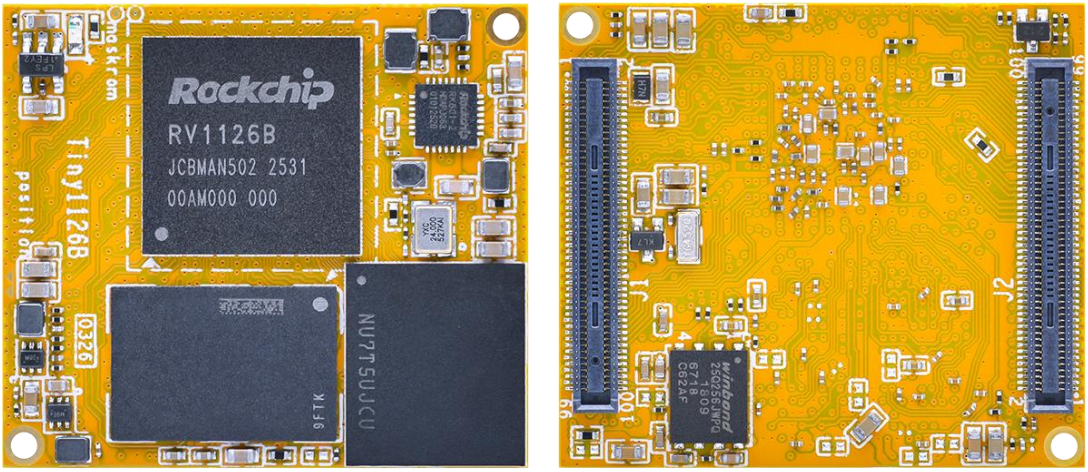
Tiny1126B Reference User Manual

V2.202606



Boardcon Embedded Design

www.armdesigner.com

1. Introduction

1.1. About this Manual

This manual is intended to provide the user with an overview of the board and benefits, complete features specifications, and set up procedures. It contains important safety information as well.

1.2. Feedback and Update to this Manual

To help our customers make the most of our products, we are continually making additional and updated resources available on the Boardcon website ((www.boardcon.com , www.armdesigner.com)).

These include manuals, application notes, programming examples, and updated software and hardware. Check in periodically to see what's new!

When we are prioritizing work on these updated resources, feedback from customers is the number one influence, If you have questions, comments, or concerns about your product or project, please no hesitate to contact us at support@armdesigner.com.

1.3. Limited Warranty

Boardcon warrants this product to be free of defects in material and workmanship for a period of one year from date of buy. During this warranty period Boardcon will repair or replace the defective unit in accordance with the following process:

A copy of the original invoice must be included when returning the defective unit to Boardcon. This limited warranty does not cover damages resulting from lighting or other power surges, misuse, abuse, abnormal conditions of operation, or attempts to alter or modify the function of the product.

This warranty is limited to the repair or replacement of the defective unit. In no event shall Boardcon be liable or responsible for any loss or damages, including but not limited to any lost profits, incidental or consequential damages, loss of business, or anticipatory profits arising from the use or inability to use this product.

Repairs make after the expiration of the warranty period are subject to a repair charge and the cost of return shipping. Please contact Boardcon to arrange for any repair service and to obtain repair charge information.

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1 Tiny1126B Introduction

1.1 Summary

The Tiny1126B system-on-module is equipped with Rockchip's RV1126B, which features a built-in quad-core Cortex-A53, 3.0 TOPS NPU, and RISC-V MCU. It is designed specifically for IPC/CVR devices, AI camera devices, intelligent interactive devices, and mini robots. The high-performance and low-power solution can help customers introduce new technologies more quickly and enhance overall solution efficiency.

1.2 Features

- **Microprocessor**
  - Quad-core Cortex-A53 up to 1.6G
  - 32KB I-cache and 32KB D-cache for each core, 512KB L3 cache
  - 3.0 TOPS Neural Process Unit
  - RISC-V MCU to support 250mS fast boot
  - Max 12M ISP

  Memory Organization
  - LPDDR4/4x RAM up to 4GB
  - EMMC4.51 up to 256GB
  - SPI Flash up to 8MB
- **Video Decoder/Encoder**
  - Supports video decode/encode up to 4K@30fps
  - Supports real-time decoding of H.264/265
  - Supports real-time UHD H.264/265 video encoding
  - Picture size up to 8192x8192
- **Display Subsystem**
  - **Video Output**

    Supports 4 lanes MIPI DSI up to 2560x1440@60fps

    Supports 24bit RGB parallel output
  - **Image in**

    Supports up to 16bit DVP interface

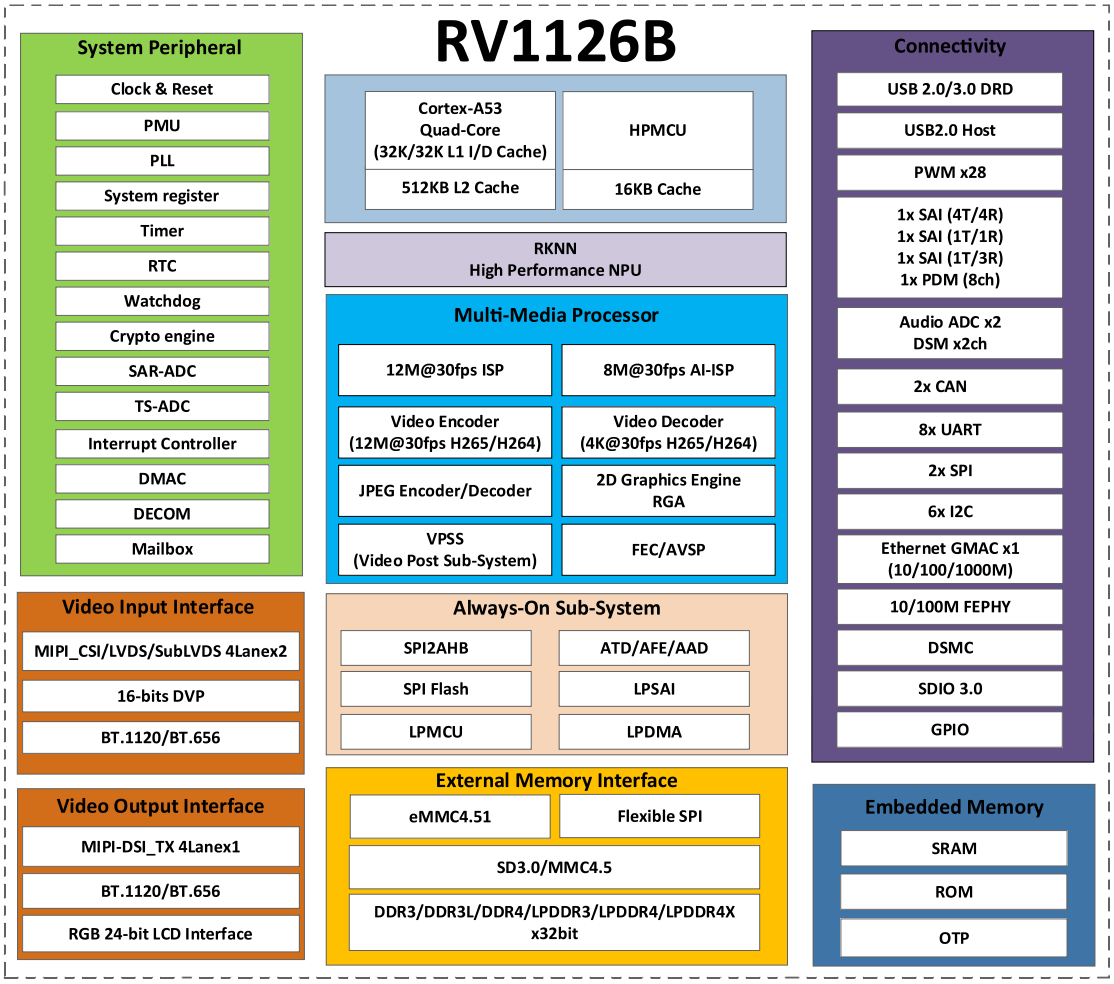
    Supports 2ch 4lanes or 4ch 2lanes MIPI CSI interface
- **Audio**
  - Three I2S/PCM interface
  - Support Mic array Up to 8ch PDM/TDM interface
  - Support PWM audio output
  - Two analog MIC input
- **USB**
  - Two 2.0 USB interfaces
  - One USB 3.0 interfaces

- One USB 2.0 OTG, and one 2.0 USB hosts

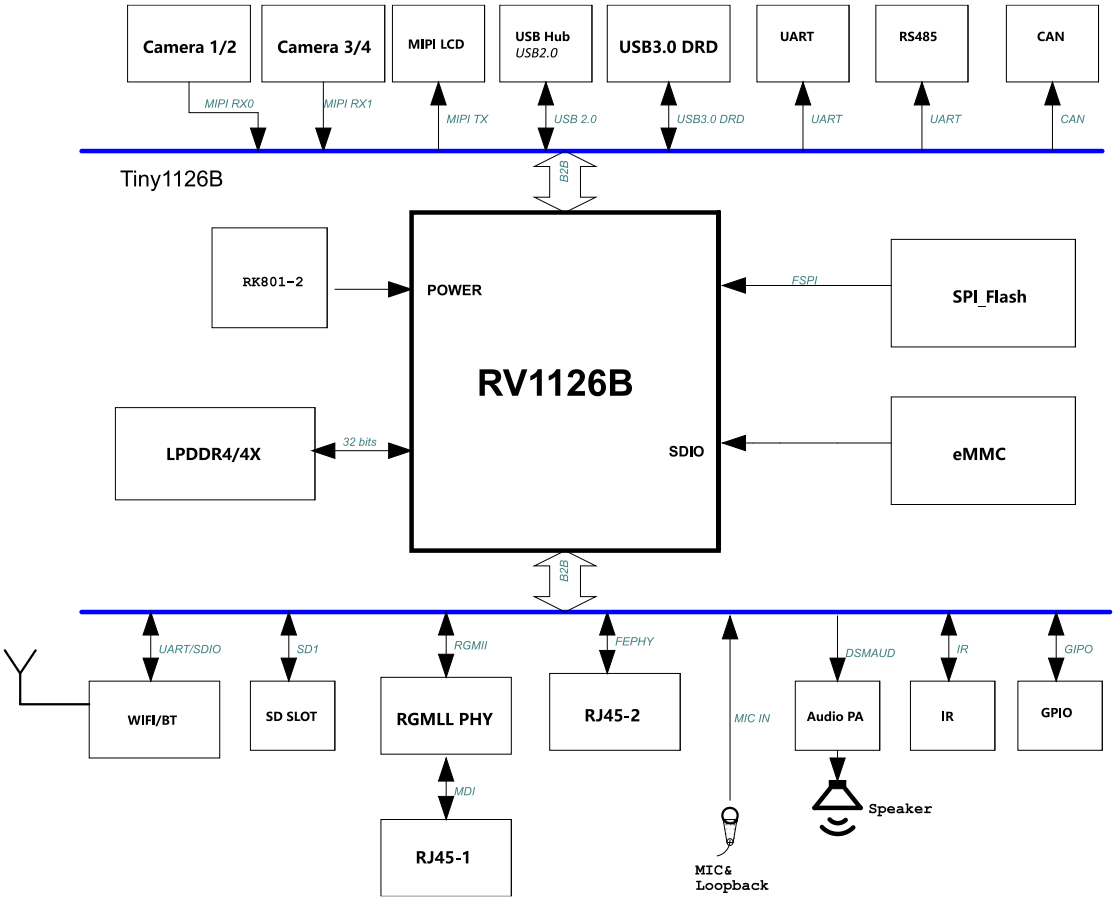
- **Ethernet**
  - Support 10/100M MDI interface
  - Support 10/100/1000M RGMII interface
- **I2C**
  - Up to five I2Cs
  - Support standard mode and fast mode (up to 400kbit/s)
- **SDIO**
  - Support 2CH SDIO 3.0 protocol
- **CAN**
  - Support CAN FD protocol
  - Up to 2-CH CAN
- **SPI**
  - Up to two SPI controllers,
  - Full-duplex synchronous serial interface
- **UART**
  - Support up to 8 UARTs
  - UART0 with 2 wires for debug tools
  - Embedded two 64byte FIFO
  - Support RS485 auto flow control mode by UART1-7
- **DSMC**
  - Achieve low cost FPGA connection
  - Support 8-16 wire serial transfer mode
  - Support up to select 4 chips, and signals configured to be valid simultaneously in transaction
- **ADC**
  - Up to 23-CH ADC channels
  - 12-bit resolution
  - Voltage input range between 0V to 1.8V
  - Support up to 2MS/s sampling rate
- **PWM**
  - Total 28-ch with 4 PWMs interface
  - Only PWM2 can generates waveform through lookup table
  - Support continuous mode and one-shot output mode
  - Support input caption mode
- **Power unit**
  - RK801 on board
  - 4.5~14.2V main power input and RTC power input
  - VCC3V3_SYS output for IO

1.3 Tiny1126B Block Diagram

1.3.1 RV1126B Block Diagram



1.3.2 Development board (SBC1126B) Block Diagram

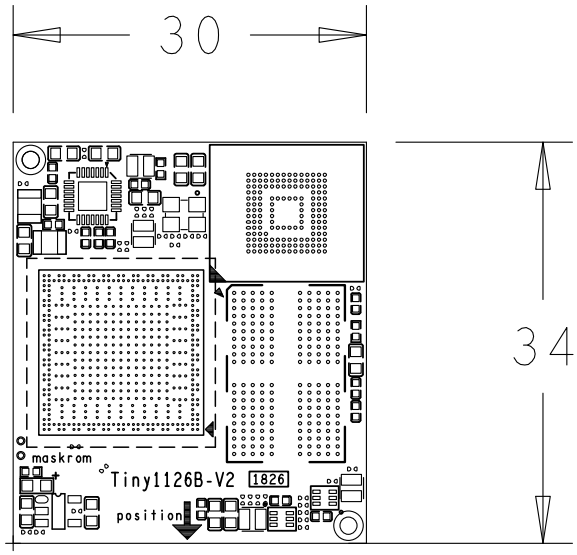


1.4 Tiny1126B specifications

Feature	Specifications
CPU	Quad-core Cortex-A53
DDR	2GB LPDDR4/4x (up to 4GB)
eMMC FLASH	8GB (up to 256GB)
Power	DC 5V
MIPI DSI	4-Lanes
I2S	3-CH
MIPI CSI	2-CH 4-Lanes or 4-CH 2-Lanes
RGB LCD	24bit
DSMC	16bit
Camera	1-CH(DVP) and 4-CH(CSI)
USB	2-CH (USB HOST2.0 and USB3.0 DRD)
Ethernet	1000M GMAC or 100M MDI
SDMMC	2-CH

I2C	5-CH
CAN	2-CH
SPI	2-CH
UART	7-CH, 1-CH(DEBUG)
PWM	28-CH
ADC IN	23-CH
Board Dimension	30 x 34mm

1.5 Tiny1126B PCB Dimension



1.6 Tiny1126B Pin Definition

J1	Signal	Description or functions	GPIO serial	IO Voltage
1	VCC5V0_SYS	5V Main Power input		5V
2	VCC5V0_SYS	5V Main Power input		5V
3	VCC5V0_SYS	5V Main Power input		5V
4	VCC5V0_SYS	5V Main Power input		5V
5	VCC5V0_SYS	5V Main Power input		5V
6	VCC5V0_SYS	5V Main Power input		5V
7	GND	Ground		0V
8	GND	Ground		0V
9	GPIO6_A2_D	SARADC1_IN2/VI_CIF_D2_M0/ ETH_PPSCLK_M0/CAN1_RXD _M1/SAI0_SDO0_M1/UART5_T X_M2/I2C4_SCL_M1	GPIO6_A2_d/PWM1 _CH2_M2	3.3V

J1	Signal	Description or functions	GPIO serial	IO Voltage
10	SDMMC0_CLK	UART3_RTSN_M0/UART4_RX_M3	GPIO2_A4_d	3.3V/1.8V
11	GPIO6_A1_D	SARADC1_IN1/VI_CIF_D1_M0/ETH_PTP_REFCLK_M0/CAN0_TXD_M1/SAI0_LRCK_M1/UART4_RX_M2/I2C3_SDA_M3	GPIO6_A1_d/PWM1_CH1_M2	3.3V
12	SDMMC0_D0	UART0_RX_M0/I2C0_SDA_M1	GPIO2_A0_d	3.3V/1.8V
13	GPIO6_B6_D	SPI1_CSN1_M1/SAI2_MCLK_M0/SDMMC1_DETN/UART1_TX_M1/I2C5_SCL_M1	GPIO6_B6_d	3.3V
14	SDMMC0_D1	UART0_TX_M0/I2C0_SCL_M1	GPIO2_A1_d	3.3V/1.8V
15	GPIO7_A1_D	I2C4_SCL_M3/PDM_CLK1_M0/PWM2_CH5_M1	GPIO7_A1_d	3.3V
16	SDMMC0_CMD	UART3_CTSN_M0/UART4_TX_M3	GPIO2_A5_d	3.3V/1.8V
17	GPIO7_A0_D	SAI0_SCLK_M0/PWM2_CH4_M1	GPIO7_A0_d	3.3V
18	SDMMC0_D2	UART3_RX_M0/UART4_RTSN_M3/JTAG_TCK_M1/TEST_CLK1_OUT	GPIO2_A2_d	3.3V/1.8V
19	PMIC_PWRON	Power Key input	(PU 22K)	5V
20	SDMMC0_D3	UART3_TX_M0/UART4_CTSN_M3/JTAG_TMS_M1	GPIO2_A3_d	3.3V/1.8V
21	MIPI_CSI_RX1_D0N			0.6V
22	GND	Ground		0V
23	MIPI_CSI_RX1_D0P			0.6V
24	nRESET	Reset Key input	(PU 1K)	3.3V
25	MIPI_CSI_RX1_D1N			0.6V
26	MIC0_N	Microphone 0-CH or negative in		0V
27	MIPI_CSI_RX1_D1P			0.6V
28	MIC0_P	Microphone 0-CH or positive in		0V
29	MIPI_CSI_RX1_CLK0N			0.6V
30	MIC1_N	Microphone 1-CH or negative in		0V
31	MIPI_CSI_RX1_CLK0P			0.6V
32	MIC1_P	Microphone 1-CH or positive in		0V
33	GND	Ground		0V

J1	Signal	Description or functions	GPIO serial	IO Voltage
34	MIPI_CSI_RX0_CLK1N			0.6V
35	MIPI_CSI_RX1_D3N	Or MIPI_CSI_RX1_D1N for CLK1		0.6V
36	MIPI_CSI_RX0_CLK1P			0.6V
37	MIPI_CSI_RX1_D3P	Or MIPI_CSI_RX1_D1P for CLK1		0.6V
38	VBAT_RTC	RTC Power input		3.3V
39	MIPI_CSI_RX1_CLK1N			0.6V
40	I2C3_SDA_CAM_1V8	SPI0_MISO_M1/SAI1_LRCK_M1/I2C3_SDA_M1	GPIO4_A5_d	1.8V
41	MIPI_CSI_RX1_CLK1P			0.6V
42	I2C3_SCL_CAM_1V8	SPI0_MOSI_M1/SAI1_SCLK_M1/I2C3_SCL_M1	GPIO4_A4_d	1.8V
43	MIPI_CSI_RX1_D2N	Or MIPI_CSI_RX1_D0N for CLK1		0.6V
44	MIPI_CSI_RX0_D0N			0.6V
45	MIPI_CSI_RX1_D2P	Or MIPI_CSI_RX1_D0P for CLK1		0.6V
46	MIPI_CSI_RX0_D0P			0.6V
47	UART4_RTSN_M0_1V8	CAM_CLK3_OUT /I2C1_SDA_M2	GPIO4_A0_u	1.8V
48	MIPI_CSI_RX0_D1N			0.6V
49	UART4_CTSN_M0_1V8	CAM_CLK2_OUT /I2C1_SCL_M2	GPIO4_A1_u	1.8V
50	MIPI_CSI_RX0_D1P			0.6V
51	MIPI_MCLK_OUT1_1V8	UART5_RTSN_M0	GPIO4_B0_d	1.8V
52	MIPI_CSI_RX0_D3N	Or MIPI_CSI_RX0_D1N for CLK1		0.6V
53	GND	Ground		0V
54	MIPI_CSI_RX0_D3P	Or MIPI_CSI_RX0_D1P for CLK1		0.6V
55	MIPI_MCLK_OUT0_1V8	UART5_CTSN_M0	GPIO4_B1_d	1.8V

J1	Signal	Description or functions	GPIO serial	IO Voltage
56	MIPI_CSI_RX0_D2N	Or MIPI_CSI_RX0_D0N for CLK1		0.6V
57	GPIO7_A5_D	SAI0_SDO0_M0/DSM_AUD_LP	GPIO7_A5_d	3.3V
58	MIPI_CSI_RX0_D2P	Or MIPI_CSI_RX0_D0P for CLK1		0.6V
59	GPIO7_A3_D	SAI0_LRCK_M0/DSM_AUD_LN/PWM2_CH7_M1	GPIO7_A3_d	3.3V
60	MIPI_CSI_RX0_CLK0N			0.6V
61	GPIO7_A4_D	I2C4_SDA_M3/PDM_CLK0_M0/UART2_CTSN_M1	GPIO7_A4_d	3.3V
62	MIPI_CSI_RX0_CLK0P			0.6V
63	GPIO7_A2_D	SAI0_MCLK_M0/PWM2_CH6_M1	GPIO7_A2_d	3.3V
64	GND	Ground		0V
65	GPIO7_A6_D	SAI0_SDI0_M0/PDM_SDI0_M0	GPIO7_A6_d	3.3V
66	UART4_RX_M0_1V8	PWM0_CH4_M1	GPIO4_A2_d	1.8V
67	GPIO7_A7_D	SAI0_SDI3_M0/SAI0_SDO1_M0/PDM_SDI3_M0/UART2_RTSN_M1	GPIO7_A7_d	3.3V
68	UART4_TX_M0_1V8	SPI0_CSN1_M1/SAI1_MCLK_M1/PWM0_CH5_M1	GPIO4_A3_d	1.8V
69	DSM_AUD_RN	SAI0_SDI2_M0/SAI0_SDO2_M0/PDM_SDI2_M0/I2C1_SCL_M3/UART2_RX_M1	GPIO7_B0_d	3.3V
70	I2C4_SDA_CAM_1V8	SPI0_CSN0_M1/SAI1_SDI_M1/PWM0_CH6_M1/UART5_TX_M0/I2C4_SDA_M2	GPIO4_A6_d	1.8V
71	DSM_AUD_RP	SAI0_SDI1_M0/SAI0_SDO3_M0/PDM_SDI1_M0/I2C1_SDA_M3/UART2_TX_M1	GPIO7_B1_d	3.3V
72	I2C4_SCL_CAM_1V8	SPI0_CLK_M1/SAI1_SDO_M1/PWM0_CH7_M1/UART5_RX_M0/I2C4_SCL_M2	GPIO4_A7_d	1.8V
73	GPIO0_C5_D	SPI2AHB_D2/PWM0_CH1_M0/UART1_RX_M0/I2C5_SDA_M0	GPIO0_C5_d	3.3V
74	UART0_RX_DBG	UART0_RX_M2/PWM1_CH3_M0/I2C1_SDA_M0/JTAG_TMS_M0	GPIO0_B4_u (For debug)	3.3V
75	CLK_32K_OUT	RTC_32K_OUT/CLK_32K	GPIO0_A2_z	3.3V

J1	Signal	Description or functions	GPIO serial	IO Voltage
76	UART0_TX_DBG	UART0_TX_M2/PWM1_CH2_M0/I2C1_SCL_M0/JTAG_TCK_M0	GPIO0_B3_u (For debug)	3.3V
77	GND	Ground		0V
78	I2C2_SCL_M0	PWM0_CH4_M0	GPIO0_D0_d	3.3V
79	USB3_DRD_SSRXN			0.6V
80	I2C2_SDA_M0	PWM0_CH5_M0	GPIO0_D1_d	3.3V
81	USB3_DRD_SSRXP			0.6V
82	SPK_CTRL		GPIO0_A4_d	3.3V
83	GND	Ground		0V
84	BT_WAKE	FSPI1_D2_M0/SPI0_CSN1_M0	GPIO0_A6_u	3.3V
85	USB3_DRD_SSTXN			0.6V
86	BT_WAKE_HOST	FSPI1_CSN0_M0/SPI0_CSN0_M0	GPIO0_A7_u	3.3V
87	USB3_DRD_SSTXP			0.6V
88	SDMMC0_DET	PWM1_CH0_M0	GPIO0_A5_u	3.3V
89	GND	Ground		0V
90	WIFI_REG_ON	FSPI1_CLK_M0/SPI0_CLK_M0	GPIO0_B2_d	3.3V
91	USB2_HOST_DP			0.6V
92	WIFI_WAKE_HOST	FSPI1_D1_M0/SPI0_MISO_M0	GPIO0_B1_d	3.3V
93	USB2_HOST_DM			0.6V
94	BT_RST	FSPI1_D0_M0/SPI0_MOSI_M0	GPIO0_B0_d	3.3V
95	USB2_DRD_VBUSDET			3.3V
96	GND	Ground		0V
97	USB2_DRD_ID		(PU 200K)	1.8V
98	USB2_DRD_DP			0.6V
99	GPIO0_A3_U		GPIO0_A3_u	3.3V
100	USB2_DRD_DM			0.6V

J2	Signal	Description or functions	GPIO serial	IO Voltage
1	VO_LCDC_D17	VI_CIF_D13_M1/DSMC_D6/IR_FPA_SDA5/PWM3_CH1_M1	GPIO5_C1_d	3.3V
2	ETH_CLK_25M_OUT_M0	SARADC2_IN5/VI_CIF_CLKIN_M0/PWM0_CH1_M2/UART3_CTSN_M2	GPIO6_C1_d	3.3V

J2	Signal	Description or functions	GPIO serial	IO Voltage
3	VO_LCDC_D18	VI_CIF_D14_M1/DSMC_D5/IR_FPA_SDA6/PWM3_CH2_M1	GPIO5_C2_d	3.3V
4	GND	Ground		0V
5	VO_LCDC_D23	VI_CIF_HSYNC_M1/DSMC_D0/SAI1_SDI_M2/PWM3_CH7_M1	GPIO5_C7_d	3.3V
6	ETH_TXCLK_M0	SARADC2_IN6/VI_CIF_CLKOUT_M0/FEPHY_LEDLINK_M2/PWM0_CH2_M2/UART3_TX_M2	GPIO6_C2_d	3.3V
7	VO_LCDC_D22	VI_CIF_CLKIN_M1/DSMC_D1/SAI1_LRCK_M2/PWM3_CH6_M1	GPIO5_C6_d	3.3V
8	ETH_TXCTL_M0	VI_CIF_D9_M0/SPI1_CSN0_M0/SAI0_SDI1_M1/SAI0_SDO3_M1/UART6_RX_M1	GPIO6_B1_d	3.3V
9	VO_LCDC_D21	VI_CIF_CLKOUT_M1/DSMC_D2/SAI1_SCLK_M2/PWM3_CH5_M1	GPIO5_C5_d	3.3V
10	ETH_TXD1_M0	SARADC2_IN0/VI_CIF_D8_M0/SPI1_CSN1_M0/SAI0_SDI2_M1/SAI0_SDO2_M1/UART6_TX_M1	GPIO6_B0_d	3.3V
11	VO_LCDC_D11	VI_CIF_D7_M1/DSMC_RDYN/PWM2_CH1_M1/UART6_CTSN_M0	GPIO5_B3_d	3.3V
12	ETH_TXD0_M0	SARADC1_IN7/VI_CIF_D7_M0/PWM2_CH3_M2/SAI0_SDI3_M1/SAI0_SDO1_M1/UART4_CTSN_M2	GPIO6_A7_d	3.3V
13	VO_LCDC_D00	VI_CIF_D0_M1/DSMC_CSN1/IR_FPA_SDA0/PWM2_CH4_M0/UART4_RTSN_M1	GPIO5_A0_d	3.3V
14	ETH_TXD3_M0	SARADC1_IN6/VI_CIF_D6_M0/PWM2_CH2_M2/UART4_RTSN_M2	GPIO6_A6_d	3.3V
15	VO_LCDC_D01	I2C5_SCL_M2/VI_CIF_D1_M1/DSMC_DQS1/SAI2_SDI2_M1/IR_FPA_SDA1/PWM2_CH5_M0/UART4_CTSN_M1	GPIO5_A1_d	3.3V
16	ETH_TXD2_M0	SARADC1_IN5/VI_CIF_D5_M0/PWM2_CH1_M2/UART5_CTSN_M2/I2C5_SDA_M3	GPIO6_A5_d	3.3V

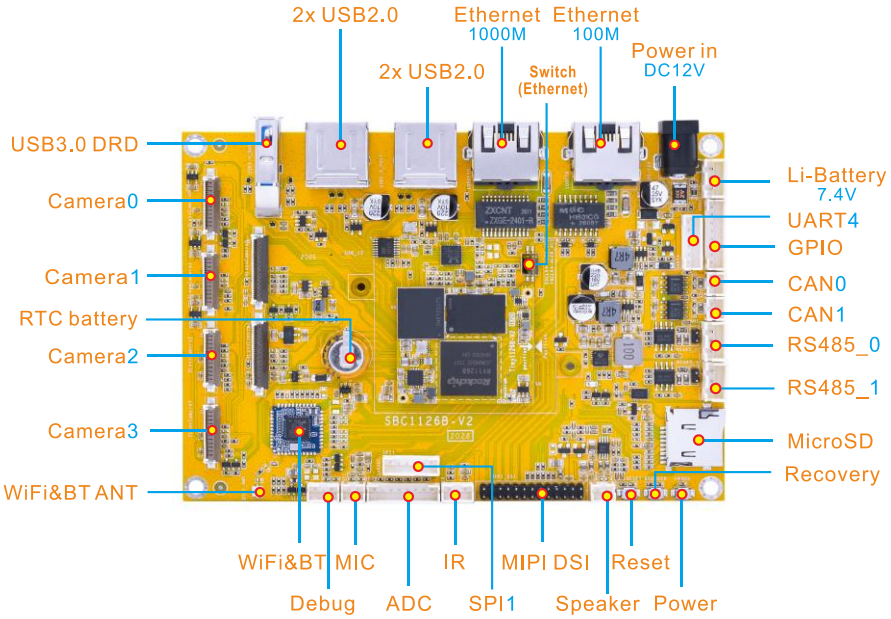
J2	Signal	Description or functions	GPIO serial	IO Voltage
17	VO_LCDC_D02	VI_CIF_D2_M1/DSMC_D15/SAI2_SDI1_M1/PWM0_CH5_M2/UART4_TX_M1	GPIO5_A2_d	3.3V
18	ETH_MDIO_M0	SARADC2_IN3/VI_CIF_D15_M0/PDM_CLK1_M1/UART7_CTSN_M1	GPIO6_B7_d	3.3V
19	VO_LCDC_D03	SPI0_CSN0_M2/DSMC_D14/SAI2_MCLK_M1/PWM0_CH4_M2/UART4_RX_M1	GPIO5_A3_d	3.3V
20	ETH_MDC_M0	SARADC2_IN4/VI_CIF_VSYNC_M0/PWM0_CH0_M2/UART3_RTSN_M2/I2C2_SCL_M2	GPIO6_C0_d	3.3V
21	VO_LCDC_D04	SPI0_MOSI_M2/DSMC_D13/SAI2_SDO_M1/PWM0_CH3_M1/UART5_TX_M1	GPIO5_A4_d	3.3V
22	ETH_MCLK_M0	VI_CIF_D12_M0/SPI1_CLK_M0/PDM_CLK0_M1/UART7_TX_M1	GPIO6_B4_d	3.3V
23	VO_LCDC_D05	SPI0_MISO_M2/DSMC_D12/SAI2_SCLK_M1/PWM0_CH2_M1/UART5_RX_M1	GPIO5_A5_d	3.3V
24	GND	Ground		0V
25	CAN0_RXD_M0	FEPHY_LEDLINK_M1/SPI1_CSN1_M2/IR_FPA_FSYNC/I2C2_SCL_M1/PWM0_CH7_M2/UART3_TX_M1	GPIO5_D4_u	3.3V
26	ETH_PPSTRIG_M0	SARADC1_IN0/VI_CIF_D0_M0/CAN0_RXD_M1/SAI0_SCLK_M1/PWM1_CH0_M2/UART4_TX_M2/I2C3_SCL_M3	GPIO6_A0_d	3.3V
27	CAN0_TXD_M0	FEPHY_LEDSPD_M1/IR_FPA_MCLK/I2C2_SDA_M1/PWM1_CH3_M1/UART3_RX_M1	GPIO5_D5_u	3.3V
28	ETH_RXD3_M0	SARADC1_IN4/VI_CIF_D4_M0/SAI0_MCLK_M1/PWM2_CH0_M2/UART5_RTSN_M2/I2C5_SCL_M3	GPIO6_A4_d	3.3V
29	VO_LCDC_D19	VI_CIF_D15_M1/DSMC_D4/SAI1_MCLK_M2/PWM3_CH3_M1	GPIO5_C3_d	3.3V
30	ETH_RXD2_M0	SARADC1_IN3/VI_CIF_D3_M0/CAN1_TXD_M1/SAI0_SDI0_M1/PWM1_CH3_M2/UART5_RX_M2/I2C4_SDA_M1	GPIO6_A3_d	3.3V

J2	Signal	Description or functions	GPIO serial	IO Voltage
31	VO_LCDC_D20	VI_CIF_VSYNC_M1/DSMC_D3/SAI1_SDO_M2/PWM3_CH4_M1	GPIO5_C4_d	3.3V
32	ETH_RXD0_M0	VI_CIF_D10_M0/SPI1_MOSI_M0/PDM_SDI2_M1/UART6_RTSN_M1	GPIO6_B2_d	3.3V
33	VO_LCDC_DEN	SPI1_CSN0_M2/ETH_PTP_REFCLK_M1/DSMC_CSN3/I2C3_SCL_M2/PWM0_CH6_M2	GPIO5_D0_d	3.3V
34	ETH_RXD1_M0	VI_CIF_D11_M0/SPI1_MISO_M0/PDM_SDI3_M1/UART6_CTSN_M1	GPIO6_B3_d	3.3V
35	VO_LCDC_HSYNC	SPI1_CLK_M2/ETH_PPSTRIG_M1/DSMC_CSN2/I2C3_SDA_M2/PWM1_CH2_M1	GPIO5_D1_d	3.3V
36	ETH_RXCTL_M0	SARADC2_IN1/VI_CIF_D13_M0/PDM_SDI0_M1/UART7_RX_M1	GPIO6_B5_d	3.3V
37	VO_LCDC_VSYNC	SPI1_MOSI_M2/DSMC_INT3/PWM1_CH1_M1/UART3_RTSN_M1	GPIO5_D2_d	3.3V
38	ETH_RXCLK_M0	SARADC2_IN7/VI_CIF_HSYNC_M0/FEPHY_LEDSPD_M2/PWM0_CH3_M2/UART3_RX_M2/I2C2_SDA_M2	GPIO6_C3_d	3.3V
39	VO_LCDC_CLK	SPI1_MISO_M2/DSMC_INT2/PWM1_CH0_M1/UART3_CTSN_M1	GPIO5_D3_d	3.3V
40	GND	Ground		0V
41	GND	Ground		0V
42	GPIO3_B6_D_1V8	SPI1_CSN1_M1/SAI2_MCLK_M0/SDMMC1_DETN/UART1_TX_M1/I2C5_SCL_M1	GPIO3_B6_d	1.8V
43	FEPHY_RXN			0.6V
44	GPIO3_B7_D_1V8	SAI2_SDI1_M0/UART1_RX_M1/I2C5_SDA_M1	GPIO3_B7_d	1.8V
45	FEPHY_RXP			0.6V
46	UART2_TX_BT_1V8	SAI2_SDI2_M0/UART2_TX_M0	GPIO3_B1_d	1.8V
47	FEPHY_TXN			0.6V
48	UART2_RX_BT_1V8	UART2_RX_M0	GPIO3_B0_d	1.8V
49	FEPHY_TXP			0.6V

J2	Signal	Description or functions	GPIO serial	IO Voltage
50	UART2_RTSN_BT_1V8	UART2_RTSN_M0	GPIO3_A6_d	1.8V
51	GND	Ground		0V
52	UART2_CTSN_BT_1V8	UART2_CTSN_M0	GPIO3_A7_d	1.8V
53	MIPI_DSI_D0N			0.6V
54	GND	Ground		0V
55	MIPI_DSI_D0P			0.6V
56	PCM_RX_1V8	SPI1_MISO_M1/SAI2_SDI0_M0/PWM2_CH1_M0/PRELIGHT_TRIG_OUT	GPIO3_B3_d	1.8V
57	MIPI_DSI_D1N			0.6V
58	PCM_CLK_1V8	SPI1_CLK_M1/SAI2_SCLK_M0/PWM2_CH2_M0/UART1_RTSN_M1/I2C4_SCL_M0/FEPHY_LEDLINK_M0	GPIO3_B4_d	1.8V
59	MIPI_DSI_D1P			0.6V
60	PCM_TX_1V8	SPI1_MOSI_M1/SAI2_SDO_M0/PWM2_CH0_M0/FLASH_TRIG_OUT	GPIO3_B2_d	1.8V
61	GND	Ground		0V
62	PCM_SYNC_1V8	SPI1_CSN0_M1/SAI2_LRCK_M0/PWM2_CH3_M0/UART1_CTSN_M1/I2C4_SDA_M0/FEPHY_LEDSPD_M0	GPIO3_B5_d	1.8V
63	MIPI_DSI_CLKN			0.6V
64	SDIO_D2		GPIO3_A4_d	1.8V
65	MIPI_DSI_CLKP			0.6V
66	SDIO_D3		GPIO3_A5_d	1.8V
67	MIPI_DSI_D2N			0.6V
68	SDIO_CMD		GPIO3_A1_d	1.8V
69	MIPI_DSI_D2P			0.6V
70	GND	Ground		0V
71	MIPI_DSI_D3N			0.6V
72	SDIO_CLK		GPIO3_A0_d	1.8V
73	MIPI_DSI_D3P			0.6V
74	SDIO_D0	I2C1_SCL_M1	GPIO3_A2_d	1.8V
75	GND	Ground		0V
76	SDIO_D1	I2C1_SDA_M1	GPIO3_A3_d	1.8V
77	VO_LCDC_D13	ETH_MDIO_M1/VI_CIF_D9_M1/DSMC_DQS0/UART7_RX_M0	GPIO5_B5_d	3.3V
78	GND	Ground		0V

J2	Signal	Description or functions	GPIO serial	IO Voltage
79	VO_LCDC_D10	VI_CIF_D6_M1/DSMC_RESETN/DSMC_INT1/PWM2_CH0_M1/UART6_RTSN_M0	GPIO5_B2_d	3.3V
80	SARADC0_IN5			1.8V
81	VO_LCDC_D12	VI_CIF_D8_M1/DSMC_CSN0/UART7_TX_M0	GPIO5_B4_d	3.3V
82	SARADC0_IN6			1.8V
83	VO_LCDC_D09	VI_CIF_D5_M1/DSMC_D8/IR_FPA_SDA3/UART6_RX_M0	GPIO5_B1_d	3.3V
84	SARADC0_IN4			1.8V
85	VO_LCDC_D06	SPI0_CLK_M2/DSMC_D11/SAI2_SDI0_M1/PWM0_CH1_M1/UART5_RTSN_M1	GPIO5_A6_d	3.3V
86	SARADC0_IN2			1.8V
87	VO_LCDC_D07	SPI0_CSN1_M2/VI_CIF_D3_M1/DSMC_D10/SAI2_LRCK_M1/I2C5_SDA_M2/PWM0_CH0_M1/UART5_CTSN_M1	GPIO5_A7_d	3.3V
88	SARADC0_IN3			1.8V
89	VO_LCDC_D08	VI_CIF_D4_M1/DSMC_D9/IR_FPA_SDA2/UART6_TX_M0	GPIO5_B0_d	3.3V
90	SARADC0_IN1			1.8V
91	VO_LCDC_D15	VI_CIF_D11_M1/DSMC_CLKP/PWM2_CH3_M1/UART7_CTSN_M0	GPIO5_B7_d	3.3V
92	SARADC0_IN0_KEY	Recover Key input	(PU 10K)	1.8V
93	VO_LCDC_D14	VI_CIF_D10_M1/DSMC_CLKN/DSMC_INT0/PWM2_CH2_M1/UART7_RTSN_M0	GPIO5_B6_d	3.3V
94	GND	Ground		0V
95	VO_LCDC_D16	VI_CIF_D12_M1/DSMC_D7/IR_FPA_SDA4/PWM3_CH0_M1	GPIO5_C0_d	3.3V
96	CAN1_RXD_M0	UART0_TX_M1/JTAG_TCK_M2/PWM2_CH6_M0	GPIO5_D6_u	3.3V
97	GND	Ground		0V
98	CAN1_TXD_M0	UART0_RX_M1/JTAG_TMS_M2/PWM2_CH7_M0	GPIO5_D7_u	3.3V
99	SDMMC0_PWREN	SPI2AHB_D0/PWM0_CH3_M0/UART1_CTSN_M0	GPIO0_C7_d	3.3V
100	VCC3V3_SYS	System IO Power output	Max: 400mA	3.3V

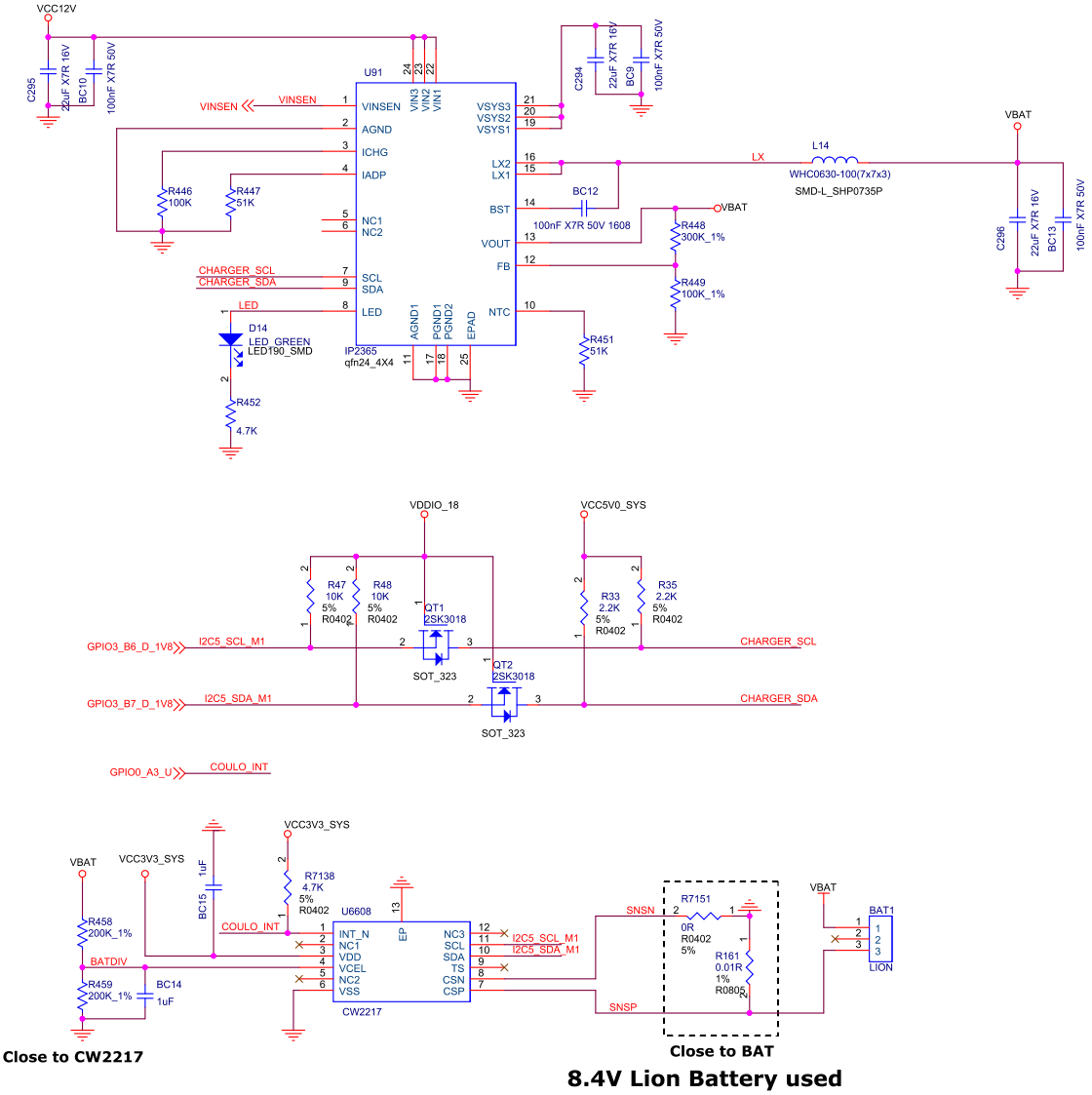
1.7 Development Kit (SBC1126B)



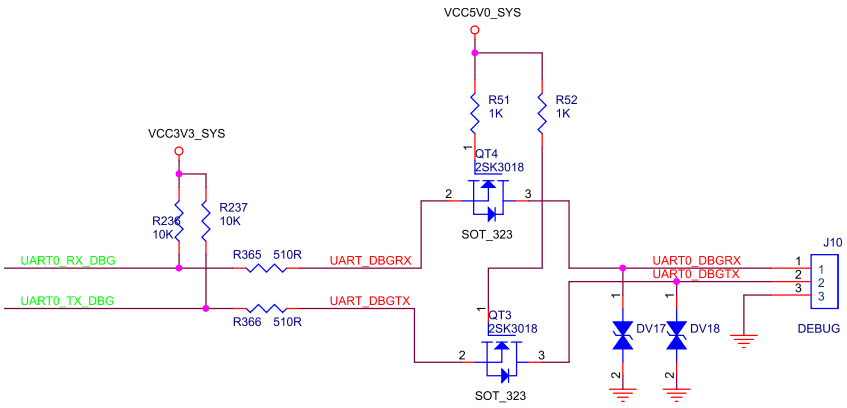
2 Hardware Design Guide

2.1 Peripheral Circuit Reference

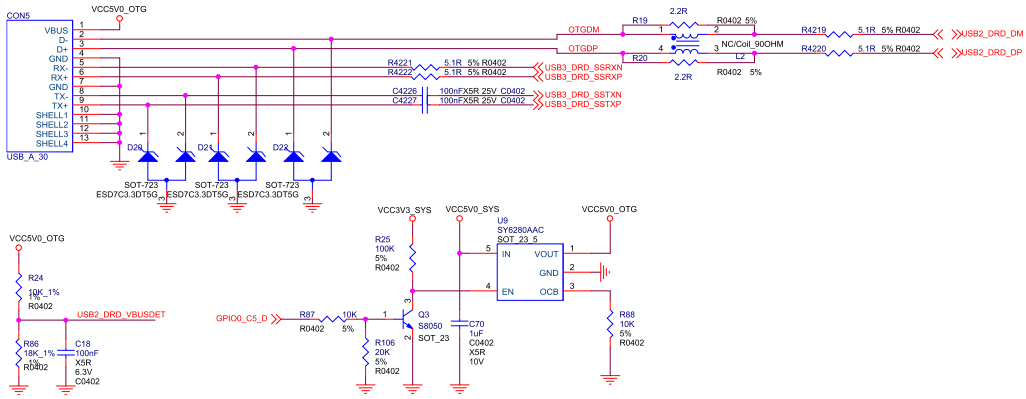
2.1.1 Battery Charge Circuit



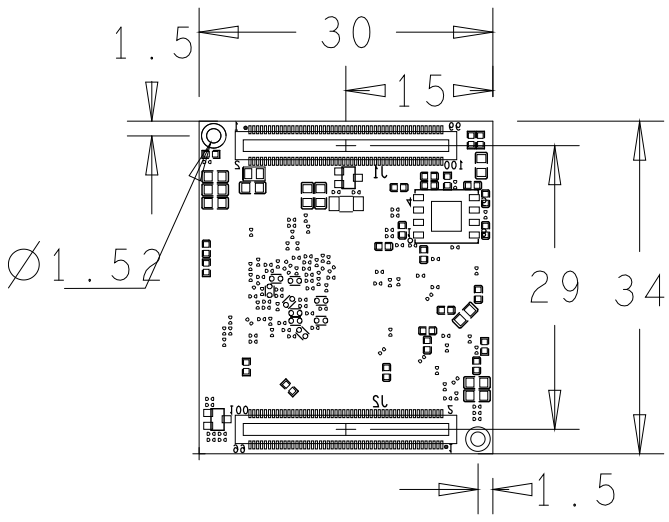
2.1.2 Debug Circuit



2.1.3 USB OTG Interface Circuit



2.2 PCB Footprint

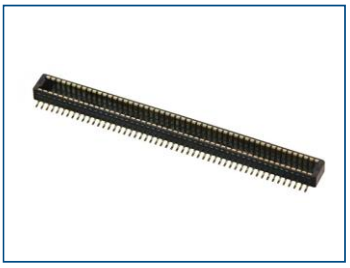


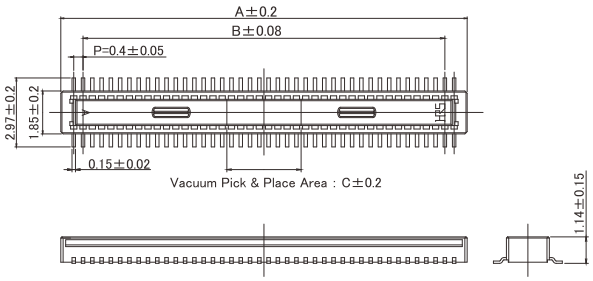
(top view)

2.3 B2B connector

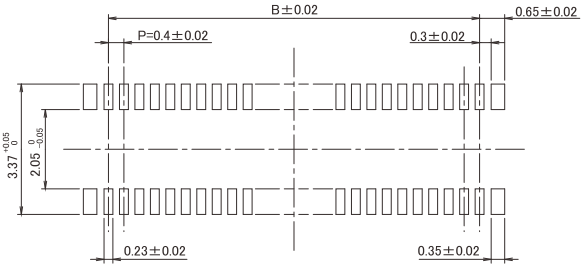
Header for carrier board: ***DF40C-100DP-0.4V***

Plug





Recommended PCB Pattern



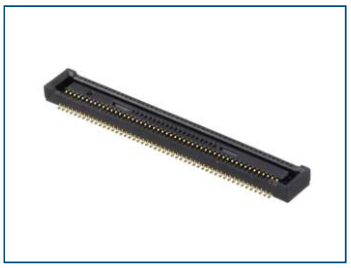
Unit : mm

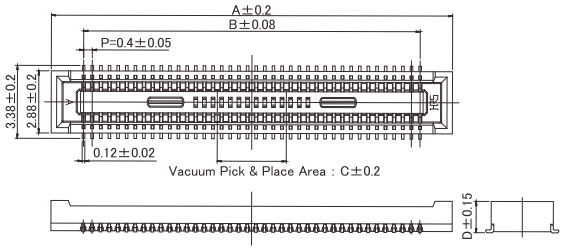
Part No.	HRS No.	No. of Pos.	A	B	C	Purchase Unit (##):(51)	Purchase Unit (##):(58)
DF40C-100DP-0.4V(##)	CL0684-4032-1-##	100	21.52	19.6	3.2	○	○

Receptacle for CPU board: ***DF40C-100DS-0.4V***

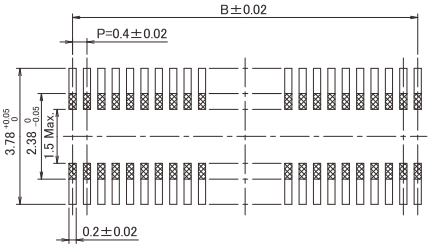
Receptacle

Stacking Height 1.5mm





Recommended PCB Pattern



DF40C (No Retention Tab)

Unit : mm

Part No.	HRS No.	No. of Pos.	A	B	C	D	Purchase Unit (##):(51)	Purchase Unit (##):(58)
DF40C-100DS-0.4V(##)	CL0684-4033-4-##	100	22.6	19.6	3.2	1.45	○	○

3 Product Electrical Characteristics

3.1 Dissipation and Temperature

Symbol	Parameter	Min	Typ	Max	Unit
VCC5V_SYS	System IO Voltage	4.5	5	14.2	V
Isys_in	VCC5V_SYS input Current		620		mA
VCC_RTC	RTC Voltage	1.8	3	3.6	V
Iirtc	RTC input Current		1.2	3	uA
VCC3V3_SYS	GPIO Voltage output		3.3		V
I3v3_SYS	VCC3V3_SYS output Current		400		mA
Ta	Operating Temperature	-20	NA	70	°C
Tstg	Storage Temperature	-40	NA	85	°C