OTG0_SSTX1N/DP_TX_D1N	/	
47	USB2_OTG0_VBUSDET	USB2_OTG0_VBUSDET	/	
48	TYPEC_OTG0_SSTX1P	USB3_OTG0_SSTX1P/DP_TX_D1P	/	
49	GND	/	/	
50	GND	/	/	
51	DP_TX_AUXN	DP_AUXN	/	
52	TYPEC_OTG0_SSRX1P	USB3_OTG0_SSRX1P/DP_TX_D0P	/	
53	DP_TX_AUXP	DP_AUXP	/	
54	TYPEC_OTG0_SSRX1N	USB3_OTG0_SSRX1N/DP_TX_D0N	/	
55	GND	/	/	
56	GND	/	/	
57	UFS_TX_D0N	UFS_TX_D0N	/	
58	UFS_RX_D0P	UFS_RX_D0P	/	
59	UFS_TX_D0P	UFS_TX_D0P	/	
60	UFS_RX_D0N	UFS_RX_D0N	/	

61	GND	/	/	
62	GND	/	/	
63	UFS_TX_D1N	UFS_TX_D1N	/	
64	UFS_RX_D1P	UFS_RX_D1P	/	
65	UFS_TX_D1P	UFS_TX_D1P	/	
66	UFS_RX_D1N	UFS_RX_D1N	/	
67	GND	/	/	
68	GND	/	/	
69	UFS_REFCLK	UFS_REFCLK	VCCIO7	
70	GPIO_BL0_EN	PWM2_CH2_M1/CAN1_TX_M1/SPI4_MISO_M0/I2C6_SCL_M3/SATA0_ACTLED_M1/PCIE0_CLKREQN_M3/VP1_SYNC_OUT/SAI4_SDI_M2/GPIO4_C6_d	VCCIO6	
71	GND	/	/	
72	GPIO_BL1_EN	PWM2_CH5_M1/UART6_RX_M3/SPI4_MOSI_M0/I2C3_SDA_M3/SATA1_ACTLED_M1/VP0_SYNC_OUT/SAI4_SDO_M2/ISP_FLASH_TRIGOUT_M1 | GPIO4_C5_d	VCCIO6	
73	UFS_RSTN	UFS_RSTN/GPIO4_D0_d	VCCIO7	
74	GPIO_BL0_PWR_EN	PWM2_CH3_M1/CAN1_RX_M1/SPI4_CLK_M0/I2C6_SDA_M3/VP2_SYNC_OUT/SAI4_SCLK_M2/GPIO4_C7_d	VCCIO6	
75	GND	/	/	
76	GPIO_BL1_PWR_EN	PWM2_CH6_M1/UART6_TX_M3/SPI4_CSN0_M0/I2C3_SCL_M3/DP_	VCCIO6	

		HPDIN_M0/SAI4_LRCK_M2/ISP_PRELIGHT_TRIG_M1/GPIO4_C4_d		
77	HDMITX_SDA	PWM2_CH1_M1/UART9_RX_M/CAN0_RX_M1/I2C2_SDA_M3/HDMI_TX_SDA/DSM_AUD_RN_M1/GPIO4_C3_d	VCCIO6	
78	HDMITX_CEC	PWM1_CH5_M1/UART11_TX_M2/SPI4_CSN1_M0/I2C7_SCL_M3/HDMI_TX_CEC_M0/SAI4_MCLK_M2/DSM_AUD_LP_M1/GPIO4_C0_d	VCCIO6	
79	HDMITX_SCL	PWM2_CH0_M1/UART9_TX_M2/CAN0_TX_M1/I2C2_SCL_M3/ HDMI_TX_SCL /DSM_AUD_RP_M1/GPIO4_C2_d	VCCIO6	
80	HDMI_TX_HPDIN	PWM0_CH1_M1/UART11_RX_M2/EDP_TX_HPDIN_M0/I2C7_SDA_M3/PCIE1_CLKREQN_M3/HDMI_TX_HPDIN_M0/DSM_AUD_LN_M1/GPIO4_C1_d	VCCIO6	

II. Size &Structure

Unit:mm, please email if you need connector size:supports@qiyangtech.com

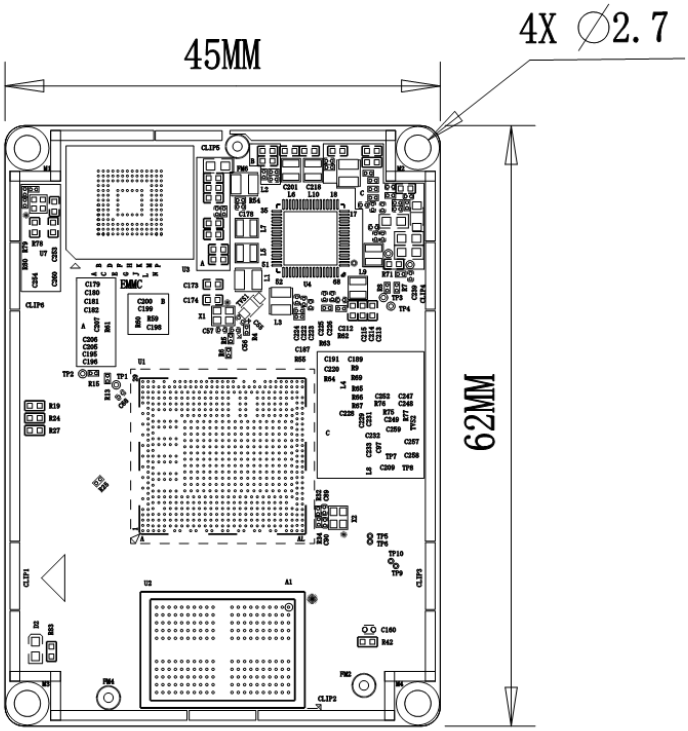
Part Number: Female Connector on Carrier Board: DF40C-80DP-0.4V(51)

Part Number: Male Connector on SOM module: DF40HC(3.0)-80DS-0.4V(51)

Brand: Hirose

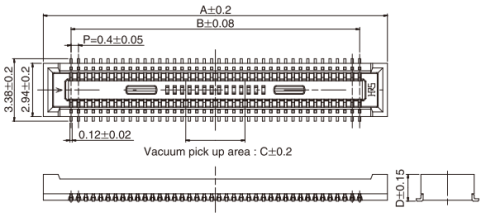
PCB Standoff:M2.5X3.0X4(inner diameter x height x outer diameter)

2.1.SOM Size

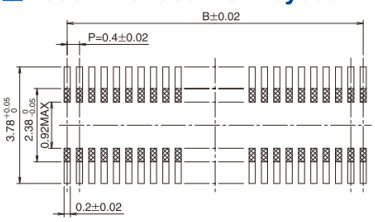


2.2 SOM Board Board-To-Board Receptacle Size

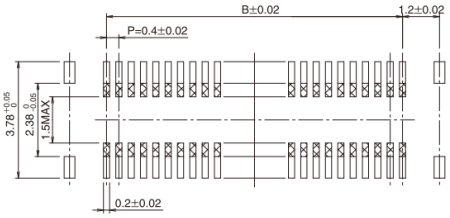
■Receptacle (Stacking height 2.5mm to 4.0mm)



◆Recommended PCB layout



DF40HC(Without reinforcing metal fitting)



DF40HB(With reinforcing metal fitting)

■Stacking height 3.0mm

【Specification No.】
(51) : Embossed package 3,000 pcs/reel

Unit : mm

Part No.	HRS No.	No. of Contacts	A	B	C	D
DF40HC(3.0)-30DS-0.4V(51)	684-4098-0 51	30	8.6	5.6	1.5	2.9
DF40HC(3.0)-40DS-0.4V(51)	684-4169-6 51	40	10.6	7.6	3.2	
DF40HC(3.0)-44DS-0.4V(51)	684-4076-7 51	44	11.4	8.4		
DF40HC(3.0)-50DS-0.4V(51)	684-4099-2 51	50	12.6	9.6		
DF40HC(3.0)-60DS-0.4V(51)	684-4100-0 51	60	14.6	11.6		
DF40HC(3.0)-70DS-0.4V(51)	684-4138-2 51	70	16.6	13.6		
DF40HC(3.0)-80DS-0.4V(51)	684-4180-9 51	80	18.6	15.6		
DF40HC(3.0)-90DS-0.4V(51)	684-4161-4 51	90	20.6	17.6		
DF40HC(3.0)-100DS-0.4V(51)	684-4151-0 51	100	22.6	19.6		

III. Electrical Property

3.1 Relative power for the SOM

Category	Power Domain	Description	Voltage	Remark
Core	VCC_SYS_5V0	Power from SOM	5V ± 10%/3A	
	VCC_IO_3V3	PMIC Output	3.3V/1.5A	
	VCC_IO_1V8	PMIC	1.8V/1A	

		Output		
	VCC_BUCK8_IO_1V8_S3	PMIC Output	1.8V/1A	
	VCC_BUCK4_IO_3V3_S3	PMIC Output	3.3V/1.5A	
IO	PMUIO0	IO Volt.	1.8V	
	PMUIO1	IO Volt.	3.3V/1.8V	3.3V (As Default)
	VCCIO0	IO Volt.	1.8V	
	VCCIO1	IO Volt.	1.8V/3.3V	3.3V (As Default)
	VCCIO3	IO Volt.	1.8V/3.3V	1.8V (As Default)
	VCCIO4	IO Volt.	1.8V/3.3V	3.3V (As Default)
	VCCIO5	IO Volt.	1.8V/3.3V	3.3V (As Default)
	VCCIO6	IO Volt.	1.8V/3.3V	3.3V (As Default)
	VCCIO7	IO Volt.	1.8V/1.2V	1.2V(As default)

IV. Note

1. Before connecting the LCD, please check the power supply specifications of your LCD module;

2. Please use the company's original connector, to avoid misconnection caused by the motherboard damage;

3. Our company promises that the company's products to provide E-mail, telephone and other communications technical support services, lifelong maintenance services;

4. Our company promises that the company's products to provide free maintenance service within 6 months from the date of sale, if the user in the use of the company's products, due to the quality of the products and failures, can be in the warranty period with the purchase of documents with the seller or our company to contact our company, Qiyang is responsible for you to repair the product or replace the new machine.

5. For one of the following circumstances, the product does not apply free warranty:

- Exceeds the warranty service period;
- No valid purchase documents;
- Into liquid, moisture or mold;
- Failures and damages caused by non-product quality reasons such as dropping, strong vibration or unauthorized alteration or misuse after purchase;
- Damage due to force majeure.

6. Our company retains the intellectual property rights of all IAC-RK3576-Kit products independently developed related software and hardware technical information; users can only use them for teaching, experimentation and scientific research, and shall not engage in any commercial use, nor can they

distribute them on the network, or tamper with their copyright through interception, modification and other means.

7. This product accepts customer bulk order, the company will provide full technical support and service.

Zhejiang Qiyang Intelligent Technology Co., Ltd.

Tel: 0571-87858811 / 87858822

Fax: 0571-89935912

Technical Support：0571-87858811 ext.805

E-MAIL: supports@qiyangtech.com

Website:http://www.qiytech.com

or http://www.qiyangtech.com

Address: 3rd Floor, Building A, WSCG Building, NO.6 Xiyuan 8th Road, Sandun Town, Xihu District, Hangzhou City, Zhejiang China

Zip code: 310030