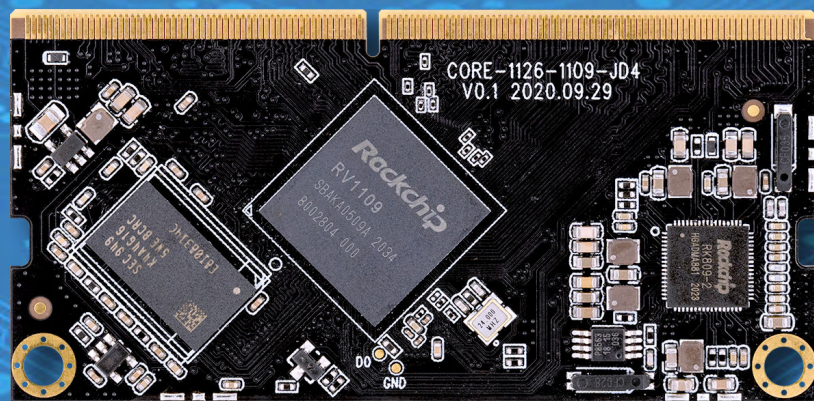


天启科技

Core-1109-JD4

高性能AI智能视觉核心板

V1.1



天启智能科技有限公司
www.t-firefly.com



更 新 记 录

版 本	更新日期	更新内容
V1.0	2020-12-30	初始版本
V1.1	2021-06-01	接口定义更新



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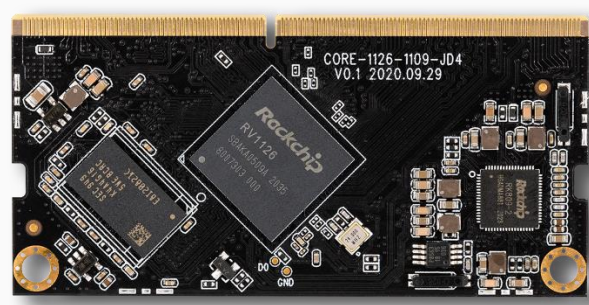
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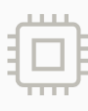
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一、产品简介

核心板 Core 1109 JD4 采用人工智能视觉应用的高性能机器视觉处理器 SoC 主控。它基于双核 ARM Cortex A7 32 位内核,集成了 NEON 和 FPU。每个核心都有一个 32KB I cache 和 32KB D cache 以及 512KB 共用二级缓存。内置 NPU 支持 INT8/ INT16 混合运算, 计算能力高达 1.2 TOPS。具有很强的网络模型兼容性, 能方便实现不同框架的转换, 如: Tensor Flow/MXNet/PyTorch/Caffe 等。



RV1109 还引入了新一代完全基于硬件的图像信号处理器和后处理器, 芯片直接集成了众多算法加速器, 实现了 IPC 和 CVR 中常用的算法加速器, 可用于 IPC 和 CVR 等产品 (如 HDR、3A 功能 (AE、AF、AWB)、LSC、3DNR、2DNR、锐化、Dehaze、鱼眼校正、Gamma 校正、特征点检测等)。芯片集成两个 MIPI CSI (或 LVD S/SubLVD S) 和一个 DVP 接口, 可以支持 3 个摄像头同时输入。核心板采用 SODIMM 260P 接口, 电镀镍金引脚, 耐腐蚀, 性能超强, 系统启动速度快, 稳定性高。广泛应用于网络摄像头、智能门锁、行车记录仪、网络直播、游戏互动等智能化行业。



高性能双核 AI 视觉处理器

采用 14nm 低功耗 AI 视觉处理器 RV1109, 拥有双核 32 位 ARM Cortex A7 架构, 集成 NEON 和 FPU, 主频高达 1.5GHz, 可实现 FastBoot 快速启动, 并支持 TrustZone 技术和多个密码引擎。



AI 算力高, 支持多种框架

内置 1.2Tops 神经网络处理器 NPU, 实现 AI 运算的功耗不及所需 GPU 的 10%。工具和配套 AI 算法完善, 支持 Tensorflow、PyTorch、Caffe、MxNet、DarkNet、ONNX 等直接转换和部署。



多级降噪、3 帧 HDR 技术

RV1109 具备多级降噪、3 帧 HDR 等技术, 即可保证场景的动态范围, 又能满足黑光全彩的需求, 让“看得清”成为现实, 符合安防领域的实际痛点诉求



H.265 多路编解码, 低延时小占比

内置 Video CODEC 视频编解码器, 支持多路 5M H.264/H.265 @30FPS 视频编解码, 可满足低码率、低延迟编码、感知编码需求, 空间占比更小。



配套行业底板, 加速产品落地

核心板可与底板组合, 构成完整的高性能行业应用主板, 扩展接口更丰富, 性能更强大, 可直接应用到各种智能产品中, 加速产品落地



丰富的扩展接口, 满足更多场景需求

采用 SODIMM 260P 接口, 拥有 I2C、SPI、UART、ADC、PWM、GPIO、USB2.0、SDIO、I2S、MIPI-DSI、MIPI-CSI、CIF、SDMMC、PHY 等丰富接口



工艺精湛, 尺寸小巧

核心板引脚采用沉金工艺, 耐腐蚀。设计尺寸仅有 69.6mm x 33.9mm, 节约更多宝贵的空间。



操作系统稳定可靠

支持 buildroot+QT, 系统占用资源小, 启动快, 稳定可靠。



开放资料, 可自主定制

提供完整的软件开发 SDK, 含交叉编译链、BSP 源码、应用开发环境、开发文档以及范例、人脸识别算法等, 客户可自主深度定制。



广泛的应用场景

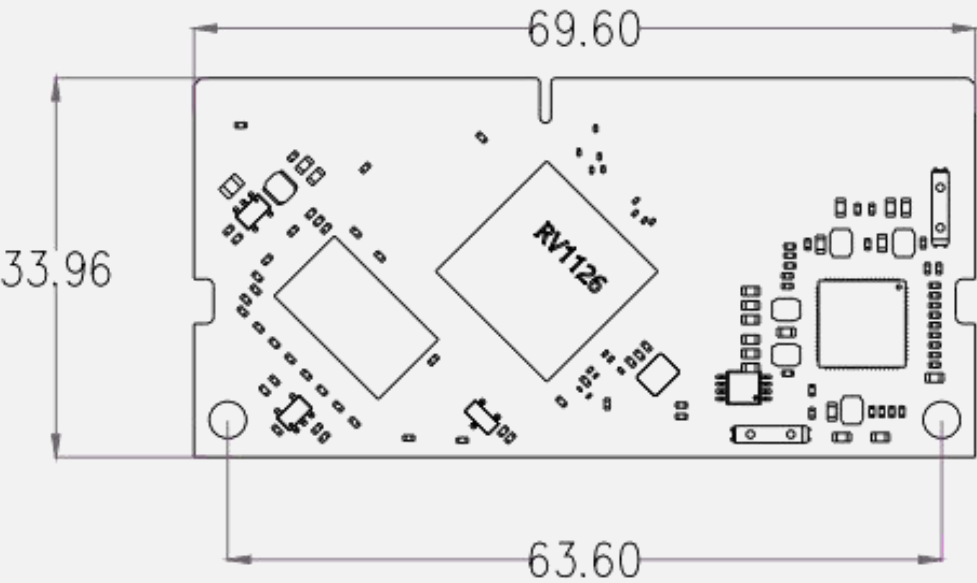
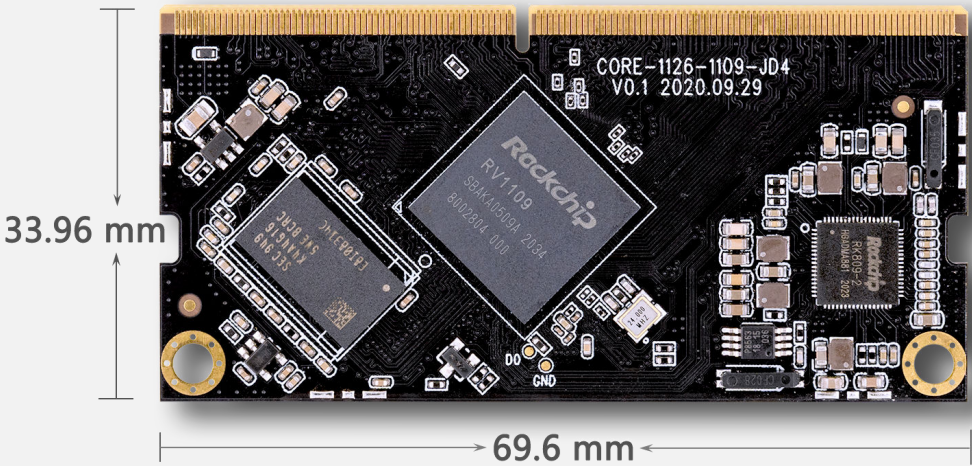
广泛应用于人脸识别、手势识别、闸机门禁、智能安防、IPC 智能网络摄像头、智能门铃猫眼、自助终端、智慧金融、智慧工地、智慧出行等行业



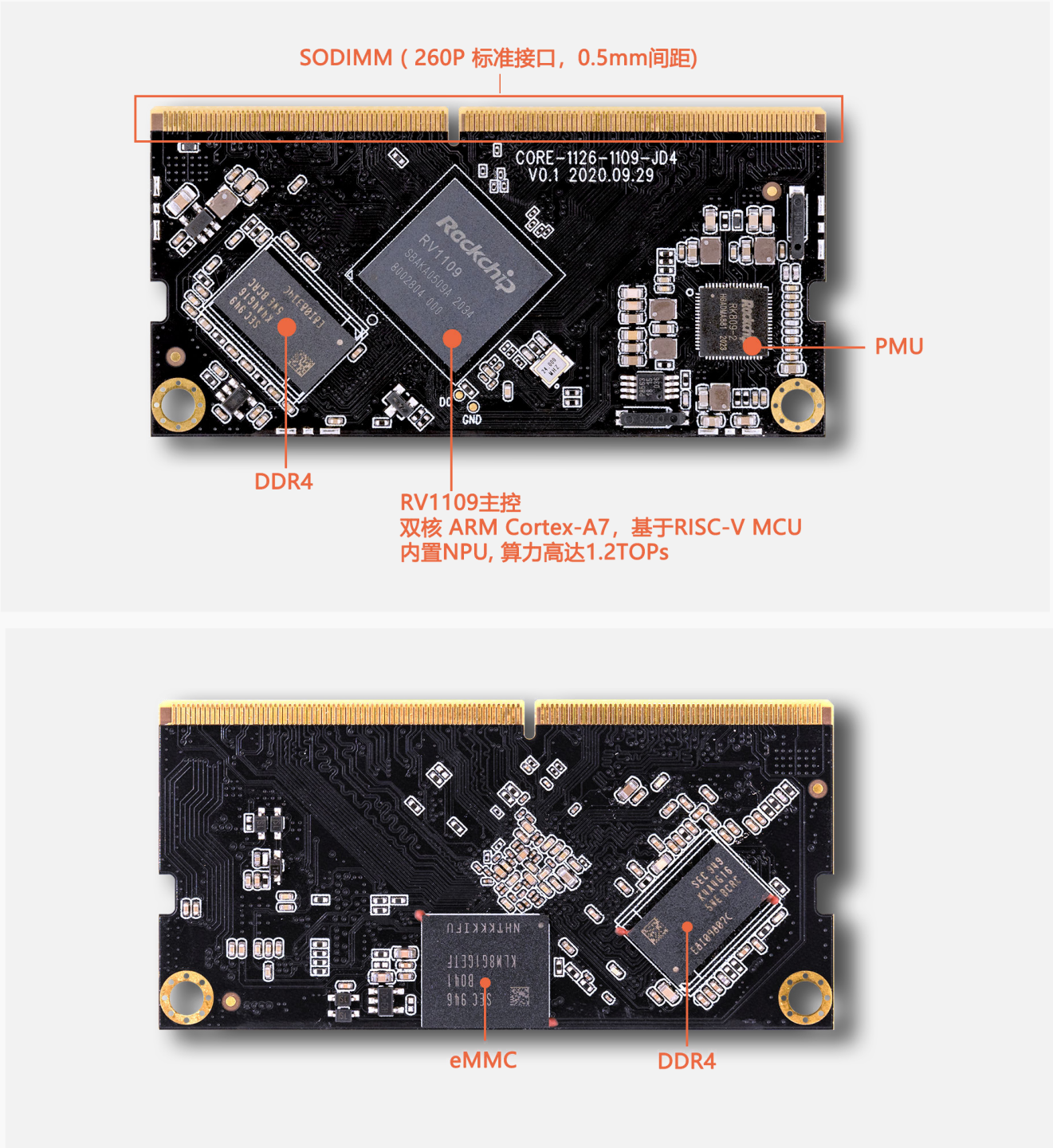
二、规格参数

基本参数	
主控芯片	RV1109
处理器	双核 ARM Cortex-A7 32 位内核，主频 1.5GHz，集成 NEON 和 FPU 每个核心都有一个 32KB I-cashe 和 32KB D-cache 以及 512KB 共用二级缓存 基于 RISC-V MCU
NPU	1.2TOPS, support INT8/ INT16, 具有很强的网络模型兼容性，提供 RKNN 模型转换工具，可实现常用 AI 框架模型的转换 例如（caffe、darknet、mxnet、onnx、pytorch、tensorflow、tflite）和算法支持
内存	1GB / 2GB DDR4
存储	8GB / 16GB eMMC
视频编码	H.264/H.265 编码能力: 2688×1520@30fps+1280×720@30fps 3072×1728@30fps+1280×720@30fps 2688×1944@30fps+1280×720@30fps
视频解码	5M H.264/H.265 解码
硬件特性	
以太网	支持 10/100/1000M 以太网接口， 具有 TSO(TCP Segmentation Offload) 网络加速
WiFi	通过 SDIO 3.0 接口扩展
显示	支持 MIPI-DSI 接口 1080P @ 60 FPS
音频	8 通道 I2S with TDM/PDM, 2 通道 I2S
摄像头	支持 3 个摄像头同时输入： 2 组 MIPI CSI（或 LVDS/sub LVDS）和 1 组 DVP (BT.601/BT.656/BT.1120) 支持 500 万 ISP 2.0 with 3 帧 HDR (Line-based / Frame-based / DCG)
外围接口	USB 2.0 OTG×1、USB 2.0 HOST×1 千兆以太网接口，具有 TSO(TCP Segmentation Offload)网络加速 SDIO 3.0×2（for Wi-Fi and SD 卡） 8 通道 I2S with TDM/PDM, 2 通道 I2S UART×6、SPI×2、I2C×6、GPIO、CAN、PWM
系统软件	
系统支持	Linux
其它参数	
核心板尺寸	69.9mm × 33.96mm
接口类型	金手指（SODIMM 260P 标准接口，0.5mm 间距）
温度参数	工作温度：-20℃ ~ 60℃ 存储温度：-20℃ ~ 70℃
工作湿度	10% ~ 90 %RH（无凝露）

三、主板尺寸



四、接口描述



五、接口定义

Notes:
Pin type: I = input, O = output, I/O = input/output (bidirectional), G= Ground, P = power supply, DOWN = Internal pull down, UP = Internal pull UP

Part A	pin	Core board pin definition	Pin type	I/O Pull	Function for Floor(MB-JD4-RV11091126)	Default function description	IO Power domain	RV1126 Pin	RV1126 Pin Name
	1	GND_1	G		GND_1	GND			GND_1
	3	GPIO0_A4_U	I/O	UP	WORKLED	System LED control 1:Enable,0:Disable	1.8V	V7	SPI0_CS1N_M0 / GPIO0_A4_U
	5	GPIO0_C0_D	I/O	DOWN	DIYLED	Diy led control 1:Enable,0:Disable	3.3V	U9	SDMMC0_PWR / UART1_RTSN_M0 / PWM2_M0 / GPIO0_C0_D
	7	GPIO0_A2_Z	I/O		FAN_CTRL		1.8V	AA3	CLKI_CLKO_32K / GPIO0_A2_Z
	9	GND_2	G		GND_2				GND_2
	11	MIC1_INN			MIC1_INN	PMIC_MIC_IN_N Core board internal series capacitor 0.1uF	3.3V		MIC1_N / MIC_R
	13	MIC1_INP			MIC1_INP	PMIC_MIC_IN_P Core board internal series capacitor 0.1uF	3.3V		MIC1_P / MIC_L
	15	HPR_OUT	O		HPR_OUT	PMIC_HearPhone_OUT_R	3.3V		HPR_OUT
	17	HP_SNS			HP_SNS	PMIC_HearPhone_OUT_GND			HP_SNS
	19	HPL_OUT	O		HPL_OUT	PMIC_HearPhone_OUT_L	3.3V		HPL_OUT
	21	SPKN_OUT	O		SPKN_OUT	PMIC_Sperker_OUT_N	3.3V		SPKN_OUT
	23	SPKP_OUT	O		SPKP_OUT	PMIC_Sperker_OUT_P	3.3V		SPKP_OUT
	25	GND	G		GND				GND_3
	27	USB_HOST_DP	I/O		USB_HOST_DP		3.3V	Y1	USB_HOST_DP
	29	USB_HOST_DM	I/O		USB_HOST_DM		3.3V	Y2	USB_HOST_DM
	31	GND_4	G		GND				GND_4
	33	NC			NC				NC_1
	35	NC			NC				NC_2
	37	GND_5	G		GND				GND_5
	39	I2C2_SCL	I/O	DOWN	PWM4_M0	PWM4_M0	3.3V	AA6	I2C2_SCL / PWM4_M0 / GPIO0_C2_D
	41	I2C2_SDA	I/O	DOWN	PWM5_M0	PWM5_M0	3.3V	Y6	I2C2_SDA / PWM5_M0 / GPIO0_C3_D
	43	GND_4	G		GND				GND_6
	45	MIPI_CSI_RX0_D2P			MIPI_CSI_RX0_D2P	MIPI_CSI_RX0_D2P	1.8V	W15	MIPI_CSI_RX0_D2P / LVDS0_RX2P
	47	MIPI_CSI_RX0_D2N			MIPI_CSI_RX0_D2N	MIPI_CSI_RX0_D2N	1.8V	Y15	MIPI_CSI_RX0_D2N / LVDS0_RX2N
	49	MIPI_CSI_RX0_D3P			MIPI_CSI_RX0_D3P	MIPI_CSI_RX0_D3P	1.8V	AA15	MIPI_CSI_RX0_D3P / LVDS0_RX3P
	51	MIPI_CSI_RX0_D3N			MIPI_CSI_RX0_D3N	MIPI_CSI_RX0_D3N	1.8V	AA16	MIPI_CSI_RX0_D3N / LVDS0_RX3N
	53	MIPI_CSI_RX0_D1P			MIPI_CSI_RX0_D1P	MIPI_CSI_RX0_D1P	1.8V	Y16	MIPI_CSI_RX0_D1P / LVDS0_RX1P
	55	MIPI_CSI_RX0_D1N			MIPI_CSI_RX0_D1N	MIPI_CSI_RX0_D1N	1.8V	W16	MIPI_CSI_RX0_D1N / LVDS0_RX1N
	57	MIPI_CSI_RX1_D3P			MIPI_CSI_RX1_D3P	MIPI_CSI_RX1_D3P	1.8V	Y17	MIPI_CSI_RX1_D3P / LVDS1_RX3P
	59	MIPI_CSI_RX1_D3N			MIPI_CSI_RX1_D3N	MIPI_CSI_RX1_D3N	1.8V	W17	MIPI_CSI_RX1_D3N / LVDS1_RX3N
	61	MIPI_CSI_RX1_D2P			MIPI_CSI_RX1_D2P	MIPI_CSI_RX1_D2P	1.8V	AA18	MIPI_CSI_RX1_D2P / LVDS1_RX2P
	63	MIPI_CSI_RX1_D2N			MIPI_CSI_RX1_D2N	MIPI_CSI_RX1_D2N	1.8V	Y18	MIPI_CSI_RX1_D2N / LVDS1_RX2N
	65	GND_7	G		GND				GND_7
	67	MIPI_CSI_RX1_D1P			MIPI_CSI_RX1_D1P	MIPI_CSI_RX1_D1P	1.8V	AA19	MIPI_CSI_RX1_D1P / LVDS1_RX1P
	69	MIPI_CSI_RX1_D1N			MIPI_CSI_RX1_D1N	MIPI_CSI_RX1_D1N	1.8V	Y19	MIPI_CSI_RX1_D1P / LVDS1_RX1N
	71	MIPI_CSI_RX1_D0P			MIPI_CSI_RX1_D0P	MIPI_CSI_RX1_D0P	1.8V	AA20	MIPI_CSI_RX1_D0P / LVDS1_RX0P
	73	MIPI_CSI_RX1_D0N			MIPI_CSI_RX1_D0N	MIPI_CSI_RX1_D0N	1.8V	Y20	MIPI_CSI_RX1_D0P / LVDS1_RX0N
	75	GND8	G		GND				GND8
	77	MIPI_CSI_PWDN0	I/O	UP	MIPI_CSI_PWDN0	MIPI_CSI Power_EN	1.8V	W20	UART4_RX_M2 / GPIO1_D4_d
	79	MIPI_CSI_CLK1	I/O	DOWN	MIPI_CSI_CLK1	MIPI_CSI_clock1	1.8V	W21	MIPI_CSI_CLK1 / UART5_RTSN_M2 / GPIO2_A1_D
	81	MIPI_CSI_CLK0	I/O	DOWN	MIPI_CSI_CLK0	MIPI_CSI_clock0	1.8V	V21	MIPI_CSI_CLK0 / UART5_CTSN_M2 / GPIO2_A3_D
	83	GND_9	G		GND				GND_9
	85	SPI0_CS1N_M1	I/O	DOWN	SPI0_CS1N_M1	SPI0_CS1N_M1	1.8V	V20	SPI0_CS1N_M1 / I2S1_MCLK_M1 / UART4_TX_M2 / GPIO1_D5_D
	87	SPI0_MOSI_M1/I2C3_SCL_M2	I/O	DOWN	SPI0_MOSI_M1	SPI0_MOSI_M1	1.8V	V19	SPI0_MOSI_M1 / I2S1_SCLK_M1 / I2C3_SCL_M2 / GPIO1_D6_D
	89	SPI0_CLK_M1	I/O	DOWN	SPI0_CLK_M1	SPI0_CLK_M1	1.8V	U20	SPI0_CLK_M1 / I2S1_SDO_M1 / UART5_RX_M2 / GPIO2_A1_D
	91	SPI0_CS0N_M1	I/O	DOWN	SPI0_CS0N_M1	SPI0_CS0N_M1	1.8V	U19	SPI0_CS0N_M1 / I2S1_SDI_M1 / UART5_TX_M2 / GPIO2_A0_D
	93	SPI0_MISO_M1/I2C3_SDA_A_M2	I/O	DOWN	SPI0_MISO_M1	SPI0_MISO_M1	1.8V	U18	SPI0_MISO_M1 / I2S1_LRCK_M1 / I2C3_SDA_M2 / GPIO1_D7_D
	95	UART4_TX_M1 / GPIO2_A6_D	I/O	DOWN	UART4_TX	UART4_TX	3.3V	M21	UART4_TX_M1 / PWM5_M1 / RGMII_COL_M1 / CIF_D2_M1 / LCDC_D2 / GPIO2_A6_D
	97	GND_10	G		GND				GND_10
	99	RMII_RXDV	I/O	DOWN	RMII_RXDV	RMII_RXDV	3.3V	K18	RGMII_RXDV_M1 / CIF_D4_M1 / LCDC_D8 / GPIO2_B4_D
	101	RMII_RXD0	I/O	DOWN	RMII_RXD0	RMII_RXD0	3.3V	K19	RGMII_RXD0_M1 / CIF_D5_M1 / LCDC_D9 / GPIO2_B5_D
	103	RMII_CLK	I/O	DOWN	RMII_CLK	RMII_CLOCK	3.3V	K21	RGMII_CLK_M1 / CIF_D7_M1 / LCDC_D11 / GPIO2_B7_D
	105	RMII_RXD1	I/O	DOWN	RMII_RXD1	RMII_RXD1	3.3V	K20	RGMII_RXD1_M1 / CIF_D6_M1 / LCDC_D10 / GPIO2_B6_D
	107	RMII_MDIO	I/O	DOWN	RMII_MDIO	RMII_MDIO	3.3V	J21	RGMII_MDIO_M1 / CIF_D9_M1 / LCDC_D13 / GPIO2_C1_D
	109	RMII_MDC	I/O	DOWN	RMII_MDC	RMII_MDC	3.3V	J20	RGMII_MDC_M1 / CIF_D10_M1 / LCDC_D14 / GPIO2_C2_D
	111	RMII_RXER	I/O	DOWN	RMII_RXER	RMII_RXER	3.3V	J19	RGMII_RXER_M1 / CIF_D8_M1 / LCDC_D12 / GPIO2_C0_D
	113	RMII_TXD0	I/O	DOWN	RMII_TXD0	RMII_TXD0 Core board internal series resistance 22R	3.3V	H20	RGMII_TXD0_M1 / CIF_D11_M1 / LCDC_D15 / GPIO2_C3_D
	115	GND_11	G		GND				GND_11
	117	RMII_TXD1	I/O	DOWN	RMII_TXD1	RMII_TXD1 Core board internal series resistance 22R	3.3V	H19	RGMII_TXD1_M1 / CIF_D12_M1 / LCDC_D16 / GPIO2_C4_D
	119	CLKOUT/GPIO_C5_D	I/O	DOWN	CLKOUT/GPIO_C5_D	PHY_XTALOUT	3.3V	G21	CLK_OUT_ETHERNET_M1 / CIF_D13_M1 / LCDC_D17 / GPIO2_C5_D
	121	RMII_RXD3/HOST_DRV_H	I/O	DOWN	RMII_RXD3	RMII_RXD3	3.3V	H18	I2S1_SDO_M2 / RGMII_RXD3_M1 / CIF_VSYNC_M1 / LCDC_D20 / GPIO2_D0_D
	123	GND_12	G		GND				GND_12
	125	RMII_TXEN/GPIO2_C6_D	I/O	DOWN	RMII_TXEN	RMII_TXEN	3.3V	G20	RGMII_TXEN_M1 / CIF_D14_M1 / LCDC_D18 / GPIO2_C6_D
	127	RMII_TXD2/ZOOM_EN_H	I/O	DOWN	RMII_TXD2	RMII_TXD2 Core board internal series resistance 22R	3.3V	F21	I2S1_SCLK_M2 / RGMII_TXD2_M1 / CIF_CLKOUT_M1 / LCDC_D21 / GPIO2_D1_D
	129	RMII_TXCLK/FOCUS_EN_H	I/O	DOWN	RMII_TXCLK	RMII_TXCLK Core board internal series resistance 22R	3.3V	F20	I2S1_LRCK_M2 / RGMII_TXCLK_M1 / CIF_CLKIN_M1 / LCDC_D22 / GPIO2_D2_D
	131	NC			NC				NC_3

133	OTG_DP			OTG_DP	USB_OTG_DP	3.3V	W3	OTG_DP
135	OTG_DM			OTG_DM	USB_OTG_DM	3.3V	W4	OTG_DM
137	NC			NC	NC			NC_4
139	LCD_PWREN/UART3_TX_M2	I/O	UP	UART3_TX	UART3_TX_M2	3.3V	E20	I2C4_SCL_M0 / CAN_RXD_M0 / UART3_TX_M2 / PWM7_IR_M1 / SPI1_CS1N_M2 / GPIO3_A0_U
141	GPIO3_A1_U/UART3_RX_M2	I/O	UP	UART3_RX	UART3_RX_M2	3.3V	E19	I2C4_SDA_M0 / CAN_TXD_M0 / UART3_RX_M2 / PWM11_IR_M1 / GPIO3_A1_U
143	PWM8_M1	I/O	DOWN	PWM8_M1/SPI1_MISO_M2	PWM8_M1/SPI1_MISO_M2	3.3V	D21	UART3_CTSN_M2 / PWM8_M1 / SPI1_MISO_M2 / LCDC_CLK / GPIO2_D7_D
145	OTG_VBUS_DET	I	DOWN	OTG_DET_1V8	OTG_DET.Active Hight	1.8V	V5	OTG_VBUS1V8
147	MIPI_DSI_TX0_D3P	O		MIPI_DSI_TX0_D3P	MIPI_DSI_TX0_D3P	1.8V	D20	MIPI_DSI_TX0_D3P
149	MIPI_DSI_TX0_D3N	O		MIPI_DSI_TX0_D3N	MIPI_DSI_TX0_D3N	1.8V	D19	MIPI_DSI_TX0_D3N
151	MIPI_DSI_TX0_D2P	O		MIPI_DSI_TX0_D2P	MIPI_DSI_TX0_D2P	1.8V	B21	MIPI_DSI_TX0_D2P
153	MIPI_DSI_TX0_D2N	O		MIPI_DSI_TX0_D2N	MIPI_DSI_TX0_D2N	1.8V	C20	MIPI_DSI_TX0_D2N
155	MIPI_DSI_TX0_D1N	O		MIPI_DSI_TX0_D1N	MIPI_DSI_TX0_D1N	1.8V	B20	MIPI_DSI_TX0_D1N
157	MIPI_DSI_TX0_D1P	O		MIPI_DSI_TX0_D1P	MIPI_DSI_TX0_D1P	1.8V	A20	MIPI_DSI_TX0_D1P
159	MIPI_DSI_TX0_D0N	O		MIPI_DSI_TX0_D0N	MIPI_DSI_TX0_D0N	1.8V	B19	MIPI_DSI_TX0_D0N
161	MIPI_DSI_TX0_D0P	O		MIPI_DSI_TX0_D0P	MIPI_DSI_TX0_D0P	1.8V	A19	MIPI_DSI_TX0_D0P
163	GND_13	G		GND	GND			GND_13
165	SDIO_CLK	I/O	DOWN	SDIO_CLK	SDIO_CLK Core board internal series resistance 22R	1.8V	D16	SDMMC1_CLK / GPIO1_B2_D
167	SDIO_D1	I/O	UP	SDIO_D1	SDIO_D1	1.8V	C16	SDMMC1_D1 / GPIO1_B5_U
169	SDIO_D0	I/O	UP	SDIO_D0	SDIO_D0	1.8V	B16	SDMMC1_D0 / GPIO1_B4_U
171	SDIO_CMD	I/O	UP	SDIO_CMD	SDIO_CMD	1.8V	A16	SDMMC1_CMD / GPIO1_B3_U
173	SDIO_D2	I/O	UP	SDIO_D2	SDIO_D2	1.8V	D15	SDMMC1_D2 / GPIO1_B6_U
175	SDIO_D3	I/O	UP	SDIO_D3	SDIO_D3	1.8V	C15	SDMMC1_D3 / GPIO1_B7_U
177	BT_WAKE	I/O	DOWN	BT_WAKE_L	CPU wake AP6236_BT	1.8V	A13	SDMMC1_PWR / I2C5_SDA_M2 / UART1_RX_M1 / GPIO1_D1_D
179	WIFI_WAKE_HOST	I/O	DOWN	WIFI_WAKE_HOST_L	WIFI_WAKE_HOST_L	1.8V	Y4	SPI0_CLK_M0 / GPIO0_B0_D
181	BT_WAKE_HOST	I/O	UP	BT_WAKE_HOST_L	BT_WAKE_HOST_L	1.8V	AA2	SPI0_CS0N_M0 / GPIO0_A5_U
183	CLK_32K	O		CLK_32K	PMIC_CLK_32K_OUT Core board internal series resistance 22R	1.8V		CLK_32K_OUT
185	GND_14	G		GND	GND			GND_14
187	BT_RST	I/O	DOWN	BT_RST	BT_RST,Active low	1.8V	W5	SPI0_MISO_M0 / GPIO0_A7_D
189	WIFI_REG_ON	I/O	DOWN	WIFI_REG_ON_H	WIFI_EN,Active hight	1.8V	V6	SPI0_MOSI_M0 / GPIO0_A6_D
191	GND_15	G		GND	GND			GND_15
193	NC			NC	NC			NC_6
195	CLK_25M_ETHERNET_M0	I/O	DOWN	CIF_CLKIN_M0	CIF_CLKIN_M0	3.3V	M19	CIF_CLKIN_M0 / CLK_OUT_ETHERNET_M0 / UART3_CTSN_M0 / GPIO3_C5_D
197	GND_16	G		GND	GND			GND_16
199	CIF_PWDN	I/O	DOWN	CIF_PWDN	CIF_PWDN	3.3V	R17	CIF_D0_M0 / I2S0_SCLK_TX_M1 / UART4_TX_M0 / I2C3_SCL_M0 / PWM8_M0 / GPIO3_A4_D
201	CIF_D14_M0	I/O	DOWN	CIF_D14	CIF_D14	3.3V	M18	CIF_D14_M0 / RGMII_RXER_M0 / PDM_SDI1_M1 / GPIO3_C2_D
203	NC			NC	NC			NC_7
205	NC			NC	NC			NC_8
207	NC			NC	NC			NC_9
209	NC			NC	NC			NC_10
211	NC			NC	NC			NC_11
213	NC			NC	NC			NC_12
215	NC			NC	NC			NC_13
217	CIF_RST	I/O	DOWN	RESET_HUB	USB_HUB_Reset,Active Hight	1.8V	B13	I2S2_MCLK_M0 / SPI1_CS1n_M1 / SDMMC1_DET / I2C5_SCL_M2 / UART1_TX_M1 / GPIO1_D0_d
219	GND_16	G		GND	GND			
221	POWER_ON			POWER_ON	PMIC Power on Signal Input, External connection Power key , active low	5V		
223	PMIC_VDC	P		VCC_5V_S	Input Voltage 3.3V-5.5V, Rated input current 50mA, PMIC Power_EN, active high	5V		
225	VCC_1V8	P		VCC_1V8	1.8V output,VCC_1V8 Total Max current 200mA(224PIN,225PIN same net)	1.8V		
227	VCC3V3_SD	P		VCC3V3_SD	3.3V output for TF card,VCC3V3_SD Total Max current 200mA(226PIN,227PIN same net)	3.3V		
229	VCC1V2_DVDD	P		VCC1V2_DVDD	1.2V output,VCC1V2_DVDD Total Max current 300mA(228PIN,229PIN same net)	1.2V		
231	VCC_3V3	P		VCC_3V3	3.3V output,VCC_3V3 Total Max current 400mA(230PIN,231PIN,234PIN,235PIN same net)	3.3V		
233	VCC_5V_S	P		VCC_5V_S	5.0V input for RTC, Max current 50mA	5.0V		
235	VCC_3V3	P		VCC_3V3	3.3V output,VCC_3V3 Total Max current 400mA(230PIN,231PIN,234PIN,235PIN same net)	3.3V		
237	VCC2V8_AVDD	P		VCC2V8_AVDD	2.8V output,VCC2V8_AVDD Total Max current 300mA(236PIN,237PIN same net)	2.8V		
239	VCC1V8_DOVDD	P		VCC1V8_DOVDD	1.8V output,VCC1V8_DOVDD Total Max current 300mA(238PIN,239PIN same net)	1.8V		

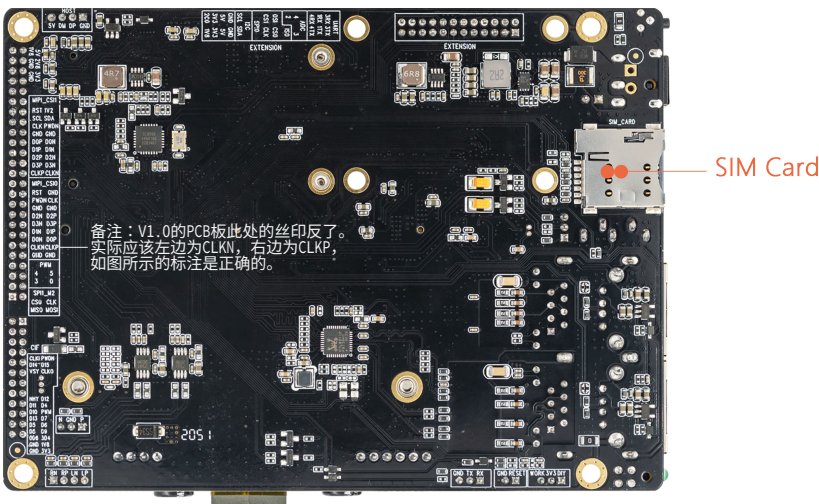
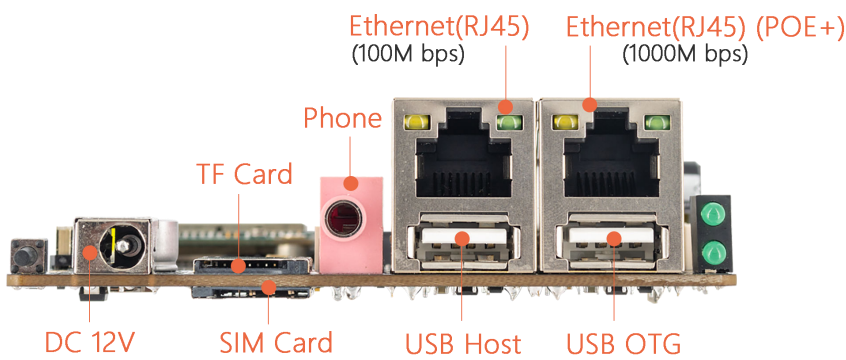
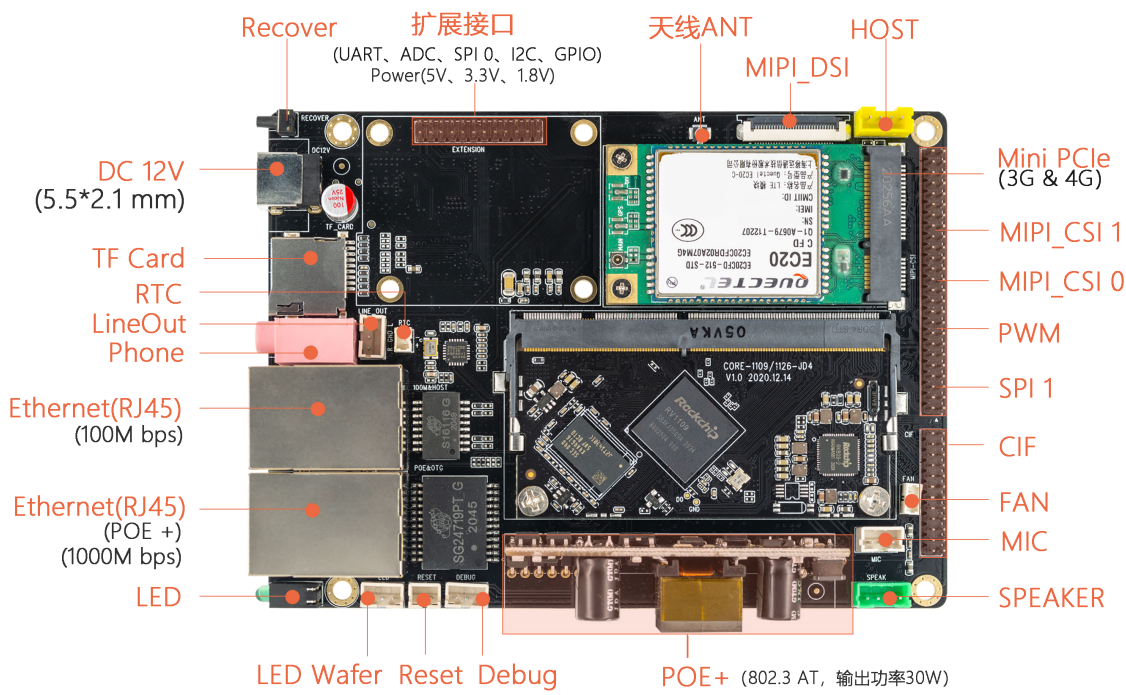
	241	NC_15							
	243	GND_17	G		GND	Power ground			
	245	GND_18	G		GND	Power ground			
	247	GND_19	G		GND	Power ground			
	249	GND_20	G		GND	Power ground			
	251	VCC5V0_SYS_1	P		VCC5V0_SYS	Input Voltage 4.8V-5.5V	5.0V_IN		
	253	VCC5V0_SYS_2	P		VCC5V0_SYS	Input Voltage 4.8V-5.5V	5.0V_IN		
	255	VCC5V0_SYS_3	P		VCC5V0_SYS	Input Voltage 4.8V-5.5V	5.0V_IN		
	257	VCC5V0_SYS_4	P		VCC5V0_SYS	Input Voltage 4.8V-5.5V	5.0V_IN		
	259	VCC5V0_SYS_5	P		VCC5V0_SYS	Input Voltage 4.8V-5.5V	5.0V_IN		
Part B	pin	Core board pin definition	Pad type	IO Pull	Function for Floor(MB-JD4-RV11091126)	Default function description	IO Power domain	RV1126 Pin	RV1126 Pin Name
	2	GND_21	G		GND	GND			GND_21
	4	GPIO1_A2_U	I/O	UP	LCD_RST	Mipi Reset,active low	1.8V	R4	I2S1_SDI_M0 / FSPI_D3 / FLASH_RDN / GPIO1_A2_U
	6	NC_16			NC	NC			NC_16
	8	GPIO0_D6_D	I/O	DOWN	LCD_PWREN	LCD_PWOER_EN	1.8V	T3	I2S1_SDO_M0 / FSPI_D2 / GPIO0_D6_D
	10	NC_17			NC	NC			NC_17
	12	I2C0_SCL_PMIC	I/O	DOWN	NC	I2C serial port 1, Core board internal pull up Resistor 2.2K	3.3V	AA7	I2C0_SCL / GPIO0_B4_D
	14	I2C0_SDA_PMIC	I/O	DOWN	NC	I2C serial port 1, Core board internal pull up Resistor 2.2K	3.3V	Y7	I2C0_SDA / GPIO0_B5_D
	16	NC_18			NC	NC			NC_18
	18	NC_19			NC	NC			NC_19
	20	NC_20			NC	NC			NC_20
	22	I2C1_SDA	I/O	UP	I2C1_SDA	I2C serial port 1, need pull up Resistor 2.2K	1.8V	W19	I2C1_SDA / UART4_RTSN_M2 / GPIO1_D2_U
	24	I2C1_SCL	I/O	UP	I2C1_SCL	I2C serial port 1, need pull up Resistor 2.2K	1.8V	Y21	I2C1_SCL / UART4_CTSN_M2 / GPIO1_D3_U
	26	GND_22	G		GND	GND			GND_22
	28	NC_21			NC	NC			NC_21
	30	PDM_SDI0 /GPIO3_D6_D	I/O	DOWN	SPK_CTL_H	Speaker_EN ,active hight	1.8V	AA12	I2S0_SDI0_M0 / PDM_SDI0_M0 / ACODEC_DAC_DATA1 / GPIO3_D6_D
	32	PDM_CLK/GPIO3_D4_D	I/O	DOWN	GPIO3_D4	GPIO3_D4	1.8V	Y12	I2S0_LRCK_RX_M0 / PDM_CLK0_M0 / ACODEC_ADC_SYNC / GPIO3_D4_D
	34	GND_23	G		GND	GND			GND_23
	36	NC_22			NC	NC			NC_22
	38	PMIC_EXT_EN	O		PMIC_EXT_EN	PMIC power_en output,active hight Core board internal series resistance 1K	5.0V		PMIC_EXT_EN
	40	GND_24	G		GND	GND			GND_24
	42	SDMMC0_DET	I/O	UP	SDMMC0_DET	TF_Card DET,active low	1.8V	U7	SDMMC0_DET / GPIO0_A3_U
	44	GND_25	G		GND	GND			GND_25
	46	SDMMC0_CMD	I/O	UP	SDMMC0_CMD	SDMMC0_CMD	Note 1	Y13	UART3_CTSN_M1 / RISC-V_JTAG_TDI / SDMMC0_CMD / GPIO1_B1_U
	48	SDMMC0_CLK	I/O	UP	SDMMC0_CLK	SDMMC0_CLK		AA13	UART3_RTSN_M1 / RISC-V_JTAG_TDO / SDMMC0_CLK / GPIO1_B0_U
	50	SDMMC0_D1	I/O	UP	SDMMC0_D1	SDMMC0_D1		W13	UART2_TX_M0 / TEST_CLK0_OUT / RISC-V_JTAG_TRSTN / SDMMC0_D1 / GPIO1_A5_U
	52	SDMMC0_D0	I/O	UP	SDMMC0_D0	SDMMC0_D0		Y14	UART2_RX_M0 / TEST_CLK1_OUT / SDMMC0_D0 / GPIO1_A4_U
	54	SDMMC0_D2	I/O	UP	SDMMC0_D2	SDMMC0_D2		V13	UART3_RX_M1 / A7_JTAG_TCK_M0 / RISC-V_JTAG_TCK / SDMMC0_D2 / GPIO1_A6_U
	56	SDMMC0_D3	I/O	UP	SDMMC0_D3	SDMMC0_D3		U13	UART3_TX_M1 / A7_JTAG_TMS_M0 / RISC-V_JTAG_TMS / SDMMC0_D3 / GPIO1_A7_U
	Note 1: Default is 3.3V; SDMMC0 1.8V(SDIO3.0 model)/3.3V(SDIO2.0 model) Auto								
	58	GND_26	G		GND	GND			GND_26
	60	MIPI_CSI_RX0_CLKN	I		MIPI_CSI_RX0_CLKN	MIPI_CSI_RX0_CLKN	1.8V	V15	MIPI_CSI_RX0_CLKN / LVDS0_CLKN
	62	MIPI_CSI_RX0_CLKP	I		MIPI_CSI_RX0_CLKP	MIPI_CSI_RX0_CLKP	1.8V	U15	MIPI_CSI_RX0_CLKP / LVDS0_CLKP
	64	MIPI_CSI_RX0_D0P	I		MIPI_CSI_RX0_D0P	MIPI_CSI_RX0_D0P	1.8V	V16	MIPI_CSI_RX0_D0P / LVDS0_RX0P
	66	MIPI_CSI_RX0_D0N	I		MIPI_CSI_RX0_D0N	MIPI_CSI_RX0_D0N	1.8V	U16	MIPI_CSI_RX0_D0N / LVDS0_RX0N
	68	MIPI_CSI_RX1_CLKP	I		MIPI_CSI_RX1_CLKP	MIPI_CSI_RX1_CLKP	1.8V	V18	MIPI_CSI_RX1_CLKP / LVDS1_CLKP
	70	MIPI_CSI_RX1_CLKN	I		MIPI_CSI_RX1_CLKN	MIPI_CSI_RX1_CLKN	1.8V	W18	MIPI_CSI_RX1_CLKN / LVDS1_CLKN
	72	NC_23			NC	NC			NC_23
	74	MIPI_CSI_PWDN1	I/O	DOWN	MIPI_CSI_PWDN1	MIPI_CSI_Powerdown1	3.3V	T18	CIF_D1_M0 / RGMII_CRS_M0 / I2S0_LRCK_TX_M1 / UART4_RX_M0 / I2C3_SDA_M0 / PWM9_M0 / GPIO3_A5_D
	76	GND_27	G		GND	GND			GND_27
	78	MIPI_CSI_RST1	I/O	DOWN	MIPI_CSI_RST1	MIPI_CSI_RST1,active low	1.8V	V11	I2S0_SDO3_SDI1_M0 / PDM_SDI1_M0 / I2C4_SDA_M1 / AUDPWM_R_M0 / AUDDSM_RP / GPIO4_A1_D
	80	MIPI_CSI_RST0	I/O	DOWN	MIPI_CSI_RST0	MIPI_CSI_RST0,active low	1.8V	U11	I2S0_SDO2_SDI2_M0 / PDM_SDI2_M0 / I2C4_SCL_M1 / AUDPWM_L_M0 / AUDDSM_RN / GPIO4_A0_D
	82	FSPI_CLK/ GPIO1_A3_D	I/O	UP	BL_EN	Black light EN ,active hight	3.3V	R3	FSPI_CLK / EMMC_RSTN / FLASH_WPN / GPIO1_A3_D
	84	FSPI_CS0N/ GPIO0_D4_U	I/O	UP	TP_RST	TP_Reset,active low	3.3V	U2	I2S1_MCLK_M0 / FSPI_CS0N / FLASH_CS0N / GPIO0_D4_U
	86	FSPI_D0/ GPIO1_A0_D	I/O	UP	TP_INT	TP_INT	3.3V	T2	I2S1_LRCK_M0 / FSPI_D0 / FLASH_ALE / GPIO1_A0_D
	88	FSPI_D1/ GPIO1_A1_U	I/O	UP	GPIO0_D6	GPIO0_D6	3.3V	R2	I2S1_SCLK_M0 / FSPI_D1 / FLASH_RDYN / GPIO1_A1_U
	90	NC_24			NC	NC			NC_24
	92	NC_25			NC	NC			NC_25
	94	PWM0_M0/UART1_TX_M0	I/O	DOWN	UART1_TX	UART1_TX	3.3V	W8	UART1_TX_M0 / PWM0_M0 / GPIO0_B6_D

96	PWM1_M0/UART1_RX_M0	I/O	DOWN	UART1_RX	UART1_RX	3.3V	V9	UART1_RX_M0 / PWM1_M0 / GPIO0_B7_D
98	NC_26			NC	NC			NC_26
100	UART2_RX/DEBUG_RX	I/O	UP	UART2_RX/DEBUG_RX	UART2_RX/DEBUG_RX	3.3V	H16	A7_JTAG_TMS_M1 / UART2_RX_M1 / GPIO3_A3_U
102	UART2_TX/DEBUG_TX	I/O	UP	UART2_TX/DEBUG_TX	UART2_TX/DEBUG_TX	3.3V	G18	A7_JTAG_TCK_M1 / UART2_TX_M1 / GPIO3_A2_U
104	PWM10_M0 / GPIO3_A6_D	I/O	DOWN	LCD_BL_PWM	LCD_BL_PWM	3.3V	P17	CIF_D2_M0 / RGMII_COL_M0 / I2S0_SDO0_M1 / UART5_TX_M0 / CAN_RXD_M1 / PWM10_M0 / GPIO3_A6_D
106	PWM4_M1/ GPIO2_A7_D	I/O	DOWN	PWM4_M1/UART4_RX	PWM4_M1/UART4_RX output	3.3V	M20	I2S2_SDO_M1 / UART4_RX_M1 / PWM4_M1 / SPI0_CS0N_M2 / LCDC_D3 / GPIO2_A7_D
108	PWM3_IR_M1/ GPIO2_B0_D	I/O	DOWN	PWM3_M1	PWM3_M1 output	3.3V	L19	I2S2_SDI_M1 / UART5_TX_M1 / PWM3_IR_M1 / SPI0_MOSI_M2 / LCDC_D4 / GPIO2_B0_D
110	I2C5_SCL_M0/GPIO2_A5_D	I/O	DOWN	3G_PWR_EN	3G_Power_EN,active hight	3.3V	L17	I2C5_SCL_M0 / UART4_CTSN_M1 / RGMII_CRS_M1 / CIF_D1_M1 / LCDC_D1 / GPIO2_A5_D
112	I2C5_SDA_M0/GPIO2_B3_D	I/O	DOWN	CIFD3/PWM0_M1	CIFD3/PWM0_M1 output	3.3V	K17	I2C5_SDA_M0 / I2S2_MCLK_M1 / UART5_CTSN_M1 / PWM0_M1 / SPI0_CS1N_M2 / CIF_D3_M1 / LCDC_D7 / GPIO2_B3_D
114	NC_27			NC	NC			NC_27
116	PWM6_M1	I/O	DOWN	PWM6_M1/SPI1_CS0_M2	PWM6_M1/SPI1_CS0_M2	3.3V	J17	I2C3_SCL_M1 / PWM6_M1 / SPI1_CS0N_M2 / LCDC_DEN / GPIO2_D4_D
118	PWM10_M1	I/O	DOWN	PWM10_M1/SPI1_CLK_M2	PWM10_M1/SPI1_CLK_M2	3.3V	H17	I2C3_SDA_M1 / PWM10_M1 / SPI1_CLK_M2 / LCDC_HSYNC / GPIO2_D5_D
120	RMII_TXD3/GPIO2_A4_D	I/O	DOWN	RMII_TXD3	RMII_TXD3 Core board internal series resistance 22R	3.3V	J18	UART4_RTSN_M1 / RGMII_TXD3_M1 / CIF_D0_M1 / LCDC_D0 / GPIO2_A4_D
122	RMII_RXD2/GPIO2_C7_D	I/O	DOWN	RMII_RXD2	RMII_RXD2	3.3V	G19	I2S1_MCLK_M2 / RGMII_RXD2_M1 / CIF_D15_M1 / LCDC_D19 / GPIO2_C7_D
124	GND_28	G		GND	GND			GND_28
126	RMII_RXCLK/P_IRIS_EN_H	I/O	DOWN	RMII_RXCLK	RMII_RXCLK	3.3V	F19	I2S1_SDI_M2 / RGMII_RXCLK_M1 / CIF_HSYNC_M1 / LCDC_D23 / GPIO2_D3_D
128	NC_28			NC	NC			NC_28
130	OTG_ID	I	UP	OTG_ID	OTG_DET.Active low	1.8V	Y3	OTG_ID
132	NC			NC	NC			NC
134	NC_29			NC	NC			NC_29
136	PWM9_M1	I/O	DOWN	PWM9_M1/SPI1_MOSI_M2	PWM9_M1/SPI1_MOSI_M2	3.3V	C21	UART3_RTSN_M2 / PWM9_M1 / SPI1_MOSI_M2 / LCDC_VSYNC / GPIO2_D6_D
138	GND_29	G		GND	GND			GND_29
140	MIPI_DSI_TX0_CLKP	O		MIPI_DSI_CLKP	MIPI_DSI_CLKP	1.8V	C19	MIPI_DSI_TX0_CLKP
142	MIPI_DSI_TX0_CLKN	O		MIPI_DSI_CLKN	MIPI_DSI_CLKN	1.8V	C18	MIPI_DSI_TX0_CLKN
144	NC_30			NC	NC			NC_30
146	NC_31			NC	NC			NC_31
148	NC_32			NC	NC			NC_32
150	ADC_IN4	I	UP	ADCIN4	ADC4 input, Core board interiorl pull up Resistor 10K	1.8V	C17	ADC_IN4
152	ADC_IN0	I	UP	RECOVER	ADC0 input,RECOVER KEY, active low Core board interiorl pull up Resistor 10K	1.8V	E17	ADC_IN0
154	ADC_IN2	I	UP	ADCIN2	ADC2 input, Core board interiorl pull up Resistor 10K	1.8V	B18	ADC_IN2
156	ADC_IN3	I	UP	ADCIN3	ADC3 input, Core board interiorl pull up Resistor 10K	1.8V	A18	ADC_IN3
158	GND_30	G		GND	GND			GND_30
160	NC_33			NC	NC			NC_33
162	PCM_RX/ GPIO1_C5_D	I/O	DOWN	HP_DET	Headphone plug in det,active low	1.8V	E13	I2S2_SDI_M0 / SPI1_MISO_M1 / FLASH_TRIG_IN / GPIO1_C5_D
164	PCM_CLK/ GPIO1_C6_D	I/O	DOWN	USB_OTG_EN	OTG power en ,active hight	1.8V	D13	I2S2_SCLK_M0 / SPI1_CLK_M1 / PRELIGHT_TRIG_OUT / UART1_RTSN_M1 / GPIO1_C6_D
166	PCM_SYNC/ GPIO1_C7_D	I/O	DOWN	MUTE	Headphone output en,active hight	1.8V	C13	I2S2_LRCK_M0 / SPI1_CS0N_M1 / UART1_CTSN_M1 / GPIO1_C7_D
168	PCM_TX/ GPIO1_C4_D	I/O	DOWN	USB_HOST_EN	USB Host power en ,active hight	1.8V	B14	I2S2_SDO_M0 / SPI1_MOSI_M1 / FLASH_TRIG_OUT / GPIO1_C4_D
170	UART0_TX	I/O	UP	UART0_TX	UART0_TX for BT	1.8V	C14	UART0_TX / GPIO1_C3_U
172	UART0_RX	I/O	UP	UART0_RX	UART0_RX for BT	1.8V	D14	UART0_RX / GPIO1_C2_U
174	UART0_CTSN	I/O	UP	UART0_CTSN	UART0_CTSN for BT	1.8V	A15	UART0_CTSN / GPIO1_C1_U
176	UART0_RTSN	I/O	UP	UART0_RTSN	UART0_RTSN for BT	1.8V	B15	UART0_RTSN / GPIO1_C0_U
178	NC_34			NC	NC			NC_34
180	GND_31	G		GND	GND			GND_31
182	GMAC_MDIO_M0	I/O	DOWN	GMAC_MDIO_M0/D15	GMAC_MDIO_M0/D15	3.3V	N20	CIF_D15_M0 / RGMII_MDIO_M0 / PDM_CLK1_M1 / GPIO3_C3_D
184	GMAC_MDC_M0	I/O	DOWN	GMAC_MDC_M0/VSYN	GMAC_MDC_M0/VSYN	3.3V	N21	CIF_VSYNC_M0 / RGMII_MDC_M0 / UART3_RTSN_M0 / GPIO3_C4_D
186	GMAC_TXCLK_M0	I/O	DOWN	GMAC_TXCLK_M0/CLKOUT	GMAC_TXCLK_M0/CLKOUT Core board internal series resistance 22R	3.3V	P19	CIF_CLKOUT_M0 / RGMII_TXCLK_M0 / UART3_TX_M0 / GPIO3_C6_D
188	GMAC_RXCLK_M0	I/O	DOWN	GMAC_RXCLK_M0/NHYN	GMAC_RXCLK_M0/NHYN	3.3V	P20	CIF_HSYNC_M0 / RGMII_RXCLK_M0 / UART3_RX_M0 / GPIO3_C7_D
190	GND_32	G		GND	GND			GND_32
192	GMAC_CLK_M0	I/O	DOWN	GMAC_CLK_M0/D12	MAC reference clock output /CIF_D12	3.3V	N19	CIF_D12_M0 / RGMII_CLK_M0 / PDM_CLK0_M1 / SPI1_CLK_M0 / GPIO3_C0_D
194	GMAC_RXD1_M0	I/O	DOWN	GMAC_RXD1_M0/D11	MAC receive data/CIF_D11	3.3V	R21	CIF_D11_M0 / RGMII_RXD1_M0 / PDM_SDI3_M1 / SPI1_MISO_M0 / GPIO3_B7_D
196	GMAC_RXD3_M0	I/O	DOWN	GMAC_RXD3_M0/D4	MAC receive data/CIF_D4	3.3V	T19	CIF_D4_M0 / RGMII_RXD3_M0 / I2S0_MCLK_M1 / UART5_RTSN_M0 / I2C5_SCL_M1 / GPIO3_B0_D
198	GMAC_RXD0_M0	I/O	DOWN	GMAC_RXD0_M0/D10	MAC receive data/CIF_D10	3.3V	R20	CIF_D10_M0 / RGMII_RXD0_M0 / PDM_SDI2_M1 / SPI1_MOSI_M0 / GPIO3_B6_D
200	GMAC_RXD2_M0	I/O	DOWN	PWM11_M0	PWM11_M0/CIF_D3	3.3V	R18	CIF_D3_M0 / RGMII_RXD2_M0 / I2S0_SDI0_M1 / UART5_RX_M0 / CAN_TXD_M1 / PWM11_IR_M0 / GPIO3_A7_D
202	GMAC_RXDV_M0	I/O	DOWN	GMAC_RXDV_M0/D13	MAC receive data valid/CIF_D13	3.3V	M17	CIF_D13_M0 / RGMII_RXDV_M0 / PDM_SDI0_M1 / GPIO3_C1_D
204	GMAC_TXD0_M0	I/O	DOWN	GMAC_TXD0_M0/D7	MAC transmit data /CIF_D7 Core board internal series resistance 22R	3.3V	R19	CIF_D7_M0 / RGMII_TXD0_M0 / I2S0_SDO1_SDI3_M1 / UART4_CTSN_M0 / GPIO3_B3_D
206	GMAC_TXD2_M0	I/O	DOWN	GMAC_TXD2_M0/D5	MAC transmit data/CIF_D5 Core board internal series resistance 22R	3.3V	T20	CIF_D5_M0 / RGMII_TXD2_M0 / I2S0_SCLK_RX_M1 / UART5_CTSN_M0 / I2C5_SDA_M1 / GPIO3_B1_D
208	GMAC_TXD3_M0	I/O	DOWN	GMAC_TXD3_M0/D6	MAC transmit data/CIF_D6 Core board internal series resistance 22R	3.3V	N17	CIF_D6_M0 / RGMII_TXD3_M0 / I2S0_LRCK_RX_M1 / UART4_RTSN_M0 / GPIO3_B2_D

210	GMAC_TXD1_M0	I/O	DOWN	GMAC_TXD1_M0/D8	MAC transmit data/CIF_D8 Core board internal series resistance 22R	3.3V	T21	CIF_D8_M0 / RGMII_TXD1_M0 / I2S0_SDO2_SDI2_M1 / SPI1_CS1N_M0 / GPIO3_B4_D
212	GMAC_TXEN_M0	I/O	DOWN	GMAC_TXEN_M0/D9	MAC transmit enable/CIF_D9 Core board internal series resistance 22R	3.3V	N18	CIF_D9_M0 / RGMII_TXEN_M0 / I2S0_SDO3_SDI1_M1 / SPI1_CS0N_M0 / GPIO3_B5_D
214	EPHY_PMEB	I/O	DOWN	EPHY_PMEB	PHY interrupt input,	3.3V	L20	I2S2_SCLK_M1 / UART5_RX_M1 / PWM2_M1 / SPI0_MISO_M2 / LCD_C D5 / GPIO2_B1_D
216	EPHY_RSTN	I/O	DOWN	EPHY_RSTN	phy reset output,active low	3.3V	K16	I2S2_LRCK_M1 / UART5_RTSN_M1 / PWM1_M1 / SPI0_CLK_M2 / LCD_C D6 / GPIO2_B2_D
218	RESET_KEY	I		RESET	system reset signal Input, External connection Reset key, active low	1.8V	W7	RESET_KEY
220	NC_35			NC	NC			NC_35
222	GND_33	G		GND	GND			GND_33
224	VCC_1V8	P		VCC_1V8	1.8V output,VCC_1V8 Total Max current 200mA(224PIN,225PIN same net)	1.8V		
226	VCC3V3_SD	P		VCC3V3_SD	1.8V output,VCC_1V8 Total Max current 200mA(224PIN,225PIN same net)	3.3V		
228	VCC1V2_DVDD	P		VCC1V2_DVDD	1.2V output,VCC1V2_DVDD Total Max current 300mA(228PIN,229PIN same net)	1.2V		
230	VCC_3V3	P		VCC_3V3	3.3V output,VCC_3V3 Total Max current 400mA(230PIN,231PIN,234PIN,235PIN same net)	3.3V		
232	VCC_RTC	P		VCC_RTC	3.3-5.0V input for RTC, Max current 50mA	5.0V		
234	VCC_3V3	P		VCC_3V3	3.3V output,VCC_3V3 Total Max current 400mA(230PIN,231PIN,234PIN,235PIN same net)	3.3V		
236	VCC2V8_AVDD	P		VCC2V8_AVDD	2.8V output,VCC2V8_AVDD Total Max current 300mA(236PIN,237PIN same net)	2.8V		
238	VCC1V8_DOVDD	P		VCC1V8_DOVDD	1.8V output,VCC1V8_DOVDD Total Max current 300mA(238PIN,239PIN same net)	1.8V		
240	NC_36			NC	NC			NC_36
242	NC_37			NC	NC			NC_37
244	GND_34	G		GND	Power ground			
246	GND_35	G		GND	Power ground			
248	GND_36	G		GND	Power ground			
250	GND_37	G		GND	Power ground			
252	VCC5V0_SYS_6	P		VCC5V0_SYS	Input Voltage 4.8V-5.5V	5.0V_IN		
254	VCC5V0_SYS_7	P		VCC5V0_SYS	Input Voltage 4.8V-5.5V	5.0V_IN		
256	VCC5V0_SYS_8	P		VCC5V0_SYS	Input Voltage 4.8V-5.5V	5.0V_IN		
258	VCC5V0_SYS_9	P		VCC5V0_SYS	Input Voltage 4.8V-5.5V	5.0V_IN		
260	VCC5V0_SYS_10	P		VCC5V0_SYS	Input Voltage 4.8V-5.5V	5.0V_IN		

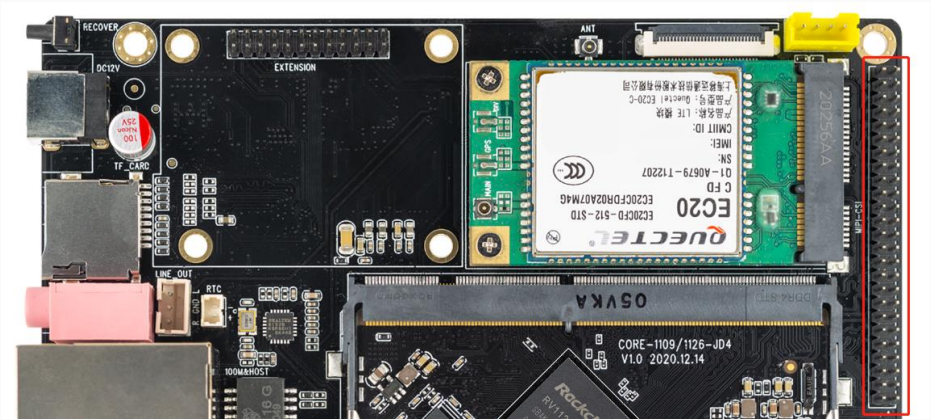
六、核心板 + 底板

Core-1109-JD4核心板与底板组合，构成完整的高性能行业应用主板，扩展接口更丰富，性能更强大，可直接应用到各种智能产品中，加速产品落地。
底板同时兼容Core-1109-JD4核心板 和 Core-1126-JD4核心板



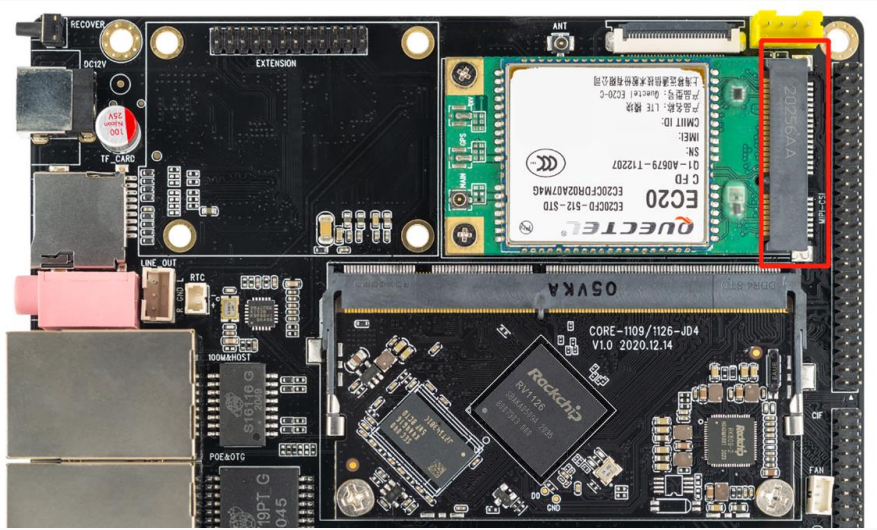
底板接口定义

1. (J13) 双排针 (25X2) 50 PIN 2.0 间距扩展接口



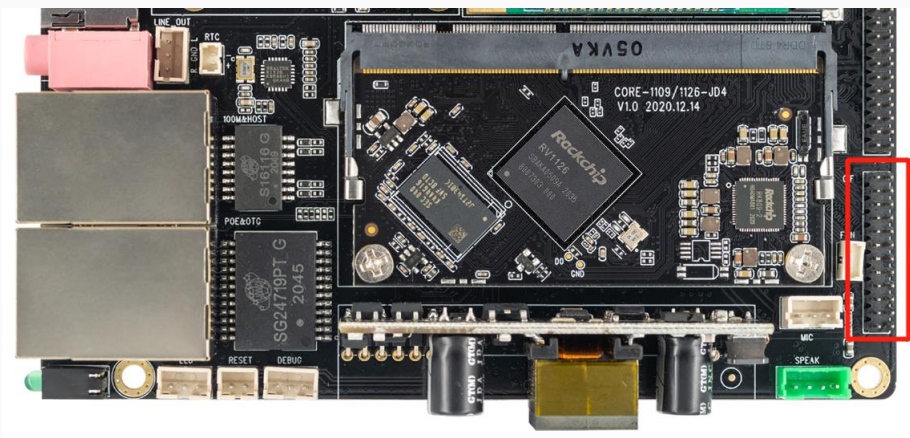
序号	定义	电平/V	序号	定义	电平/V
1	PWM8_M1/SPI1_MISO_M2	3.3	2	PWM9_M1/SPI1_MOSI_M2	3.3
3	PWM6_M1/SPI1_CS0_M2	3.3	4	PWM10_M1/SPI1_CLK_M2	3.3
5	PWM3_M1	3.3	6	CIFD3/PWM0_M1	3.3
7	PWM4_M0	3.3	8	PWM5_M0	
9	GND		10	GND	
11	MIPI_CSI_RX0_CLKN	1.8	12	MIPI_CSI_RX0_CLKP	1.8
13	MIPI_CSI_RX0_D0N	1.8	14	MIPI_CSI_RX0_D0P	1.8
15	MIPI_CSI_RX0_D1N	1.8	16	MIPI_CSI_RX0_D1P	1.8
17	MIPI_CSI_RX0_D3N	1.8	18	MIPI_CSI_RX0_D3P	1.8
19	MIPI_CSI_RX0_D2N	1.8	20	MIPI_CSI_RX0_D2P	1.8
21	GND		22	GND	
23	MIPI_CSI_PWDN0	1.8	24	MIPI_CSI_CLK0	1.8
25	MIPI_CSI_RST0	1.8	26	GND	
27	MIPI_CSI_RX1_CLKP	1.8	28	MIPI_CSI_RX1_CLKN	1.8
29	MIPI_CSI_RX1_D3P	1.8	30	MIPI_CSI_RX1_D3N	1.8
31	MIPI_CSI_RX1_D2P	1.8	32	MIPI_CSI_RX1_D2N	1.8
33	MIPI_CSI_RX1_D1P	1.8	34	MIPI_CSI_RX1_D1N	1.8
35	MIPI_CSI_RX1_D0P	1.8	36	MIPI_CSI_RX1_D0N	1.8
37	GND		38	GND	
39	MIPI_CSI_CLK1	1.8	40	MIPI_CSI_PWDN1	3.3
41	I2C1_SCL(板上上拉电阻 2.2K)	1.8	42	I2C1_SDA (板上上拉电阻 2.2K)	1.8
43	MIPI_CSI_RST1	1.8	44	VCC1V2_DVDD	1.2
45	GND		46	VCC_3V3	3.3
47	GND		48	VCC2V8_AVDD	2.8
49	VCC1V8_DOVDD	1.8	50	VCC_5V	5.0

2. (J4) Mini PCIE 接口 52pin (for 4G 模组)



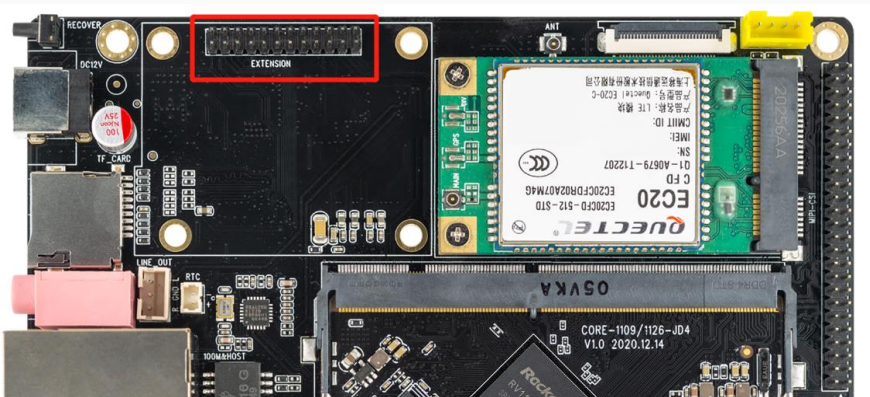
序号	定义	电平/V	序号	定义	电平/V
1	NC		2	VCC3V8_4G	3.8
3	NC		4	GND	
5	NC		6	NC	
7	NC		8	UIM_PWR	1.8
9	GND		10	UIM_DAT	1.8
11	NC		12	UIM_CLK	1.8
13	NC		14	UIM_RST	1.8
15	GND		16	NC	
17	NC		18	GND	
19	NC		20	NC	
21	GND		22	Reset	3.8
23	NC		24	NC	
25	NC		26	GND	
27	GND		28	NC	
29	GND		30	NC	
31	NC		32	NC	
33	NC		34	GND	
35	GND		36	HUB1_HOST_DM3	3.3
37	GND		38	HUB1_HOST_DP3	3.3
39	VCC3V8_4G	3.8	40	GND	
41	VCC3V8_4G	3.8	42	NC	
43	GND		44	NC	
45	NC		46	NC	
47	NC		48	NC	
49	NC		50	GND	
51	NC		52	VCC3V8_4G	3.8

3. (J18) 双排针 (12X2) 24 PIN 2.0 间距扩展接口



序号	定义	电平/V	序号	定义	电平/V
1	CIF_PWDN	3.3	2	CIF_CLKIN_M0	3.3
3	GMAC_MDIO_M0/D15	3.3	4	CIF_D14	3.3
5	GMAC_TXCLK_M0/CLKOUT	3.3	6	GMAC_MDC_M0/VSYN	3.3
7	GMAC_CLK_M0/D12	3.3	8	GMAC_RXCLK_M0/NHYN	3.3
9	GMAC_RXD3_M0/D4	3.3	10	GMAC_RXD1_M0/D11	3.3
11	GMAC_RXD2_M0/PWM11_M0	3.3	12	GMAC_RXD0_M0/D10	3.3
13	GMAC_TXD0_M0/D7	3.3	14	GMAC_RXDV_M0/D13	3.3
15	GMAC_TXD3_M0/D6	3.3	16	GMAC_TXD2_M0/D5	3.3
17	GMAC_TXEN_M0/D9	3.3	18	GMAC_TXD1_M0/D8	3.3
19	GPIO3_D4	1.8	20	GPIO0_D6	3.3
21	VCC_1V8	1.8	22	GND	
23	VCC_3V3	3.3	24	GND	

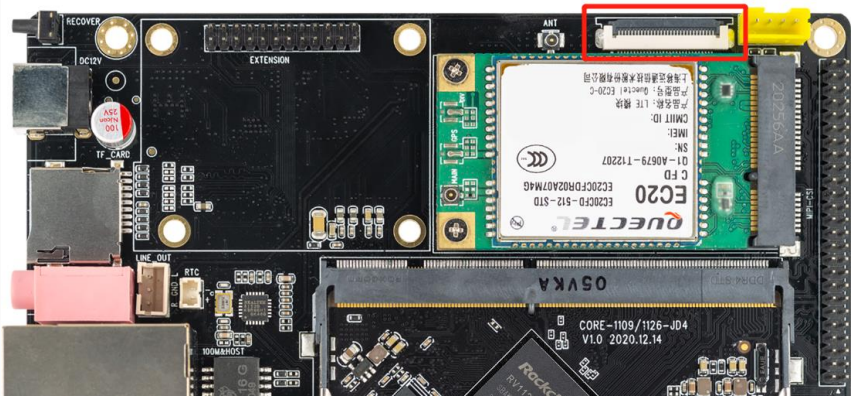
4. (J19) 双排针 (12X2) 24 PIN 2.0 间距扩展接口



序号	定义	电平/V	序号	定义	电平/V
1	UART3_TX	3.3	2	UART3_RX	3.3
3	UART1_TX	3.3	4	UART1_RX	3.3
5	UART4_TX	3.3	6	PWM4_M1/UART4_RX	3.3
7	ADCIN2	1.8	8	ADCIN4	1.8
9	SPI0_MISO_M1	1.8	10	ADCIN3	1.8
11	SPI0_CS0N_M1	1.8	12	SPI0_MOSI_M1	1.8
13	SPI0_CLK_M1	1.8	14	SPI0_CS1N_M1	1.8
15	I2C1_SDA (板上上拉电阻 2.2K)	1.8	16	I2C1_SCL (板上上拉电阻 2.2K)	1.8

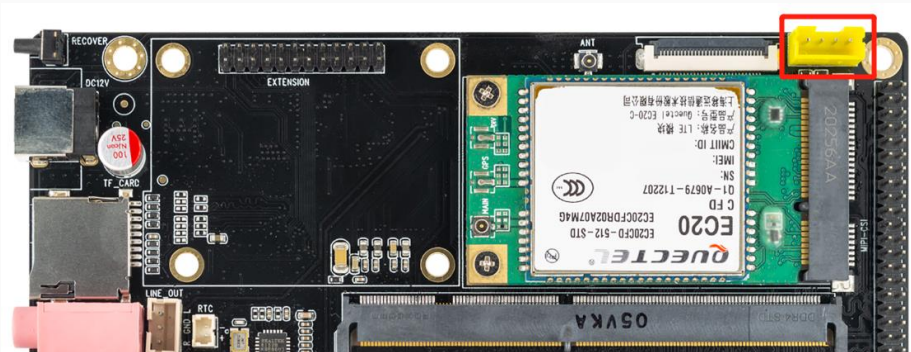
17	GND		18	GND	
19	VCC_5V	5.0	20	VCC_5V	5.0
21	VCC_3V3	3.3	22	VCC_3V3	3.3
23	VCC_1V8	1.8	24	GPIO_2C0	

5. (J15) MIPI_Display_Interface 30 PIN 0.5 间距



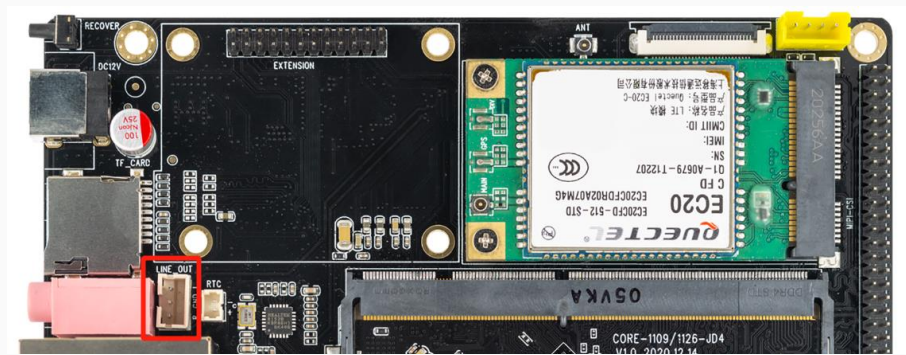
序号	定义	电平/V	序号	定义	电平/V
1	VCC_SYS	5.0V	16	MIPI_DSI_D0P	1.8V
2	VCC_SYS	5.0V	17	MIPI_DSI_D0N	1.8V
3	VCC_SYS	5.0V	18	GND	
4	GND		19	MIPI_DSI_D1P	1.8V
5	NC		20	MIPI_DSI_D1N	1.8V
6	VCC_3V3	3.3V	21	GND	
7	I2C1_SDA_3V3(板上上拉电阻 2.2K)	3.3V	22	MIPI_DSI_CLKP	1.8V
8	I2C1_SCL_3V3(板上上拉电阻 2.2K)	3.3V	23	MIPI_DSI_CLKN	1.8V
9	LCD_PWREN (GPIO0_D6_d)	1.8V	24	GND	
10	TP_INT (GPIO1_A0_u)	3.3V	25	MIPI_DSI_D2P	1.8V
11	BL_EN (GPIO1_A3_u)	3.3V	26	MIPI_DSI_D2N	1.8V
12	LCD_BL_PWM (GPIO3_A6_d)	3.3V	27	GND	
13	LCD_RST_3V3 (GPIO1_A2_u)	3.3V	28	MIPI_DSI_D3P	1.8V
14	TP_RST (GPIO0_D4_u)	3.3V	29	MIPI_DSI_D3N	1.8V
15	GND		30	GND	

6. (J23) USB_HOST 4 PIN 2.0mm 间距 Wafer 座



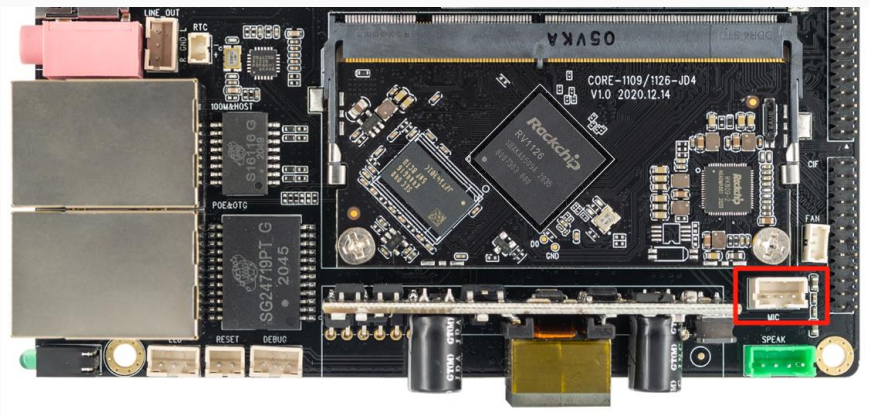
序号	定义	电平/V	序号	定义	电平/V
1	GND		2	HUB1_HOST_DP4	3.3
3	HUB1_HOST_DM4	3.3	4	VCC5V0_HOST	5.0

7. (J16) Line-Out 3 PIN 2.0mm 间距 Wafer 座



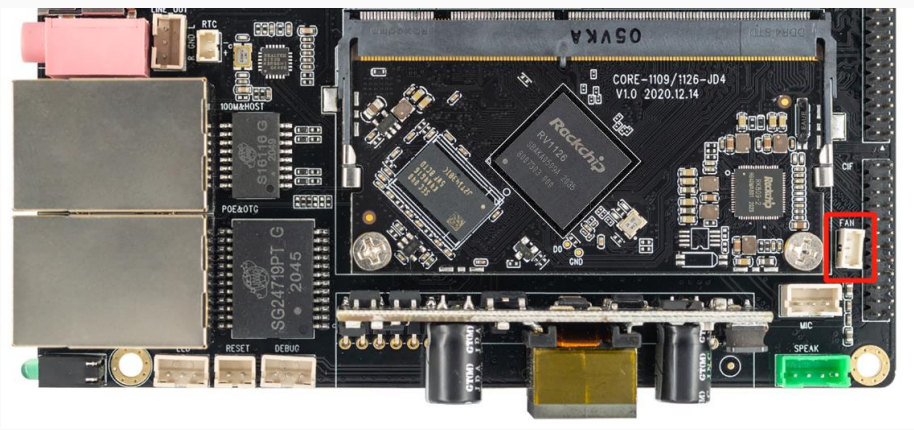
序号	定义	电平/V	序号	定义	电平/V
1	LINE_OUT_R		2	HP_AGND	
3	LINE_OUT_L	3.3			

8. (J1) MIC-IN 3 PIN 2.0mm 间距 Wafer 座



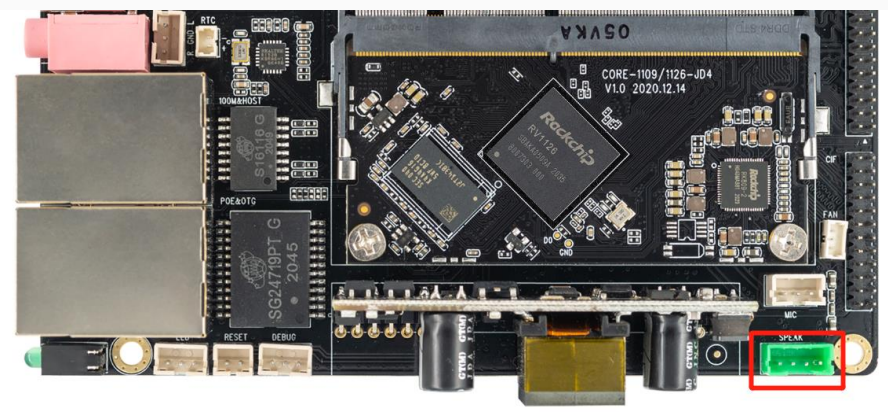
序号	定义	电平/V	序号	定义	电平/V
1	MIC1_INP	1.8	2	GND	
3	MIC1_INN	1.8			

9. (J12) FAN 3 PIN 2.0mm 间距 Wafer 座



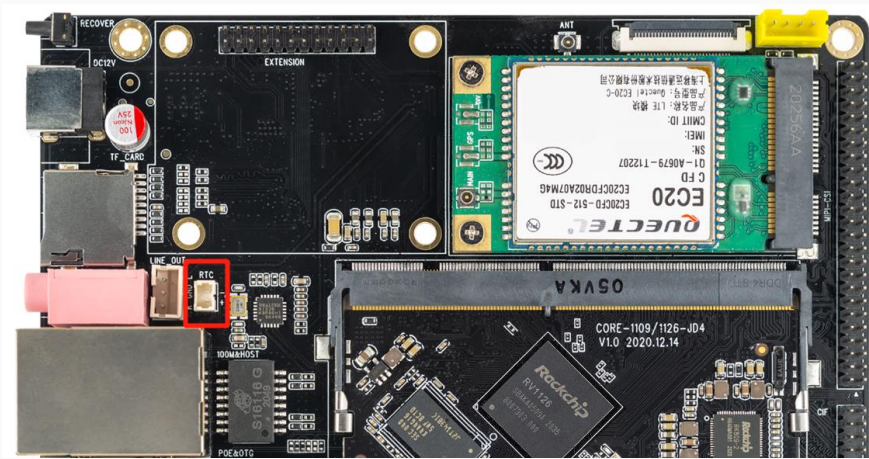
序号	定义	电平/V	序号	定义	电平/V
1	NC		2	FAN+	12
3	FAN-	12			

10. (J14) Speaker-Out 4 PIN 2.0mm 间距 Wafer 座



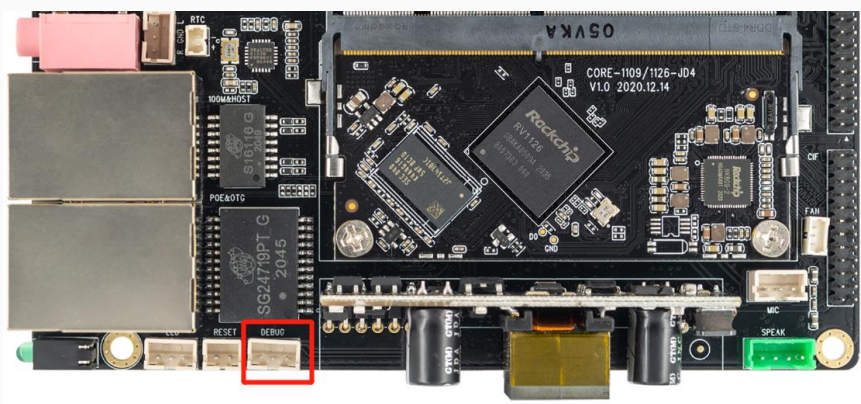
序号	定义	电平/V	序号	定义	电平/V
1	SPK_R_N	5.0	2	SPK_R_P	5.0
3	SPK_L_N	5.0	4	SPK_L_P	5.0

11. (J9) RTC_BAT 2 PIN 2.0mm 间距 Wafer 座



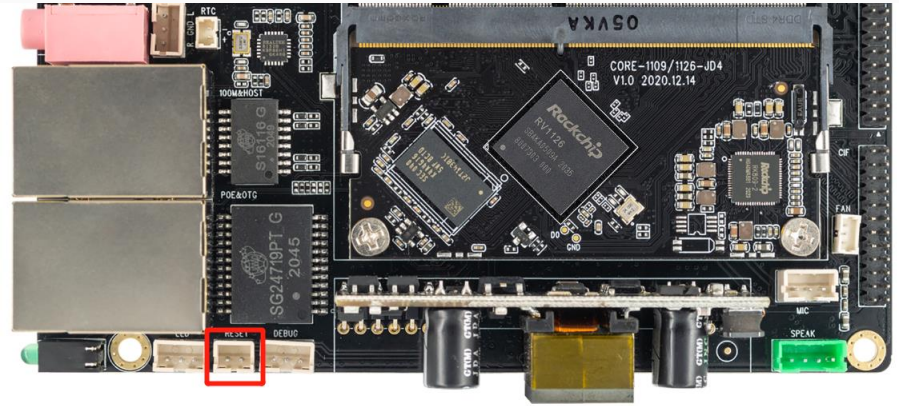
序号	定义	电平/V	序号	定义	电平/V
1	GND		2	VCC_RTC	3.3

12. (J10) DEBUG 3 PIN 2.0mm 间距 Wafer 座



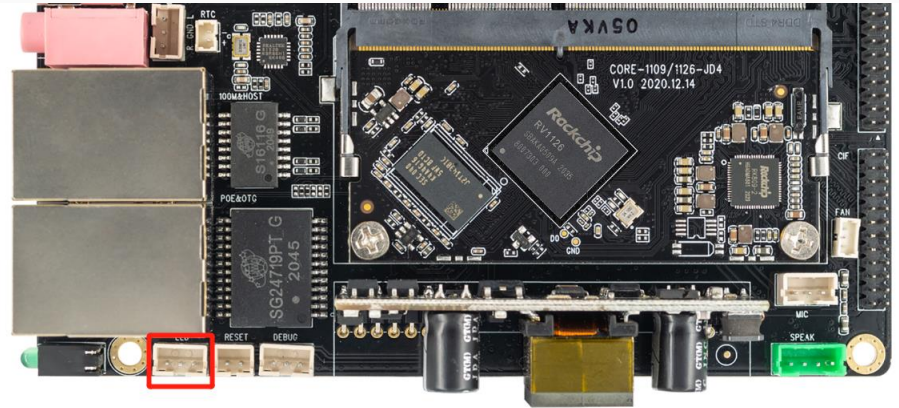
序号	定义	电平/V	序号	定义	电平/V
1	UART2_RXD	3.3	2	UART2_TXD	3.3
3	GND				

13. (J11) POWER-KEY 2 PIN 2.0mm 间距 Wafer 座



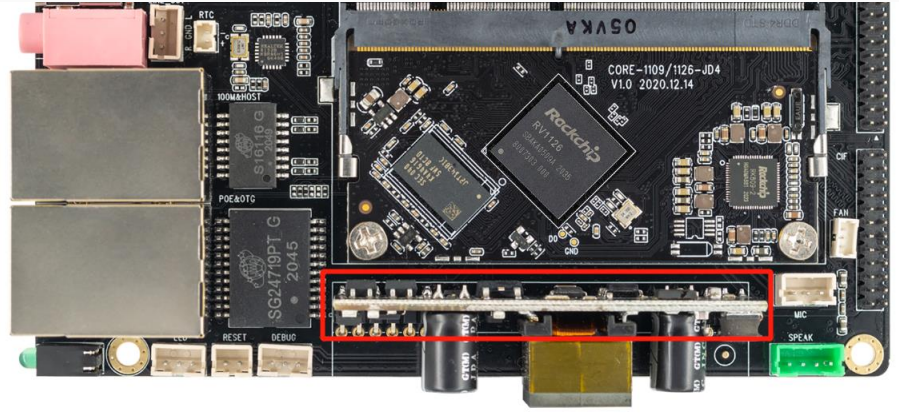
序号	定义	电平/V	序号	定义	电平/V
1	POWER_ON	5.0	2	GND	

14. (J20) LED 3 PIN 2.0mm 间距 Wafer 座



序号	定义	电平/V	序号	定义	电平/V
1	DIY_LED	3.3	2	VCC_3V3	3.3
3	WORK_LED	3.3			

15. (U10) POE 模块接口



序号	定义	电平/V	序号	定义	电平/V
1	NC		2	NC	
3	POW_VA1	48	4	POW_VA2	48
5	POW_VB1	48	6	POW_VB2	48
7	GND		8	GND	
9	DC_12V	12.0	10	DC_12V	12.0

公 司 简 介

中山市天启智能科技有限公司，成立于 2005 年，拥有超过十年科技产品的研发能力，拥有近百项发明专利与软件著作权，是国家高新技术企业。我们专注于开源智能硬件，物联网、数字音频产品的研发设计、生产和销售，同时提供了智能硬件 产品的整体解决方案。天启是福州瑞芯微电子（Rockchip）正式授权的 IDH（独立设计公司），同时也是瑞芯微电子的战略合作伙伴，有超过 10 年的紧密合作关系。

Firefly 是天启科技旗下的品牌，拥有开源社区与网上商城。Firefly 产品包括核心板，行业主板，行业整机、集群服务器与开发套件等产品。Firefly 目前已超过 10 万用户，其中有 10000 多家的企业用户，知名用户包括 Arm、Google、百度、腾讯、阿里巴巴等。Firefly 团队研发成员超过 70 人，拥有原理图设计，PCB Layout，主板量产，嵌入式开发，系统开发，应用程序开发等研发能力。为众多科技创业者与初创企业加速研发进程，并提供专业的技术服务。

“让科技更简单，让生活更智能”是 Firefly 团队的理念，我们希望通过 Firefly 的开源产品与技术服务，让各种科技产品的研发变得高效简单，让智能科技融入生活。Firefly 致力于为企业客户提供长期稳定可靠的行业产品和服务、为客户持续创造价值。

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官网：www.t-firefly.com

电话：4001-511-533

邮编：528400

地址：广东省中山市东区中山四路 57 号宏宇大厦 1 座 2101 室

业务沟通

邮箱：sales@t-firefly.com

商城

自营商城：store.t-firefly.com

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