



IAC-RV1126B-CM Hardware Manual

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QIYANG TECHNOLOGY Co., Ltd

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Company Profile

Zhejiang Qiyang Intelligent Technology Co., Ltd., established in 2007, which locates in Hangzhou, Zhejiang, PRC. It is a high-end technological enterprise that specializes in exploitation, fabrication, and selling embedded computer mainboards. With 10 years of experiences, Qiyang has established the completed service chain from the design concept to mass production successfully.

The R&D team is organized by 30 more technical engineers. Qiyang focus on providing functional embedded hardware, software tool and customization solutions. It has been applied to Industrial Control, Internet of Things, New Retail, Smart Medical, Electricity Device, Environmental Surveillance, Charging Pile etc.

With the growth of the business, Qiyang has set up an SMT factory in Zhuji, Zhejiang province, which is 5000 m², with a 2xSMT production line. The SMT factory performs the ISO9001 Quality Management System strictly. Relying on the solid production ability, the SMT factory's annual capacity is about a million sets, which totally guarantee the delivery date.

Qiyang has a thorough sales marketing network, professional sales, and after-sales team to provide full technical support and service. The business has spread over 120 countries and areas, it helps the clients to introduce the products into the market efficiently and successfully.

The combination and extension of research and development, production capacity, and market, that provide a solid foundation for Qiyang to provide specialized, globalized embedded hardware and software.

We offer:

- **Software/Hardware Mainboard**

Based on the CPU solution from NXP, Rockchip, MTK, Renesas, TI, Atmel, Cirrus Logic etc. Qiyang provides the ARM development kit/system on module/industrial board and periphery products, paired tools and software for the user do further exploitation.

- **Customization Service**

Fully taking the advantage of the technical accumulation on the ARM platform and Linux, Android, Ubuntu OS, Qiyang provides the efficient OEM/ODM service to the users.

Sincerely thanks for using Qiyang's product, we will try our best to offer you the technical supports!

Technical Support

If you have questions about the documents, you can contact us during office hours (Monday to Friday 8:30-12:00, 13:30-17:30)

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[/www.qiyangtech.com](http://www.qiyangtech.com)(English)

Information updates

1、Information updates

Product-related manuals and datasheets are constantly being improved and updated; please ensure that they are up-to-date when you use them.

2、Update Notification

Qiyang's newest product information and news updates will be released through the WeChat official account, please pay attention!



3、Data Acquisition

After purchasing the product, please contact our business personnel to obtain it.

4、Provided materials

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

Hardware: corresponding baseboard schematic, PCB source file (Allegro16.6)

Files: hardware manual, test manual, user manual, environment construction manual, IO pin comparison table, core board, baseboard structure dimension drawing (dxf), chip information.

Usage suggestions:

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

2) please check the packing list carefully before use and check whether there are any missing files;

3) understand the basic structure and composition of the development kit, including the allocation of hardware resources, the definition of each pin of the core board and the carrier board, and the definition of the expansion pins, etc.;

4) we accept bulk orders for the IAC-RV1126B-CM SoM.

Version Record

Version No.	Hardware Platform	Date	Description	Revised by
V1.0	IAC-RV1126B-CM-V1_00	2025-12	Initial Release	Maoh

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Note: This manual primarily covers the hardware interfaces and pin assignments of the System on Module.

I . System Composition

1.1. System Composition

The RV1126B is a high-performance vision processor System-on-Chip (SoC) designed for machine vision and edge AI applications. Built on a quad-core ARM Cortex-A53 64-bit architecture, each CPU core integrates NEON multimedia processing units and a Floating Point Unit (FPU). Each core incorporates 32 KB instruction cache (I-cache), 32 KB data cache (D-cache), and a 512 KB shared L2 cache. The integrated Neural Processing Unit (NPU) supports INT8/INT16 hybrid quantization with a computing power of up to 3.0 TOPS. It offers robust model compatibility and seamless conversion for mainstream deep learning frameworks including TensorFlow, MXNet, PyTorch, Caffe, etc.

The RV1126B features a next-generation hardware-based Image Signal Processor (ISP) and post-processing engine supporting camera sensors up to 12 Megapixels. It integrates hardware accelerators for algorithms such as High Dynamic Range (HDR), 3A (AE/AWB/AF), Lens Shading Correction (LSC), 3D Noise Reduction (3DNR), 2D Noise Reduction (2DNR), sharpening, dehazing, fisheye distortion correction, gamma correction, and feature point detection. Additionally, an AI-ISP supporting up to 8 MP is integrated to complement the traditional ISP, providing enhanced spatial noise reduction and superior image enhancement. Equipped with two MIPI Camera Serial Interfaces (CSI, convertible to LVDS / SubLVDS) and one Digital Video Port (DVP, compatible with BT.601/BT.656/BT.1120 protocols), the SoC supports concurrent multi-camera input (up to 4 channels).

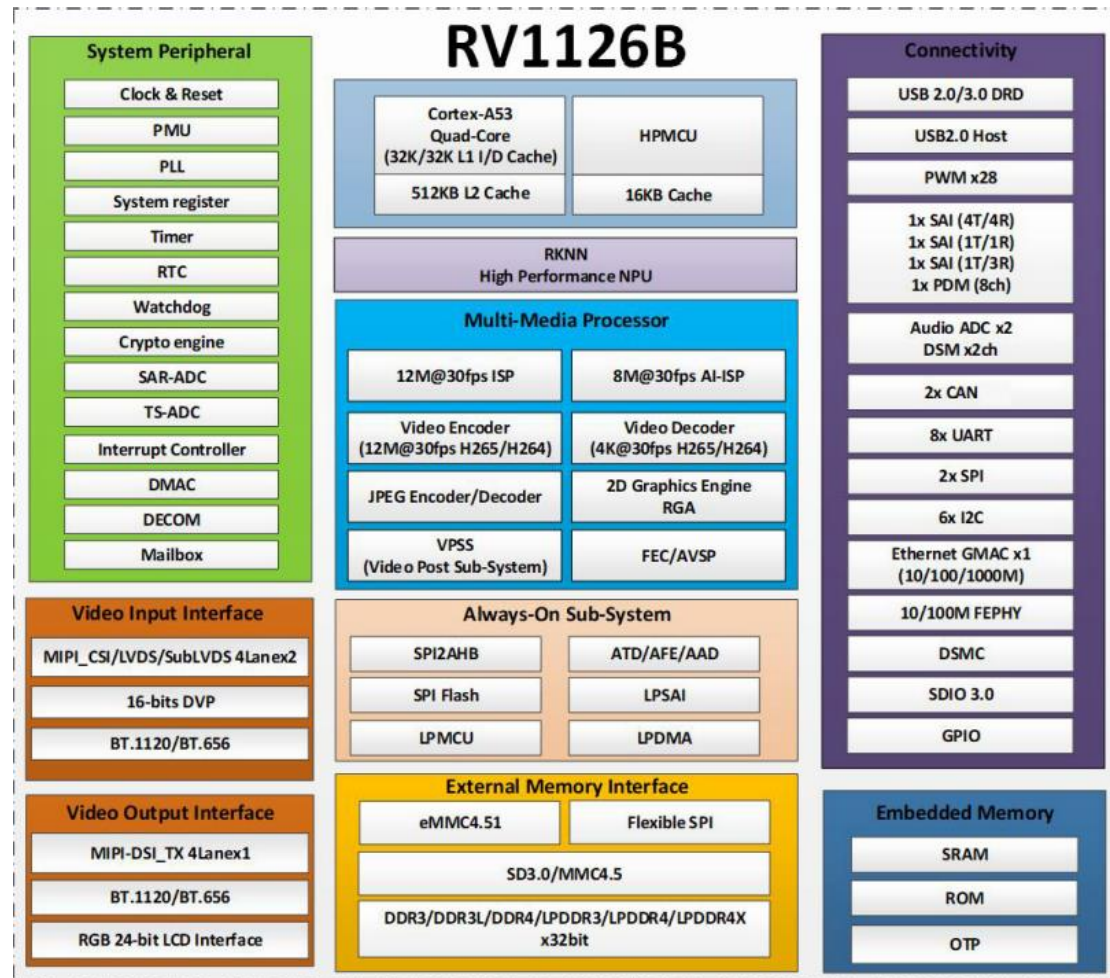
The multi-format video encoder supports H.265 and H.264 video compression along with multi-stream encoding. This enables high-resolution local storage alongside simultaneous low-bitrate streaming to the cloud. The onboard H.264/H.265 hardware video decoder supports up to 4K @ 30 fps decoding.

In addition to the high-performance multimedia processing modules mentioned above, the RV1126B also integrates a wide range of audio, storage, and peripheral interfaces, including the Integrated Circuit Bus (I2C), Serial Peripheral Interface (SPI), and Pulse Width Modulation (PWM). Users can use these interfaces to expand the system with additional sensors or other peripherals, significantly enhancing the system's flexibility and scalability.

RV1126B supports high-performance external DRAM controllers compatible with DDR3/DDR3L/DDR4/LPDDR3/LPDDR4/LPDDR4X to meet demanding memory bandwidth requirements.

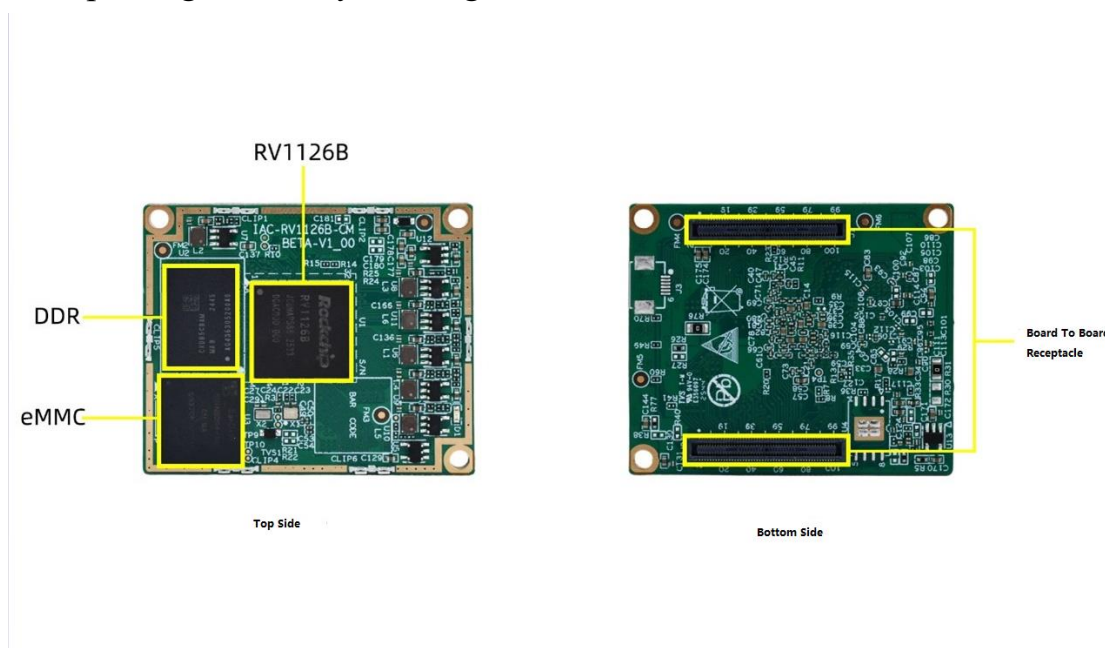
In addition, the chip also integrates functional modules such as Real-Time Clock (RTC), Power-On Reset (POR) module, Reduced Media Independent Interface (RMII) Ethernet Physical Layer (PHY) and Audio Codec.

Processor block diagram:



1.2. SoM Overview

The IAC-RV1126B-CM SoM is manufactured by using high-precision 8-layer PCB technology with Immersion Gold finish and High-TG material, delivering superior electrical integrity and immunity to electromagnetic interference. It integrates the CPU, LPDDR4, eMMC, PMIC, and essential power rails. Resources are routed out via high-density Board-to-Board (B2B) connectors providing up to 200 pins, enabling extensive pin-multiplexing flexibility to design custom carrier boards.



- ◆ Onboard RockChip RV1126B processor;
- ◆ Onboard 4GB LPDDR4 and 16GB eMMC (Standard configuration);
- ◆ Fabricated with an 8-layer PCB high-precision Immersion Gold process;
- ◆ SoM dimensions: 40mm × 47mm, suitable for compact embedded applications;
- ◆ Interfaces routed via two 100-pin Board-to-Board connectors to expand SoM resources;
- ◆ Powered by +3.3V DC input with onboard Power Management IC (PMIC);
- ◆ Supports Linux 6.1 OS and Busybox environment.

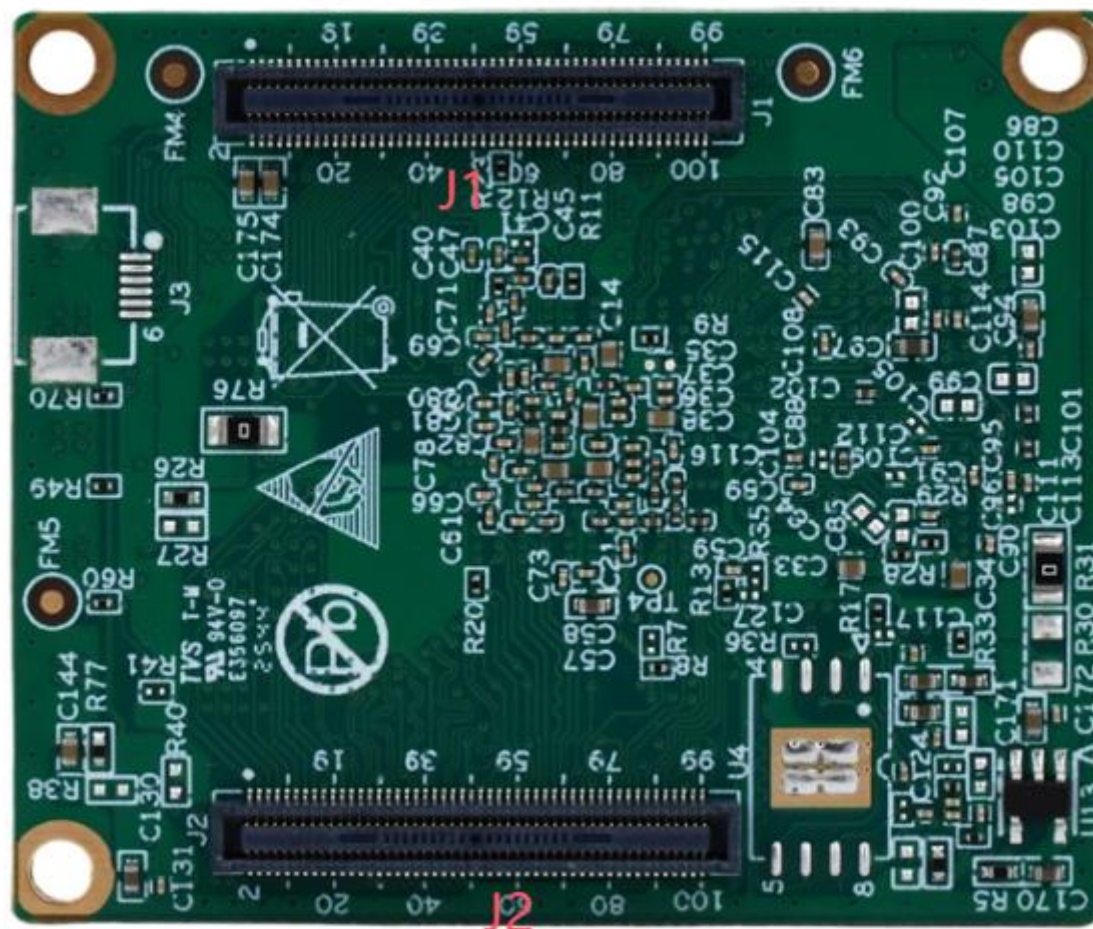
1.3. SoM Resources

Note: The listed resources represent the maximum multiplexed capacity; multiplexing relationships exist among functions.

Hardware Resources	CPU	RockChip RV1126B processor
	Processor	Quad ARM® Cortex™-A53 RV1126B Main frequency up to 1.5GHz
	VPU	Video Decoding: 3840x2160@30fps H.265 HEVC/MBC yuv420 Video Decoding: 3840x2160@30fps H.264 AVC/MVC yuv400/yuv420/yuv422 Video Encoding: HEVC Main Profile Level 5.0 Video Encoding: H.264 High Profile Level 5.0 Maximum encoding up to 12M@30fps 12M@30fps Mainstream Resolution Support: 3840x2160@30fps , 1920x1080@30fps
	NPU	Neural Processing Unit: Provides up to 3 TOPS for INT8
	ISP	Resolution up to 12M@30fps; supports up to 8M@30fps AI-ISP
	RAM	4GB LPDDR4 (expandable to 8GB)
	Flash	16GB eMMC (expandable to 32GB / 64GB eMMC)
	Ethernet	1x RGMII (10M/100M/1000M Ethernet) 1x 100M PHY (10M/100M Ethernet, shared MAC)
	Communication	8x UARTs (including 1x Debug UART, CPU UART rate up to 4Mbps)
		2x SPI
		1x DSM
		2x CAN
	Display	1x 4-lane MIPI_DSI display interface, resolution up to 1080P@60fps 1x RGB 888 LCD display interface, resolution up to 1080P@60fps
	Audio	3x SAI 1x MIC
	USB	1x USB 3.0 OTG interface
		1x USB 2.0 HOST interface
	Camera	2x MIPI DPHY-CSI (4 lanes, resolution supports 4K@30fps)

		2x LVDS (4 lanes, resolution supports 4K@30fps)
	Input	6x I2C 7x 8-bit ADC channels
	Other Interfaces	Multiple GPIOs 1x 32.768kHz CLK output 1x 24MHz CLK output Multiple PWM outputs
	Storage	2x SDMMC
	Power Input	+3.3V power supply
Electrical Characteristics	PCB Layers / Size	SoM dimensions: 40mm*47mm 8-layer PCB high-precision Immersion Gold process
	Power Consumption	TBD
	Operating Temperature	-20°C ~ +70°C
	Storage Temperature	-20°C ~ +80°C
	Operating Humidity	5% to 95%, non-condensing
	SoM Configurations	Default: 4GB DDR / 16GB eMMC (-20°C ~ +70°C) Optional: 8GB DDR / 64GB eMMC (-20°C ~ +70°C)

The layout diagram of the core connectors is as follows:



► J1->J1A:

Pin	Signal Name (Default)	CPU Multiplexing Functions	Power Domain	Remarks
1	VCC_SYS_3V3	/	/	POWER IN
2	VCC_SYS_3V3	/	/	POWER IN
3	VCC_SYS_3V3	/	/	POWER IN

4	VCC_SYS_3V3	/	/	POWER IN
5	VCC_SYS_3V3	/	/	POWER IN
6	VCC_SYS_3V3	/	/	POWER IN
7	VCC_SYS_3V3	/	/	POWER IN
8	VCC_AUD_1V8	/	/	POWER OUT
9	GND	/	/	
10	GND	/	/	
11	GND	/	/	
12	GND	/	/	
13	GND	/	/	
14	GND	/	/	
15	VCC_IO_SD0	/	/	POWER IN
16	VCC_1V8	/	/	POWER OUT
17	VCC_IO_SD1	/	/	POWER IN
18	VCC_3V3	/	/	POWER OUT
19	IF_PWR_CTRL	/	/	
20	VCC_3V3	/	/	POWER OUT
21	I2C5_SDA_M2	I2C5_SDA_M2/DSMC_D10/SAI2_LRCK_M1/SPI0	VCCIO5	

		_CS1_M2/UART5_CTSN_M1/PWM0_CH0_M1/VI_CIF_D3_M1/VO_LCDC_D7/GPIO5_A7_D		
22	GPIO5_D3_D	DSMC_INT2/UART3_CTSN_M1/PWM1_CH0_M1/SPI1_MISO_M2/VO_LCDC_CLK/GPIO5_D3_D	VCCIO5	
23	I2C5_SCL_M2	I2C5_SCL_M2/DSMC_DQS1/SAI2_SDI1_M1/ETH_PPCLK_M1/UART4_CTSN_M1/PWM2_CH5_M0/VI_CIF_D1_M1/VO_LCDC_D1/GPIO5_A1_D	VCCIO5	
24	GPIO5_D2_D	DSMC_INT3/UART3_RTSN_M1/PWM1_CH1_M1/SPI1_MOSI_M2/VO_LCDC_VSYNC/GPIO5_D2_D	VCCIO5	
25	GPIO5_B3_D	DSMC_RDYN/ETH_MCLK_M1/UART6_CTSN_M0/PWM2_CH1_M1/VI_CIF_D7_M1/VO_LCDC_D11/GPIO5_B3_D	VCCIO5	
26	GPIO5_D1_D	I2C3_SDA_M2/DSMC_CSN2/ETH_PPSTRIG_M1/PWM1_CH2_M1/SPI1_CLK_M2/VO_LCDC_HSYNC/GPIO5_D1_D	VCCIO5	
27	GPIO5_B4_D	DSMC_CSNO/UART7_TX_M0/VI_CIF_D8_M1/VO_LCDC_D12/GPIO5_B4_D	VCCIO5	
28	GPIO5_D0_D	DSMC_D0/I2C3_SCL_M2/DSMC_CSN3/ETH_PTP_REFCLK_M1/PWM0_CH6_M2/SPI1_CSNO_M2/VO_LCDC_DEN/GPIO5_D0_D	VCCIO5	
29	CAN1_RXD	UART0_TX_M1/PWM2_CH6_M0/JTAG_TCK_M2	VCCIO5	

		/CAN1_RXD_M0/GPIO5_D6_U		
30	GPIO5_A5_D	DSMC_D12/SAI2_SDI0_M1/SPI0_MISO_M2/UAR T5_RX_M1/PWM0_CH2_M1/VO_LCDC_D5/GPI O5_A5_D	VCCIO5	
31	CAN1_TXD	UART0_RX_M1/PWM2_CH7_M0/JTAG_TMS_M 2/CAN1_TXD_M0/GPIO5_D7_U	VCCIO5	
32	GPIO5_A4_D	DSMC_D13/SAI2_SCLK_M1/SPI0_MOSI_M2/UA RT5_TX_M1/PWM0_CH3_M1/VO_LCDC_D4/GPI O5_A4_D	VCCIO5	
33	CAN0_RXD	I2C2_SCL_M1/FEPHY_LEDLINK_M1/UART3_T X_M1/PWM0_CH7_M2/SPI1_CS1_M2/CAN0_RX D_M0/GPIO5_D4_U	VCCIO5	
34	GPIO5_A6_D	DSMC_D11/SAI2_LRCK_M1/SPI0_CLK_M2/UAR T5_RTSN_M1/PWM0_CH1_M1/VO_LCDC_D6/G PIO5_A6_D	VCCIO5	
35	CAN0_TXD	I2C2_SDA_M1/FEPHY_LEDSPD_M1/UART3_RX _M1/PWM1_CH3_M1/CAN0_TXD_M0/GPIO5_D5 _U	VCCIO5	
36	GPIO5_A3_D	DSMC_D14/SAI2_SDO_M1/SPI0_CSNO_M2/UAR T4_RX_M1/PWM0_CH4_M2/VO_LCDC_D3/GPI O5_A3_D	VCCIO5	
37	GMAC_MDC	DSMC_CLKN/DSMC_INT0/ETH_MDC_M1/UAR	VCCIO5	

		T7_RTSN_M0/PWM2_CH3_M1/VI_CIF_D10_M1/ VO_LCDC_D14/GPIO5_B6_D		
38	GPIO5_A2_D	DSMC_D15/SAI2_MCLK_M1/UART4_TX_M1/P WM0_CH5_M2/VI_CIF_D2_M1/VO_LCDC_D2/G PIO5_A2_D	VCCIO5	
39	GMAC_MDIO	DSMC_DQS0/ETH_MDIO_M1/UART7_RX_M0/P WM2_CH2_M1/VI_CIF_D9_M1/VO_LCDC_D13/ GPIO5_B5_D	VCCIO5	
40	GPIO5_C1_D	DSMC_D7/ETH_TXD1_M1/PWM3_CH1_M1/VI_ CIF_D12_M1/VO_LCDC_D16/GPIO5_C1_D	VCCIO5	
41	GMAC_TXD0	DSMC_CLKP/ETH_TXD0_M1/UART7_CTSN_M0 /PWM3_CH0_M1/VI_CIF_D11_M1/VO_LCDC_D 15/GPIO5_B7_D	VCCIO5	
42	GMAC_RXD0	DSMC_D8/ETH_RXD0_M1/UART6_RX_M0/VI_ CIF_D5_M1/VO_LCDC_D9/GPIO5_B1_D	VCCIO5	
43	GMAC_TXD1	DSMC_D7/ETH_TXD1_M1/ PWM3_CH0_M1/ VI_CIF_D12_M1/VO_LCDC_D16/GPIO5_C0_D	VCCIO5	
44	GMAC_RXD1	DSMC_RESETN/DSMC_INT1/ETH_RXD1_M1/U ART6_RTSN_M0/PWM2_CH0_M1/VI_CIF_D6_M 1/VO_LCDC_D10/GPIO5_B2_D	VCCIO5	
45	GMAC_TXD2	DSMC_D3/SAI1_SCLK_M2/ETH_TXD2_M1/PW M3_CH5_M1/VI_CIF_VSYNC_M1/VO_LCDC_D2	VCCIO5	

		0/GPIO5_C5_D		
46	GMAC_RXD2	DSMC_D5/SAI1_MCLK_M2/ETH_TXCTL_M1/PWM3_CH3_M1/VI_CIF_D14_M1/VO_LCDC_D18/GPIO5_C3_D	VCCIO5	
47	GMAC_TXD3	DSMC_CSN1/SAI2_SDI2_M1/ETH_TXD3_M1/UART4_RTSN_M1/PWM2_CH4_M0/VI_CIF_D0_M1/VO_LCDC_D0/GPIO5_A0_D	VCCIO5	
48	GMAC_RXD3	DSMC_D4/SAI1_SDO_M2/ETH_RXD2_M1/PWM3_CH4_M1/VI_CIF_D15_M1/VO_LCDC_D19/GPIO5_C4_D	VCCIO5	
49	GMAC_TXCTL	DSMC_D6/ETH_CLK_25M_OUT_M1/PWM3_CH2_M1/VI_CIF_D13_M1/VO_LCDC_D17/GPIO5_C2_D	VCCIO5	
50	GMAC_RXCTL	DSMC_D9/ETH_RXCTL_M1/UART6_TX_M0/VI_CIF_D4_M1/VO_LCDC_D8/GPIO5_B0_D	VCCIO5	
51	GMAC_TXCLK	DSMC_D2/SAI1_LRCK_M2/ETH_TXCLK_M1/PWM3_CH6_M1/VI_CIF_CLKOUT_M1/VO_LCDC_D21/GPIO5_C6_D	VCCIO5	
52	GMAC_RXCLK	DSMC_D1/SAI1_SDI_M2/ETH_RXCLK_M1/PWM3_CH7_M1/VI_CIF_CLKIN_M1/VO_LCDC_D22/GPIO5_C7_D	VCCIO5	
53	GND	/		

54	GND	/		
55	MIPI_TX_D3P	MIPI_DPHY_DSI_TX_D3P		
56	SDMMC1_CLK	SDMMC1_CLK/ GPIO3_A0_D	VCCIO3	
57	MIPI_TX_D3N	MIPI_DPHY_DSI_TX_D3N K/SDIO_D0_M1/GMAC1_TXD2/GPIO3_A0_u		
58	SDMMC1_D1	I2C1_SDA_M1/SDMMC1_D1/GPIO3_A3_D	VCCIO3	
59	MIPI_TX_D2P	MIPI_DPHY_DSI_TX_D2P		
60	SDMMC1_D0	I2C1_SCL_M1/SDMMC1_D0/GPIO3_A2_D	VCCIO3	
61	MIPI_TX_D2N	MIPI_DPHY_DSI_TX_D2N		
62	SDMMC1_CMD	SDMMC1_CMD/GPIO3_A1_D	VCCIO3	
63	MIPI_TX_CLKP	MIPI_DPHY_DSI_TX_CLKP		
64	SDMMC1_D3	SDMMC1_D3/GPIO3_A5_D	VCCIO3	
65	MIPI_TX_CLKN	MIPI_DPHY_DSI_TX_CLKN		
66	SDMMC1_D2	SDMMC1_D2/GPIO3_A4_D	VCCIO3	
67	MIPI_TX_D1P	MIPI_DPHY_DSI_TX_D1P		
68	GND	/		
69	MIPI_TX_D1N	MIPI_DPHY_DSI_TX_D1N		
70	UART2_RXD	UART2_RX_M0/GPIO3_B0_D	VCCIO3	
71	MIPI_TX_D0P	MIPI_DPHY_DSI_TX_D0P		
72	UART2_TXD	UART2_TX_M0/GPIO3_B1_D	VCCIO3	
73	MIPI_TX_D0N	MIPI_DPHY_DSI_TX_D0N		
74	UART2_nCTS	UART2_CTSN_M0/GPIO3_A7_D	VCCIO3	

75	GND	/		
76	UART2_nRTS	UART2_RTSN_M0/GPIO3_A6_D	VCCIO3	
77	FEPHY_TXP	/		
78	SAI2_LRCK	FEPHY_LEDSPD_M0/PWM2_CH3_M0/I2C4_SD A_M0/SAI2_LRCK_M0/SPI1_CS0_M1/UART1_C TSN_M1/GPIO3_B5_D	VCCIO3	
79	FEPHY_TXN	/		
80	SAI2_SDO	FLASH_TRIG_OUT/PWM2_CH0_M0/SAI2_SDO_ M0/SPI1_MOSI_M1/GPIO3_B2_D	VCCIO3	
81	FEPHY_RXP	/		
82	SAI2_SCLK	FEPHY_LEDLINK_M0/PWM2_CH2_M0/I2C4_SC L_M0/SAI2_SCLK_M0/SPI1_CLK_M1/UART1_R TSN_M1/GPIO3_B4_D	VCCIO3	
83	FEPHY_RXN	/		
84	SAI2_SDI0	PRELIGHT_TRIG_OUT/PWM2_CH1_M0/SAI2_S DI0_M0/SPI1_MISO_M1/GPIO3_B3_D	VCCIO3	
85	GND	/		
86	SAI2_MCLK	SDMMC1_DETNI2C5_SCL_M1/SAI2_MCLK_M 0/SPI1_CS1_M1/UART1_TX_M1/GPIO3_B6_D	VCCIO3	
87	I2C0_SCL_M0	I2C0_SCL_M0/SPI2AHB_CSN/GPIO0_C2_U	PMUIO1	
88	SAI2_SDI1	I2C5_SDA_M1/SAI2_SDI1_M0/UART1_RX_M1/ GPIO3_B7_D	VCCIO3	

89	I2C0_SDA_M0	I2C8_SDA_M1/UART6_CTSN_M0/FSPI_D3_M1/ SDIO_D3_M0/GMAC0_TXD2/GPIO2_B1_u	PMUIO1	
90	GND			
91	I2C2_SCL_M0	I2C3_SCL_M3/SDIO_CMD_M0/GMAC0_TXD3/G PIO2_B2_u	PMUIO1	
92	SARADC0_IN7	/		
93	I2C2_SDA_M0	I2C2_SDA_M0/PWM0_CH5_M0/GPIO0_D1_D	PMUIO1	
94	SARADC0_IN0	/		
95	PWM0_CH7	I2C3_SCL_M0/PWM0_CH7_M0/GPIO0_C0_D	PMUIO1	
96	GND			
97	PWM0_CH6	I2C3_SDA_M0/PWM0_CH6_M0/PWR_CTRL2/GP IO0_C1_D	PMUIO1	
98	UART0_RX_DBG	JTAG_TMS_M0/I2C1_SDA_M0/PWM1_CH3_M0/ UART0_RX_M2 /GPIO0_B4_U	PMUIO0	
99	PWM0_CH3	UART1_CTSN_M0/PWM0_CH3_M0/SPI2AHB_D 0/GPIO0_C7_D	PMUIO1	
100	UART0_TX_DBG	JTAG_TCK_M0/I2C1_SCL_M0/PWM1_CH2_M0/ UART0_TX_M2 /GPIO0_B3_U	PMUIO0	

▶ J2->J1B:

Pin	Signal Name（Default）	CPU Power Domain	Power Domain	Remarks
1	UART3_TXD	SARADC2_IN6/ETH_TXCLK_M0/VI_CIF_CLKO UT_M0FEPHY_LEDLINK_M2/UART3_TX_M2/P	VCCIO6	

		WM0_CH2_M2/GPIO6_C2_D		
2	UART7_TXD	SARADC2_IN1/ETH_RXCTL_M0/VI_CIF_D13_M0/PDM_SDI0_M1/UART7_RX_M1/GPIO6_B5_D	VCCIO6	
3	UART3_RXD	SARADC2_IN7/ETH_RXCLK_M0/VI_CIF_HSYN C_M0/FEPHY_LEDSPD_M2 I2C2_SDA_M2/UART3_RX_M2/PWM0_CH3_M2 /GPIO6_C3_D	VCCIO6	
4	UART7_RXD	ETH_RXCTL_M0/VI_CIF_D13_M0/PDM_SDI0_M1/UART7_RX_M1/GPIO6_B5_D	VCCIO6	
5	UART3_nRTS	SARADC2_IN4/ETH_MDC_M0/VI_CIF_VSYNC_M0/I2C2_SCL_M2/UART3_RTSN_M2/PWM0_CH0_M2/GPIO6_C0_D	VCCIO6	
6	UART7_nRTS	SARADC2_IN2/VI_CIF_D14_M0/PDM_SDI1_M1/UART7_RTSN_M1/GPIO6_B6_D	VCCIO6	
7	UART3_nCTS	SARADC2_IN5/ETH_CLK_25M_OUT_M0/VI_CIF_CLKIN_M0/UART3_CTSN_M2/PWM0_CH1_M2/GPIO6_C1_D	VCCIO6	
8	UART7_nCTS	SARADC2_IN3/ETH_MDIO_M0/VI_CIF_D15_M0 /PDM_CLK1_M1/UART7_CTSN_M1/GPIO6_B7_D	VCCIO6	
9	UART5_TXD	SARADC1_IN2/ETH_PPSCLK_M0/CAN1_RXD_	VCCIO6	

		M1/VI_CIF_D2_M0/SAI0_SDO0_M1/I2C4_SCL_M1/UART5_TX_M2/PWM1_CH2_M2/GPIO6_A2_D		
10	UART6_TXD	SARADC2_IN0/ETH_TXD1_M0/SAI0_SDO2_M1/VI_CIF_D8_M0/SAI0_SDI2_M1/SPI1_CS1_M0/UART6_TX_M1/GPIO6_B0_D	VCCIO6	
11	UART5_RXD	SARADC1_IN3/ETH_RXD2_M0/CAN1_TXD_M1/VI_CIF_D3_M0/SAI0_SDI0_M1/I2C4_SDA_M1/UART5_RX_M2/PWM1_CH3_M2/GPIO6_A3_D	VCCIO6	
12	UART6_RXD	ETH_TXCTL_M0/SAI0_SDO3_M1/VI_CIF_D9_M0/SAI0_SDI1_M1/SPI1_CS0_M0/UART6_RX_M1/GPIO6_B1_D	VCCIO6	
13	UART5_nRTS	SARADC1_IN4/ETH_RXD3_M0/VI_CIF_D4_M0/SAI0_MCLK_M1/I2C5_SCL_M3/UART5_RTSN_M2/PWM2_CH0_M2/GPIO6_A4_D	VCCIO6	
14	UART6_nRTS	ETH_RXD0_M0/VI_CIF_D10_M0/PDM_SDI2_M1/SPI1_MOSI_M0/UART6_RTSN_M1/GPIO6_B2_D	VCCIO6	
15	UART5_nCTS	SARADC1_IN5/ETH_TXD2_M0/VI_CIF_D5_M0/I2C5_SDA_M3/UART5_CTSN_M2/PWM2_CH1_M2/GPIO6_A5_D	VCCIO6	
16	UART6_nCTS	ETH_RXD1_M0/VI_CIF_D11_M0/PDM_SDI3_M1/SPI1_MISO_M0/UART6_CTSN_M1/GPIO6_B3_D	VCCIO6	

		D		
17	UART4_TXD	SARADC1_IN0/ETH_PPSTRIG_M0/CAN0_RXD_M1/VI_CIF_D0_M0/SAI0_SCLK_M1/I2C3_SCL_M3/UART4_TX_M2/PWM1_CH0_M2/GPIO6_A0_D	VCCIO6	
18	UART4_nRTS	SARADC1_IN6/ETH_TXD3_M0/VI_CIF_D6_M0/UART4_RTSN_M2/PWM2_CH2_M2/GPIO6_A6_D	VCCIO6	
19	UART4_RXD	SARADC1_IN1/ETH_PTP_REFCLK_M0/CAN0_TXD_M1/VI_CIF_D1_M0/SAI0_LRCK_M1/I2C3_SDA_M3/UART4_RX_M2/PWM1_CH1_M2/GPIO6_A1_D	VCCIO6	
20	UART4_nCTS	SARADC1_IN7/ETH_TXD0_M0/SAI0_SDO1_M1/VI_CIF_D7_M0/SAI0_SDI3_M1/UART4_CTSN_M2/PWM2_CH3_M2/GPIO6_A7_D	VCCIO6	
21	GND	/	/	
22	GND	/	/	
23	MIPI_RX1_D0N	MIPI_DPHY_CSI_RX1_D0N/LVDS_RX1_D0N	/	
24	MIPI_RX0_D0N	MIPI_DPHY_CSI_RX0_D0N/LVDS_RX0_D0N	/	
25	MIPI_RX1_D0P	MIPI_DPHY_CSI_RX1_D0P/LVDS_RX1_D0P	/	
26	MIPI_RX0_D0P	MIPI_DPHY_CSI_RX0_D0P/LVDS_RX0_D0P	/	
27	MIPI_RX1_D1N	MIPI_DPHY_CSI_RX1_D1N/LVDS_RX1_D1N	/	

28	MIPI_RX0_D1N	MIPI_DPHY_CSI_RX0_D1N/LVDS_RX0_D1N	/	
29	MIPI_RX1_D1P	MIPI_DPHY_CSI_RX1_D1P/LVDS_RX1_D1P	/	
30	MIPI_RX0_D1P	MIPI_DPHY_CSI_RX0_D1P/LVDS_RX0_D1P		
31	MIPI_RX1_CLK0N	MIPI_DPHY_CSI_RX1_CLK0N/LVDS_RX1_CLK0N		
32	MIPI_RX0_CLK0N	MIPI_DPHY_CSI_RX0_CLK0N/LVDS_RX0_CLK0N		
33	MIPI_RX1_CLK0P	MIPI_DPHY_CSI_RX1_CLK0P/LVDS_RX1_CLK0P		
34	MIPI_RX0_CLK0P	MIPI_DPHY_CSI_RX0_CLK0P/LVDS_RX0_CLK0P		
35	MIPI_RX1_CLK1N	MIPI_DPHY_CSI_RX1_CLK1N/LVDS_RX1_CLK1N		
36	MIPI_RX0_CLK1N	MIPI_DPHY_CSI_RX0_CLK1N/LVDS_RX0_CLK1N		
37	MIPI_RX1_CLK1P	MIPI_DPHY_CSI_RX1_CLK1P/LVDS_RX1_CLK1P		
38	MIPI_RX0_CLK1P	MIPI_DPHY_CSI_RX0_CLK1P/LVDS_RX0_CLK1P		
39	MIPI_RX1_D3N	MIPI_DPHY_CSI_RX1_D3N/LVDS_RX1_D3N		
40	MIPI_RX0_D3N	MIPI_DPHY_CSI_RX0_D3N/LVDS_RX0_D3N		
41	MIPI_RX1_D3P	MIPI_DPHY_CSI_RX1_D3P/LVDS_RX1_D3P		

42	MIPI_RX0_D3P	MIPI_DPHY_CSI_RX0_D3P/LVDS_RX0_D3P		
43	MIPI_RX1_D2N	MIPI_DPHY_CSI_RX1_D2N/LVDS_RX1_D2N		
44	MIPI_RX0_D2N	MIPI_DPHY_CSI_RX0_D2N/LVDS_RX0_D2N		
45	MIPI_RX1_D2P	MIPI_DPHY_CSI_RX1_D2P/LVDS_RX1_D2P		
46	MIPI_RX0_D2P	MIPI_DPHY_CSI_RX0_D2P/LVDS_RX0_D2P		
47	GND	/		
48	GND	/		
49	CAM_CLK2_OUT	CAM_CLK2_OUT/I2C1_SCL_M2/UART4_CTSN_M0/GPIO4_A1_U	VCCIO4	
50	CAM_CLK0_OUT	CAM_CLK0_OUT/UART5_CTSN_M0/GPIO4_B1_D	VCCIO4	
51	CAM_CLK3_OUT	CAM_CLK2_OUT/I2C1_SCL_M2/UART4_CTSN_M0/GPIO4_A1_U	VCCIO4	
52	CAM_CLK1_OUT	CAM_CLK1_OUT/UART5_RTSN_M0/GPIO4_B0_D	VCCIO4	
53	I2C4_SCL_M2	PWM0_CH7_M1/SPI0_CLK_M1/SAI1_SDO_M1/I2C4_SCL_M2 UART5_RX_M0/GPIO4_A7_D	VCCIO4	
54	I2C3_SCL_M1	SPI0_MOSI_M1/SAI1_SCLK_M1/I2C3_SCL_M1/GPIO4_A4_D	VCCIO4	
55	I2C4_SDA_M2	PWM0_CH6_M1/SPI0_CSN0_M1/SAI1_SDI_M1/I2C4_SDA_M2 UART5_TX_M0/GPIO4_A6_D	VCCIO4	

56	I2C3_SDA_M1	SPI0_MISO_M1/SAI1_LRCK_M1/I2C3_SDA_M1/ GPIO4_A5_D	VCCIO4	
57	GPIO4_A3_D	PWM0_CH5_M1/SPI0_CSN1_M1/SAI1_MCLK_M 1/UART4_TX_M0 /GPIO4_A3_D	VCCIO4	
58	GPIO4_A2_D	UART4_RX_M0/GPIO4_A2_D/ PWM0_CH4_M1	VCCIO4	
59	GND	/	/	
60	GND	/	/	
61	MIC1_N		/	
62	GPIO7_A4_D	PDM_CLK0_M0/I2C4_SDA_M3/UART2_CTSN_ M1/GPIO7_A4_D	VCCIO7	
63	MIC1_P	/	/	
64	GPIO7_A1_D	PDM_CLK1_M0/I2C4_SCL_M3/PWM2_CH5_M1/ GPIO7_A1_D	VCCIO7	
65	MIC0_N	/	/	
66	SAI0_MCLK	SAI0_MCLK_M0/PWM2_CH6_M1/GPIO7_A2_D	VCCIO7	
67	MIC0_P	/	/	
68	SAI0_SCLK	SAI0_SCLK_M0/PWM2_CH4_M1/GPIO7_A0_D	VCCIO7	
69	GND	/	/	
70	SAI0_LRCK	SAI0_LRCK_M0/DSM_AUD_LN/PWM2_CH7_M 1/GPIO7_A3_D	VCCIO7	
71	SDMMC0_CLK	UART4_RX_M3/UART3_RTSN_M0/SDMMC0_C LK/GPIO2_A4_D	VCCIO2	

72	SAI0_SDO0	SAI0_SDO0_M0/DSM_AUD_LP/GPIO7_A5_D	VCCIO7	
73	SDMMC0_D0	I2C0_SDA_M1/UART0_RX_M0/SDMMC0_D0/GPIO2_A0_D	VCCIO2	
74	SAI0_SDI0	SAI0_SDI0_M0/PDM_SDI0_M0/GPIO7_A6_D	VCCIO7	
75	SDMMC0_D1	I2C0_SCL_M1/UART0_TX_M0/SDMMC0_D1/GPIO2_A1_D	VCCIO2	
76	SAI0_SDO1	SAI0_SDO1_M0/SAI0_SDI3_M0/PDM_SDI3_M0/UART2_RTSN_M1 GPIO7_A7_D	VCCIO7	
77	SDMMC0_CMD	UART4_TX_M3/UART3_CTSN_M0/SDMMC0_CMD/GPIO2_A5_D	VCCIO2	
78	DSM_AUD_RP	SAI0_SDO3_M0/SAI0_SDI1_M0/PDM_SDI1_M0/I2C1_SDA_M3/DSM_AUD_RP/UART2_TX_M1/GPIO7_B1_D	VCCIO7	
79	SDMMC0_D2	TEST_CLK1_OUT/JTAG_TCK_M1/UART4_RTSN_M3/UART3_RX_M0/SDMMC0_D2/GPIO2_A2_D	VCCIO2	
80	DSM_AUD_RN	SAI0_SDO2_M0/SAI0_SDI2_M0/PDM_SDI2_M0/I2C1_SCL_M3 DSM_AUD_RN/UART2_RX_M1/GPIO7_B0_D	VCCIO7	
81	SDMMC0_D3	JTAG_TMS_M1/UART4_CTSN_M3/UART3_TX_M0/SDMMC0_D3/GPIO2_A3_D	VCCIO2	
82	GND	/		

83	SDMMC0_DET	PWM1_CH0_M0/SDMMC0_DET/GPIO0_A5_U	PMUIO0	
84	USB_HOST_DP	/		
85	SPI0_nCS1_M0	SPI0_CS1N_M0/FSPI1_D2_M0/GPIO0_A6_U	PMUIO0	
86	USB_HOST_DM	/		
87	SPI0_nCS0_M0	SPI0_CS0N_M0/FSPI1_CSN0_M0/GPIO0_A7_U	PMUIO0	
88	USB_DRD_SSRXN	/		
89	SPI0_MOSI_M0	SPI0_MOSI_M0/ FSPI1_D0_M0/ GPIO0_B0_D	PMUIO0	
90	USB_DRD_SSRXP	/		
91	SPI0_MISO_M0	SPI0_MISO_M0/FSPI1_D1_M0/GPIO0_B1_D	PMUIO0	
92	USB_DRD_SSTXN	/		
93	SPI0_CLK_M0	SPI0_CLK_M0/ FSPI1_CLK_M0/ GPIO0_B2_D	PMUIO0	
94	USB_DRD_SSTXP	/		
95	CLK_OUT_24M	TEST_CLK0_OUT/REF_CLK0_OUT/GPIO0_A0_Z	PMUIO0	
96	USB_DRD_DP	/		
97	CLK_OUT_32K	RTC_32K_OUT/CLK_32K/GPIO0_A2_Z	PMUIO0	
98	USB_DRD_DM	/		
99	SYS_nRST			
100	USB_DRD_VDET	/		

II. Structure & Size:

Unit: mm, If connector technical drawings or detailed specifications are required, please email: supports@qiyangtech.com

Part Numbers:

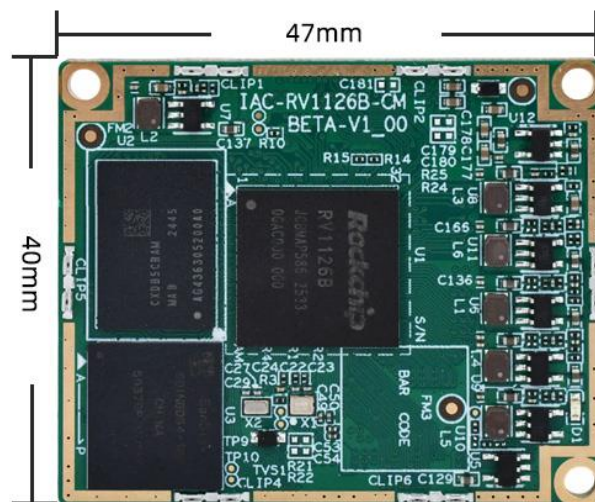
Carrier Board (Female): DF40HC(3.0)-100DS-0.4V(51)

SoM (Male): DF40C-100DP-0.4V(51)

Brand: Hirose

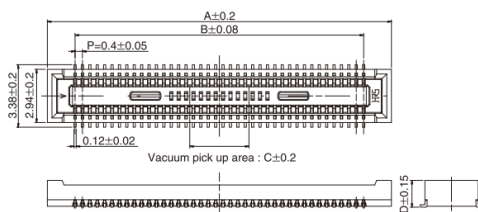
Standoff: M2.5X3.0X4 (Inner Diameter × Height × Outer Diameter)

2.1. SoM Dimensions

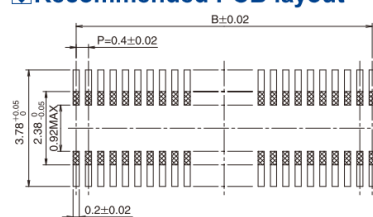


2.2 SoM Connector Dimensions

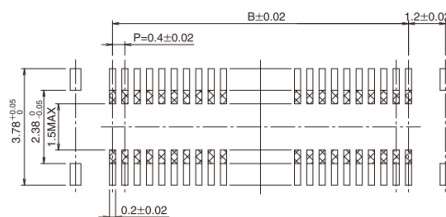
■ Receptacle (Stacking height 2.5mm to 4.0mm)



◆ 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 Characteristics

3.1. Core Related Power Supply

Classification	Power Network	Description	Voltage	Remarks
Core Power	VCC_SYS_3V3	Core power supply	3V3/3A	Main Power Input
	VCC_AUD_1V8	Core Output	1.8V/300mA	Power Output
	VCC_IO_SD0	TF Power Supply	3.3V/1.8V	Default 3.3V

	VCC_IO_SD1	TF Power Supply	3.3V/1.8V	Default 1.8V
	VCC_IO_1V8	Core Output	1.8V/300mA	Output
	VCC_IO_3V3	Core Output	3.3V/600mA	Output
IO	PMUIO0	IO Voltage	3.3V	
	PMUIO1	IO Voltage	3.3V	
	VCCIO1	IO Voltage	1.8V/3.3Vs	Default 1.8V
	VCCIO2	IO Voltage	1.8V/3.3V	Default 1.8V
	VCCIO3	IO Voltage	1.8V/3.3V	Default 1.8V
	VCCIO4	IO Voltage	1.8V/3.3V	Default 1.8V
	VCCIO5	IO Voltage	3.3V	
	VCCIO6	IO Voltage	3.3V	
	VCCIO7	IO Voltage	3.3V	

IV. Remark

1. Before connecting to LCD, please confirm LCD power specification.

2. Please use the original connecting accessories to avoid damaging the main board.

3. We ensure offering technology support through E-mail, telephone for lifelong technical support service.

4. We ensure offering 6-months repair service for free, if malfunction occurs in warranty because of quality problem. Under that circumstance, please contact our retailer or our company with purchase receipt within warranty period, we are willing to repair or replace.

5. Under these circumstances, we do not offer repair for free:

- Over warranty time;
- Do not attach purchase receipt;
- Liquid inlet, damp or mold;
- Malfunction and damage is not due to product quality but drops, intense shaking, arbitrarily modify, disoperation after purchase;
- Damage of force majeure.

6. We reserve intellectual property for the software and hardware technical data of IAC-RV1126B-CM; users can only use them for teaching, testing, researching. Shall not be engaged in any commercial purpose.

Shall not distribute them on the Internet. Shall not intercept, modify them to tamper copyright.

7. We accept batch order; we can offer technical support and service.

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