

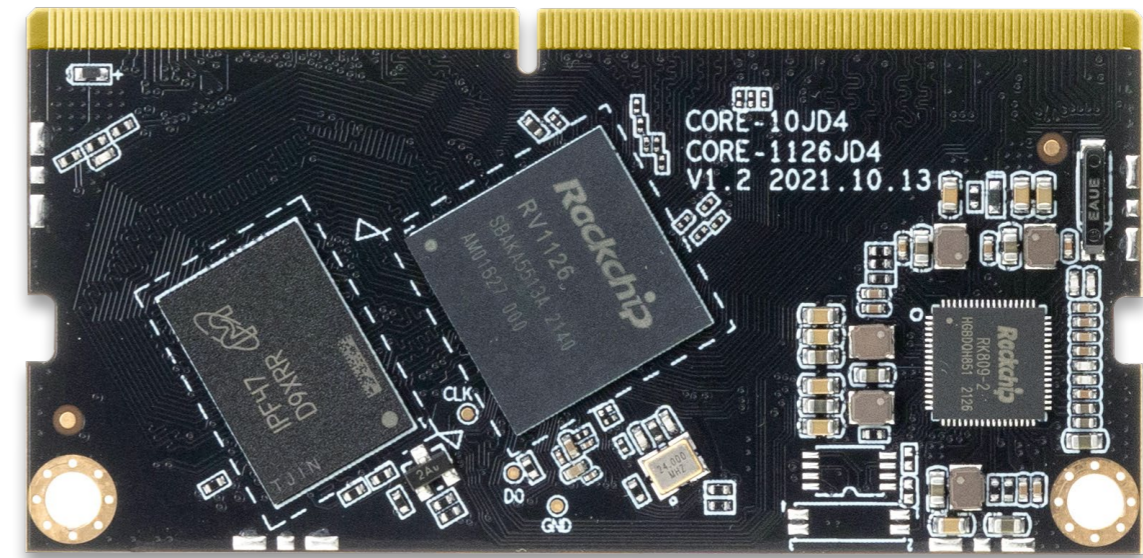


# High-Performance AI Vision Core Board

- | Core-1126-JD4(Commercial)
- | Core-1126K-JD4(Industrial)

V1.2 2024-9-5

T-CHIP INTELLIGENCE TECHNOLOGY



# Product features



## Quad-core AI vision processor

Low-consumption AI vision processor RV1126, with 14nm lithography process and quad-core 32-bit ARM Cortex-A7 architecture, integrates NEON and FPU – the frequency is up to 1.5GHz. It supports FastBoot, TrustZone technology and multiple crypto engines.



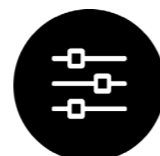
## 4K H.265 encoding & decoding

Built-in Video CODEC supports 4K H.254/H.265@30FPS and multi-channel video encoding and decoding, meeting the needs of low bit rate, low-latency encoding, perceptual encoding and making the video occupancy smaller.



## Stable and reliable OS

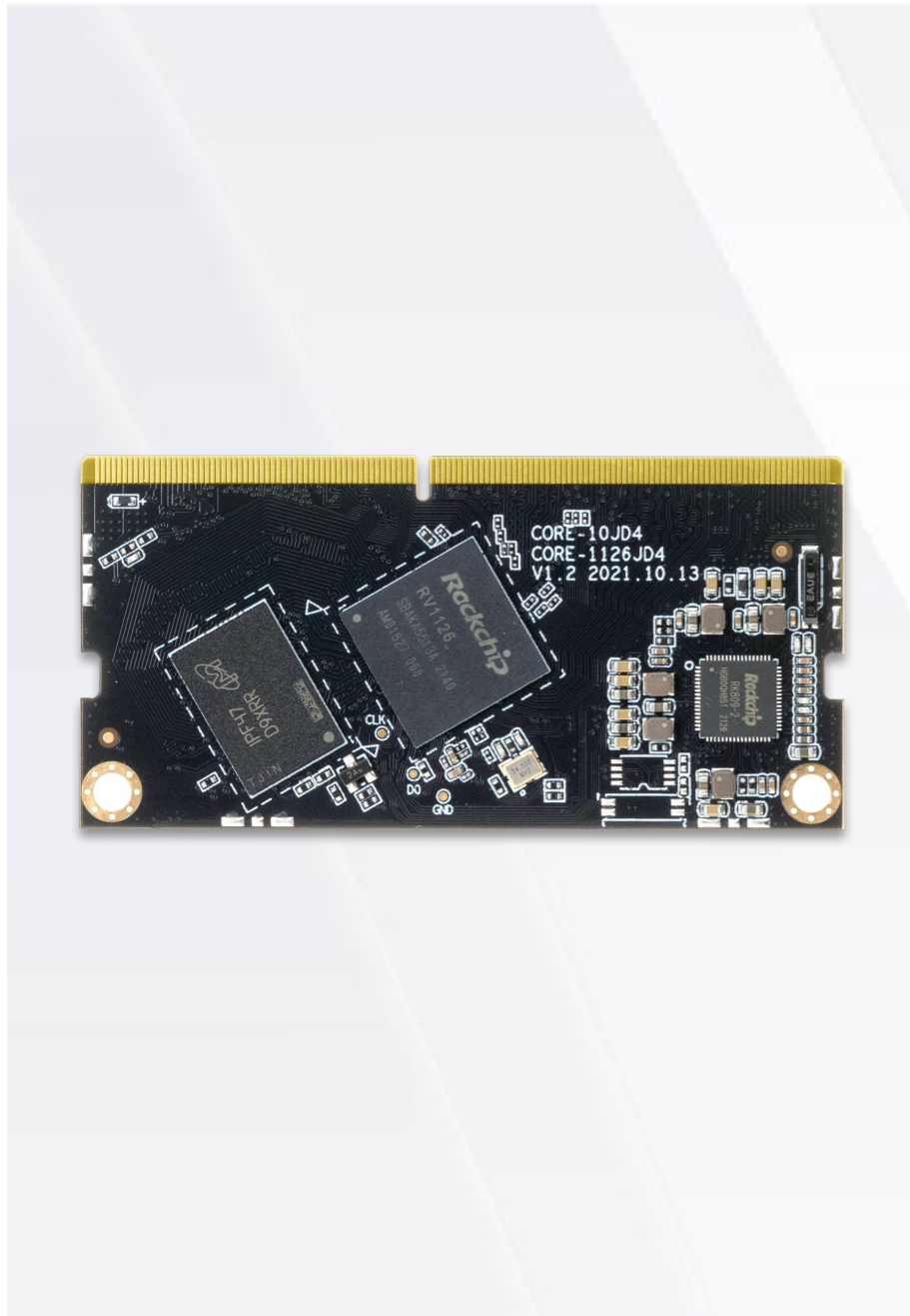
It supports Buildroot+QT OS – occupies small space, starts fast, and provides stable and reliable operation.



## Various interfaces

SODIMM 260P port is provided; I2C, SPI, UART, ADC, PWM, GPIO, USB2.0, SDIO, I2S, MIPI-DSI, MIPI-CSI, CIF, SDMMC, PHY and other interfaces are equipped, meeting needs of more usage scenarios.

# Product features



## High performance, high computing power

Built-in neural network processor NPU with computing power up to 2.0 Tops realizes that the power consumption of AI computing is less than 10% of the power required by the GPU. With tools and supporting AI algorithms provided, it supports direct conversion and deployment of Tensorflow, PyTorch, Caffe, MxNet, DarkNet, ONNX, etc.



## Multi-level image noise reduction

With multi-level image noise reduction, 3F-HDR and other technologies, RV1126 not only ensures the dynamic range of the scene, but also meets the needs of outputting full color in darkness, making "clearly visible" a reality – more conforms to the actual demands in the security field.



## Applications

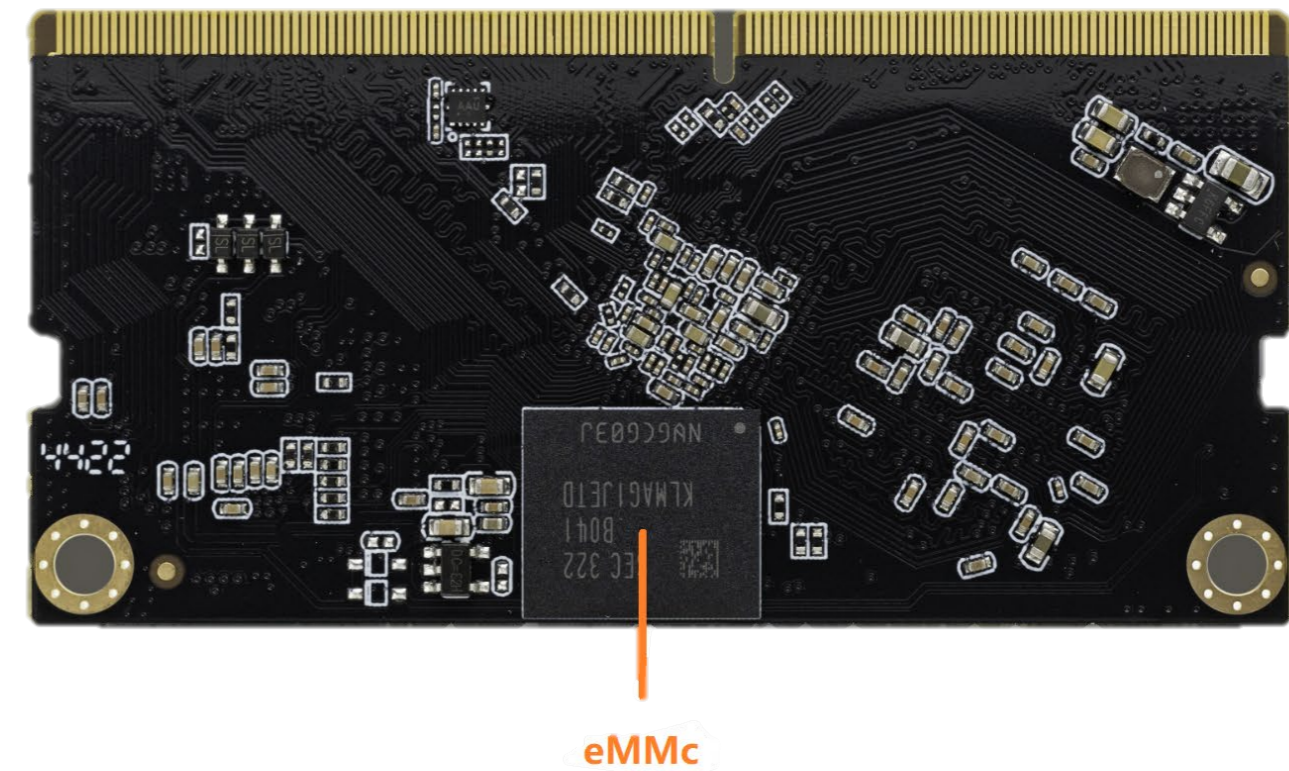
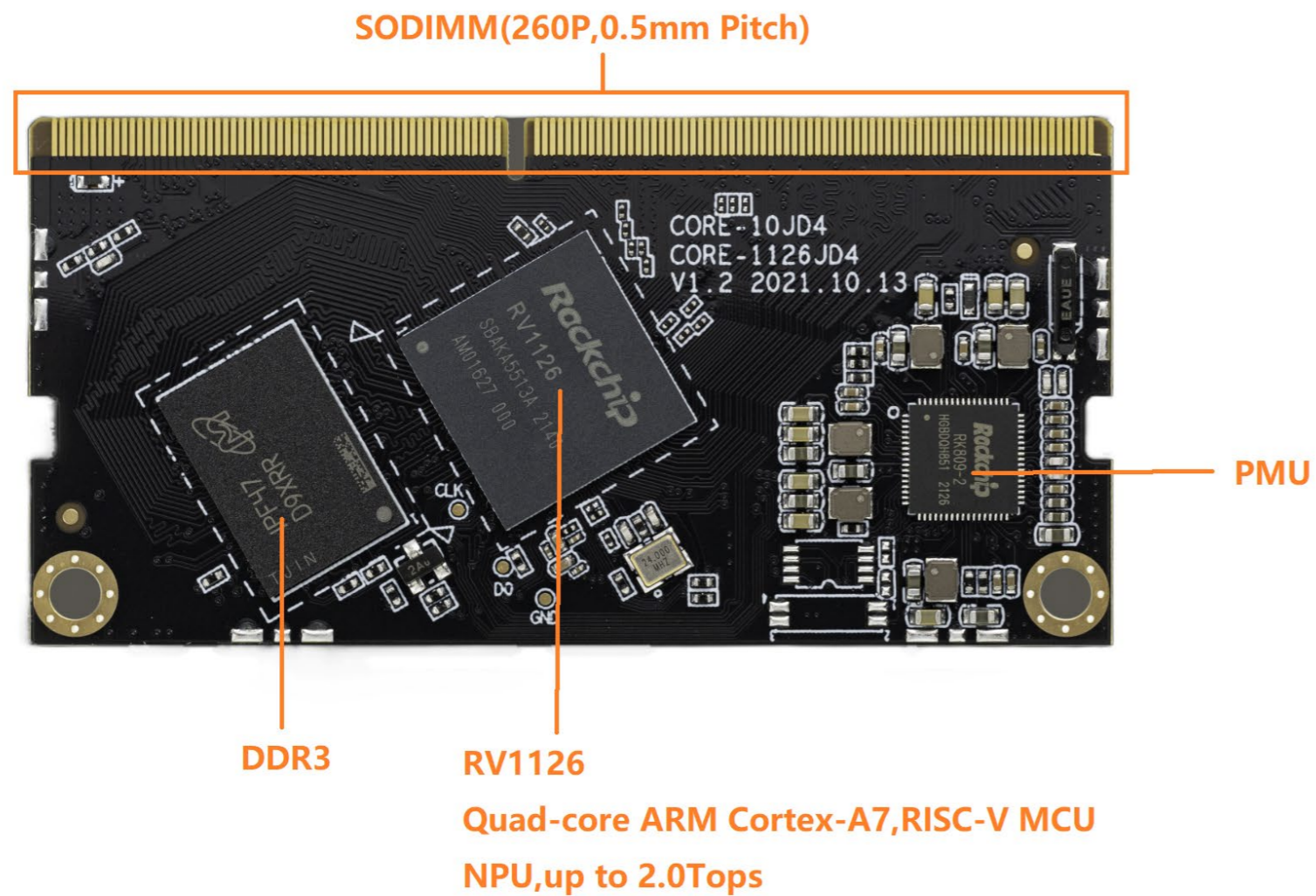
It is widely used in face recognition, gesture recognition, gate access control, smart security, smart IP camera, smart doorbell/peephole, self-service terminals, smart finance, smart construction, smart travel and other industries.

# Specifications

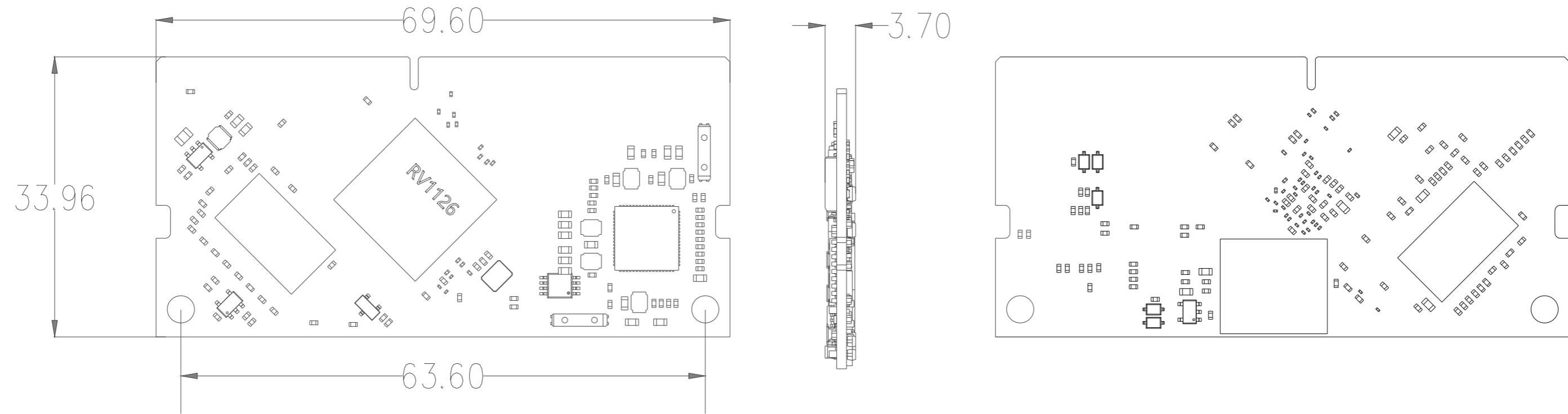


|                          |                   | Core-1126-JD4 (Commercial)   | Core-1126K-JD4 (Industrial)   |
|--------------------------|-------------------|--|---|
| Basic Specifications     | CPU               | RV1126<br>Quad-core 32-bit ARM Cortex-A7, RISC-V MCU, up to 1.5GHz   | RV1126K<br>Quad-core 32-bit ARM Cortex-A7, RISC-V MCU, up to 1.5GHz                   |
|                          | NPU               | Up to 2.0TOPs<br>Support 8-bit/16-bit operation<br>Support TensorFlow, TensorFlow lite, Pytorch, Caffe, Mxnet, Darknet, Onnx   |   |
|                          | ISP               | 14MP ISP, 3-frame HDR  |   |
|                          | VPU               | 4K H.264/H.265 30fps video encoding, 3840×2160@30fps + 1080@30fps encoding<br>4K H.264/H.265 30fps video decoding, 3840×2160@30fps encoding + 3840×2160@30fps decoding   |   |
|                          | RAM               | LPDDR4 (1GB/2GB/4GB optional)  |   |
|                          | Storage           | eMMC (8GB/16GB/32GB optional)  |   |
|                          | Power             | 5V (voltage tolerance ± 5%)  |   |
|                          | OS                | Buildroot+QT   |   |
|                          | Interface         | Gold finger (SODIMM 260P standard interface, 0.5mm pitch)  |   |
|                          | Weight            | ≈20g   |   |
|                          | Size              | 69.9mm × 33.96mm   |   |
|                          | Power consumption | Min:≈0.15W(5.0V/30mA)<br>Normal:≈0.8W(5.0V/160mA)<br>Max:≈3.25W(5.0V/650mA)  | Min:≈0.15W(5.0V/30mA)<br>Normal:≈0.75W(5.0V/150mA)<br>Max:≈3.25W(5.0V/650mA)          |
|                          | Environment       | Operating temperature: -20°C ~ 60°C<br>Storage humidity: 10% ~ 90%RH (non-condensing)  | Operating temperature: -20°C ~ 70°C<br>Storage humidity: 10% ~ 90%RH (non-condensing) |
| Interface Specifications | Network           | Through the SDIO3.0, 2.4GHz/5GHz dual-band Wi-Fi and Bluetooth expansion are available; 4G/3G network expansion is supported<br>Through GMAC, Gigabit Ethernet expansion is available and TSO (TCP Segmentation Offload) for network acceleration is supported |   |
|                          | Video Input       | 2 × MIPI CSI (or LVDS/sub LVDS)<br>1 × DVP (BT.601/BT.656/BT.1120)<br>Support simultaneous input from 3 cameras: 2 × MIPI CSI (or LVDS/sub LVDS) + 1 × DVP   |   |
|                          | Video Output      | 1 × MIPI-DSI (1080P@60fps)   |   |
|                          | Audio             | 1 × I2S/PCM/TDM (8 channels), supporting microphone array<br>2 × I2S/PCM (2 channels)  |   |
|                          | USB               | 1 × USB2.0 HOST, 1 × USB2.0 OTG  |   |
|                          | Other             | 2 × SPI, 6 × UART, 6 × I2C, 1 × CAN, 4 × PWM, GPIOs  |   |

# Core Board Interface description

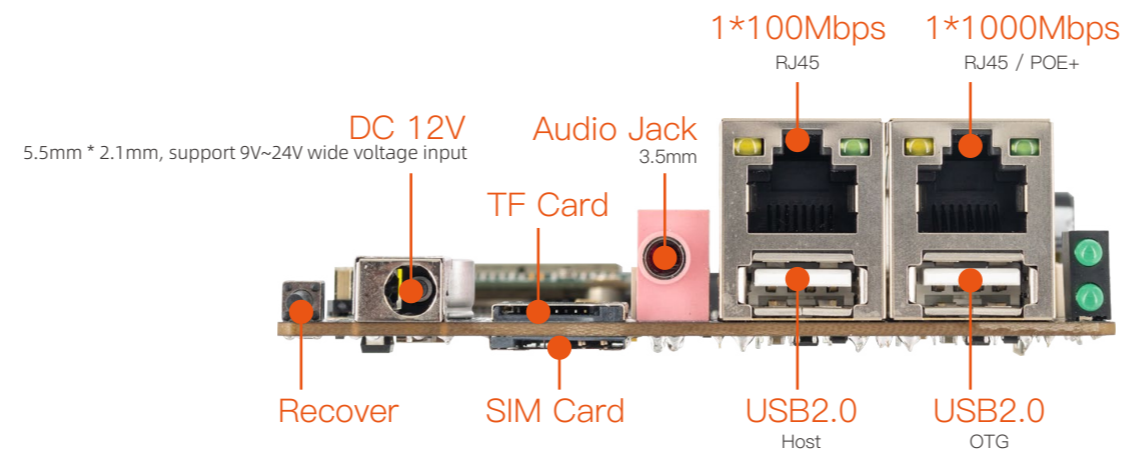
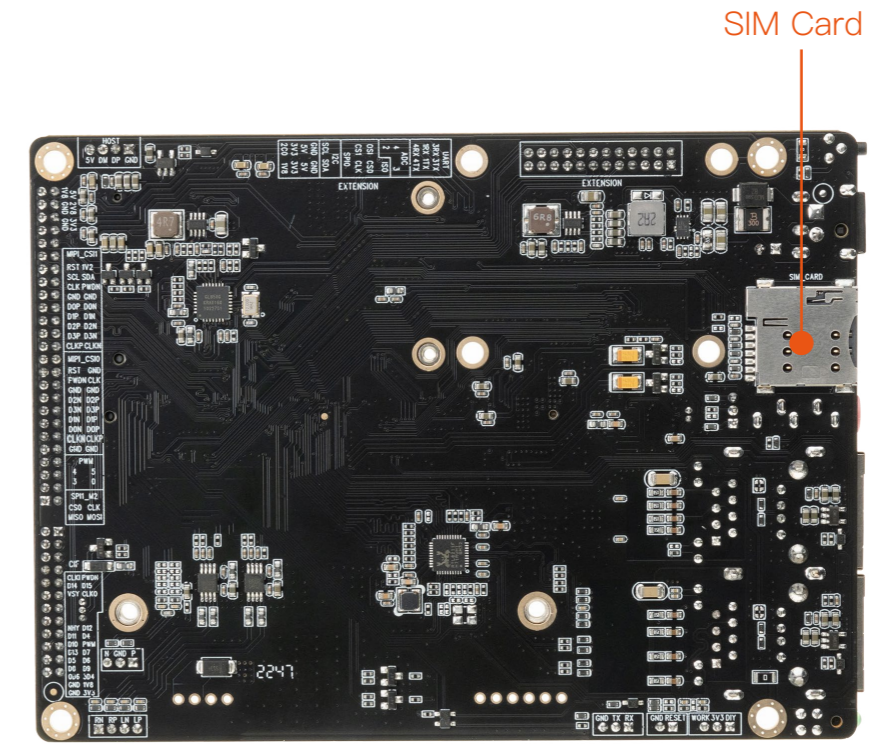
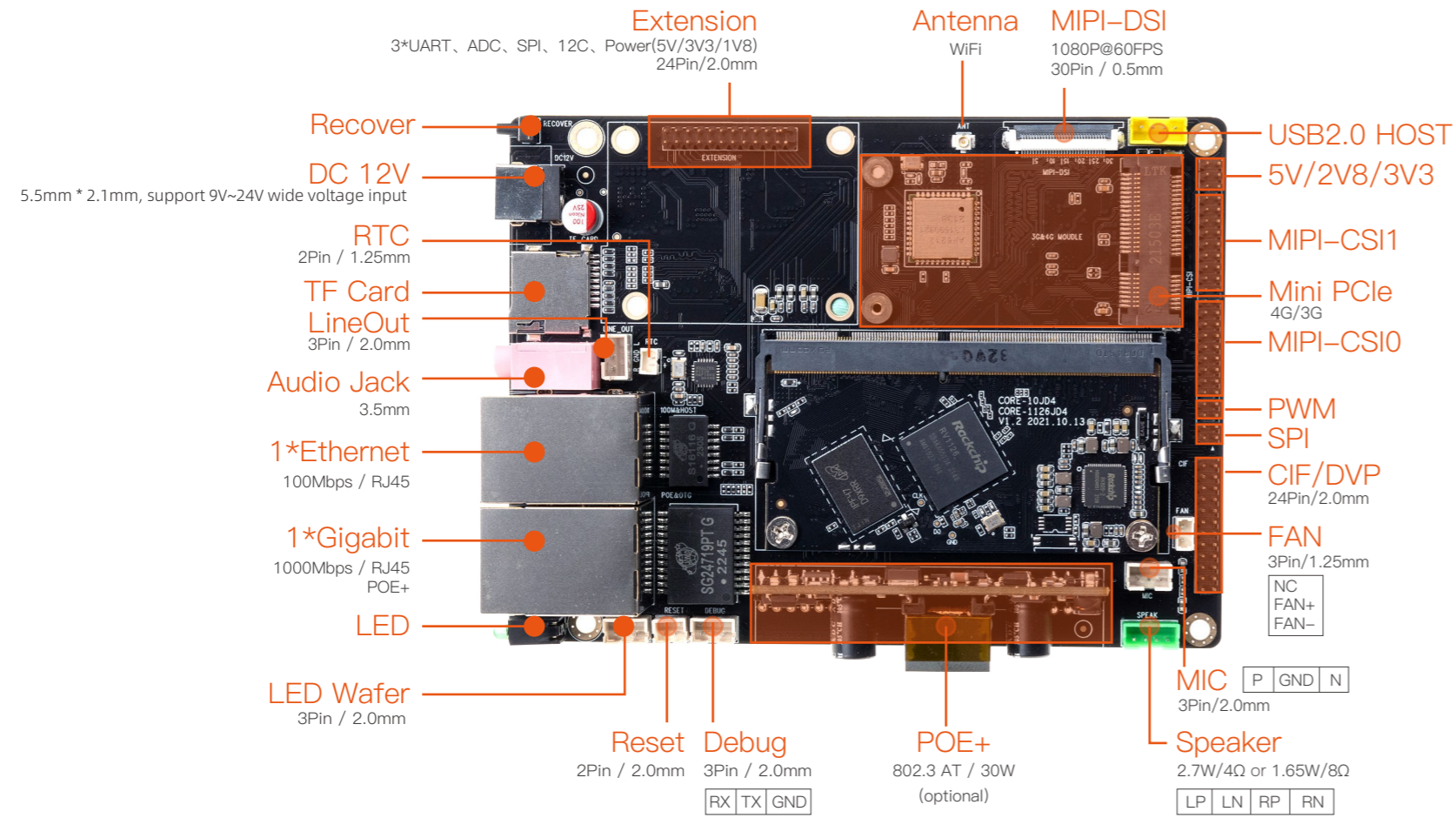


# Core Board Dimension

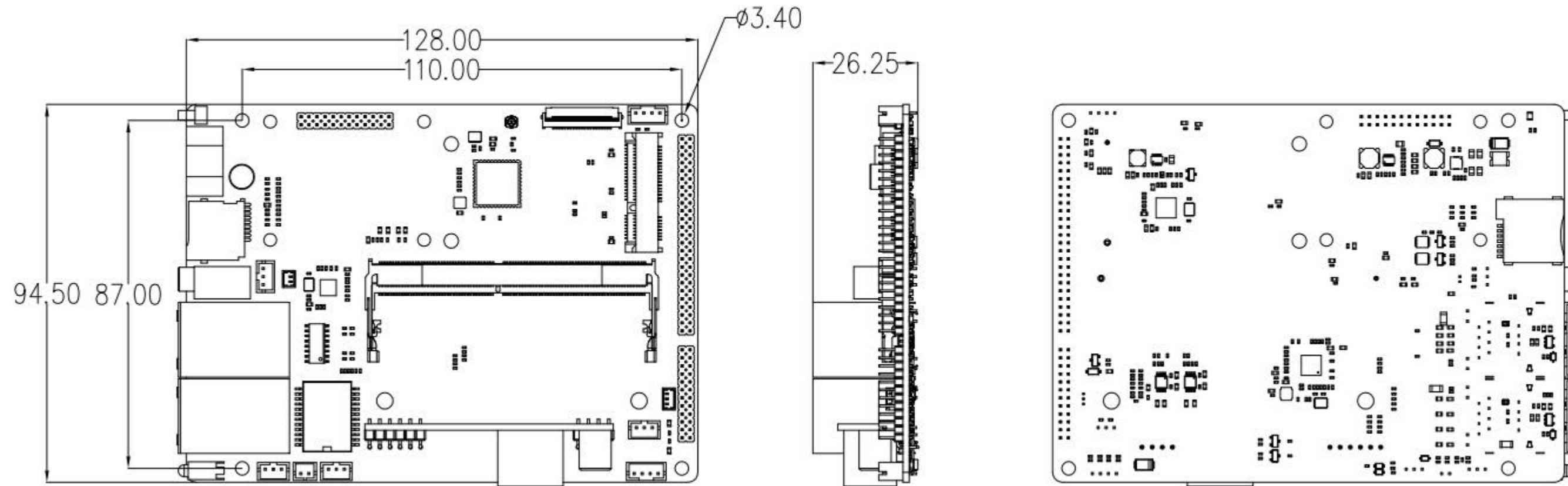




# Mainboard Interface description



# Mainboard Dimension







# Interface definition

**Notes1:**

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 Number | RV1126 Pin Name                                   |
|--------|-----|---------------------------|----------|----------|---------------------------------------|--|-----------------|-------------------|---|
|        | 1   | GND_1                     | G        |          | GND_1                                 | GND  |                 |                   | GND_1   |
|        | 3   | GPIO0_A4_U                | I/O      | UP       | WORKLED                               | System LED control<br>1:Enable,0:Disable                     | 1.8V            | V7                | SPI0_CS1N_M0 / GPIO0_A4_U                         |
|        | 5   | GPIO0_C0_D                | I/O      | DOWN     | DIYLED                                | Diy led control<br>1:Enable,0:Disable                        | 3.3V            | U9                | SDMMC0_PWR / UART1_RTSM_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                  | I        |          | MIC1_INN                              | PMIC MIC_IN_N<br>Core board internal series capacitor 0.1uF  | 3.3V            |                   | MIC1_N / MIC_R                                    |
|        | 13  | MIC1_INP                  | I        |          | MIC1_INP                              | PMIC MIC_IN_P,<br>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              |      |      | GND_6                           |
| 45 | MIPI_CSI_RX0_D2P | I   |      | MIPI_CSI_RX0_D2P | MIPI_CSI_RX0_D2P | 1.8V | W15  | MIPI_CSI_RX0_D2P / LVDS0_RX2P   |
| 47 | MIPI_CSI_RX0_D2N | I   |      | MIPI_CSI_RX0_D2N | MIPI_CSI_RX0_D2N | 1.8V | Y15  | MIPI_CSI_RX0_D2N / LVDS0_RX2N   |
| 49 | MIPI_CSI_RX0_D3P | I   |      | MIPI_CSI_RX0_D3P | MIPI_CSI_RX0_D3P | 1.8V | AA15 | MIPI_CSI_RX0_D3P / LVDS0_RX3P   |
| 51 | MIPI_CSI_RX0_D3N | I   |      | MIPI_CSI_RX0_D3N | MIPI_CSI_RX0_D3N | 1.8V | AA16 | MIPI_CSI_RX0_D3N / LVDS0_RX3N   |
| 53 | MIPI_CSI_RX0_D1P | I   |      | MIPI_CSI_RX0_D1P | MIPI_CSI_RX0_D1P | 1.8V | Y16  | MIPI_CSI_RX0_D1P / LVDS0_RX1P   |
| 55 | MIPI_CSI_RX0_D1N | I   |      | MIPI_CSI_RX0_D1N | MIPI_CSI_RX0_D1N | 1.8V | W16  | MIPI_CSI_RX0_D1N / LVDS0_RX1N   |
| 57 | MIPI_CSI_RX1_D3P | I   |      | MIPI_CSI_RX1_D3P | MIPI_CSI_RX1_D3P | 1.8V | Y17  | MIPI_CSI_RX1_D3P / LVDS1_RX3P   |
| 59 | MIPI_CSI_RX1_D3N | I   |      | MIPI_CSI_RX1_D3N | MIPI_CSI_RX1_D3N | 1.8V | W17  | MIPI_CSI_RX1_D3N / LVDS1_RX3N   |
| 61 | MIPI_CSI_RX1_D2P | I   |      | MIPI_CSI_RX1_D2P | MIPI_CSI_RX1_D2P | 1.8V | AA18 | MIPI_CSI_RX1_D2P / LVDS1_RX2P   |
| 63 | MIPI_CSI_RX1_D2N | I   |      | MIPI_CSI_RX1_D2N | MIPI_CSI_RX1_D2N | 1.8V | Y18  | MIPI_CSI_RX1_D2N / LVDS1_RX2N   |
| 65 | GND_7            | G   |      | GND              | GND              |      |      | GND_7                           |
| 67 | MIPI_CSI_RX1_D1P | I   |      | MIPI_CSI_RX1_D1P | MIPI_CSI_RX1_D1P | 1.8V | AA19 | MIPI_CSI_RX1_D1P / LVDS1_RX1P   |
| 69 | MIPI_CSI_RX1_D1N | I   |      | MIPI_CSI_RX1_D1N | MIPI_CSI_RX1_D1N | 1.8V | Y19  | MIPI_CSI_RX1_D1P / LVDS1_RX1N   |



|     |                          |     |      |                  |                   |      |      |   |
|-----|--------------------------|-----|------|------------------|-------------------|------|------|---|
| 71  | MIPI_CSI_RX1_D0P         | I   |      | MIPI_CSI_RX1_D0P | MIPI_CSI_RX1_D0P  | 1.8V | AA20 | MIPI_CSI_RX1_D0P / LVDS1_RX0P   |
| 73  | MIPI_CSI_RX1_D0N         | I   |      | MIPI_CSI_RX1_D0N | MIPI_CSI_RX1_D0N  | 1.8V | Y20  | MIPI_CSI_RX1_D0P / LVDS1_RX0N   |
| 75  | GND8                     | G   |      | GND              | 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_A2_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               |      |      | 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_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               |      |      | 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<br>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   |      |     | GND_11   |
| 117 | RMII_TXD1             | I/O | DOWN | RMII_TXD1        | RMII_TXD1<br>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   |      |     | 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<br>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<br>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                   |      |     | 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 /<br>UART3_TX_M2 / PWM7_IR_M1 /<br>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 /<br>UART3_RX_M2 / PWM11_IR_M1 /<br>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 /<br>SPI1_MISO_M2 / LCDC_CLK /<br>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<br>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 /<br>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<br>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 /<br>CLK_OUT_ETHERNET_M0 /<br>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 /<br>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 hight  | 5V   |     |  |
| 225 | VCC_1V8     | P   |      | VCC_1V8     | 1.8V output,VCC_1V8 Total Max current 200mA (Pin224/225 same net)               | 1.8V |     |  |
| 227 | VCC3V3_SD   | P   |      | VCC3V3_SD   | 3.3V output for TF card,VCC3V3_SD Total Max current 200mA (Pin226/227 same net) | 3.3V |     |  |
| 229 | VCC1V2_DVDD | P   |      | VCC1V2_DVDD | 1.2V output,VCC1V2_DVDD Total Max current 300mA (Pin228/229 same net)           | 1.2V |     |  |
| 231 | VCC_3V3     | P   |      | VCC_3V3     | 3.3V output,VCC_3V3 Total Max current   | 3.3V |     |  |



|               |              |                                  |                 |                |   |                                     |                        |                          |  |
|---------------|--------------|----------------------------------|-----------------|----------------|---|-------------------------------------|------------------------|--------------------------|--|
|               |              |                                  |                 |                | 400mA (Pin230/231/234/235 same net)                                       |                                     |                        |                          |  |
| 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 (Pin230/231/234/235 same net) | 3.3V                                |                        |                          |  |
| 237           | VCC2V8_AVDD  | P                                |                 | VCC2V8_AVDD    | 2.8V output,VCC2V8_AVDD Total Max current 300mA (Pin236/237 same net)     | 2.8V                                |                        |                          |  |
| 239           | VCC1V8_DOVDD | P                                |                 | VCC1V8_DOVDD   | 1.8V output,VCC1V8_DOVDD Total Max current 300mA (Pin238/239/ 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                             |                        |                          |  |
| <b>Part B</b> | <b>pin</b>   | <b>Core board pin definition</b> | <b>Pad type</b> | <b>IO Pull</b> | <b>Function for Floor(MB-JD4-RV11091126)</b>                              | <b>Default function description</b> | <b>IO Power domain</b> | <b>RV1126 Pin Number</b> | <b>RV1126 Pin Name</b>                         |
|               | 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,<br>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,<br>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,<br>need pull up Resistor 2.2K                              | 1.8V | W19  | I2C1_SDA / UART4_RTSN_M2 /<br>GPIO1_D2_U                        |
| 24 | I2C1_SCL             | I/O | UP   | I2C1_SCL    | I2C serial port 1,<br>need pull up Resistor 2.2K                              | 1.8V | Y21  | I2C1_SCL / UART4_CTSN_M2 /<br>GPIO1_D3_U                        |
| 26 | GND_22               | G   |      | GND         | GND   |      |      | GND_22  |
| 28 | NC_21                |     |      | NC          | NC  |      |      | NC_21   |
| 30 | PDM_SDIO /GPIO3_D6_D | I/O | DOWN | SPK_CTL_H   | Speaker_EN ,active hight  | 1.8V | AA12 | I2S0_SDIO_M0 / PDM_SDIO_M0 /<br>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 /<br>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<br>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 high                                | 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<br>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 /<br>CIF_HSYNC_M1 / LCDC_D23 /<br>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 /<br>SPI1_MOSI_M2 / LCDC_VSYNC /<br>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,<br>Core board interiorl pull up Resistor 10K                        | 1.8V | C17 | ADC_IN4   |
| 152 | ADC_IN0                | I   | UP   | RECOVER              | ADC0 input,RECOVER KEY, active low<br>Core board interiorl pull up Resistor 10K | 1.8V | E17 | ADC_IN0   |
| 154 | ADC_IN2                | I   | UP   | ADCIN2               | ADC2 input,<br>Core board interiorl pull up Resistor 10K                        | 1.8V | B18 | ADC_IN2   |
| 156 | ADC_IN3                | I   | UP   | ADCIN3               | ADC3 input,<br>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 /<br>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 /<br>PRELIGHT_TRIG_OUT /<br>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 /<br>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 /<br>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 /<br>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_VSYN_M0 / RGMII_MDC_M0 /<br>UART3_RTSN_M0 / GPIO3_C4_D                        |
| 186 | GMAC_TXCLK_M0        | I/O | DOWN | GMAC_TXCLK_M0/CLKOUT | GMAC_TXCLK_M0/CLKOUT<br>Core board internal series resistance 22R | 3.3V | P19 | CIF_CLKOUT_M0 / RGMII_TXCLK_M0 /<br>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_HSYN_M0 / RGMII_RXCLK_M0 /<br>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 /<br>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<br>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<br>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<br>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<br>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<br>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 / LCDC_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 / LCDC_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 (Pin224/225 same net)               | 1.8V |     |   |
| 226 | VCC3V3_SD    | P   |      | VCC3V3_SD    | 3.3V output for TF card,VCC3V3_SD Total Max current 200mA (Pin226/227 same net) | 3.3V |     |   |
| 228 | VCC1V2_DVDD  | P   |      | VCC1V2_DVDD  | 1.2V output,VCC1V2_DVDD Total Max current 300mA (Pin228/229 same net)           | 1.2V |     |   |
| 230 | VCC_3V3      | P   |      | VCC_3V3      | 3.3V output,VCC_3V3 Total Max current 400mA (Pin230/231/234/235 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 (Pin230/231/234/235 same net)       | 3.3V |     |   |
| 236 | VCC2V8_AVDD  | P   |      | VCC2V8_AVDD  | 2.8V output,VCC2V8_AVDD Total Max current 300mA (Pin236/237 same net)           | 2.8V |     |   |
| 238 | VCC1V8_DOVDD | P   |      | VCC1V8_DOVDD | 1.8V output,VCC1V8_DOVDD Total Max current 300mA (Pin238/239/ 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  |      |     |   |





|            |               |   |  |            |                         |         |  |  |
|------------|---------------|---|--|------------|-------------------------|---------|--|--|
| <b>246</b> | GND_35        | G |  | GND        | Power ground            |         |  |  |
| <b>248</b> | GND_36        | G |  | GND        | Power ground            |         |  |  |
| <b>250</b> | GND_37        | G |  | GND        | Power ground            |         |  |  |
| <b>252</b> | VCC5V0_SYS_6  | P |  | VCC5V0_SYS | Input Voltage 4.8V-5.5V | 5.0V_IN |  |  |
| <b>254</b> | VCC5V0_SYS_7  | P |  | VCC5V0_SYS | Input Voltage 4.8V-5.5V | 5.0V_IN |  |  |
| <b>256</b> | VCC5V0_SYS_8  | P |  | VCC5V0_SYS | Input Voltage 4.8V-5.5V | 5.0V_IN |  |  |
| <b>258</b> | VCC5V0_SYS_9  | P |  | VCC5V0_SYS | Input Voltage 4.8V-5.5V | 5.0V_IN |  |  |
| <b>260</b> | VCC5V0_SYS_10 | P |  | VCC5V0_SYS | Input Voltage 4.8V-5.5V | 5.0V_IN |  |  |



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