

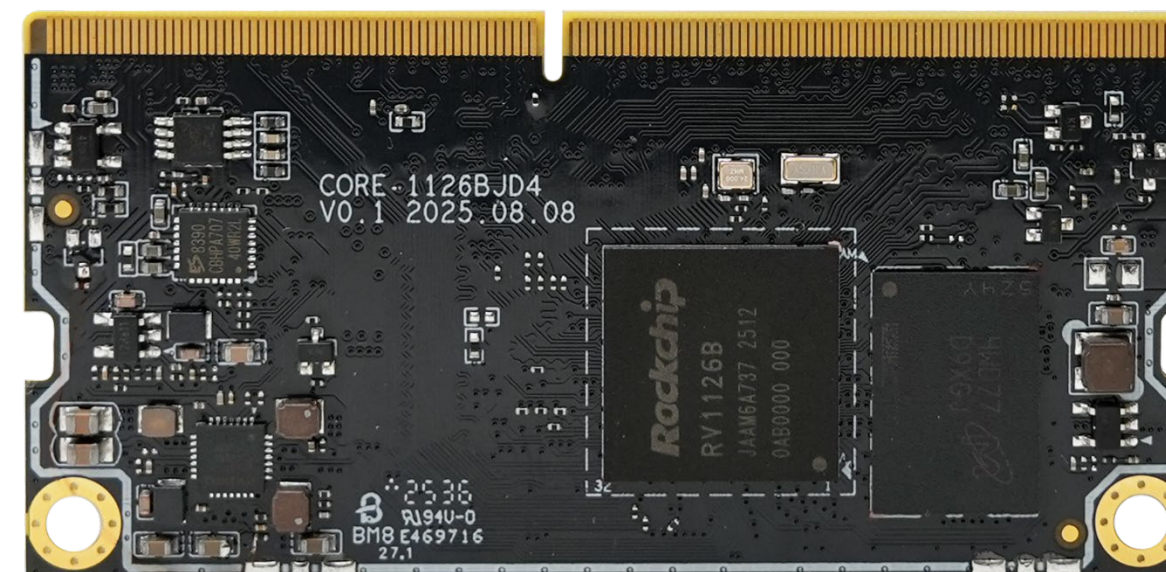


# AI Vision Core Board

- | CORE-1126BJD4(Commercial)
- | ICORE-1126BJD4(Industrial)

V0.1 2025-9-30

T-CHIP INTELLIGENCE TECHNOLOGY



# Product features



## High-performance AI vision processor RV1126B

It adopts a quad-core 64-bit high-performance AI vision processor RV1126B series, based on ARM Cortex-A53 core, integrates NEON advanced SIMD and FPU (floating-point computing unit), providing strong support for high-performance computing and multitasking.



## 3TOPS computing power NPU empowers AI applications

It has a built-in 3TOPS NPU, supports INT4/INT8/INT16/FP16 hybrid computing, and supports deep learning frameworks such as TensorFlow, TensorFlow Lite, PyTorch, Caffe, and ONNX, which can perform intelligent data processing, speech recognition, and image analysis to meet the needs of most edge computing AI applications on terminal devices.



## Private deployment of lightweight large AI models

It supports the privatization deployment of lightweight large language models and multimodal large models within the Transformer architecture 2B, such as Qwen series, Gemma2-2B, Phi2, InternLM2, MiniCPM series, TinyLLAMA, RWKV7 and other small-scale AI models, to meet the needs of localized applications in lightweight scenarios.



## 12MP ISP, powerful image processing capabilities

A new generation of 12MP ISP, 8MP AI-ISP, and post-processor have been introduced. It integrates multiple algorithm accelerators, such as HDR, 3A, LSC, 3DNR, etc., to provide better spatial noise reduction performance and enhanced image enhancement effects.

# Product features



**4K**

## Support 12M video encoding, 4K video decoding

It can achieve up to 12M@30fps encoding and supports multi-stream encoding (such as storing high-resolution video locally and transmitting low-resolution video in the cloud). Supports 4K@30fps decoding, integrated JPEG codec, supports Baseline mode and multiple image sizes and YUV formats.



## Support four cameras input at the same time

It supports two MIPI CSI/LVDS/SubLVDS DPHY interfaces and one DVP (BT.601/BT.656/BT.1120) interface, and supports up to 4 cameras to input at the same time.



## Uses a gold finger connector, compact size

Adopts standard gold finger SODIMM 260Pin connector, with an exquisite compact design. It has an overall dimension of 69.9mm × 33.96mm and weighs only 10g, being small and lightweight for easy installation and portability, and compatible with various device scenarios.



## Abundant expansion interfaces

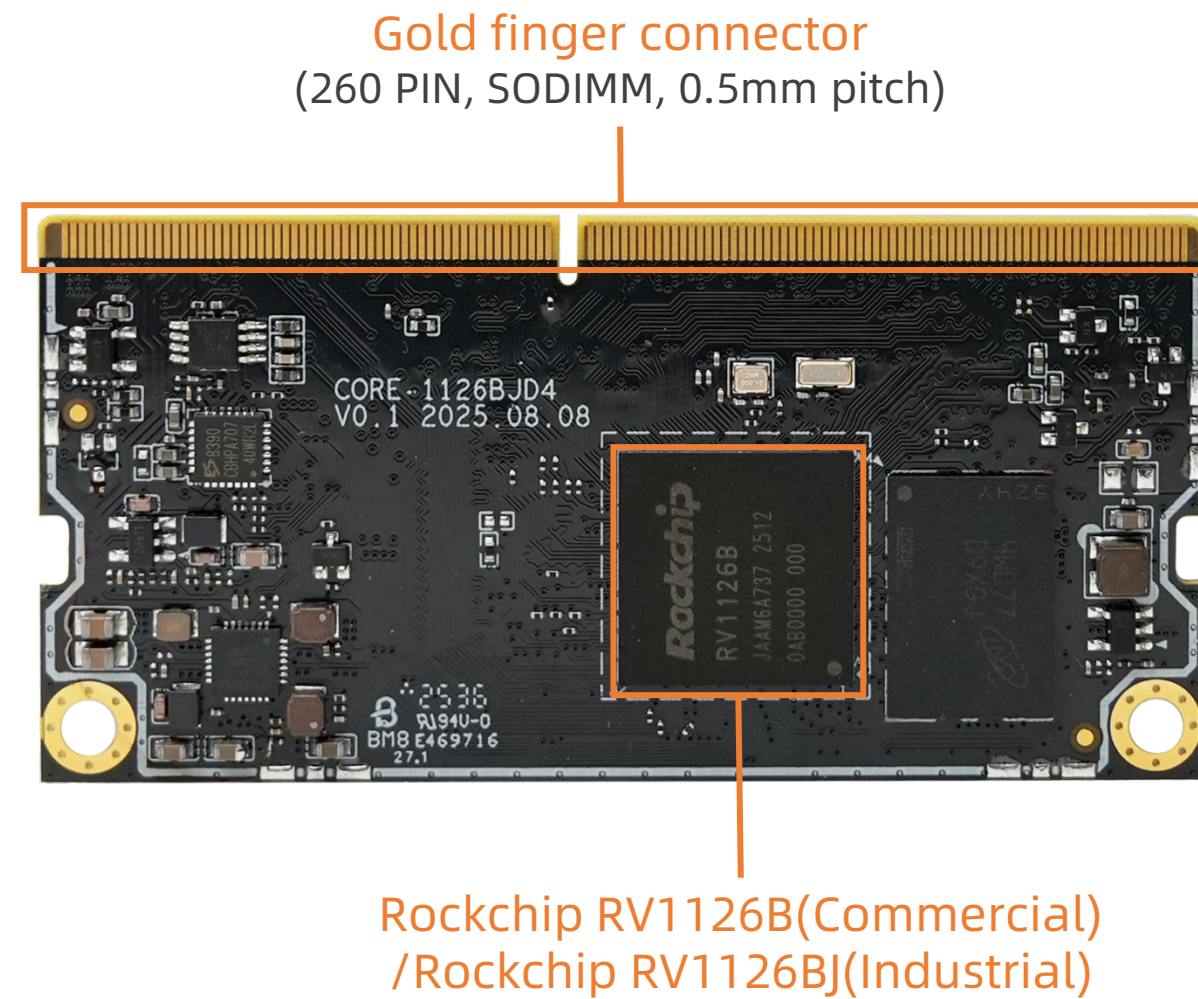
It has MIPI-CSI, MIPI-DSI, HDMI2.0, PCIe3.0, SATA3.0, USB3.0, USB2.0, SDIO, I2C, I2S, SPI, UART, CAN, PWM, ADC, GPIO and other expansion interfaces.

# Specifications

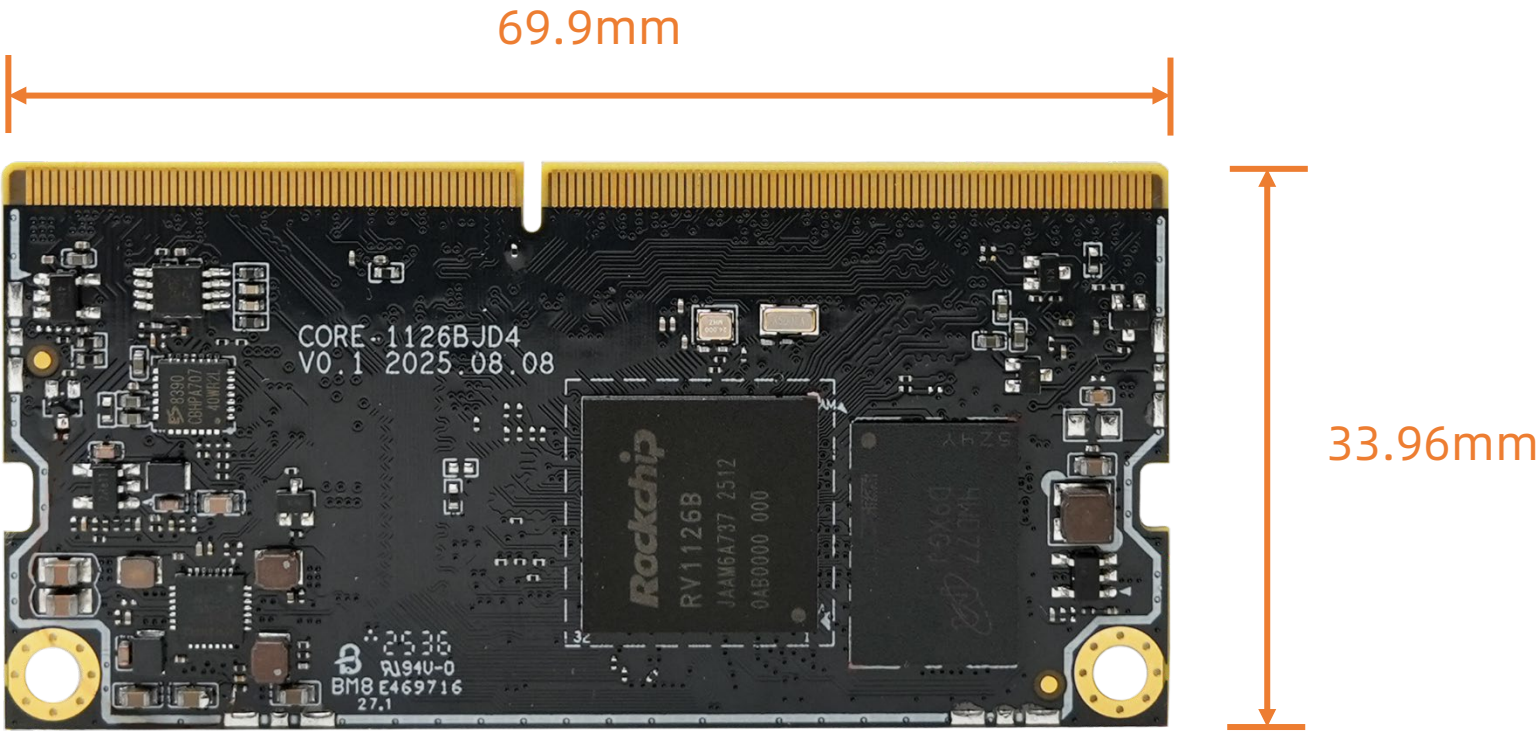


|                          |                   | CORE-1126BJD4 (Commercial)                                                                                                                                                                                                                                                                                                                                                                  | ICORE-1126BJD4 (Industrial)                                                                                                 |
|--------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Basic Specifications     | SOC               | Rockchip RV1126B                                                                                                                                                                                                                                                                                                                                                                            | Rockchip RV1126BJ                                                                                                           |
|                          | CPU               | Quad-core 64-bit ARM Cortex-A53, integrated with NEON and FPU                                                                                                                                                                                                                                                                                                                               |                                                                                                                             |
|                          | NPU               | 3TOPS NPU, supporting INT4/INT8/INT16/FP16 mixed-precision computing                                                                                                                                                                                                                                                                                                                        |                                                                                                                             |
|                          | ISP               | 12MP ISP, 8MP AI-ISP, integrated with multiple algorithm accelerators including HDR, 3A, LSC, 3DNR, 2DNR, sharpening, defogging, fisheye correction, gamma correction, feature point detection, etc.                                                                                                                                                                                        |                                                                                                                             |
|                          | Encoding/Decoding | Encoding: 12M@30fps H.265/H.264<br>Decoding: 4K@30fps H.265/H.264                                                                                                                                                                                                                                                                                                                           |                                                                                                                             |
|                          | RAM               | LPDDR4 (1GB/2GB/4GB Optional)                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                             |
|                          | Storage           | eMMC (8GB/16GB/32GB Optional)                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                             |
|                          | Power             | 5V (voltage tolerance $\pm 5\%$ )                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                             |
|                          | OS                | Debian12, Buildroot+QT, Ubuntu                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                             |
|                          | Software support  | Supports private deployment of lightweight large language models and multimodal large models with up to 2B parameters under the Transformer architecture, such as small-sized large AI models including the Qwen series, Gemma2-2B, Phi2, InternLM2, MiniCPM series, TinyLLAMA, and RWKV7. Supports deep learning frameworks such as TensorFlow, TensorFlow Lite, PyTorch, Caffe, and ONNX. |                                                                                                                             |
|                          | Interface         | Gold finger (SODIMM 260P standard connector, 0.5mm pitch)                                                                                                                                                                                                                                                                                                                                   |                                                                                                                             |
|                          | Size              | 69.9mm $\times$ 33.96mm                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                             |
|                          | Weight            | $\approx 10\text{g}$                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                             |
|                          | Environment       | Operating Temperature: $-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$<br>Storage Humidity: 10% $\sim$ 90%RH (non-condensing)                                                                                                                                                                                                                                                                 | Operating Temperature: $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$<br>Storage Humidity: 10% $\sim$ 90%RH (non-condensing) |
| Interface Specifications | Internet          | One Gigabit Ethernet port can be expanded via the GMAC interface, with support for network acceleration features including TSO (TCP Segmentation Offload) and USO (UDP Segmentation Offload)<br>Dual-band 2.4GHz/5GHz WiFi and Bluetooth can be expanded via the SDIO3.0 interface, and the interface also supports 4G/3G network expansion                                                 |                                                                                                                             |
|                          | Video input       | 2 $\times$ MIPI-CSI/LVDS/sub LVDS DPHY (1 $\times$ 4lanes or 2 $\times$ 2lanes)<br>1 $\times$ DVP (BT.601/BT.656/BT.1120)<br>Support 4 cameras input at the same time: 2 $\times$ MIPI CSI/LVDS/sub LVDS + 1 $\times$ DVP                                                                                                                                                                   |                                                                                                                             |
|                          | Video output      | 1 $\times$ MIPI-DSI (1080P@60Hz, 1 $\times$ 4lanes)<br>Supports BT.656/BT.1120 interfaces<br>Supports MCU/RGB LCD interfaces, with a maximum of 24 bits                                                                                                                                                                                                                                     |                                                                                                                             |
|                          | Audio             | 1 $\times$ SAI (4T/4R), 1 $\times$ SAI (1T/1R), 1 $\times$ SAI (1T/3R), supporting I2S/TDM/PCM audio protocols<br>PDM and Audio Codec support a sampling rate of up to 192KHz                                                                                                                                                                                                               |                                                                                                                             |
|                          | USB               | 1 $\times$ USB2.0 HOST, 1 $\times$ USB3.0 DRD                                                                                                                                                                                                                                                                                                                                               |                                                                                                                             |
|                          | Other interfaces  | 2 $\times$ SPI, 8 $\times$ UART, 6 $\times$ I2C, 2 $\times$ CAN, 28 $\times$ PWM, GPIOs                                                                                                                                                                                                                                                                                                     |                                                                                                                             |

# Core board Interface description



# Core board Dimension





# Interface definition

| <b>Notes1:</b><br>Pin type: I = input, O = output, I/O = input/output (bidirectional), G= Ground , P = power supply , DOWN = Internal pull down , UP = Internal pull UP , L = Lowe Level , H = High level |                                                           |                    |          |                 |          |                                        |                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------|----------|-----------------|----------|----------------------------------------|-----------------------------------------------------------|
| PIN                                                                                                                                                                                                       | CORE-1126BJD4 pin definition                              | RV1126B Pin Number | Pin type | IO Power domain | I/O Pull | Function for Floor (MB-JD4-RV11091126) | Default function description                              |
| 1                                                                                                                                                                                                         | GND_1                                                     |                    | G        |                 |          | GND_1                                  | GND                                                       |
| 3                                                                                                                                                                                                         | FSPI1_D2_M0/SPI0_CSN1_M0/GPIO0_A6_u                       | 1AA6               | I/O      | 1.8V            | UP       | GSSENSOR_INT_1V8                       | System LED control<br>1:Enable,0:Disable                  |
| 5                                                                                                                                                                                                         | SPI2AHB_D2/PWM0_CH1_M0/UART1_RX_M0/I2C5_SDA_M0/GPIO0_C5_d | 1AA10              | I/O      | 1.8V            | DOWN     | MSSENSOR_INT_H_1V8                     | Diy led control<br>1:Enable,0:Disable                     |
| 7                                                                                                                                                                                                         | SPI2AHB_D0/PWM0_CH3_M0/UART1_CTSN_M0/GPIO0_C7_d           | 1AB8               | I/O      | 1.8V            | DOWN     | GPIO0_C7_D_1V8                         | GPIO0_C7_D_1V8                                            |
| 9                                                                                                                                                                                                         | GND_2                                                     |                    | G        |                 |          | GND                                    | GND                                                       |
| 11                                                                                                                                                                                                        | AUDIO_ADC1_MICN                                           | AL18               | I        | 3.3V            |          | MIC1_N                                 | PMIC MIC1_N<br>Core board internal series capacitor 0.1uF |
| 13                                                                                                                                                                                                        | AUDIO_ADC1_MICP                                           | AL17               | I        | 3.3V            |          | MIC1_P                                 | PMIC MIC1_P<br>Core board internal series capacitor 0.1uF |
| 15                                                                                                                                                                                                        | HPR_OUT                                                   |                    | O        | 3.3V            |          | HPR_OUT                                | PMIC_HearPhone_OUT_R                                      |
| 17                                                                                                                                                                                                        | HP_SNS                                                    |                    | G        |                 |          | HP_SNS                                 | PMIC_HearPhone_OUT_GND                                    |
| 19                                                                                                                                                                                                        | HPL_OUT                                                   |                    | O        | 3.3V            |          | HPL_OUT                                | PMIC_HearPhone_OUT_L                                      |
| 21                                                                                                                                                                                                        | SPKN_OUT                                                  |                    | O        | 3.3V            |          | SPKN_OUT                               | PMIC_Sperker_OUT_N                                        |
| 23                                                                                                                                                                                                        | SPKP_OUT                                                  |                    | O        | 3.3V            |          | SPKP_OUT                               | PMIC_Sperker_OUT_P                                        |
| 25                                                                                                                                                                                                        | GND_3                                                     |                    | G        |                 |          | GND                                    | GND                                                       |
| 27                                                                                                                                                                                                        | USB_HOST_DP                                               | AL4                | I/O      | -               |          | USB_HOST_DP                            | USB_HOST_DP                                               |
| 29                                                                                                                                                                                                        | USB_HOST_DM                                               | AL3                | I/O      | -               |          | USB_HOST_DM                            | USB_HOST_DM                                               |
| 31                                                                                                                                                                                                        | GND_4                                                     |                    | G        |                 |          | GND                                    | GND                                                       |



# Interface definition

|    |                                    |      |     |      |      |                    |                    |
|----|------------------------------------|------|-----|------|------|--------------------|--------------------|
| 33 | MIPI_DPHY_CSI_RX0_CLK1P            | AL22 | I   | -    |      | MIPI_CSI_RX0_CLK1P | MIPI_CSI_RX0_CLK1P |
| 35 | MIPI_DPHY_CSI_RX0_CLK1N            | AM22 | I   | -    |      | MIPI_CSI_RX0_CLK1N | MIPI_CSI_RX0_CLK1N |
| 37 | GND_5                              |      | G   |      |      | GND                | GND                |
| 39 | I2C2_SCL_M0/PWM0_CH4_M0/GPIO0_D0_d | 1AA8 | I/O | 3.3V | DOWN | I2C2_SCL_SENSOR    | I2C2_SCL_SENSOR    |
| 41 | I2C2_SDA_M0/PWM0_CH5_M0/GPIO0_D1_d | 1AC6 | I/O | 3.3V | DOWN | I2C2_SDA_SENSOR    | I2C2_SDA_SENSOR    |
| 43 | GND_6                              |      | G   |      |      | GND                | GND                |
| 45 | MIPI_DPHY_CSI_RX0_D2P/LVDS_RX0_D2P | AM19 | I   | -    |      | MIPI_CSI_RX0_D2P   | MIPI_CSI_RX0_D2P   |
| 47 | MIPI_DPHY_CSI_RX0_D2N/LVDS_RX0_D2N | AM20 | I   | -    |      | MIPI_CSI_RX0_D2N   | MIPI_CSI_RX0_D2N   |
| 49 | MIPI_DPHY_CSI_RX0_D3P/LVDS_RX0_D3P | AL20 | I   | -    |      | MIPI_CSI_RX0_D3P   | MIPI_CSI_RX0_D3P   |
| 51 | MIPI_DPHY_CSI_RX0_D3N/LVDS_RX0_D3N | AL21 | I   | -    |      | MIPI_CSI_RX0_D3N   | MIPI_CSI_RX0_D3N   |
| 53 | MIPI_DPHY_CSI_RX0_D1P/LVDS_RX0_D1P | AL24 | I   | -    |      | MIPI_CSI_RX0_D1P   | MIPI_CSI_RX0_D1P   |
| 55 | MIPI_DPHY_CSI_RX0_D1N/LVDS_RX0_D1N | AL25 | I   | -    |      | MIPI_CSI_RX0_D1N   | MIPI_CSI_RX0_D1N   |
| 57 | MIPI_DPHY_CSI_RX1_D3P/LVDS_RX1_D3P | AM28 | I   | -    |      | MIPI_CSI_RX1_D3P   | MIPI_CSI_RX1_D3P   |
| 59 | MIPI_DPHY_CSI_RX1_D3N/LVDS_RX1_D3N | AM29 | I   | -    |      | MIPI_CSI_RX1_D3N   | MIPI_CSI_RX1_D3N   |
| 61 | MIPI_DPHY_CSI_RX1_D2P/LVDS_RX1_D2P | AM27 | I   | -    |      | MIPI_CSI_RX1_D2P   | MIPI_CSI_RX1_D2P   |
| 63 | MIPI_DPHY_CSI_RX1_D2N/LVDS_RX1_D2N | AL28 | I   | -    |      | MIPI_CSI_RX1_D2N   | MIPI_CSI_RX1_D2N   |
| 65 | GND_7                              |      | G   |      |      | GND                | GND                |
| 67 | MIPI_DPHY_CSI_RX1_D1P/LVDS_RX1_D1P | AL32 | I   | -    |      | MIPI_CSI_RX1_D1P   | MIPI_CSI_RX1_D1P   |



# Interface definition

|     |                                                                                                  |      |     |      |      |                  |                  |
|-----|--------------------------------------------------------------------------------------------------|------|-----|------|------|------------------|------------------|
| 69  | MIPI_DPHY_CSI_RX1_D1N/LVDS_RX1_D1N                                                               | AK32 | I   | -    |      | MIPI_CSI_RX1_D1N | MIPI_CSI_RX1_D1N |
| 71  | MIPI_DPHY_CSI_RX1_D0P/LVDS_RX1_D0P                                                               | AJ32 | I   | -    |      | MIPI_CSI_RX1_D0P | MIPI_CSI_RX1_D0P |
| 73  | MIPI_DPHY_CSI_RX1_D0N/LVDS_RX1_D0N                                                               | AJ31 | I   | -    |      | MIPI_CSI_RX1_D0N | MIPI_CSI_RX1_D0N |
| 75  | GND8                                                                                             |      | G   |      |      | GND              | GND              |
| 77  | PWM0_CH4_M1/UART4_RX_M0/GPIO4_A2_d                                                               | 1Y23 | I/O | 1.8V | DOWN | MIPI_CSI_PWDN0   | MIPI_CSI_PWDN0   |
| 79  | CAM_CLK1_OUT/UART5_RTSN_M0/GPIO4_B0_d                                                            | AF31 | I/O | 1.8V | DOWN | MIPI_MCLK_OUT1   | MIPI_MCLK_OUT1   |
| 81  | CAM_CLK0_OUT/UART5_CTSN_M0/GPIO4_B1_d                                                            | AE31 | I/O | 1.8V | DOWN | MIPI_MCLK_OUT0   | MIPI_MCLK_OUT0   |
| 83  | GND_9                                                                                            |      | G   |      |      | GND              | GND              |
| 85  | SPI0_CSN1_M1/SAI1_MCLK_M1/PWM0_CH5_M1/UART4_TX_M0/GPIO4_A3_d                                     | 1V21 | I/O | 1.8V | DOWN | SPI0_CS1n_M1     | SPI0_CS1n_M1     |
| 87  | SPI0_MOSI_M1/SAI1_SCLK_M1/I2C3_SCL_M1/GPIO4_A4_d                                                 | 1V22 | I/O | 1.8V | DOWN | SPI0_MOSI_M1     | SPI0_MOSI_M1     |
| 89  | SPI0_CLK_M1/SAI1_SDO_M1/PWM0_CH7_M1/UART5_RX_M0/I2C4_SCL_M2/GPIO4_A7_d                           | 1T22 | I/O | 1.8V | DOWN | SPI0_CLK_M1      | SPI0_CLK_M1      |
| 91  | SPI0_CSN0_M1/SAI1_SDI_M1/PWM0_CH6_M1/UART5_TX_M0/I2C4_SDA_M2/GPIO4_A6_d                          | 1T21 | I/O | 1.8V | DOWN | SPI0_CS0n_M1     | SPI0_CS0n_M1     |
| 93  | SPI0_MISO_M1/SAI1_LRCK_M1/I2C3_SDA_M1/GPIO4_A5_d                                                 | AF32 | I/O | 1.8V | DOWN | SPI0_MISO_M1     | SPI0_MISO_M1     |
| 95  | UVO_LCDC_D2/ETH_PPSCCLK_M1/VI_CIF_D2_M1/DSMC_D15/SAI2_SDI1_M1/PWM0_CH5_M2/UART4_TX_M1/GPIO5_A2_d | P32  | I/O | 3.3V | DOWN | LCD_BL_PWM       | LCD_BL_PWM       |
| 97  | GND_10                                                                                           |      | G   |      |      | GND              | GND              |
| 99  | VO_LCDC_D8/ETH_RXCTL_M1/VI_CIF_D4_M1/DSMC_D9/IR_FPA_SDA2/UART6_TX_M0/GPIO5_B0_d                  | K31  | I/O | 3.3V | DOWN | GMAC_RXCTL_M1    | GMAC_RXCTL_M1    |
| 101 | VO_LCDC_D9/ETH_RXD0_M1/VI_CIF_D5_M1/DSMC_D8/IR_FPA_SDA3/UART6_RX_M0/GPIO5_B1_d                   | 1K23 | I/O | 3.3V | DOWN | GMAC_RXD0_M1     | GMAC_RXD0_M1     |
| 103 | VO_LCDC_D11/ETH_MCLK_M1/VI_CIF_D7_M1/DSMC_RDYN/PWM2_CH1_M1/UART6_CTSN_M0/GPIO5_B3_d              | 2E13 | I/O | 3.3V | DOWN | RMII_CLK         | RMII_CLK         |



# Interface definition

|     |                                                                                                 |      |     |      |      |                     |                                                                  |
|-----|-------------------------------------------------------------------------------------------------|------|-----|------|------|---------------------|------------------------------------------------------------------|
| 105 | VO_LCDC_D10/ETH_RXD1_M1/VI_CIF_D6_M1/DSMC_RESETN/DSMC_INT1/PWM2_CH0_M1/UART6_RTSN_M0/GPIO5_B2_d | 1H23 | I/O | 3.3V | DOWN | GMAC_RXD1_M1        | GMAC_RXD1_M1                                                     |
| 107 | VO_LCDC_D13/ETH_MDIO_M1/VI_CIF_D9_M1/DSMC_DQS0/UART7_RX_M0/GPIO5_B5_d                           | 1H21 | I/O | 3.3V | DOWN | GMAC_MDIO_M1        | GMAC_MDIO_M1                                                     |
| 109 | VO_LCDC_D14/ETH_MDC_M1/VI_CIF_D10_M1/DSMC_CLKN/DSMC_INT0/PWM2_CH2_M1/UART7_RTSN_M0/GPIO5_B6_d   | J31  | I/O | 3.3V | DOWN | GMAC_MDC_M1         | GMAC_MDC_M1                                                      |
| 111 | VO_LCDC_D12/VI_CIF_D8_M1/DSMC_CSN0/UART7_TX_M0/GPIO5_B4_d                                       | 1H22 | I/O | 3.3V | DOWN | RMII_RXER           | RMII_RXER                                                        |
| 113 | VO_LCDC_D15/ETH_TXD0_M1/VI_CIF_D11_M1/DSMC_CLKP/PWM2_CH3_M1/UART7_CTSN_M0/GPIO5_B7_d            | H32  | I/O | 3.3V | DOWN | GMAC_TXD0_M1        | GMAC_TXD0_M1<br>Core board internal series resistance 22R        |
| 115 | GND_11                                                                                          |      | G   |      |      | GND                 | GND                                                              |
| 117 | VO_LCDC_D16/ETH_TXD1_M1/VI_CIF_D12_M1/DSMC_D7/IR_FPA_SDA4/PWM3_CH0_M1/GPIO5_C0_d                | J23  | I/O | 3.3V | DOWN | GMAC_TXD1_M1        | GMAC_TXD1_M1<br>Core board internal series resistance 22R        |
| 119 | VO_LCDC_D17/ETH_CLK_25M_OUT_M1/VI_CIF_D13_M1/DSMC_D6/IR_FPA_SDA5/PWM3_CH1_M1/GPIO5_C1_d         | 1F22 | I/O | 3.3V | DOWN | CLK_OUT_ETHERNET_M1 | CLK_OUT_ETHERNET_M1<br>Core board internal series resistance 22R |
| 121 | VO_LCDC_D20/ETH_RXD3_M1/VI_CIF_VSYNC_M1/DSMC_D3/SAI1_SDO_M2/PWM3_CH4_M1/GPIO5_C4_d              | F31  | I/O | 3.3V | DOWN | GMAC_RXD3_M1        | GMAC_RXD3_M1                                                     |
| 123 | GND_12                                                                                          |      | G   |      |      | GND                 | GND                                                              |
| 125 | VO_LCDC_D18/ETH_TXCTL_M1/VI_CIF_D14_M1/DSMC_D5/IR_FPA_SDA6/PWM3_CH2_M1/GPIO5_C2_d               | 1F23 | I/O | 3.3V | DOWN | GMAC_TXCTL_M1       | GMAC_TXCTL_M1<br>Core board internal series resistance 22R       |
| 127 | VO_LCDC_D21/ETH_TXD2_M1/VI_CIF_CLKOUT_M1/DSMC_D2/SAI1_SCLK_M2/PWM3_CH5_M1/GPIO5_C5_d            | 1D23 | I/O | 3.3V | DOWN | GMAC_TXD2_M1        | GMAC_TXD2_M1<br>Core board internal series resistance 22R        |
| 129 | VO_LCDC_D22/ETH_TXCLK_M1/VI_CIF_CLKIN_M1/DSMC_D1/SAI1_LRCK_M2/PWM3_CH6_M1/GPIO5_C6_d            | 1D22 | I/O | 3.3V | DOWN | GMAC_TXCLK_M1       | GMAC_TXCLK_M1<br>Core board internal series resistance 22R       |
| 131 | NC_3                                                                                            |      |     |      |      | NC                  | NC                                                               |
| 133 | USB_DRD_DP                                                                                      | AL2  | I/O | -    |      | USB_DRD_DP          | USB_OTG_DP                                                       |
| 135 | USB_DRD_DM                                                                                      | AM2  | I/O | -    |      | USB_DRD_DM          | USB_OTG_DM                                                       |
| 137 | NC_4                                                                                            |      |     |      |      | NC                  | NC                                                               |



# Interface definition

|     |                                                                                                       |      |     |      |      |                 |                                                       |
|-----|-------------------------------------------------------------------------------------------------------|------|-----|------|------|-----------------|-------------------------------------------------------|
| 139 | FEPHY_LEDLINK_M1/SPI1_CSN1_M2/CAN0_RXD_M0/IR_FPA_FSYNC/I2C2_SCL_M1/PWM0_CH7_M2/UART3_TX_M1/GPIO5_D4_u | 2D13 | I/O | 3.3V | UP   | LCD_PWREN       | LCD_PWREN                                             |
| 141 | FEPHY_LEDSPD_M1/CAN0_TXD_M0/IR_FPA_MCLK/I2C2_SDA_M1/PWM1_CH3_M1/UART3_RX_M1/GPIO5_D5_u                | 1C22 | I/O | 3.3V | UP   | GPIO5_D5_U      | GPIO5_D5_U                                            |
| 143 | VO_LCDC_CLK/SPI1_MISO_M2/DSMC_INT2/PWM1_CH0_M1/UART3_CT<br>SN_M1/GPIO5_D3_d                           | D31  | I/O | 3.3V | DOWN | PWM1_CH0_M1     | PWM1_CH0_M1                                           |
| 145 | USB_DRD_VBUSDET                                                                                       | 1AA2 | I   | 3.3V |      | USB_DRD_VBUSDET | USB_DRD_VBUSDET                                       |
| 147 | MIPI_DPHY_DSI_TX_D3P                                                                                  | C32  | O   | -    |      | MIPI_DSI_D3P    | MIPI_DSI_TX0_D3P                                      |
| 149 | MIPI_DPHY_DSI_TX_D3N                                                                                  | B32  | O   | -    |      | MIPI_DSI_D3N    | MIPI_DSI_TX0_D3N                                      |
| 151 | MIPI_DPHY_DSI_TX_D2P                                                                                  | A31  | O   | -    |      | MIPI_DSI_D2P    | MIPI_DSI_TX0_D2P                                      |
| 153 | MIPI_DPHY_DSI_TX_D2N                                                                                  | B31  | O   | -    |      | MIPI_DSI_D2N    | MIPI_DSI_TX0_D2N                                      |
| 155 | MIPI_DPHY_DSI_TX_D1N                                                                                  | A28  | O   | -    |      | MIPI_DSI_D1N    | MIPI_DSI_TX0_D1N                                      |
| 157 | MIPI_DPHY_DSI_TX_D1P                                                                                  | A29  | O   | -    |      | MIPI_DSI_D1P    | MIPI_DSI_TX0_D1P                                      |
| 159 | MIPI_DPHY_DSI_TX_D0N                                                                                  | B27  | O   | -    |      | MIPI_DSI_D0N    | MIPI_DSI_TX0_D0N                                      |
| 161 | MIPI_DPHY_DSI_TX_D0P                                                                                  | B28  | O   | -    |      | MIPI_DSI_D0P    | MIPI_DSI_TX0_D0P                                      |
| 163 | GND_13                                                                                                |      | G   |      |      | GND             | GND                                                   |
| 165 | SDMMC1_CLK/GPIO3_A0_d                                                                                 | B22  | I/O | 1.8V | DOWN | SDIO_CLK        | SDIO_CLK<br>Core board internal series resistance 22R |
| 167 | SDMMC1_D1/I2C1_SDA_M1/GPIO3_A3_d                                                                      | A23  | I/O | 1.8V | DOWN | SDIO_D1         | SDIO_D1                                               |
| 169 | SDMMC1_D0/I2C1_SCL_M1/GPIO3_A2_d                                                                      | A22  | I/O | 1.8V | DOWN | SDIO_D0         | SDIO_D0                                               |
| 171 | SDMMC1_CMD/GPIO3_A1_d                                                                                 | B21  | I/O | 1.8V | DOWN | SDIO_CMD        | SDIO_CMD                                              |
| 173 | SDMMC1_D2/GPIO3_A4_d                                                                                  | A20  | I/O | 1.8V | DOWN | SDIO_D2         | SDIO_D2                                               |



# Interface definition

|     |                                                                                                                  |      |     |      |      |                     |                                                               |
|-----|------------------------------------------------------------------------------------------------------------------|------|-----|------|------|---------------------|---------------------------------------------------------------|
| 175 | SDMMC1_D3/GPIO3_A5_d                                                                                             | B20  | I/O | 1.8V | DOWN | SDIO_D3             | SDIO_D3                                                       |
| 177 | SAI2_SDI1_M0/UART1_RX_M1/I2C5_SDA_M1/GPIO3_B7_d                                                                  | A16  | I/O | 1.8V | DOWN | HOST_WAKE_BT        | CPU wake AP6236_BT                                            |
| 179 | FSPI1_CLK_M0/SPI0_CLK_M0/GPIO0_B2_d                                                                              | 1AC2 | I/O | 1.8V | DOWN | WIFI_WAKE_HOST_1V8  | WIFI_WAKE_HOST_L                                              |
| 181 | FSPI1_CSN0_M0/SPI0_CSN0_M0/GPIO0_A7_u                                                                            | 1AC4 | I/O | 1.8V | UP   | BT_WAKE_HOST_1V8    | BT_WAKE_HOST_L                                                |
| 183 | RTC_32K_OUT/CLK_32K/GPIO0_A2_z                                                                                   | AL12 | I/O | 1.8V | Z    | CLK_32K_OUT_1V8     | PMIC_CLK_32K_OUT<br>Core board internal series resistance 22R |
| 185 | GND_14                                                                                                           |      | G   |      |      | GND                 | GND                                                           |
| 187 | FSPI1_D1_M0/SPI0_MISO_M0/GPIO0_B1_d                                                                              | 1AA4 | I/O | 1.8V | DOWN | BT_RST_1V8          | BT_RST,Active low                                             |
| 189 | FSPI1_D0_M0/SPI0_MOSI_M0/GPIO0_B0_d                                                                              | 1AB4 | I/O | 1.8V | DOWN | WIFI_REG_ON_1V8     | WIFI_EN,Active hight                                          |
| 191 | GND_15                                                                                                           |      | G   |      |      | GND                 | GND                                                           |
| 193 | NC_6                                                                                                             |      |     |      |      | NC                  | NC                                                            |
| 195 | SARADC2_IN5/VI_CIF_CLKIN_M0/ETH_CLK_25M_OUT_M0/PWM0_CH1_M2/UART3_CTSN_M2/GPIO6_C1_d                              | U32  | I/O | 3.3V | DOWN | CLK_25M_ETHERNET_M0 | CLK_25M_ETHERNET_M0                                           |
| 197 | GND_16                                                                                                           |      | G   |      |      | GND                 | GND                                                           |
| 199 | SARADC1_IN0/VI_CIF_D0_M0/ETH_PPSTRIG_M0/CAN0_RXD_M1/SAI0_S_CLK_M1/PWM1_CH0_M2/UART4_TX_M2/I2C3_SCL_M3/GPIO6_A0_d | 1T23 | I/O | 3.3V | DOWN | CIF_PWDN            | CIF_PWDN                                                      |
| 201 | SARADC2_IN2/VI_CIF_D14_M0/PDM_SDI1_M1/UART7_RTSN_M1/GPIO6_B6_d                                                   | 1M23 | I/O | 3.3V | DOWN | CIF_D14_M0          | CIF_D14_M0                                                    |
| 203 | NC_7                                                                                                             |      |     |      |      | NC                  | NC                                                            |
| 205 | FEPHY_TXP                                                                                                        | A26  | O   | 3.3V |      | FEPHY_TXP           | FEPHY_TXP                                                     |
| 207 | FEPHY_TXN                                                                                                        | A25  | O   | 3.3V |      | FEPHY_TXN           | FEPHY_TXN                                                     |
| 209 | NC_10                                                                                                            |      |     |      |      | NC                  | NC                                                            |



# Interface definition

|     |                                                                    |     |   |      |      |              |                                                                                 |
|-----|--------------------------------------------------------------------|-----|---|------|------|--------------|---------------------------------------------------------------------------------|
| 211 | FEPHY_RXP                                                          | B25 | I | 3.3V |      | FEPHY_RXP    | FEPHY_RXP                                                                       |
| 213 | FEPHY_RXN                                                          | B24 | I | 3.3V |      | FEPHY_RXN    | FEPHY_RXN                                                                       |
| 215 | NC_13                                                              |     |   |      |      | NC           | NC                                                                              |
| 217 | SPI1_CSN1_M1/SAI2_MCLK_M0/SDMMC1_DET_N/UART1_TX_M1/I2C5_SCL_M1/GPI | B16 | I | 1.8V | DOWN | CIF_RST      | USB_HUB_Reset,Active Hight                                                      |
| 219 | GND_16_                                                            |     | G |      |      | GND          | GND                                                                             |
| 221 | POWER_ON                                                           |     | I | 5V   |      | PMIC_PWRON   | PMIC Power on Signal Input, External connection Power key , active low          |
| 223 | VDC                                                                |     | I | 5V   |      | VDC          | Input Voltage 3.3V-5.5V, Rated input current 50mA, PMIC Power_EN, active high   |
| 225 | VCC_1V8                                                            |     | P | 1.8V |      | VCC_1V8      | 1.8V output,VCC_1V8 Total Max current 200mA (Pin224/225 same net)               |
| 227 | VCC3V3_SD_1                                                        |     | P | 3.3V |      | VCC3V3_SD    | 3.3V output for TF card,VCC3V3_SD Total Max current 200mA (Pin226/227 same net) |
| 229 | VCC1V2_DVDD_1                                                      |     | P | 1.2V |      | VCC1V2_DVDD  | 1.2V output,VCC1V2_DVDD Total Max current 300mA (Pin228/229 same net)           |
| 231 | VCC_3V3_1                                                          |     | P | 3.3V |      | VCC_3V3      | 3.3V output,VCC_3V3 Total Max current 400mA (Pin230/231/234/235 same net)       |
| 233 | VCC_5V_S                                                           |     | P | 5.0V |      | VCC_5V_S     | 5.0V input for RTC, Max current 50mA                                            |
| 235 | VCC_3V3_2                                                          |     | P | 3.3V |      | VCC_3V3      | 3.3V output,VCC_3V3 Total Max current 400mA (Pin230/231/234/235 same net)       |
| 237 | VCC2V8_AVDD_1                                                      |     | P | 2.8V |      | VCC2V8_AVDD  | 2.8V output,VCC2V8_AVDD Total Max current 300mA (Pin236/237 same net)           |
| 239 | VCC1V8_DOVDD_1                                                     |     | P | 1.8V |      | VCC1V8_DOVDD | 1.8V output,VCC1V8_DOVDD Total Max current 300mA (Pin238/239/ same net)         |
| 241 | NC_15                                                              |     |   |      |      | NC           | NC                                                                              |
| 243 | GND_17                                                             |     | G |      |      | GND          | Power ground                                                                    |
| 245 | GND_18                                                             |     | G |      |      | GND          | Power ground                                                                    |



# Interface definition

| 247 | GND_19                              |                    | G        |                 |          | GND                                       | Power ground                                                |
|-----|-------------------------------------|--------------------|----------|-----------------|----------|-------------------------------------------|-------------------------------------------------------------|
| 249 | GND_20                              |                    | G        |                 |          | GND                                       | Power ground                                                |
| 251 | VCC5V0_SYS_1                        |                    | P        | 5.0V_IN         |          | VCC5V0_SYS                                | Input Voltage 4.8V-5.5V                                     |
| 253 | VCC5V0_SYS_2                        |                    | P        | 5.0V_IN         |          | VCC5V0_SYS                                | Input Voltage 4.8V-5.5V                                     |
| 255 | VCC5V0_SYS_3                        |                    | P        | 5.0V_IN         |          | VCC5V0_SYS                                | Input Voltage 4.8V-5.5V                                     |
| 257 | VCC5V0_SYS_4                        |                    | P        | 5.0V_IN         |          | VCC5V0_SYS                                | Input Voltage 4.8V-5.5V                                     |
| 259 | VCC5V0_SYS_5                        |                    | P        | 5.0V_IN         |          | VCC5V0_SYS                                | Input Voltage 4.8V-5.5V                                     |
| PIN | CORE-1126BJD4 pin definition        | RV1126B Pin Number | Pin type | IO Power domain | I/O Pull | Function for Floor<br>(MB-JD4-RV11091126) | Default function description                                |
| 2   | GND_21                              |                    | G        |                 |          | GND                                       | GND                                                         |
| 4   | FSPI0_D3/SAI1_SDI_M0/GPIO1_B6_u     | 1T1                | I/O      | 1.8V            | UP       | FSPI_D3                                   | FSPI_D3                                                     |
| 6   | NC_16                               |                    |          |                 |          | NC                                        | NC                                                          |
| 8   | FSPI0_D2/SAI1_SDO_M0/GPIO1_B2_u     | 1T3                | I/O      | 1.8V            | UP       | FSPI_D2                                   | LCD_PWOER_EN                                                |
| 10  | NC_17                               |                    |          |                 |          | NC                                        | NC                                                          |
| 12  | SPI2AHB_CSN0/I2C0_SCL_M0/GPIO0_C2_u | 1AA12              | I        | 3.3V            | UP       | I2C0_SCL_PMIC                             | I2C0_SCL_PMIC,<br>Core board internal pull up Resistor 2.2K |
| 14  | SPI2AHB_CLK/I2C0_SDA_M0/GPIO0_C3_u  | 1AB12              | I/O      | 3.3V            | UP       | I2C0_SDA_PMIC                             | I2C0_SDA_PMIC,<br>Core board internal pull up Resistor 2.2K |
| 16  | AUDIO_ADC0_MICN                     | AM17               | I        | 3.3V            |          | MIC0_N                                    | MIC0_N                                                      |
| 18  | AUDIO_ADC0_MICP                     | AM16               | I        | 3.3V            |          | MIC0_P                                    | MIC0_P                                                      |
| 20  | NC_20                               |                    |          |                 |          | NC                                        | NC                                                          |



# Interface definition

|    |                                                                                         |       |     |           |      |                |                                   |
|----|-----------------------------------------------------------------------------------------|-------|-----|-----------|------|----------------|-----------------------------------|
| 22 | SAI0_SDI1_M0/SAI0_SDO3_M0/PDM_SDI1_M0/DSM_AUD_RP/I2C1_SDA_M3/<br>UART2_TX_M1/GPIO7_B1_d | 1AC14 | O   | 1.8V      | DOWN | I2C1_SDA_M3    | I2C1_SDA_M3                       |
| 24 | SAI0_SDI2_M0/SAI0_SDO2_M0/PDM_SDI2_M0/DSM_AUD_RN/I2C1_SCL_M3/<br>UART2_RX_M1/GPIO7_B0_d | 1AB14 | O   | 1.8V      | DOWN | I2C1_SCL_M3    | I2C1_SCL_M3                       |
| 26 | GND_22                                                                                  |       | G   |           |      | GND            | GND                               |
| 28 | NC_21                                                                                   |       |     |           |      | NC             | NC                                |
| 30 | SAI0_SDI0_M0/PDM_SDI0_M0/GPIO7_A6_d                                                     | 1AB16 | O   | 1.8V      | DOWN | PDM_SDI0_M0    | Speaker_EN ,active hight          |
| 32 | I2C4_SDA_M3/PDM_CLK0_M0/UART2_CTSN_M1/GPIO7_A4_d                                        | 1AC16 | O   | 1.8V      | DOWN | PDM_CLK0_M0    | PDM_CLK0_M0                       |
| 34 | GND_23                                                                                  |       | G   |           |      | GND            | GND                               |
| 36 | NC_22                                                                                   |       |     |           |      | NC             | NC                                |
| 38 | EXT_PWR_EN                                                                              |       | O   | 5.0V      |      | VCC_5V_S       | PMIC power_en output,active hight |
| 40 | GND_24                                                                                  |       | G   |           |      | GND            | GND                               |
| 42 | SDMMC0_DET/PWM1_CH0_M0/GPIO0_A5_u                                                       | AL10  | I/O | 1.8V      | UP   | SDMMC0_DET_1V8 | TF_Card DET,active low            |
| 44 | GND_25                                                                                  |       | G   |           |      | GND            | GND                               |
| 46 | SDMMC0_CMD/UART3_CTSN_M0/UART4_TX_M3/GPIO2_A5_d                                         | 1AC18 | I/O | 1.8V/3.3V | DOWN | SDMMC0_CMD     | SDMMC0_CMD                        |
| 48 | SDMMC0_CLK/UART3_RTSN_M0/UART4_RX_M3/GPIO2_A4_d                                         | 1AC20 | I/O | 1.8V/3.3V | DOWN | SDMMC0_CLK     | SDMMC0_CLK                        |
| 50 | SDMMC0_D1/UART0_TX_M0/I2C0_SCL_M1/GPIO2_A1_d                                            | 1AA20 | I/O | 1.8V/3.3V | DOWN | SDMMC0_D1      | SDMMC0_D1                         |
| 52 | SDMMC0_D0/UART0_RX_M0/I2C0_SDA_M1/GPIO2_A0_d                                            | 1AB20 | I/O | 1.8V/3.3V | DOWN | SDMMC0_D0      | SDMMC0_D0                         |
| 54 | SDMMC0_D2/UART3_RX_M0/UART4_RTSN_M3/JTAG_TCK_M1/TEST_CLK1_O<br>UT/GPIO2_A2_d            | 1AB18 | I/O | 1.8V/3.3V | DOWN | SDMMC0_D2      | SDMMC0_D2                         |
| 56 | SDMMC0_D3/UART3_TX_M0/UART4_CTSN_M3/JTAG_TMS_M1/GPIO2_A3_d                              | 1AA18 | I/O | 1.8V/3.3V | DOWN | SDMMC0_D3      | SDMMC0_D3                         |



# Interface definition

|    |                                                                                                                    |      |     |      |      |                    |                     |
|----|--------------------------------------------------------------------------------------------------------------------|------|-----|------|------|--------------------|---------------------|
| 58 | GND_26                                                                                                             |      | G   |      |      | GND                | GND                 |
| 60 | MIPI_DPHY_CSI_RX0_CLK0N/LVDS_RX0_CLK0N                                                                             | AL23 | I   | -    |      | MIPI_CSI_RX0_CLK0N | MIPI_CSI_RX0_CLK0N  |
| 62 | MIPI_DPHY_CSI_RX0_CLK0P/LVDS_RX0_CLK0P                                                                             | AM23 | I   | -    |      | MIPI_CSI_RX0_CLK0P | MIPI_CSI_RX0_CLK0P  |
| 64 | MIPI_DPHY_CSI_RX0_D0P/LVDS_RX0_D0P                                                                                 | AM25 | I   | -    |      | MIPI_CSI_RX0_D0P   | MIPI_CSI_RX0_D0P    |
| 66 | MIPI_DPHY_CSI_RX0_D0N/LVDS_RX0_D0N                                                                                 | AM26 | I   | -    |      | MIPI_CSI_RX0_D0N   | MIPI_CSI_RX0_D0N    |
| 68 | MIPI_DPHY_CSI_RX1_CLK0P/LVDS_RX1_CLK0P                                                                             | AL31 | I   | -    |      | MIPI_CSI_RX1_CLK0P | MIPI_CSI_RX1_CLK0P  |
| 70 | MIPI_DPHY_CSI_RX1_CLK0N/LVDS_RX1_CLK0N                                                                             | AM31 | I   | -    |      | MIPI_CSI_RX1_CLK0N | MIPI_CSI_RX1_CLK0N  |
| 72 | NC_23                                                                                                              |      |     |      |      | NC                 | NC                  |
| 74 | SARADC1_IN1/VI_CIF_D1_M0/ETH_PTP_REFCLK_M0/CAN0_TXD_M1/SAIO_LRCK_M1/PWM1_CH1_M2/UART4_RX_M2/I2C3_SDA_M3/GPIO6_A1_d | AD32 | I/O | 3.3V | DOWN | MIPI_CSI_PWDN1     | MIPI_CSI_Powerdown1 |
| 76 | GND_27                                                                                                             |      | G   |      |      | GND                | GND                 |
| 78 | CAM_CLK2_OUT/UART4_CTSN_M0/I2C1_SCL_M2/GPIO4_A1_u                                                                  | AG32 | I/O | 1.8V | UP   | MIPI_CSI_PWDN1     | MIPI_CSI_PWDN1      |
| 80 | CAM_CLK3_OUT/UART4_RTSN_M0/I2C1_SDA_M2/GPIO4_A0_u                                                                  | AG31 | I/O | 1.8V | UP   | MIPI_CSI_RST0      | MIPI_CSI_RST0       |
| 82 | FSPI0_CLK/GPIO1_B7_d                                                                                               |      | I/O | 3.3V | DOWN | FSPI_CLK           | FSPI_CLK            |
| 84 | FSPI0_CSN0/SAI1_MCLK_M0/GPIO1_B0_u                                                                                 |      | I/O | 3.3V | UP   | FSPI_CSN           | FSPI_CSN            |
| 86 | FSPI0_D0/SAI1_LRCK_M0/GPIO1_B4_u                                                                                   |      | I/O | 3.3V | UP   | FSPI_D0            | FSPI_D0             |
| 88 | FSPI0_D1/SAI1_SCLK_M0/GPIO1_B5_u                                                                                   |      | I/O | 3.3V | UP   | FSPI_D1            | FSPI_D1             |
| 90 | MIPI_DPHY_CSI_RX1_CLK1P/LVDS_RX1_CLK1P                                                                             | AL29 | I   | -    |      | MIPI_CSI_RX1_CLK1P | MIPI_CSI_RX1_CLK1P  |
| 92 | MIPI_DPHY_CSI_RX1_CLK1N/LVDS_RX1_CLK1N                                                                             | AL30 | I   | -    |      | MIPI_CSI_RX1_CLK1N | MIPI_CSI_RX1_CLK1N  |



# Interface definition

|     |                                                                                                                 |      |     |      |      |                |                                                           |
|-----|-----------------------------------------------------------------------------------------------------------------|------|-----|------|------|----------------|-----------------------------------------------------------|
| 94  | UART0_TX_M1/JTAG_TCK_M2/CAN1_RXD_M0/PWM2_CH6_M0/GPIO5_D6_u                                                      | 1A22 | I/O | 3.3V | UP   | PWM2_CH6_M0    | PWM2_CH6_M0                                               |
| 96  | UART0_RX_M1/JTAG_TMS_M2/CAN1_TXD_M0/PWM2_CH7_M0/GPIO5_D7_u                                                      | 1B22 | I/O | 3.3V | UP   | PWM2_CH7_M0    | PWM2_CH7_M0                                               |
| 98  | NC_26                                                                                                           |      |     |      |      | NC             | NC                                                        |
| 100 | UART0_RX_M2/PWM1_CH3_M0/I2C1_SDA_M0/JTAG_TMS_M0/GPIO0_B4_u                                                      | AL9  | I/O | 3.3V | UP   | UART0_RX_DBG   | UART0_RX_DBG                                              |
| 102 | UART0_TX_M2/PWM1_CH2_M0/I2C1_SCL_M0/JTAG_TCK_M0/GPIO0_B3_u                                                      | AM10 | I/O | 3.3V | UP   | UART0_TX_DBG   | UART0_TX_DBG                                              |
| 104 | SARADC1_IN2/VI_CIF_D2_M0/ETH_PPSCCLK_M0/CAN1_RXD_M1/SAI0_SDO0_M1/PWM1_CH2_M2/UART5_TX_M2/I2C4_SCL_M1/GPIO6_A2_d | AC32 | I/O | 3.3V | DOWN | LEN_EN/PWM     | LEN_EN/PWM                                                |
| 106 | VO_LCDC_D3/SPI0_CSN0_M2/DSMC_D14/SAI2_MCLK_M1/PWM0_CH4_M2/UART4_RX_M1/GPIO5_A3_d                                | P31  | I/O | 3.3V | DOWN | TP_RST_L       | TP_RST_L                                                  |
| 108 | VO_LCDC_D4/SPI0_MOSI_M2/DSMC_D13/SAI2_SDO_M1/PWM0_CH3_M1/UART5_TX_M1/GPIO5_A4_d                                 | N31  | I/O | 3.3V | DOWN | TP_INT_L       | TP_INT_L output                                           |
| 110 | VO_LCDC_D1/I2C5_SCL_M2/VI_CIF_D1_M1/DSMC_DQS1/SAI2_SDI2_M1/IR_FPA_SDA1/PWM2_CH5_M0/UART4_CTSN_M1/GPIO5_A1_d     | R32  | I/O | 3.3V | DOWN | I2C5_SCL_M2_TP | I2C5_SCL_M2_TP                                            |
| 112 | VO_LCDC_D7/SPI0_CSN1_M2/VI_CIF_D3_M1/DSMC_D10/SAI2_LRCK_M1/I2C5_SDA_M2/PWM0_CH0_M1/UART5_CTSN_M1/GPIO5_A7_d     | L31  | I/O | 3.3V | DOWN | I2C5_SDA_M2_TP | I2C5_SDA_M2_TP                                            |
| 114 | NC_27                                                                                                           |      |     |      |      | NC             | NC                                                        |
| 116 | VO_LCDC_DEN/SPI1_CSN0_M2/ETH_PTP_REFCLK_M1/DSMC_CSN3/I2C3_SCL_M2/PWM0_CH6_M2/GPIO5_D0_d                         | F32  | I/O | 3.3V | DOWN | PWM0_CH6_M2    | PWM0_CH6_M2                                               |
| 118 | VO_LCDC_HSYNC/SPI1_CLK_M2/ETH_PPSTRIG_M1/DSMC_CSN2/I2C3_SDA_M2/PWM1_CH2_M1/GPIO5_D1_d                           | E31  | I/O | 3.3V | DOWN | PWM1_CH2_M1    | PWM1_CH2_M1                                               |
| 120 | VO_LCDC_D0/ETH_TXD3_M1/VI_CIF_D0_M1/DSMC_CSN1/IR_FPA_SDA0/PWM2_CH4_M0/UART4_RTSN_M1/GPIO5_A0_d                  | R31  | I/O | 3.3V | DOWN | GMAC_TXD3_M1   | GMAC_TXD3_M1<br>Core board internal series resistance 22R |
| 122 | VO_LCDC_D19/ETH_RXD2_M1/VI_CIF_D15_M1/DSMC_D4/SAI1_MCLK_M2/PWM3_CH3_M1/GPIO5_C3_d                               | G31  | I/O | 3.3V | DOWN | GMAC_RXD2_M1   | GMAC_RXD2_M1                                              |
| 124 | GND_28                                                                                                          |      | G   |      |      | GND            | GND                                                       |
| 126 | VO_LCDC_D23/ETH_RXCLK_M1/VI_CIF_HSYNC_M1/DSMC_D0/SAI1_SDI_M2/PWM3_CH7_M1/GPIO5_C7_d                             | 1D21 | I/O | 3.3V | DOWN | GMAC_RXCLK_M1  | GMAC_RXCLK_M1                                             |



# Interface definition

|     |                                                                               |      |     |      |      |                  |                                                                                             |
|-----|-------------------------------------------------------------------------------|------|-----|------|------|------------------|---------------------------------------------------------------------------------------------|
| 128 | NC_28                                                                         |      |     |      |      | NC               | NC                                                                                          |
| 130 | USB_DRD_ID                                                                    | 1AB2 | I   | 1.8V |      | OTG_ID           | OTG_DET.Active low                                                                          |
| 132 | USB_DRD_SSTXN                                                                 | AM5  | O   | -    |      | USB_DRD_SSTXN    | USB_DRD_SSTXN                                                                               |
| 134 | USB_DRD_SSTXP                                                                 | AM4  | O   | -    |      | USB_DRD_SSTXP    | USB_DRD_SSTXP                                                                               |
| 136 | VO_LCDC_VSYNC/SPI1_MOSI_M2/DSMC_INT3/PWM1_CH1_M1/UART3_RT<br>SN_M1/GPIO5_D2_d | E32  | I/O | 3.3V | DOWN | PWM1_CH1_M1      | PWM1_CH1_M1                                                                                 |
| 138 | GND_29                                                                        |      | G   |      |      | GND              | GND                                                                                         |
| 140 | MIPI_DPHY_DSI_TX_CLKP                                                         | B30  | O   | -    |      | MIPI_DSI_CLKP    | MIPI_DSI_CLKP                                                                               |
| 142 | MIPI_DPHY_DSI_TX_CLKN                                                         | B29  | O   | -    |      | MIPI_DSI_CLKN    | MIPI_DSI_CLKN                                                                               |
| 144 | NC_30                                                                         |      |     |      |      | NC               | NC                                                                                          |
| 146 | USB_DRD_SSRXP                                                                 | AL6  | I   | -    |      | USB_DRD_SSRXP    | USB_DRD_SSRXP                                                                               |
| 148 | USB_DRD_SSRXN                                                                 | AL7  | I   | -    |      | USB_DRD_SSRXN    | USB_DRD_SSRXN                                                                               |
| 150 | SARADC0_IN1                                                                   | 1C18 | I   | 1.8V |      | SARADC0_IN1      | SARADC0_IN1,<br>Core board interiorl pull up Resistor 10K                                   |
| 152 | SARADC0_IN7_BOOT                                                              | 1A20 | I   | 1.8V |      | SARADC0_IN7_BOOT | SARADC0_IN7_BOOT input,RECOVER KEY, active low<br>Core board interiorl pull up Resistor 10K |
| 154 | SARADC0_IN3                                                                   | 1B18 | I   | 1.8V |      | SARADC0_IN3      | SARADC0_IN3 input,<br>Core board interiorl pull up Resistor 10K                             |
| 156 | SARADC0_IN4                                                                   | 2B11 | I   | 1.8V |      | SARADC0_IN4      | SARADC0_IN4 input,<br>Core board interiorl pull up Resistor 10K                             |
| 158 | GND_30                                                                        |      | G   |      |      | GND              | GND                                                                                         |
| 160 | NC_33                                                                         |      |     |      |      | NC               | NC                                                                                          |
| 162 | SPI1_MISO_M1/SAI2_SDI0_M0/PWM2_CH1_M0/PRELIGHT_TRIG_OUT/GPI<br>O3_B3_d        | 1B14 | I/O | 1.8V | DOWN | SAI2_SDI_M0      | SAI2_SDI_M0                                                                                 |



# Interface definition

|     |                                                                                                         |      |     |      |      |               |                                                            |
|-----|---------------------------------------------------------------------------------------------------------|------|-----|------|------|---------------|------------------------------------------------------------|
| 164 | SPI1_CLK_M1/SAI2_SCLK_M0/PWM2_CH2_M0/UART1_RTSN_M1/I2C4_SCL_M0/FEPHY_LEDLINK_M0/GPIO3_B4_d              | 1A14 | I/O | 1.8V | DOWN | SAI2_SCLK_M0  | SAI2_SCLK_M0                                               |
| 166 | SPI1_CSN0_M1/SAI2_LRCK_M0/PWM2_CH3_M0/UART1_CTSN_M1/I2C4_SDA_M0/FEPHY_LEDSPD_M0/GPIO3_B5_d              | 1A16 | I/O | 1.8V | DOWN | SAI2_LRCK_M0  | SAI2_LRCK_M0                                               |
| 168 | SPI1_MOSI_M1/SAI2_SDO_M0/PWM2_CH0_M0/FLASH_TRIG_OUT/GPIO3_B2_d                                          | 1B16 | I/O | 1.8V | DOWN | SAI2_SDO_M0   | SAI2_SDO_M0                                                |
| 170 | SAI2_SDI2_M0/UART2_TX_M0/GPIO3_B1_d                                                                     | A17  | I/O | 1.8V | DOWN | UART2_TX_M0   | UART2_TX_M0                                                |
| 172 | UART2_RX_M0/GPIO3_B0_d                                                                                  | B17  | I/O | 1.8V | DOWN | UART2_RX_M0   | UART2_RX_M0                                                |
| 174 | UART2_CTSN_M0/GPIO3_A7_d                                                                                | B18  | I/O | 1.8V | DOWN | UART2_CTSN_M0 | UART2_CTSN_M0                                              |
| 176 | UART2_RTSN_M0/GPIO3_A6_d                                                                                | B19  | I/O | 1.8V | DOWN | UART2_RTSN_M0 | UART2_RTSN_M0                                              |
| 178 | NC_34                                                                                                   |      |     |      |      | NC            | NC                                                         |
| 180 | GND_31                                                                                                  |      | G   |      |      | GND           | GND                                                        |
| 182 | SARADC2_IN3/VI_CIF_D15_M0/ETH_MDIO_M0/PDM_CLK1_M1/UART7_CTSN_M1/GPIO6_B7_d                              | 1K21 | I/O | 3.3V | DOWN | GMAC_MDIO_M0  | GMAC_MDIO_M0                                               |
| 184 | SARADC2_IN4/VI_CIF_VSYNC_M0/ETH_MDC_M0/PWM0_CH0_M2/UART3_RTSN_M2/I2C2_SCL_M2/GPIO6_C0_d                 | V32  | I/O | 3.3V | DOWN | GMAC_MDC_M0   | GMAC_MDC_M0                                                |
| 186 | SARADC2_IN6/VI_CIF_CLKOUT_M0/ETH_TXCLK_M0/FEPHY_LEDLINK_M2/PWM0_CH2_M2/UART3_TX_M2/GPIO6_C2_d           | U31  | I/O | 3.3V | DOWN | GMAC_TXCLK_M0 | GMAC_TXCLK_M0<br>Core board internal series resistance 22R |
| 188 | SARADC2_IN7/VI_CIF_HSYNC_M0/ETH_RXCLK_M0/FEPHY_LEDSPD_M2/PWM0_CH3_M2/UART3_RX_M2/I2C2_SDA_M2/GPIO6_C3_d | V31  | I/O | 3.3V | DOWN | GMAC_RXCLK_M0 | GMAC_RXCLK_M0                                              |
| 190 | GND_32                                                                                                  |      | G   |      |      | GND           | GND                                                        |
| 192 | VI_CIF_D12_M0/ETH_MCLK_M0/SPI1_CLK_M0/PDM_CLK0_M1/UART7_TX_M1/GPIO6_B4_d                                | 1M21 | I/O | 3.3V | DOWN | GMAC_CLK_M0   | GMAC_CLK_M0                                                |
| 194 | VI_CIF_D11_M0/ETH_RXD1_M0/SPI1_MISO_M0/PDM_SDI3_M1/UART6_CTSN_M1/GPIO6_B3_d                             | 1P23 | I/O | 3.3V | DOWN | GMAC_RXD1_M0  | GMAC_RXD1_M0                                               |
| 196 | SARADC1_IN4/VI_CIF_D4_M0/ETH_RXD3_M0/SAI0_MCLK_M1/PWM2_CH0_M2/UART5_RTSN_M2/I2C5_SCL_M3/GPIO6_A4_d      | AB31 | I/O | 3.3V | DOWN | GMAC_RXD3_M0  | GMAC_RXD3_M0                                               |



# Interface definition

|     |                                                                                                              |      |     |             |      |              |                                                                                 |
|-----|--------------------------------------------------------------------------------------------------------------|------|-----|-------------|------|--------------|---------------------------------------------------------------------------------|
| 198 | VI_CIF_D10_M0/ETH_RXD0_M0/SPI1_MOSI_M0/PDM_SDI2_M1/UART6_RTS_N_M1/GPIO6_B2_d                                 | AP22 | I/O | 3.3V        | DOWN | GMAC_RXD0_M0 | GMAC_RXD0_M0                                                                    |
| 200 | SARADC1_IN3/VI_CIF_D3_M0/ETH_RXD2_M0/CAN1_TXD_M1/SAI0_SDI0_M1/PWM1_CH3_M2/UART5_RX_M2/I2C4_SDA_M1/GPIO6_A3_d | AC31 | I/O | 3.3V        | DOWN | GMAC_RXD2_M0 | GMAC_RXD2_M0                                                                    |
| 202 | SARADC2_IN1/VI_CIF_D13_M0/ETH_RXCTL_M0/PDM_SDI0_M1/UART7_RX_M1/GPIO6_B5_d                                    | 1M22 | I/O | 3.3V        | DOWN | GMAC_RXDV_M0 | GMAC_RXDV_M0                                                                    |
| 204 | SARADC1_IN7/VI_CIF_D7_M0/ETH_TXD0_M0/PWM2_CH3_M2/SAI0_SDI3_M1/SAI0_SDO1_M1/UART4_CTSN_M2/GPIO6_A7_d          | Y32  | I/O | 3.3V        | DOWN | GMAC_TXD0_M0 | MAC transmit data /CIF_D7<br>Core board internal series resistance 22R          |
| 206 | SARADC1_IN5/VI_CIF_D5_M0/ETH_TXD2_M0/PWM2_CH1_M2/UART5_CTSN_M2/I2C5_SDA_M3/GPIO6_A5_d                        | AA31 | I/O | 3.3V        | DOWN | GMAC_TXD2_M0 | MAC transmit data/CIF_D5<br>Core board internal series resistance 22R           |
| 208 | SARADC1_IN6/VI_CIF_D6_M0/ETH_TXD3_M0/PWM2_CH2_M2/UART4_RTSN_M2/GPIO6_A6_d                                    | AA32 | I/O | 3.3V        | DOWN | GMAC_TXD3_M0 | MAC transmit data/CIF_D6<br>Core board internal series resistance 22R           |
| 210 | SARADC2_IN0/VI_CIF_D8_M0/ETH_TXD1_M0/SPI1_CSN1_M0/SAI0_SDI2_M1/SAI0_SDO2_M1/UART6_TX_M1/GPIO6_B0_d           | W31  | I/O | 3.3V        | DOWN | GMAC_TXD1_M0 | MAC transmit data/CIF_D8<br>Core board internal series resistance 22R           |
| 212 | VI_CIF_D9_M0/ETH_TXCTL_M0/SPI1_CSN0_M0/SAI0_SDI1_M1/SAI0_SDO3_M1/UART6_RX_M1/GPIO6_B1_d                      | 1P21 | I/O | 3.3V        | DOWN | GMAC_TXEN_M0 | MAC transmit enable /CIF_D9<br>Core board internal series resistance 22R        |
| 214 | VO_LCDC_D5/SPI0_MISO_M2/DSMC_D12/SAI2_SCLK_M1/PWM0_CH2_M1/UART5_RX_M1/GPIO5_A5_d                             | M32  | I/O | 3.3V        | DOWN | EPHY_PMEB    | PHY interrupt input,                                                            |
| 216 | VO_LCDC_D6/SPI0_CLK_M2/DSMC_D11/SAI2_SDI0_M1/PWM0_CH1_M1/UART5_RTSN_M1/GPIO5_A6_d                            | L32  | I/O | 3.3V        | DOWN | EPHY_RSTn    | phy reset output,active low                                                     |
| 218 | RESET_KEY                                                                                                    | AL13 | I   | 1.8V        |      | RESET        | system reset signal Input, External connection Reset key, active low            |
| 220 | NC_35                                                                                                        |      |     |             |      | NC           | NC                                                                              |
| 222 | GND_33                                                                                                       |      | G   |             |      | GND          | GND                                                                             |
| 224 | VCC_1V8_1                                                                                                    |      | P   | VCC_1V8     |      | VCC_1V8      | 1.8V output,VCC_1V8 Total Max current 200mA (Pin224/225 same net)               |
| 226 | VCC3V3_SD_2                                                                                                  |      | P   | VCC3V3_SD   |      | VCC3V3_SD    | 3.3V output for TF card,VCC3V3_SD Total Max current 200mA (Pin226/227 same net) |
| 228 | VCC1V2_DVDD_2                                                                                                |      | P   | VCC1V2_DVDD |      | VCC1V2_DVDD  | 1.2V output,VCC1V2_DVDD Total Max current 300mA (Pin228/229 same net)           |
| 230 | VCC_3V3_3                                                                                                    |      | P   | VCC_3V3     |      | VCC_3V3      | 3.3V output,VCC_3V3 Total Max current 400mA (Pin230/231/234/235 same net)       |



# Interface definition

|     |                |  |   |              |  |              |                                                                           |
|-----|----------------|--|---|--------------|--|--------------|---------------------------------------------------------------------------|
| 232 | VCC_RTC        |  | P | VCC_RTC      |  | VCC_RTC      | 3.3-5.0V input for RTC, Max current 50mA                                  |
| 234 | VCC_3V3_4      |  | P | VCC_3V3      |  | VCC_3V3      | 3.3V output,VCC_3V3 Total Max current 400mA (Pin230/231/234/235 same net) |
| 236 | VCC2V8_AVDD_2  |  | P | VCC2V8_AVDD  |  | VCC2V8_AVDD  | 2.8V output,VCC2V8_AVDD Total Max current 300mA (Pin236/237 same net)     |
| 238 | VCC1V8_DOVDD_2 |  | P | VCC1V8_DOVDD |  | VCC1V8_DOVDD | 1.8V output,VCC1V8_DOVDD Total Max current 300mA (Pin238/239/ same net)   |
| 240 | NC_36          |  |   |              |  | NC           | NC                                                                        |
| 242 | NC_37          |  |   |              |  | NC           | NC                                                                        |
| 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 | VCC_SYS_6      |  | P | 5.0V_IN      |  | VCC5V0_SYS   | Input Voltage 4.8V-5.5V                                                   |
| 254 | VCC_SYS_7      |  | P | 5.0V_IN      |  | VCC5V0_SYS   | Input Voltage 4.8V-5.5V                                                   |
| 256 | VCC_SYS_8      |  | P | 5.0V_IN      |  | VCC5V0_SYS   | Input Voltage 4.8V-5.5V                                                   |
| 258 | VCC_SYS_9      |  | P | 5.0V_IN      |  | VCC5V0_SYS   | Input Voltage 4.8V-5.5V                                                   |
| 260 | VCC_SYS_10     |  | P | 5.0V_IN      |  | VCC5V0_SYS   | Input Voltage 4.8V-5.5V                                                   |



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