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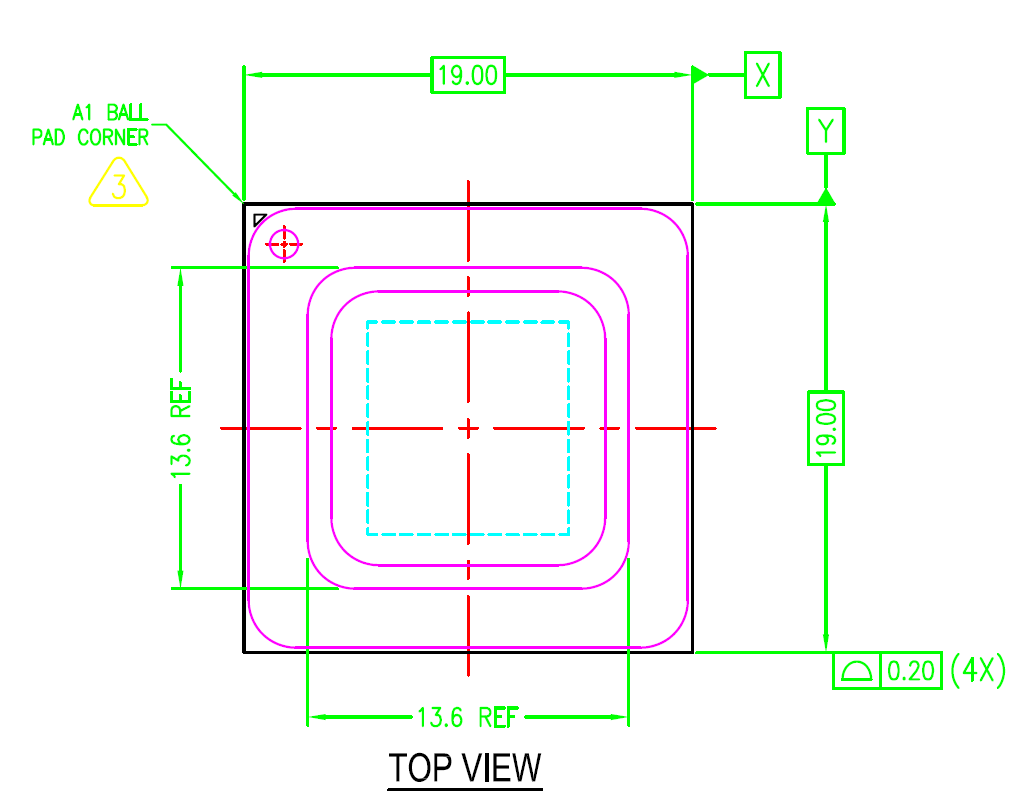
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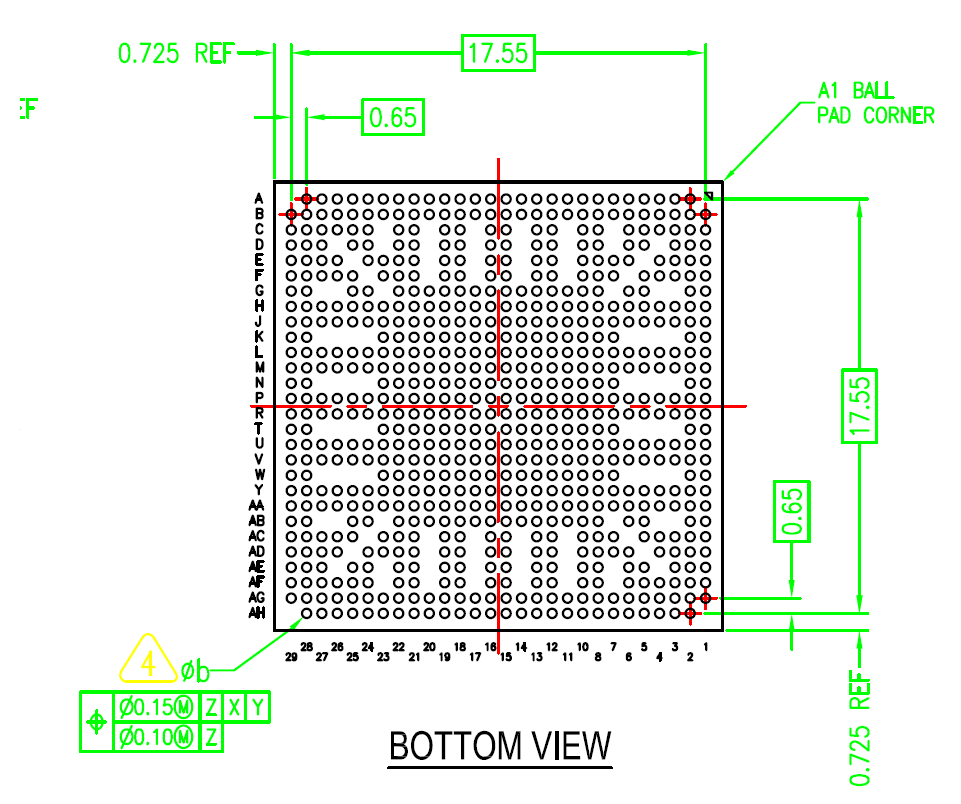
## Package Information

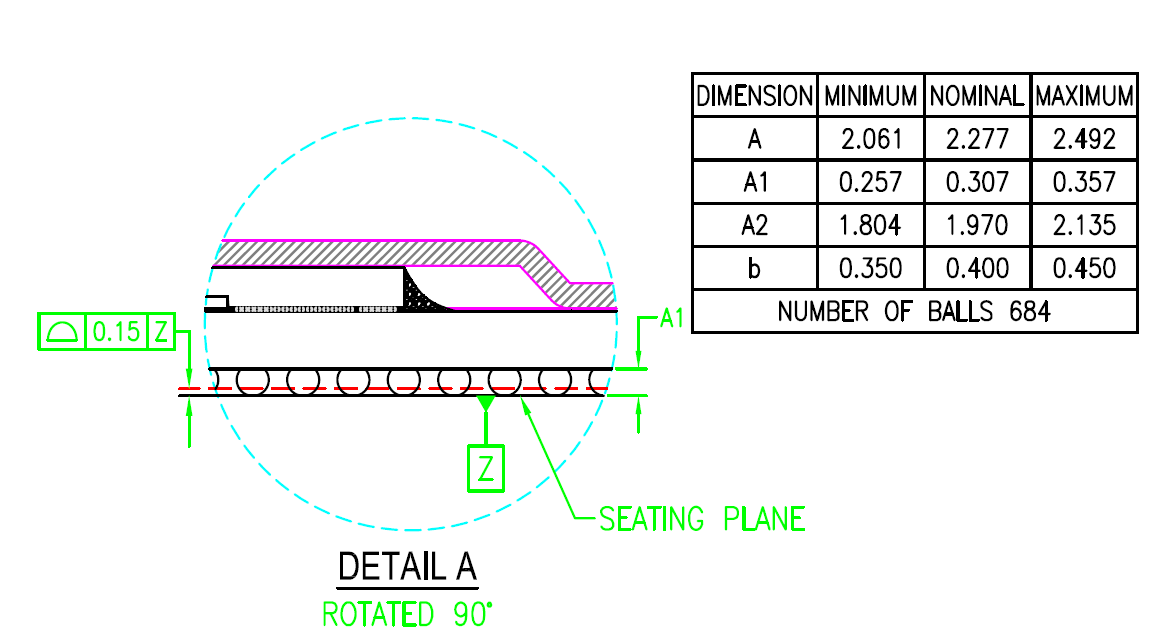
## Ordering information

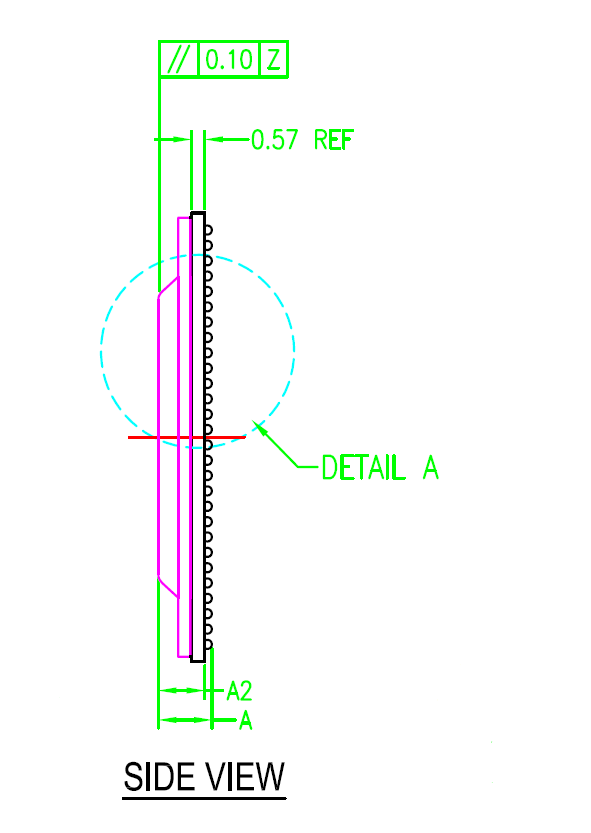
|  |  |  |
| --- | --- | --- |
| Part No | Package | Device special feature |
| AR9201 | 19X19 mm^2 Ball pitch 0.65mm  FCBGA684 |  |
|  |  |  |

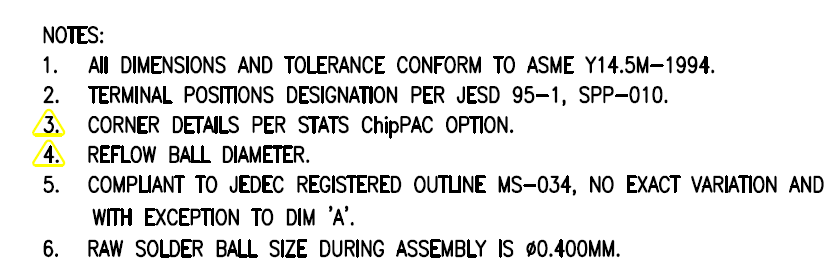
## Dimension











## Ball Map

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** |
| **A** |  | DDR\_DQ40 | DDR\_DQ41 | DDR\_DQ43 | DDR\_DQS5N | DDR\_DQ44 | DDR\_DM5 | DDR\_DQ47 | DDR\_DQ48 | DDR\_DQ50 | DDR\_DQS6N | DDR\_DQ52 | DDR\_DQ51 | DDR\_DQ54 |
| **B** | DDR\_CK | DDR\_CKN | VSS | DDR\_DQ42 | DDR\_DQS5 | VSS | DDR\_DQ45 | DDR\_DQ46 | VSS | DDR\_DQ49 | DDR\_DQS6 | VSS | DDR\_DQ53 | DDR\_DM6 |
| **C** | DDR\_A17 | DDR\_A16 | DDR\_CKE1 | DDR\_RAM\_RSTN | DDR\_ATO | DDR\_DQ34 |  | DDR\_DQS4 | DDR\_DQ39 |  | DDR\_DQ57 | DDR\_DQS7N |  | DDR\_DQ61 |
| **D** | DDR\_A14 | DDR\_A15 | DDR\_CKE0 |  | DDR\_DTO0 | DDR\_DQ33 |  | DDR\_DQS4N | DDR\_DQ36 |  | DDR\_DQ56 | DDR\_DQS7 |  | DDR\_DQ60 |
| **E** | DDR\_A12 | DDR\_A13 | DDR\_CSN0 | DDR\_CSN1 |  | DDR\_DQ32 | DDR\_DQ35 | VSS | DDR\_DQ38 |  | VSS | DDR\_DQ58 |  | VSS |
| **F** | DDR\_A10 | VSS | DDR\_BG1 | DDR\_BG0 | VSS |  | DDR\_DTO1 | DDR\_PLL\_VDD | DDR\_DQ37 |  | DDR\_DM4 | DDR\_DQ59 |  | DDR\_DQ62 |
| **G** | DDR\_A11 | DDR\_A9 |  |  | DDR\_ODT0 | DDR\_ALERTN |  | DDR\_PLL\_VDD | DDR\_VDDQ | DDR\_VDDQ | DDR\_VDDQ | VSS | VSS | PCIE\_VP |
| **H** | DDR\_A7 | DDR\_A6 | DDR\_BA0 | DDR\_PARITY | DDR\_ODT1 | DDR\_VREFI | DDR\_VDDQ | DDR\_VDDQ | VSS | VSS | VSS | DDR\_AVSS1V8 | DDR\_AVDD18 | CA7\_AVDD1V8 |
| **J** | DDR\_A2 | VSS | DDR\_A8 | DDR\_BA1 | VSS | DDR\_ACTN | DDR\_VDDQ | DDR\_VDDQ | VSS | VSS | VSS | VSS | CA7\_AVSS1V8 | OTP\_VDDIO1V8 |
| **K** | DDR\_A3 | DDR\_A5 |  |  |  |  | DDR\_VREFO\_0 | DDR\_VDDQ | VSS | VDD | CA7\_VDD | CA7\_VDD | CA7\_VDD | VDD |
| **L** | DDR\_A4 | DDR\_A1 | DDR\_DQ30 | DDR\_DQ31 | DDR\_DM3 | DDR\_ZQ | DDR\_VDDQ | DDR\_VDDQ | VSS | VDD | CA7\_VDD | VSS | VSS | VSS |
| **M** | DDR\_A0 | VSS | DDR\_DQ28 | DDR\_DQ29 | VSS | DDR\_VREFI\_ZQ | DDR\_VREFO\_1 | DDR\_VDDQ | VSS | VDD | CA7\_VDD | VSS | VSS | VSS |
| **N** | DDR\_DQ23 | DDR\_DM2 |  |  |  |  | DDR\_VDDQ | VSS | VSS | VDD | VDD | VDD | VDD | VDD |
| **P** | DDR\_DQ21 | DDR\_DQ22 | DDR\_DQS3N | DDR\_DQS3 | DDR\_DQ27 | DDR\_DQ26 | DDR\_VDDQ | VSS | VSS | VDD | VDD | VDD | VDD | VDD |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **15** | **16** | **17** | **18** | **19** | **20** | **21** | **22** | **23** | **24** | **25** | **26** | **27** | **28** |  |
| DDR\_DQ55 | PCIE\_TX1P | PCIE\_RX1P | PCIE\_RX0P | PCIE\_TX0P | TYPEC\_REXT | TYPEC\_CC1 | TYPEC\_REXT\_CC | XTAL1 | QDAC\_OUTN\_A | IDAC\_OUTN\_A | IADC\_VINN\_A | QADC\_VINN\_A |  | **A** |
| VSS | PCIE\_TX1N | PCIE\_RX1N | PCIE\_RX0N | PCIE\_TX0N | TYPEC\_VBUS | TYPEC\_CC2 | CLKREF\_SEL\_PAD | XTAL2 | QDAC\_OUTP\_A | IDAC\_OUTP\_A | IADC\_VINP\_A | QADC\_VINP\_A | AD\_IN\_2 | **B** |
| DDR\_DQ63 |  | TYPEC\_AUXP | VSS |  | TYPEC\_TXRX2P | VSS |  | RSSI\_2 | PDET\_A\_5G | PDET\_A\_2G | AD\_IN\_3 | QADC\_VINP\_B | QADC\_VINN\_B | **C** |
| TYPEC\_AUX\_PUPDN |  | TYPEC\_TX0P | TYPEC\_AUXN |  | TYPEC\_TXRX2N | AD\_IN\_5 |  | PDET\_B\_5G | PDET\_B\_2G |  | RSSI\_1 | IADC\_VINP\_B | IADC\_VINN\_B | **D** |
| TYPEC\_AUX\_PDPUP |  | TYPEC\_TX0N | TYPEC\_TXRX1N |  | TYPEC\_TX3N | AD\_IN\_6 | AD\_IN\_1 | AD\_IN\_0 |  | IADC\_VINP\_C | IADC\_VINN\_C | IDAC\_OUTP\_B | IDAC\_OUTN\_B | **E** |
| DDR\_DM7 |  | VSS | TYPEC\_TXRX1P |  | TYPEC\_TX3P | AD\_IN\_4 | I2C\_SCLK4\_PAD |  | I2C\_SDA3\_PAD | QADC\_VINP\_C | QADC\_VINN\_C | QDAC\_OUTP\_B | QDAC\_OUTN\_B | **F** |
| PCIE\_VPH | PCIE\_RESREF | TYPEC\_AVDD\_VH\_3V3 | TYPEC\_AVDD\_H\_1V8 | AVDD1V8\_OSC | AVSS\_OSC | AD\_IN\_7 |  | GBE\_RST\_PAD | I2C\_SDA4\_PAD |  |  | IADC\_VINP\_D | IADC\_VINN\_D | **G** |
| VSS | PCIE\_VPTX | TYPEC\_AVDD | TYPEC\_AVDD\_CLK | VSS | AVSS\_A | AVSS\_A | PWM0\_PAD | GBE\_INT\_PAD | I2C\_SCLK3\_PAD | EMMC\_D0\_PAD | EMMC\_D1\_PAD | QADC\_VINP\_D | QADC\_VINN\_D | **H** |
| VSS | VSS | VSS | TYPEC\_AVDD | VSS | AVDD1V8\_A | AVDD1V8\_A | PWM1\_PAD | GBE\_CLK\_PAD | VSS | EMMC\_D2\_PAD | EMMC\_D3\_PAD | EMMC\_CCMD\_PAD | EMMC\_CLKOUT\_PAD | **J** |
| VDD | VDD | VDD | VDD | VDD | AVSS\_PLL | AVDD1V8\_PLL | EMMC\_PWR\_PAD |  |  |  |  | EMMC\_D4\_PAD | EMMC\_D5\_PAD | **K** |
| VSS | VSS | VDD | VDD | VSS | VDD18\_EMMC\_0 | VDD3\_EMMC | PWM2\_PAD | SPI\_M1\_DO\_PAD | SPI\_M1\_DI\_PAD | GBE\_MDC\_PAD | GBE\_TXC\_PAD | EMMC\_D7\_PAD | EMMC\_D6\_PAD | **L** |
| VSS | VSS | VDD | VDD | VSS | VDD18\_EMMC\_1 | VDD33\_RGM | PWM3\_PAD | SPI\_M1\_SCLK\_PAD | SPI\_M1\_CSN\_PAD | GBE\_MDIO\_PAD | GBE\_TXEN\_PAD | GBE\_TXD1\_PAD | GBE\_TXD0\_PAD | **M** |
| VDD | VDD | VDD | VDD | VDD | VSS | VDD33\_RGM | PWM4\_PAD |  |  |  |  | GBE\_TXD2\_PAD | GBE\_TXD3\_PAD | **N** |
| VDD | VDD | VDD | VDD | VDD | VSS | VSS | UART\_SIN4\_PAD | SPI\_M2\_CS0N\_PAD | SPI\_M2\_DI\_PAD | SPI\_M0\_CSN\_PAD | VSS | GBE\_RXEN\_PAD | GBE\_RXC\_PAD | **P** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **R** | DDR\_DQ20 | VSS | DDR\_DQ25 | DDR\_DM0 | VSS | DDR\_DQ24 | DDR\_VDDQ | DDR\_VDDQ | VSS | VDD | CEVA\_VDD | VSS | VSS | VSS |
| **T** | DDR\_DQS2N | DDR\_DQS2 |  |  |  |  | DDR\_VDDQ | VSS | VSS | CEVA\_VDD | CEVA\_VDD | VSS | VSS | VSS |
| **U** | DDR\_DQ19 | DDR\_DQ17 | DDR\_DQ7 | DDR\_DQ5 | DDR\_DQ0 | DDR\_VDDQ | DDR\_VDDQ | VSS | VSS | CEVA\_VDD | CEVA\_VDD | CEVA\_VDD | CEVA\_VDD | CEVA\_VDD |
| **V** | DDR\_DQ16 | VSS | DDR\_DQ6 | DDR\_DQ1 | VSS | UART\_RX3\_PAD | VDD18\_R | VSS | VSS | CEVA\_VDD | CEVA\_VDD | CEVA\_VDD | CEVA\_VDD | CEVA\_VDD |
| **W** | DDR\_DQ18 | DDR\_DQ15 |  |  |  |  | UART\_TX3\_PAD | VSS | CEVA\_VDD | CEVA\_VDD | CEVA\_VDD | VSS | VSS | VSS |
| **Y** | DDR\_DM1 | DDR\_DQ14 | DDR\_DQS0N | DDR\_DQS0 | DDR\_DQ2 | UART\_TX0\_PAD | VSS | VSS | CEVA\_VDD | CEVA\_VDD | CEVA\_VDD | VSS | VSS | VSS |
| **AA** | DDR\_DQ13 | VSS | DDR\_DQ4 | DDR\_DQ3 | VSS | UART\_TX1\_PAD | UART\_RX1\_PAD | VSS | VSS | VSS | VSS | VSS | VDD | VDD |
| **AB** | DDR\_DQ12 | DDR\_DQ11 |  |  | UART\_RX2\_PAD | UART\_TX2\_PAD |  | TEST\_MODE\_EN\_PAD | VSS | VSS | MIPI\_AVDD1V8 | MIPI\_AVDD1V8 | CEVA\_AVDD1V8 | CEVA\_AVSS1V8 |
| **AC** | DDR\_DQS1N | DDR\_DQS1 | I2C\_SCLK2\_PAD | I2C\_SCLK1\_PAD | I2C\_SDA2\_PAD |  | UART\_RX0\_PAD | RSTN\_PAD | MIPI\_AGND |  | MIPI\_AGND | MIPI1\_REXT |  | MIPI\_AGND |
| **AD** | DDR\_DQ10 | VSS | I2C\_SCLK0\_PAD | I2C\_SDA1\_PAD |  | GP0\_PAD | GP2\_PAD | MIPI7\_REXT | MIPI6\_REXT |  | MIPI4\_REXT | MIPI1\_CLKP |  | MIPI0\_CLKP |
| **AE** | DDR\_DQ9 | DDR\_DQ8 | I2C\_SDA0\_PAD |  | MIPI7\_CLKN | MIPI6\_CLKN |  | MIPI5\_REXT | MIPI5\_CLKN |  | MIPI4\_CLKN | MIPI1\_CLKN |  | MIPI0\_CLKN |
| **AF** | GP5\_PAD | GP4\_PAD | GP7\_PAD | MIPI\_AGND | MIPI7\_CLKP | MIPI6\_CLKP |  | MIPI\_AGND | MIPI5\_CLKP |  | MIPI4\_CLKP | MIPI\_AGND |  | MIPI\_AGND |
| **AG** | GP6\_PAD | GP1\_PAD | MIPI7\_D1P | MIPI7\_D0P | MIPI6\_D1P | MIPI6\_D0P | MIPI5\_D1P | MIPI5\_D0P | MIPI4\_D1P | MIPI4\_D0P | MIPI1\_D0P | MIPI1\_D1P | MIPI0\_D1P | MIPI0\_D0P |
| **AH** |  | GP3\_PAD | MIPI7\_D1N | MIPI7\_D0N | MIPI6\_D1N | MIPI6\_D0N | MIPI5\_D1N | MIPI5\_D0N | MIPI4\_D1N | MIPI4\_D0N | MIPI1\_D0N | MIPI1\_D1N | MIPI0\_D1N | MIPI0\_D0N |
|  | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| VSS | VSS | VDD | VDD | VSS | VDD18\_SD\_1 | VDD18\_SD\_0 | UART\_SOUT4\_PAD | SPI\_M2\_SCLK\_PAD | SPI\_M2\_DO\_PAD | SPI\_M0\_DI\_PAD | SPI\_M0\_SCLK\_PAD | GBE\_RXD1\_PAD | GBE\_RXD0\_PAD | **R** |
| VSS | VSS | VDD | VDD | VSS | VSS | VDD3\_SD | PWM5\_PAD |  |  |  |  | GBE\_RXD3\_PAD | GBE\_RXD2\_PAD | **T** |
| VDD | VDD | VDD | VDD | VDD | VSS | VSS | PWM6\_PAD | PWM7\_PAD | SPI\_MS3\_DI\_PAD | SPI\_M0\_DO\_PAD | SPI\_MS3\_SCLK\_PAD | SD\_CCMD\_PAD | SD\_CCLK\_OUT\_PAD | **U** |
| VDD | VDD | VDD | VDD | VDD | VSS | VDD18 | PWM8\_PAD | SPI\_MS3\_DO\_PAD | SPI\_MS3\_CS1N\_PAD | SPI\_MS3\_CS3N\_PAD | SPI\_MS3\_CS2N\_PAD | SD\_CARD\_WPRT\_PAD | SD\_CARD\_DETECT\_N\_PAD | **V** |
| VSS | VSS | VDD | VDD | VSS | VSS | VDD18 | PWM9\_PAD |  |  |  |  | SD\_CDATA\_1\_PAD | SD\_CDATA\_0\_PAD | **W** |
| VSS | VSS | VDD | VDD | VDD | VSS | VDD18 | SPI\_MS3\_CS0N\_PAD | SPI\_MS3\_CS4N\_PAD | I2S\_WS2\_PAD | I2S\_SDI1\_PAD | VSS | SD\_CDATA\_3\_PAD | SD\_CDATA\_2\_PAD | **Y** |
| VDD | VDD | VDD | USB\_DVDD0V9 | USB\_VP0V9 | VSS | VSS | I2S\_CLK2\_PAD | I2S\_SDI2\_PAD | I2S\_SDO2\_PAD | I2S\_WS1\_PAD | I2S\_SDI0\_PAD | I2S\_WS0\_PAD | I2S\_CLK0\_PAD | **AA** |
| VSS | VSS | VSS | USB\_VDDH3V3 | VP\_HDMI | VP3V3\_TERM\_HDMI | HDMI\_RREF |  | I2S\_WS3\_PAD | I2S\_SDI3\_PAD |  |  | I2S\_SDO1\_PAD | I2S\_SDO0\_PAD | **AB** |
| MIPI0\_REXT |  | MIPI2\_REXT | USB\_VDD3V3 |  | VPH\_HDMI | VSS | QE0\_4\_PAD |  | I2S\_SDO3\_PAD | I2S\_CLK3\_PAD | I2S\_CLK1\_PAD | VSYNC1\_PAD | PCLK1\_PAD | **AC** |
| MIPI3\_REXT |  | USB\_ID | USB\_RESREF |  | USB\_OC\_PAD | HDMI\_SCL\_PAD | QE0\_7\_PAD | QE0\_2\_PAD |  | DE0\_PAD | PCLK0\_PAD | QE1\_1\_PAD | DE1\_PAD | **AD** |
| MIPI3\_CLKN |  | MIPI2\_CLKN | USB\_VBUS |  | USB\_PWR\_PAD | HDMI\_SDA\_PAD |  | QE0\_5\_PAD | QE0\_3\_PAD |  | HSYNC0\_PAD | QE1\_3\_PAD | HSYNC1\_PAD | **AE** |
| MIPI3\_CLKP |  | MIPI2\_CLKP | MIPI\_AGND |  | HDMI\_CEC\_PAD | VSS |  | QE0\_6\_PAD | VSS | QE0\_1\_PAD | VSYNC0\_PAD | QE1\_5\_PAD | QE1\_0\_PAD | **AF** |
| MIPI3\_D1P | MIPI3\_D0P | MIPI2\_D1P | MIPI2\_D0P | USB\_DN | USB\_TX0N | USB\_RX0N | HDMI\_RX2N | HDMI\_RX1N | HDMI\_RX0N | HDMI\_RXCN | QE0\_0\_PAD | QE1\_6\_PAD | QE1\_2\_PAD | **AG** |
| MIPI3\_D1N | MIPI3\_D0N | MIPI2\_D1N | MIPI2\_D0N | USB\_DP | USB\_TX0P | USB\_RX0P | HDMI\_RX2P | HDMI\_RX1P | HDMI\_RX0P | HDMI\_RXCP | QE1\_4\_PAD | QE1\_7\_PAD |  | **AH** |
| **15** | **16** | **17** | **18** | **19** | **20** | **21** | **22** | **23** | **24** | **25** | **26** | **27** | **28** |  |

## Pin Order

Total: 684 pins.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pin Number** | **Pin Name** | **Pin Number** | **Pin Name** | **Pin Number** | **Pin Name** | **Pin Number** | **Pin Name** | **Pin Number** | **Pin Name** |
| A10 | DDR\_DQ50 | AE6 | MIPI6\_CLKN | D20 | TYPEC\_TXRX2N | K12 | CA7\_VDD | R24 | SPI\_M2\_DO\_PAD |
| A11 | DDR\_DQS6N | AE8 | MIPI5\_REXT | D21 | AD\_IN\_5 | K13 | CA7\_VDD | R25 | SPI\_M0\_DI\_PAD |
| A12 | DDR\_DQ52 | AE9 | MIPI5\_CLKN | D23 | PDET\_B\_5G | K14 | VDD | R26 | SPI\_M0\_SCLK\_PAD |
| A13 | DDR\_DQ51 | AF1 | GP5\_PAD | D24 | PDET\_B\_2G | K15 | VDD | R27 | GBE\_RXD1\_PAD |
| A14 | DDR\_DQ54 | AF11 | MIPI4\_CLKP | D26 | RSSI\_1 | K16 | VDD | R28 | GBE\_RXD0\_PAD |
| A15 | DDR\_DQ55 | AF12 | MIPI\_AGND | D27 | IADC\_VINP\_B | K17 | VDD | R3 | DDR\_DQ25 |
| A16 | PCIE\_TX1P | AF14 | MIPI\_AGND | D28 | IADC\_VINN\_B | K18 | VDD | R4 | DDR\_DM0 |
| A17 | PCIE\_RX1P | AF15 | MIPI3\_CLKP | D3 | DDR\_CKE0 | K19 | VDD | R5 | VSS |
| A18 | PCIE\_RX0P | AF17 | MIPI2\_CLKP | D5 | DDR\_DTO0 | K2 | DDR\_A5 | R6 | DDR\_DQ24 |
| A19 | PCIE\_TX0P | AF18 | MIPI\_AGND | D6 | DDR\_DQ33 | K20 | AVSS\_PLL | R7 | DDR\_VDDQ |
| A2 | DDR\_DQ40 | AF2 | GP4\_PAD | D8 | DDR\_DQS4N | K21 | AVDD1V8\_PLL | R8 | DDR\_VDDQ |
| A20 | TYPEC\_REXT | AF20 | HDMI\_CEC\_PAD | D9 | DDR\_DQ36 | K22 | EMMC\_PWR\_PAD | R9 | VSS |
| A21 | TYPEC\_CC1 | AF21 | VSS | E1 | DDR\_A12 | K27 | EMMC\_D4\_PAD | T1 | DDR\_DQS2N |
| A22 | TYPEC\_REXT\_CC | AF23 | QE0\_6\_PAD | E11 | VSS | K28 | EMMC\_D5\_PAD | T10 | CEVA\_VDD |
| A23 | XTAL1 | AF24 | VSS | E12 | DDR\_DQ58 | K7 | DDR\_VREFO\_0 | T11 | CEVA\_VDD |
| A24 | QDAC\_OUTN\_A | AF25 | QE0\_1\_PAD | E14 | VSS | K8 | DDR\_VDDQ | T12 | VSS |
| A25 | IDAC\_OUTN\_A | AF26 | VSYNC0\_PAD | E15 | TYPEC\_AUX\_PDPUP | K9 | VSS | T13 | VSS |
| A26 | IADC\_VINN\_A | AF27 | QE1\_5\_PAD | E17 | TYPEC\_TX0N | L1 | DDR\_A4 | T14 | VSS |
| A27 | QADC\_VINN\_A | AF28 | QE1\_0\_PAD | E18 | TYPEC\_TXRX1N | L10 | VDD | T15 | VSS |
| A3 | DDR\_DQ41 | AF3 | GP7\_PAD | E2 | DDR\_A13 | L11 | CA7\_VDD | T16 | VSS |
| A4 | DDR\_DQ43 | AF4 | MIPI\_AGND | E20 | TYPEC\_TX3N | L12 | VSS | T17 | VDD |
| A5 | DDR\_DQS5N | AF5 | MIPI7\_CLKP | E21 | AD\_IN\_6 | L13 | VSS | T18 | VDD |
| A6 | DDR\_DQ44 | AF6 | MIPI6\_CLKP | E22 | AD\_IN\_1 | L14 | VSS | T19 | VSS |
| A7 | DDR\_DM5 | AF8 | MIPI\_AGND | E23 | AD\_IN\_0 | L15 | VSS | T2 | DDR\_DQS2 |
| A8 | DDR\_DQ47 | AF9 | MIPI5\_CLKP | E25 | IADC\_VINP\_C | L16 | VSS | T20 | VSS |
| A9 | DDR\_DQ48 | AG1 | GP6\_PAD | E26 | IADC\_VINN\_C | L17 | VDD | T21 | VDD3\_SD |
| AA1 | DDR\_DQ13 | AG10 | MIPI4\_D0P | E27 | IDAC\_OUTP\_B | L18 | VDD | T22 | PWM5\_PAD |
| AA10 | VSS | AG11 | MIPI1\_D0P | E28 | IDAC\_OUTN\_B | L19 | VSS | T27 | GBE\_RXD3\_PAD |
| AA11 | VSS | AG12 | MIPI1\_D1P | E3 | DDR\_CSN0 | L2 | DDR\_A1 | T28 | GBE\_RXD2\_PAD |
| AA12 | VSS | AG13 | MIPI0\_D1P | E4 | DDR\_CSN1 | L20 | VDD18\_EMMC\_0 | T7 | DDR\_VDDQ |
| AA13 | VDD | AG14 | MIPI0\_D0P | E6 | DDR\_DQ32 | L21 | VDD3\_EMMC | T8 | VSS |
| AA14 | VDD | AG15 | MIPI3\_D1P | E7 | DDR\_DQ35 | L22 | PWM2\_PAD | T9 | VSS |
| AA15 | VDD | AG16 | MIPI3\_D0P | E8 | VSS | L23 | SPI\_M1\_DO\_PAD | U1 | DDR\_DQ19 |
| AA16 | VDD | AG17 | MIPI2\_D1P | E9 | DDR\_DQ38 | L24 | SPI\_M1\_DI\_PAD | U10 | CEVA\_VDD |
| AA17 | VDD | AG18 | MIPI2\_D0P | F1 | DDR\_A10 | L25 | GBE\_MDC\_PAD | U11 | CEVA\_VDD |
| AA18 | USB\_DVDD0V9 | AG19 | USB\_DN | F11 | DDR\_DM4 | L26 | GBE\_TXC\_PAD | U12 | CEVA\_VDD |
| AA19 | USB\_VP0V9 | AG2 | GP1\_PAD | F12 | DDR\_DQ59 | L27 | EMMC\_D7\_PAD | U13 | CEVA\_VDD |
| AA2 | VSS | AG20 | USB\_TX0N | F14 | DDR\_DQ62 | L28 | EMMC\_D6\_PAD | U14 | CEVA\_VDD |
| AA20 | VSS | AG21 | USB\_RX0N | F15 | DDR\_DM7 | L3 | DDR\_DQ30 | U15 | VDD |
| AA21 | VSS | AG22 | HDMI\_RX2N | F17 | VSS | L4 | DDR\_DQ31 | U16 | VDD |
| AA22 | I2S\_CLK2\_PAD | AG23 | HDMI\_RX1N | F18 | TYPEC\_TXRX1P | L5 | DDR\_DM3 | U17 | VDD |
| AA23 | I2S\_SDI2\_PAD | AG24 | HDMI\_RX0N | F2 | VSS | L6 | DDR\_ZQ | U18 | VDD |
| AA24 | I2S\_SDO2\_PAD | AG25 | HDMI\_RXCN | F20 | TYPEC\_TX3P | L7 | DDR\_VDDQ | U19 | VDD |
| AA25 | I2S\_WS1\_PAD | AG26 | QE0\_0\_PAD | F21 | AD\_IN\_4 | L8 | DDR\_VDDQ | U2 | DDR\_DQ17 |
| AA26 | I2S\_SDI0\_PAD | AG27 | QE1\_6\_PAD | F22 | I2C\_SCLK4\_PAD | L9 | VSS | U20 | VSS |
| AA27 | I2S\_WS0\_PAD | AG28 | QE1\_2\_PAD | F24 | I2C\_SDA3\_PAD | M1 | DDR\_A0 | U21 | VSS |
| AA28 | I2S\_CLK0\_PAD | AG3 | MIPI7\_D1P | F25 | QADC\_VINP\_C | M10 | VDD | U22 | PWM6\_PAD |
| AA3 | DDR\_DQ4 | AG4 | MIPI7\_D0P | F26 | QADC\_VINN\_C | M11 | CA7\_VDD | U23 | PWM7\_PAD |
| AA4 | DDR\_DQ3 | AG5 | MIPI6\_D1P | F27 | QDAC\_OUTP\_B | M12 | VSS | U24 | SPI\_MS3\_DI\_PAD |
| AA5 | VSS | AG6 | MIPI6\_D0P | F28 | QDAC\_OUTN\_B | M13 | VSS | U25 | SPI\_M0\_DO\_PAD |
| AA6 | UART\_TX1\_PAD | AG7 | MIPI5\_D1P | F3 | DDR\_BG1 | M14 | VSS | U26 | SPI\_MS3\_SCLK\_PAD |
| AA7 | UART\_RX1\_PAD | AG8 | MIPI5\_D0P | F4 | DDR\_BG0 | M15 | VSS | U27 | SD\_CCMD\_PAD |
| AA8 | VSS | AG9 | MIPI4\_D1P | F5 | VSS | M16 | VSS | U28 | SD\_CCLK\_OUT\_PAD |
| AA9 | VSS | AH10 | MIPI4\_D0N | F7 | DDR\_DTO1 | M17 | VDD | U3 | DDR\_DQ7 |
| AB1 | DDR\_DQ12 | AH11 | MIPI1\_D0N | F8 | DDR\_PLL\_VDD | M18 | VDD | U4 | DDR\_DQ5 |
| AB10 | VSS | AH12 | MIPI1\_D1N | F9 | DDR\_DQ37 | M19 | VSS | U5 | DDR\_DQ0 |
| AB11 | MIPI\_AVDD1V8 | AH13 | MIPI0\_D1N | G1 | DDR\_A11 | M2 | VSS | U6 | DDR\_VDDQ |
| AB12 | MIPI\_AVDD1V8 | AH14 | MIPI0\_D0N | G10 | DDR\_VDDQ | M20 | VDD18\_EMMC\_1 | U7 | DDR\_VDDQ |
| AB13 | CEVA\_AVDD1V8 | AH15 | MIPI3\_D1N | G11 | DDR\_VDDQ | M21 | VDD33\_RGM | U8 | VSS |
| AB14 | CEVA\_AVSS1V8 | AH16 | MIPI3\_D0N | G12 | VSS | M22 | PWM3\_PAD | U9 | VSS |
| AB15 | VSS | AH17 | MIPI2\_D1N | G13 | VSS | M23 | SPI\_M1\_SCLK\_PAD | V1 | DDR\_DQ16 |
| AB16 | VSS | AH18 | MIPI2\_D0N | G14 | PCIE\_VP | M24 | SPI\_M1\_CSN\_PAD | V10 | CEVA\_VDD |
| AB17 | VSS | AH19 | USB\_DP | G15 | PCIE\_VPH | M25 | GBE\_MDIO\_PAD | V11 | CEVA\_VDD |
| AB18 | USB\_VDDH3V3 | AH2 | GP3\_PAD | G16 | PCIE\_RESREF | M26 | GBE\_TXEN\_PAD | V12 | CEVA\_VDD |
| AB19 | VP\_HDMI | AH20 | USB\_TX0P | G17 | TYPEC\_AVDD\_VH\_3V3 | M27 | GBE\_TXD1\_PAD | V13 | CEVA\_VDD |
| AB2 | DDR\_DQ11 | AH21 | USB\_RX0P | G18 | TYPEC\_AVDD\_H\_1V8 | M28 | GBE\_TXD0\_PAD | V14 | CEVA\_VDD |
| AB20 | VP3V3\_TERM\_HDMI | AH22 | HDMI\_RX2P | G19 | AVDD1V8\_OSC | M3 | DDR\_DQ28 | V15 | VDD |
| AB21 | HDMI\_RREF | AH23 | HDMI\_RX1P | G2 | DDR\_A9 | M4 | DDR\_DQ29 | V16 | VDD |
| AB23 | I2S\_WS3\_PAD | AH24 | HDMI\_RX0P | G20 | AVSS\_OSC | M5 | VSS | V17 | VDD |
| AB24 | I2S\_SDI3\_PAD | AH25 | HDMI\_RXCP | G21 | AD\_IN\_7 | M6 | DDR\_VREFI\_ZQ | V18 | VDD |
| AB27 | I2S\_SDO1\_PAD | AH26 | QE1\_4\_PAD | G23 | GBE\_RST\_PAD | M7 | DDR\_VREFO\_1 | V19 | VDD |
| AB28 | I2S\_SDO0\_PAD | AH27 | QE1\_7\_PAD | G24 | I2C\_SDA4\_PAD | M8 | DDR\_VDDQ | V2 | VSS |
| AB5 | UART\_RX2\_PAD | AH3 | MIPI7\_D1N | G27 | IADC\_VINP\_D | M9 | VSS | V20 | VSS |
| AB6 | UART\_TX2\_PAD | AH4 | MIPI7\_D0N | G28 | IADC\_VINN\_D | N1 | DDR\_DQ23 | V21 | VDD18 |
| AB8 | TEST\_MODE\_EN\_PAD | AH5 | MIPI6\_D1N | G5 | DDR\_ODT0 | N10 | VDD | V22 | PWM8\_PAD |
| AB9 | VSS | AH6 | MIPI6\_D0N | G6 | DDR\_ALERTN | N11 | VDD | V23 | SPI\_MS3\_DO\_PAD |
| AC1 | DDR\_DQS1N | AH7 | MIPI5\_D1N | G8 | DDR\_PLL\_VDD | N12 | VDD | V24 | SPI\_MS3\_CS1N\_PAD |
| AC11 | MIPI\_AGND | AH8 | MIPI5\_D0N | G9 | DDR\_VDDQ | N13 | VDD | V25 | SPI\_MS3\_CS3N\_PAD |
| AC12 | MIPI1\_REXT | AH9 | MIPI4\_D1N | H1 | DDR\_A7 | N14 | VDD | V26 | SPI\_MS3\_CS2N\_PAD |
| AC14 | MIPI\_AGND | B1 | DDR\_CK | H10 | VSS | N15 | VDD | V27 | SD\_CARD\_WPRT\_PAD |
| AC15 | MIPI0\_REXT | B10 | DDR\_DQ49 | H11 | VSS | N16 | VDD | V28 | SD\_CARD\_DETECT\_N\_PAD |
| AC17 | MIPI2\_REXT | B11 | DDR\_DQS6 | H12 | DDR\_AVSS1V8 | N17 | VDD | V3 | DDR\_DQ6 |
| AC18 | USB\_VDD3V3 | B12 | VSS | H13 | DDR\_AVDD18 | N18 | VDD | V4 | DDR\_DQ1 |
| AC2 | DDR\_DQS1 | B13 | DDR\_DQ53 | H14 | CA7\_AVDD1V8 | N19 | VDD | V5 | VSS |
| AC20 | VPH\_HDMI | B14 | DDR\_DM6 | H15 | VSS | N2 | DDR\_DM2 | V6 | UART\_RX3\_PAD |
| AC21 | VSS | B15 | VSS | H16 | PCIE\_VPTX | N20 | VSS | V7 | VDD18\_R |
| AC22 | QE0\_4\_PAD | B16 | PCIE\_TX1N | H17 | TYPEC\_AVDD | N21 | VDD33\_RGM | V8 | VSS |
| AC24 | I2S\_SDO3\_PAD | B17 | PCIE\_RX1N | H18 | TYPEC\_AVDD\_CLK | N22 | PWM4\_PAD | V9 | VSS |
| AC25 | I2S\_CLK3\_PAD | B18 | PCIE\_RX0N | H19 | VSS | N27 | GBE\_TXD2\_PAD | W1 | DDR\_DQ18 |
| AC26 | I2S\_CLK1\_PAD | B19 | PCIE\_TX0N | H2 | DDR\_A6 | N28 | GBE\_TXD3\_PAD | W10 | CEVA\_VDD |
| AC27 | VSYNC1\_PAD | B2 | DDR\_CKN | H20 | AVSS\_A | N7 | DDR\_VDDQ | W11 | CEVA\_VDD |
| AC28 | PCLK1\_PAD | B20 | TYPEC\_VBUS | H21 | AVSS\_A | N8 | VSS | W12 | VSS |
| AC3 | I2C\_SCLK2\_PAD | B21 | TYPEC\_CC2 | H22 | PWM0\_PAD | N9 | VSS | W13 | VSS |
| AC4 | I2C\_SCLK1\_PAD | B22 | CLKREF\_SEL\_PAD | H23 | GBE\_INT\_PAD | P1 | DDR\_DQ21 | W14 | VSS |
| AC5 | I2C\_SDA2\_PAD | B23 | XTAL2 | H24 | I2C\_SCLK3\_PAD | P10 | VDD | W15 | VSS |
| AC7 | UART\_RX0\_PAD | B24 | QDAC\_OUTP\_A | H25 | EMMC\_D0\_PAD | P11 | VDD | W16 | VSS |
| AC8 | RSTN\_PAD | B25 | IDAC\_OUTP\_A | H26 | EMMC\_D1\_PAD | P12 | VDD | W17 | VDD |
| AC9 | MIPI\_AGND | B26 | IADC\_VINP\_A | H27 | QADC\_VINP\_D | P13 | VDD | W18 | VDD |
| AD1 | DDR\_DQ10 | B27 | QADC\_VINP\_A | H28 | QADC\_VINN\_D | P14 | VDD | W19 | VSS |
| AD11 | MIPI4\_REXT | B28 | AD\_IN\_2 | H3 | DDR\_BA0 | P15 | VDD | W2 | DDR\_DQ15 |
| AD12 | MIPI1\_CLKP | B3 | VSS | H4 | DDR\_PARITY | P16 | VDD | W20 | VSS |
| AD14 | MIPI0\_CLKP | B4 | DDR\_DQ42 | H5 | DDR\_ODT1 | P17 | VDD | W21 | VDD18 |
| AD15 | MIPI3\_REXT | B5 | DDR\_DQS5 | H6 | DDR\_VREFI | P18 | VDD | W22 | PWM9\_PAD |
| AD17 | USB\_ID | B6 | VSS | H7 | DDR\_VDDQ | P19 | VDD | W27 | SD\_CDATA\_1\_PAD |
| AD18 | USB\_RESREF | B7 | DDR\_DQ45 | H8 | DDR\_VDDQ | P2 | DDR\_DQ22 | W28 | SD\_CDATA\_0\_PAD |
| AD2 | VSS | B8 | DDR\_DQ46 | H9 | VSS | P20 | VSS | W7 | UART\_TX3\_PAD |
| AD20 | USB\_OC\_PAD | B9 | VSS | J1 | DDR\_A2 | P21 | VSS | W8 | VSS |
| AD21 | HDMI\_SCL\_PAD | C1 | DDR\_A17 | J10 | VSS | P22 | UART\_SIN4\_PAD | W9 | CEVA\_VDD |
| AD22 | QE0\_7\_PAD | C11 | DDR\_DQ57 | J11 | VSS | P23 | SPI\_M2\_CS0N\_PAD | Y1 | DDR\_DM1 |
| AD23 | QE0\_2\_PAD | C12 | DDR\_DQS7N | J12 | VSS | P24 | SPI\_M2\_DI\_PAD | Y10 | CEVA\_VDD |
| AD25 | DE0\_PAD | C14 | DDR\_DQ61 | J13 | CA7\_AVSS1V8 | P25 | SPI\_M0\_CSN\_PAD | Y11 | CEVA\_VDD |
| AD26 | PCLK0\_PAD | C15 | DDR\_DQ63 | J14 | OTP\_VDDIO1V8 | P26 | VSS | Y12 | VSS |
| AD27 | QE1\_1\_PAD | C17 | TYPEC\_AUXP | J15 | VSS | P27 | GBE\_RXEN\_PAD | Y13 | VSS |
| AD28 | DE1\_PAD | C18 | VSS | J16 | VSS | P28 | GBE\_RXC\_PAD | Y14 | VSS |
| AD3 | I2C\_SCLK0\_PAD | C2 | DDR\_A16 | J17 | VSS | P3 | DDR\_DQS3N | Y15 | VSS |
| AD4 | I2C\_SDA1\_PAD | C20 | TYPEC\_TXRX2P | J18 | TYPEC\_AVDD | P4 | DDR\_DQS3 | Y16 | VSS |
| AD6 | GP0\_PAD | C21 | VSS | J19 | VSS | P5 | DDR\_DQ27 | Y17 | VDD |
| AD7 | GP2\_PAD | C23 | RSSI\_2 | J2 | VSS | P6 | DDR\_DQ26 | Y18 | VDD |
| AD8 | MIPI7\_REXT | C24 | PDET\_A\_5G | J20 | AVDD1V8\_A | P7 | DDR\_VDDQ | Y19 | VDD |
| AD9 | MIPI6\_REXT | C25 | PDET\_A\_2G | J21 | AVDD1V8\_A | P8 | VSS | Y2 | DDR\_DQ14 |
| AE1 | DDR\_DQ9 | C26 | AD\_IN\_3 | J22 | PWM1\_PAD | P9 | VSS | Y20 | VSS |
| AE11 | MIPI4\_CLKN | C27 | QADC\_VINP\_B | J23 | GBE\_CLK\_PAD | R1 | DDR\_DQ20 | Y21 | VDD18 |
| AE12 | MIPI1\_CLKN | C28 | QADC\_VINN\_B | J24 | VSS | R10 | VDD | Y22 | SPI\_MS3\_CS0N\_PAD |
| AE14 | MIPI0\_CLKN | C3 | DDR\_CKE1 | J25 | EMMC\_D2\_PAD | R11 | CEVA\_VDD | Y23 | SPI\_MS3\_CS4N\_PAD |
| AE15 | MIPI3\_CLKN | C4 | DDR\_RAM\_RSTN | J26 | EMMC\_D3\_PAD | R12 | VSS | Y24 | I2S\_WS2\_PAD |
| AE17 | MIPI2\_CLKN | C5 | DDR\_ATO | J27 | EMMC\_CCMD\_PAD | R13 | VSS | Y25 | I2S\_SDI1\_PAD |
| AE18 | USB\_VBUS | C6 | DDR\_DQ34 | J28 | EMMC\_CLKOUT\_PAD | R14 | VSS | Y26 | VSS |
| AE2 | DDR\_DQ8 | C8 | DDR\_DQS4 | J3 | DDR\_A8 | R15 | VSS | Y27 | SD\_CDATA\_3\_PAD |
| AE20 | USB\_PWR\_PAD | C9 | DDR\_DQ39 | J4 | DDR\_BA1 | R16 | VSS | Y28 | SD\_CDATA\_2\_PAD |
| AE21 | HDMI\_SDA\_PAD | D1 | DDR\_A14 | J5 | VSS | R17 | VDD | Y3 | DDR\_DQS0N |
| AE23 | QE0\_5\_PAD | D11 | DDR\_DQ56 | J6 | DDR\_ACTN | R18 | VDD | Y4 | DDR\_DQS0 |
| AE24 | QE0\_3\_PAD | D12 | DDR\_DQS7 | J7 | DDR\_VDDQ | R19 | VSS | Y5 | DDR\_DQ2 |
| AE26 | HSYNC0\_PAD | D14 | DDR\_DQ60 | J8 | DDR\_VDDQ | R2 | VSS | Y6 | UART\_TX0\_PAD |
| AE27 | QE1\_3\_PAD | D15 | TYPEC\_AUX\_PUPDN | J9 | VSS | R20 | VDD18\_SD\_1 | Y7 | VSS |
| AE28 | HSYNC1\_PAD | D17 | TYPEC\_TX0P | K1 | DDR\_A3 | R21 | VDD18\_SD\_0 | Y8 | VSS |
| AE3 | I2C\_SDA0\_PAD | D18 | TYPEC\_AUXN | K10 | VDD | R22 | UART\_SOUT4\_PAD | Y9 | CEVA\_VDD |
| AE5 | MIPI7\_CLKN | D2 | DDR\_A15 | K11 | CA7\_VDD | R23 | SPI\_M2\_SCLK\_PAD |  |  |

## Pin Descriptions

## System/GPIO interface (10)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin No.** | **Name** | **Pin Direction** | **Reset** | **IO Type** | **Description** |
| AC8 | RSTN | in | N/A | 1.8v digital IO | RSTN |
| AB8 | TEST\_MODE\_EN | in | N/A | 1.8v digital IO | TEST\_MODE\_EN |
| AD6 | GP0 | inout | PD | 1.8v digital IO | JTAG\_TRSTN/WTD\_0/GPIO\_A0\_0 |
| AG2 | GP1 | inout | PU | 1.8v digital IO | GPIO\_A0\_1/PCIE\_PERST\_DET |
| AD7 | GP2 | inout | PU | 1.8v digital IO | GPIO\_A0\_2/HDMI\_HP |
| AH2 | GP3 | inout | PU | 1.8v digital IO | GPIO\_A0\_3/UART\_SIN5/SPI\_M2\_CS1N |
| AF2 | GP4 | inout | PU | 1.8v digital IO | GPIO\_A0\_4/UART\_SOUT5/SPI\_M2\_CS2N/BB\_SPI\_DO\_A |
| AF1 | GP5 | inout | PU | 1.8v digital IO | GPIO\_A0\_5/WTD\_1/BB\_SPI\_ENB\_A |
| AG1 | GP6 | inout | PU | 1.8v digital IO | GPIO\_A0\_6/UART\_SIN1/SPI\_M2\_CS3N/I2C\_SDA4/BB\_SPI\_DI\_A |
| AF3 | GP7 | inout | PU | 1.8v digital IO | GPIO\_A0\_7/UART\_SOUT1/SPI\_M2\_CS4N/I2C\_SCLK4/BB\_SPI\_CLK\_A |

**Share function**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Name** | **Function\_0** | **Function\_1** | **Function\_2** | **Function\_3** | **Function\_4** | **Function\_5** |
| GP0 | JTAG\_TRSTN | WTD\_0 |  |  | GPIO\_A0\_0 | ATE\_TEST\_IN\_16 |
| GP1 | GPIO\_A0\_1 | PCIE\_PERST\_DET |  |  |  | ATE\_TEST\_IN\_17 |
| GP2 | GPIO\_A0\_2 | HDMI\_HP |  |  |  | ATE\_TEST\_IN\_18 |
| GP3 | GPIO\_A0\_3 | UART\_SIN5 | SPI\_M2\_CS1N |  |  | ATE\_TEST\_IN\_19 |
| GP4 | GPIO\_A0\_4 | UART\_SOUT5 | SPI\_M2\_CS2N |  | BB\_SPI\_DO\_A | ATE\_TEST\_IN\_20 |
| GP5 | GPIO\_A0\_5 | WTD\_1 |  |  | BB\_SPI\_ENB\_A | ATE\_TEST\_IN\_21 |
| GP6 | GPIO\_A0\_6 | UART\_SIN1 | SPI\_M2\_CS3N | I2C\_SDA4 | BB\_SPI\_DI\_A | ATE\_TEST\_IN\_22 |
| GP7 | GPIO\_A0\_7 | UART\_SOUT1 | SPI\_M2\_CS4N | I2C\_SCLK4 | BB\_SPI\_CLK\_A | ATE\_TEST\_IN\_23 |

## SPI Interface (20)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin No.** | **Name** | **Pin Direction** | **Reset** | **IO Type** | **Description** |
| P25 | SPI\_M0\_DI | INOUT | PU | 1.8v digital IO | SPI\_M0\_DI/GPIO\_C0\_0 |
| R25 | SPI\_M0\_DO | INOUT | N/A | 1.8v digital IO | SPI\_M0\_DO/GPIO\_C0\_1 |
| U25 | SPI\_M0\_SCLK | INOUT | N/A | 1.8v digital IO | SPI\_M0\_SCLK/GPIO\_C0\_2 |
| R26 | SPI\_M0\_CSN | INOUT | N/A | 1.8v digital IO | SPI\_M0\_CSN/GPIO\_C0\_3 |
| M24 | SPI\_M1\_DI | INOUT | PU | 1.8v digital IO | SPI\_M1\_DI/GPIO\_C0\_4/CAN\_RXD2 |
| L24 | SPI\_M1\_DO | INOUT | PU | 1.8v digital IO | SPI\_M1\_DO/GPIO\_C0\_5/CAN\_TXD2 |
| L23 | SPI\_M1\_SCLK | INOUT | PU | 1.8v digital IO | SPI\_M1\_SCLK/GPIO\_C0\_6/CAN\_RXD3/TEST\_JTAG\_RTCK |
| M23 | SPI\_M1\_CSN | INOUT | PU | 1.8v digital IO | SPI\_M1\_CSN/GPIO\_C0\_7/CAN\_TXD3/TEST\_JTAG\_TRSTN |
| P23 | SPI\_M2\_DI | INOUT | PU | 1.8v digital IO | SPI\_M2\_DI/GPIO\_D0\_0/BB\_ANT\_SW\_SEL/TEST\_JTAG\_TDI |
| P24 | SPI\_M2\_DO | INOUT | PU | 1.8v digital IO | SPI\_M2\_DO/GPIO\_D0\_1/BB\_ANT\_SW\_SEL\_N/TEST\_JTAG\_TDO |
| R24 | SPI\_M2\_SCLK | INOUT | PD | 1.8v digital IO | SPI\_M2\_SCLK/GPIO\_D0\_2/BS\_SEL/TEST\_JTAG\_TCK |
| R23 | SPI\_M2\_CS0N | INOUT | PU | 1.8v digital IO | SPI\_M2\_CS0N/GPIO\_D0\_3/BS\_SEL\_N/TEST\_JTAG\_TMS |
| Y22 | SPI\_MS3\_DI | INOUT | PU | 1.8v digital IO | SPI\_DBG\_DI/GPIO\_A1\_0/SPI\_M3\_DI/CAN\_RXD0/SPI\_S0\_DI |
| V24 | SPI\_MS3\_DO | INOUT | N/A | 1.8v digital IO | SPI\_DBG\_DO/GPIO\_A1\_1/SPI\_M3\_DO/CAN\_TXD0/SPI\_S0\_DO |
| V26 | SPI\_MS3\_SCLK | INOUT | PU | 1.8v digital IO | SPI\_DBG\_CLK/GPIO\_A1\_2/SPI\_M3\_SCLK/CAN\_RXD1/SPI\_S0\_SCK |
| V25 | SPI\_MS3\_CS0N | INOUT | PU | 1.8v digital IO | SPI\_DBG\_CSN/GPIO\_A1\_3/SPI\_M3\_CS0N/CAN\_TXD1/SPI\_S0\_CSN |
| Y23 | SPI\_MS3\_CS1N | INOUT | PU | 1.8v digital IO | BB\_DEBUG\_MOSI/GPIO\_A1\_4/SPI\_M3\_CS1N/CAN\_STBY0/SPI\_S1\_DI |
| U24 | SPI\_MS3\_CS2N | INOUT | N/A | 1.8v digital IO | BB\_DEBUG\_MISO/GPIO\_A1\_5/SPI\_M3\_CS2N/CAN\_STBY1/SPI\_S1\_DO |
| V23 | SPI\_MS3\_CS3N | INOUT | PU | 1.8v digital IO | BB\_DEBUG\_SCK/GPIO\_A1\_6/SPI\_M3\_CS3N/CAN\_STBY2/SPI\_S1\_SCK |
| U26 | SPI\_MS3\_CS4N | INOUT | PU | 1.8v digital IO | BB\_DEBUG\_CSN/GPIO\_A1\_7/SPI\_M3\_CS4N/CAN\_STBY3/SPI\_S1\_CSN |

**Share function**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | **Function\_0** | **Function\_1** | **Function\_2** | **Function\_3** | **Function\_4** |
| SPI\_M0\_DI | SPI\_M0\_DI | GPIO\_C0\_0 |  |  |  |
| SPI\_M0\_DO | SPI\_M0\_DO | GPIO\_C0\_1 |  |  |  |
| SPI\_M0\_SCLK | SPI\_M0\_SCLK | GPIO\_C0\_2 |  |  |  |
| SPI\_M0\_CSN | SPI\_M0\_CSN | GPIO\_C0\_3 |  |  |  |
| SPI\_M1\_DI | SPI\_M1\_DI | GPIO\_C0\_4 | CAN\_RXD2 |  |  |
| SPI\_M1\_DO | SPI\_M1\_DO | GPIO\_C0\_5 | CAN\_TXD2 |  |  |
| SPI\_M1\_SCLK | SPI\_M1\_SCLK | GPIO\_C0\_6 | CAN\_RXD3 | TEST\_JTAG\_RTCK |  |
| SPI\_M1\_CSN | SPI\_M1\_CSN | GPIO\_C0\_7 | CAN\_TXD3 | TEST\_JTAG\_TRSTN |  |
| SPI\_M2\_DI | SPI\_M2\_DI | GPIO\_D0\_0 | BB\_ANT\_SW\_SEL | TEST\_JTAG\_TDI |  |
| SPI\_M2\_DO | SPI\_M2\_DO | GPIO\_D0\_1 | BB\_ANT\_SW\_SEL\_N | TEST\_JTAG\_TDO |  |
| SPI\_M2\_SCLK | SPI\_M2\_SCLK | GPIO\_D0\_2 | BS\_SEL | TEST\_JTAG\_TCK |  |
| SPI\_M2\_CS0N | SPI\_M2\_CS0N | GPIO\_D0\_3 | BS\_SEL\_N | TEST\_JTAG\_TMS |  |
| SPI\_MS3\_DI | SPI\_DBG\_DI | GPIO\_A1\_0 | SPI\_M3\_DI | CAN\_RXD0 | SPI\_S0\_DI |
| SPI\_MS3\_DO | SPI\_DBG\_DO | GPIO\_A1\_1 | SPI\_M3\_DO | CAN\_TXD0 | SPI\_S0\_DO |
| SPI\_MS3\_SCLK | SPI\_DBG\_CLK | GPIO\_A1\_2 | SPI\_M3\_SCLK | CAN\_RXD1 | SPI\_S0\_SCK |
| SPI\_MS3\_CS0N | SPI\_DBG\_CSN | GPIO\_A1\_3 | SPI\_M3\_CS0N | CAN\_TXD1 | SPI\_S0\_CSN |
| SPI\_MS3\_CS1N | BB\_DEBUG\_MOSI | GPIO\_A1\_4 | SPI\_M3\_CS1N | CAN\_STBY0 | SPI\_S1\_DI |
| SPI\_MS3\_CS2N | BB\_DEBUG\_MISO | GPIO\_A1\_5 | SPI\_M3\_CS2N | CAN\_STBY1 | SPI\_S1\_DO |
| SPI\_MS3\_CS3N | BB\_DEBUG\_SCK | GPIO\_A1\_6 | SPI\_M3\_CS3N | CAN\_STBY2 | SPI\_S1\_SCK |
| SPI\_MS3\_CS4N | BB\_DEBUG\_CSN | GPIO\_A1\_7 | SPI\_M3\_CS4N | CAN\_STBY3 | SPI\_S1\_CSN |

## I2C Interface (10)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin No.** | **Name** | **Pin Direction** | **Reset** | **IO Type** | **Description** |
| AD3 | I2C\_SDA0 | INOUT | PU | 1.8v digital IO | I2C\_SDA0/GPIO\_B1\_0 |
| AE3 | I2C\_SCLK0 | INOUT | PU | 1.8v digital IO | I2C\_SCLK0/GPIO\_B1\_1 |
| AC4 | I2C\_SDA1 | INOUT | PU | 1.8v digital IO | I2C\_SDA1/GPIO\_B1\_2 |
| AD4 | I2C\_SCLK1 | INOUT | PU | 1.8v digital IO | I2C\_SCLK1/GPIO\_B1\_3 |
| AC3 | I2C\_SDA2 | INOUT | PU | 1.8v digital IO | I2C\_SDA2/GPIO\_B1\_4 |
| AC5 | I2C\_SCLK2 | INOUT | PU | 1.8v digital IO | I2C\_SCLK2/GPIO\_B1\_5 |
| H24 | I2C\_SDA3 | INOUT | PU | 1.8v digital IO | I2C\_SDA3/GPIO\_B1\_6/BB\_SPI\_ENB\_B |
| F24 | I2C\_SCLK3 | INOUT | PU | 1.8v digital IO | I2C\_SCLK3/GPIO\_B1\_7/BB\_SPI\_CLK\_B |
| F22 | I2C\_SDA4 | INOUT | PD | 1.8v digital IO | JTAG\_TMS/GPIO\_D0\_4/BB\_SPI\_DI\_B/I2C\_SDA4 |
| G24 | I2C\_SCLK4 | INOUT | PD | 1.8v digital IO | JTAG\_TCK/GPIO\_D0\_5/BB\_SPI\_DO\_B/I2C\_SCLK4 |

**Share function**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Function\_0** | **Function\_1** | **Function\_2** | **Function\_3** |
| I2C\_SDA0 | I2C\_SDA0 | GPIO\_B1\_0 |  |  |
| I2C\_SCLK0 | I2C\_SCLK0 | GPIO\_B1\_1 |  |  |
| I2C\_SDA1 | I2C\_SDA1 | GPIO\_B1\_2 |  |  |
| I2C\_SCLK1 | I2C\_SCLK1 | GPIO\_B1\_3 |  |  |
| I2C\_SDA2 | I2C\_SDA2 | GPIO\_B1\_4 |  |  |
| I2C\_SCLK2 | I2C\_SCLK2 | GPIO\_B1\_5 |  |  |
| I2C\_SDA3 | I2C\_SDA3 | GPIO\_B1\_6 | BB\_SPI\_ENB\_B |  |
| I2C\_SCLK3 | I2C\_SCLK3 | GPIO\_B1\_7 | BB\_SPI\_CLK\_B |  |
| I2C\_SDA4 | JTAG\_TMS | GPIO\_D0\_4 | BB\_SPI\_DI\_B | I2C\_SDA4 |
| I2C\_SCLK4 | JTAG\_TCK | GPIO\_D0\_5 | BB\_SPI\_DO\_B | I2C\_SCLK4 |

## UART Interface (10)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin No.** | **Name** | **Pin Direction** | **Reset** | **IO Type** | **Description** |
| AC7 | UART\_RX0 | INOUT | PU | 1.8v digital IO | SEC\_UART\_SIN/GPIO\_C1\_0/UART\_SIN0 |
| Y6 | UART\_TX0 | INOUT | N/A | 1.8v digital IO | SEC\_UART\_SOUT/GPIO\_C1\_1/UART\_SOUT0 |
| AA7 | UART\_RX1 | INOUT | PU | 1.8v digital IO | TROOT\_RXD/GPIO\_C1\_2/CAN\_RXD0/UART\_SIN1 |
| AA6 | UART\_TX1 | INOUT | N/A | 1.8v digital IO | TROOT\_TXD/GPIO\_C1\_3/CAN\_TXD0/UART\_SOUT1 |
| AB5 | UART\_RX2 | INOUT | PU | 1.8v digital IO | UART\_SIN2/GPIO\_C1\_4/CAN\_RXD1 |
| AB6 | UART\_TX2 | INOUT | PU | 1.8v digital IO | UART\_SOUT2/GPIO\_C1\_5/CAN\_TXD1 |
| V6 | UART\_RX3 | INOUT | PU | 1.8v digital IO | UART\_SIN3/GPIO\_C1\_6/CAN\_RXD2 |
| W7 | UART\_TX3 | INOUT | PU | 1.8v digital IO | UART\_SOUT3/GPIO\_C1\_7/CAN\_TXD2/CEVA\_UART\_TX |
| P22 | UART\_SIN4 | INOUT | PD | 1.8v digital IO | JTAG\_TDI/GPIO\_D0\_6/CAN\_RXD3/BB\_PA\_ON\_2G/UART\_SIN4/UART\_CTS\_N1 |
| R22 | UART\_SOUT4 | INOUT | N/A | 1.8v digital IO | JTAG\_TDO/GPIO\_D0\_7/CAN\_TXD3/BB\_PA\_ON\_5G/UART\_SOUT4/UART\_RTS\_N1 |

**Share function**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Name** | **Function\_0** | **Function\_1** | **Function\_2** | **Function\_3** | **Function\_4** | **Function\_5** |
| UART\_RX0 | SEC\_UART\_SIN | GPIO\_C1\_0 | UART\_SIN0 |  |  |  |
| UART\_TX0 | SEC\_UART\_SOUT | GPIO\_C1\_1 | UART\_SOUT0 |  |  |  |
| UART\_RX1 | TROOT\_RXD | GPIO\_C1\_2 | CAN\_RXD0 | UART\_SIN1 |  |  |
| UART\_TX1 | TROOT\_TXD | GPIO\_C1\_3 | CAN\_TXD0 | UART\_SOUT1 |  |  |
| UART\_RX2 | UART\_SIN2 | GPIO\_C1\_4 | CAN\_RXD1 | ATE\_TEST\_IN\_24 |  |  |
| UART\_TX2 | UART\_SOUT2 | GPIO\_C1\_5 | CAN\_TXD1 | ATE\_TEST\_IN\_25 |  |  |
| UART\_RX3 | UART\_SIN3 | GPIO\_C1\_6 | CAN\_RXD2 | ATE\_TEST\_IN\_26 |  |  |
| UART\_TX3 | UART\_SOUT3 | GPIO\_C1\_7 | CAN\_TXD2 | CEVA\_UART\_TX |  |  |
| UART\_SIN4 | JTAG\_TDI | GPIO\_D0\_6 | CAN\_RXD3 | BB\_PA\_ON\_2G | UART\_SIN4 | UART\_CTS\_N1 |
| UART\_SOUT4 | JTAG\_TDO | GPIO\_D0\_7 | CAN\_TXD3 | BB\_PA\_ON\_5G | UART\_SOUT4 | UART\_RTS\_N1 |

## PWM Interface (10)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin No.** | **Name** | **Pin Direction** | **Reset** | **IO Type** | **Description** |
| H22 | PWM0 | OUT | N/A | 1.8v digital IO | PWM0/GPIO\_D1\_0 |
| J22 | PWM1 | OUT | N/A | 1.8v digital IO | PWM1/GPIO\_D1\_1/TRACE\_DATA\_7 |
| L22 | PWM2 | INOUT | PU | 1.8v digital IO | PWM2/GPIO\_D1\_2/UART\_SIN5/SPI\_M2\_DI/TRACE\_DATA\_6 |
| M22 | PWM3 | OUT | N/A | 1.8v digital IO | PWM3/GPIO\_D1\_3/UART\_SOUT5/SPI\_M2\_DO/TRACE\_DATA\_5 |
| N22 | PWM4 | INOUT | PU | 1.8v digital IO | PWM4/GPIO\_D1\_4/UART\_SIN6/SPI\_M2\_SCLK/TRACE\_DATA\_4/BB\_PA\_ON\_2G\_1 |
| T22 | PWM5 | INOUT | PU | 1.8v digital IO | PWM5/GPIO\_D1\_5/UART\_SOUT6/SPI\_M2\_CS0N/TRACE\_DATA\_3/BB\_PA\_ON\_5G\_1 |
| U22 | PWM6 | INOUT | PU | 1.8v digital IO | PWM6/GPIO\_D1\_6/UART\_SIN7/SPI\_M2\_CS1N/TRACE\_DATA\_2/CAN\_TCLK0 |
| U23 | PWM7 | INOUT | PU | 1.8v digital IO | PWM7/GPIO\_D1\_7/UART\_SOUT7/SPI\_M2\_CS2N/TRACE\_DATA\_1/CAN\_TCLK1 |
| V22 | PWM8 | INOUT | PU | 1.8v digital IO | PWM8/GPIO\_A2\_0/UART\_SIN8/SPI\_M2\_CS3N/TRACE\_DATA\_0/CAN\_TCLK2 |
| W22 | PWM9 | INOUT | PU | 1.8v digital IO | PWM9/GPIO\_A2\_1/UART\_SOUT8/SPI\_M2\_CS4N/TRACE\_CLK/CAN\_TCLK3 |

**Share function**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Name** | **Function\_0** | **Function\_1** | **Function\_2** | **Function\_3** | **Function\_4** | **Function\_5** |
| PWM0 | PWM0 | GPIO\_D1\_0 |  |  |  |  |
| PWM1 | PWM1 | GPIO\_D1\_1 |  |  | TRACE\_DATA\_7 |  |
| PWM2 | PWM2 | GPIO\_D1\_2 | UART\_SIN5 | SPI\_M2\_DI | TRACE\_DATA\_6 |  |
| PWM3 | PWM3 | GPIO\_D1\_3 | UART\_SOUT5 | SPI\_M2\_DO | TRACE\_DATA\_5 |  |
| PWM4 | PWM4 | GPIO\_D1\_4 | UART\_SIN6 | SPI\_M2\_SCLK | TRACE\_DATA\_4 | BB\_PA\_ON\_2G\_1 |
| PWM5 | PWM5 | GPIO\_D1\_5 | UART\_SOUT6 | SPI\_M2\_CS0N | TRACE\_DATA\_3 | BB\_PA\_ON\_5G\_1 |
| PWM6 | PWM6 | GPIO\_D1\_6 | UART\_SIN7 | SPI\_M2\_CS1N | TRACE\_DATA\_2 | CAN\_TCLK0 |
| PWM7 | PWM7 | GPIO\_D1\_7 | UART\_SOUT7 | SPI\_M2\_CS2N | TRACE\_DATA\_1 | CAN\_TCLK1 |
| PWM8 | PWM8 | GPIO\_A2\_0 | UART\_SIN8 | SPI\_M2\_CS3N | TRACE\_DATA\_0 | CAN\_TCLK2 |
| PWM9 | PWM9 | GPIO\_A2\_1 | UART\_SOUT8 | SPI\_M2\_CS4N | TRACE\_CLK | CAN\_TCLK3 |

## I2S Interface (16)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin No.** | **Name** | **Pin Direction** | **Reset** | **IO Type** | **Description** |
| AA28 | I2S\_WS0 | INOUT | PU | 1.8v digital IO | I2S\_WS\_0/GPIO\_B2\_0 |
| AA26 | I2S\_SDI0 | INOUT | PD | 1.8v digital IO | I2S\_SDI\_0/GPIO\_B2\_1 |
| AB28 | I2S\_SDO0 | INOUT | PU | 1.8v digital IO | I2S\_SDO\_0/GPIO\_B2\_2 |
| AA27 | I2S\_CLK0 | INOUT | PU | 1.8v digital IO | I2S\_CLK\_0/GPIO\_B2\_3 |
| AC26 | I2S\_WS1 | INOUT | PU | 1.8v digital IO | I2S\_WS\_1/GPIO\_B2\_4 |
| Y25 | I2S\_SDI1 | INOUT | PD | 1.8v digital IO | I2S\_SDI\_1/GPIO\_B2\_5 |
| AB27 | I2S\_SDO1 | INOUT | PU | 1.8v digital IO | I2S\_SDO\_1/GPIO\_B2\_6 |
| AA25 | I2S\_CLK1 | INOUT | PU | 1.8v digital IO | I2S\_CLK\_1/GPIO\_B2\_7 |
| AA22 | I2S\_WS2 | INOUT | PU | 1.8v digital IO | I2S\_WS\_2/GPIO\_C2\_0/MON\_OUT\_24/BB\_RXTX\_A/ATE\_TEST\_IN\_8 |
| AA23 | I2S\_SDI2 | INOUT | PD | 1.8v digital IO | I2S\_SDI\_2/GPIO\_C2\_1/MON\_OUT\_25/BB\_ENABLE\_A/ATE\_TEST\_IN\_9 |
| AA24 | I2S\_SDO2 | INOUT | PU | 1.8v digital IO | I2S\_SDO\_2/GPIO\_C2\_2/MON\_OUT\_26/BB\_RXHP\_A/ATE\_TEST\_IN\_10 |
| Y24 | I2S\_CLK2 | INOUT | PU | 1.8v digital IO | I2S\_CLK\_2/GPIO\_C2\_3/MON\_OUT\_27/BB\_RX\_LNA\_VBIAS\_2G/ATE\_TEST\_IN\_11 |
| AC25 | I2S\_WS3 | INOUT | PU | 1.8v digital IO | I2S\_WS\_3/GPIO\_C2\_4/DVP\_EXT\_OUT\_0/MON\_OUT\_28/BB\_RXTX\_B/ATE\_TEST\_IN\_12 |
| AB24 | I2S\_SDI3 | INOUT | PD | 1.8v digital IO | I2S\_SDI\_3/GPIO\_C2\_5/DVP\_EXT\_OUT\_1/MON\_OUT\_29/BB\_ENABLE\_B/ATE\_TEST\_IN\_13 |
| AC24 | I2S\_SDO3 | INOUT | PU | 1.8v digital IO | I2S\_SDO\_3/GPIO\_C2\_6/DVP\_EXT\_OUT\_2/MON\_OUT\_30/BB\_RXHP\_B/ATE\_TEST\_IN\_14 |
| AB23 | I2S\_CLK3 | INOUT | PU | 1.8v digital IO | I2S\_CLK\_3/GPIO\_C2\_7/DVP\_EXT\_OUT\_3/MON\_OUT\_31/BB\_RX\_LNA\_VBIAS\_5G/ATE\_TEST\_IN\_15 |

**Share function**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Name** | **Function\_0** | **Function\_1** | **Function\_2** | **Function\_3** | **Function\_4** | **Function\_5** |
| I2S\_WS0 | I2S\_WS\_0 | GPIO\_B2\_0 |  |  |  |  |
| I2S\_SDI0 | I2S\_SDI\_0 | GPIO\_B2\_1 |  |  |  |  |
| I2S\_SDO0 | I2S\_SDO\_0 | GPIO\_B2\_2 |  |  |  |  |
| I2S\_CLK0 | I2S\_CLK\_0 | GPIO\_B2\_3 |  |  |  |  |
| I2S\_WS1 | I2S\_WS\_1 | GPIO\_B2\_4 |  |  |  |  |
| I2S\_SDI1 | I2S\_SDI\_1 | GPIO\_B2\_5 |  |  |  |  |
| I2S\_SDO1 | I2S\_SDO\_1 | GPIO\_B2\_6 |  |  |  |  |
| I2S\_CLK1 | I2S\_CLK\_1 | GPIO\_B2\_7 |  |  |  |  |
| I2S\_WS2 | I2S\_WS\_2 | GPIO\_C2\_0 |  | MON\_OUT\_24 | BB\_RXTX\_A | ATE\_TEST\_IN\_8 |
| I2S\_SDI2 | I2S\_SDI\_2 | GPIO\_C2\_1 |  | MON\_OUT\_25 | BB\_ENABLE\_A | ATE\_TEST\_IN\_9 |
| I2S\_SDO2 | I2S\_SDO\_2 | GPIO\_C2\_2 |  | MON\_OUT\_26 | BB\_RXHP\_A | ATE\_TEST\_IN\_10 |
| I2S\_CLK2 | I2S\_CLK\_2 | GPIO\_C2\_3 |  | MON\_OUT\_27 | BB\_RX\_LNA\_VBIAS\_2G | ATE\_TEST\_IN\_11 |
| I2S\_WS3 | I2S\_WS\_3 | GPIO\_C2\_4 | DVP\_EXT\_OUT\_0 | MON\_OUT\_28 | BB\_RXTX\_B | ATE\_TEST\_IN\_12 |
| I2S\_SDI3 | I2S\_SDI\_3 | GPIO\_C2\_5 | DVP\_EXT\_OUT\_1 | MON\_OUT\_29 | BB\_ENABLE\_B | ATE\_TEST\_IN\_13 |
| I2S\_SDO3 | I2S\_SDO\_3 | GPIO\_C2\_6 | DVP\_EXT\_OUT\_2 | MON\_OUT\_30 | BB\_RXHP\_B | ATE\_TEST\_IN\_14 |
| I2S\_CLK3 | I2S\_CLK\_3 | GPIO\_C2\_7 | DVP\_EXT\_OUT\_3 | MON\_OUT\_31 | BB\_RX\_LNA\_VBIAS\_5G | ATE\_TEST\_IN\_15 |

## SD Interface (8)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin No.** | **Name** | **Pin Direction** | **Reset** | **IO Type** | **Description** |
| U28 | SD\_CCLK\_OUT | OUT | N/A | 1.8/3.3v digital IO | QSPI\_SCK/SD\_CCLK\_OUT/GPIO\_D2\_0 |
| U27 | SD\_CCMD | OUT | N/A | 1.8/3.3v digital IO | QSPI\_CS\_N/SD\_CCMD/GPIO\_D2\_1 |
| V28 | SD\_CARD\_DETECT\_N | INOUT | PU | 1.8/3.3v digital IO | GPIO\_D2\_2/SD\_CARD\_DETECT\_N |
| V27 | SD\_CARD\_WPRT | INOUT | PU | 1.8/3.3v digital IO | GPIO\_D2\_3/SD\_CARD\_WPRT |
| W28 | SD\_CDATA\_0 | INOUT | PU | 1.8/3.3v digital IO | QSPI\_DATA\_0/SD\_CDATA\_0/GPIO\_D2\_4 |
| W27 | SD\_CDATA\_1 | INOUT | PU | 1.8/3.3v digital IO | QSPI\_DATA\_1/SD\_CDATA\_1/GPIO\_D2\_5 |
| Y28 | SD\_CDATA\_2 | INOUT | PU | 1.8/3.3v digital IO | QSPI\_DATA\_2/SD\_CDATA\_2/GPIO\_D2\_6 |
| Y27 | SD\_CDATA\_3 | INOUT | PU | 1.8/3.3v digital IO | QSPI\_DATA\_3/SD\_CDATA\_3/GPIO\_D2\_7 |

**Share function**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Function\_0** | **Function\_1** | **Function\_2** |
| SD\_CCLK\_OUT | QSPI\_SCK | SD\_CCLK\_OUT | GPIO\_D2\_0 |
| SD\_CCMD | QSPI\_CS\_N | SD\_CCMD | GPIO\_D2\_1 |
| SD\_CARD\_DETECT\_N | GPIO\_D2\_2 | SD\_CARD\_DETECT\_N |  |
| SD\_CARD\_WPRT | GPIO\_D2\_3 | SD\_CARD\_WPRT |  |
| SD\_CDATA\_0 | QSPI\_DATA\_0 | SD\_CDATA\_0 | GPIO\_D2\_4 |
| SD\_CDATA\_1 | QSPI\_DATA\_1 | SD\_CDATA\_1 | GPIO\_D2\_5 |
| SD\_CDATA\_2 | QSPI\_DATA\_2 | SD\_CDATA\_2 | GPIO\_D2\_6 |
| SD\_CDATA\_3 | QSPI\_DATA\_3 | SD\_CDATA\_3 | GPIO\_D2\_7 |

## DVP Interface (24)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin No.** | **Name** | **Pin Direction** | **Reset** | **IO Type** | **Description** |
| AC28 | PCLK1 | INOUT | PD | 1.8v digital IO | PCLK1/GPIO\_A2\_2/I2C\_SDA3/TYPEC\_DIG\_OUT\_0/MON\_OUT\_0/ATE\_TEST\_OUT\_0/DVP\_EXT\_OUT\_4 |
| AD28 | DE1 | INOUT | PD | 1.8v digital IO | PDE1/GPIO\_A2\_3/I2C\_SCLK3/TYPEC\_DIG\_OUT\_1/MON\_OUT\_1/ATE\_TEST\_OUT\_1/DVP\_EXT\_OUT\_5 |
| AC27 | VSYNC1 | INOUT | PD | 1.8v digital IO | PVSYNC1/GPIO\_A2\_4/UART\_SIN7/TYPEC\_DIG\_OUT\_2/MON\_OUT\_2/ATE\_TEST\_OUT\_2/DVP\_EXT\_OUT\_6 |
| AE28 | HSYNC1 | INOUT | PD | 1.8v digital IO | PHSYNC1/GPIO\_A2\_5/UART\_SOUT7/TYPEC\_DIG\_OUT\_3/MON\_OUT\_3/ATE\_TEST\_OUT\_3/DVP\_EXT\_OUT\_7 |
| AF28 | QE1\_0 | INOUT | PU | 1.8v digital IO | PDATA1\_0/GPIO\_A3\_0/UART\_SIN8/TYPEC\_DIG\_OUT\_4/MON\_OUT\_4/ATE\_TEST\_OUT\_4 |
| AD27 | QE1\_1 | INOUT | PU | 1.8v digital IO | PDATA1\_1/GPIO\_A3\_1/UART\_SOUT8/TYPEC\_DIG\_OUT\_5/MON\_OUT\_5/ATE\_TEST\_OUT\_5 |
| AG28 | QE1\_2 | INOUT | PU | 1.8v digital IO | PDATA1\_2/GPIO\_A3\_2/I2C\_SDA4/TYPEC\_DIG\_IN\_6/MON\_OUT\_6/ATE\_TEST\_OUT\_6 |
| AE27 | QE1\_3 | INOUT | PU | 1.8v digital IO | PDATA1\_3/GPIO\_A3\_3/I2C\_SCLK4/TYPEC\_DIG\_IN\_7/MON\_OUT\_7/ATE\_TEST\_OUT\_7 |
| AH26 | QE1\_4 | INOUT | PD | 1.8v digital IO | PDATA1\_4/GPIO\_A3\_4/SPI\_M3\_CS1N/TYPEC\_DIG\_IN\_8/MON\_OUT\_8/ATE\_TEST\_OUT\_8 |
| AF27 | QE1\_5 | INOUT | PD | 1.8v digital IO | PDATA1\_5/GPIO\_A3\_5/SPI\_M3\_CS2N/TYPEC\_DIG\_IN\_9/MON\_OUT\_9/ATE\_TEST\_OUT\_9 |
| AG27 | QE1\_6 | INOUT | PD | 1.8v digital IO | PDATA1\_6/GPIO\_A3\_6/SPI\_M3\_CS3N/TYPEC\_DIG\_OUT\_10/MON\_OUT\_10/ATE\_TEST\_OUT\_10 |
| AH27 | QE1\_7 | INOUT | PD | 1.8v digital IO | PDATA1\_7/GPIO\_A3\_7/SPI\_M3\_CS4N/TYPEC\_DIG\_OUT\_11/MON\_OUT\_11/ATE\_TEST\_OUT\_11 |
| AD26 | PCLK0 | INOUT | PD | 1.8v digital IO | PCLK0 /GPIO\_A2\_6/MON\_OUT\_12/ATE\_TEST\_OUT\_12 |
| AD25 | DE0 | INOUT | PD | 1.8v digital IO | PDE0/GPIO\_A2\_7/MON\_OUT\_13/ATE\_TEST\_OUT\_13 |
| AF26 | VSYNC0 | INOUT | PD | 1.8v digital IO | PVSYNC0/GPIO\_B0\_0/MON\_OUT\_14/ATE\_TEST\_OUT\_14 |
| AE26 | HSYNC0 | INOUT | PD | 1.8v digital IO | PHSYNC0 /GPIO\_B0\_1/MON\_OUT\_15/ATE\_TEST\_OUT\_15 |
| AG26 | QE0\_0 | INOUT | PU | 1.8v digital IO | MON\_OUT\_16/GPIO\_B3\_0/PDATA0\_0/ATE\_TEST\_IN\_0 |
| AF25 | QE0\_1 | INOUT | PU | 1.8v digital IO | MON\_OUT\_17/GPIO\_B3\_1/PDATA0\_1/ATE\_TEST\_IN\_1 |
| AD23 | QE0\_2 | INOUT | PU | 1.8v digital IO | MON\_OUT\_18/GPIO\_B3\_2/PDATA0\_2/ATE\_TEST\_IN\_2 |
| AE24 | QE0\_3 | INOUT | PU | 1.8v digital IO | MON\_OUT\_19**/GPIO\_B3\_3/PDATA0\_3/ATE\_TEST\_IN\_3** |
| AC22 | QE0\_4 | INOUT | PU | 1.8v digital IO | MON\_OUT\_20/GPIO\_B3\_4/PDATA0\_4/ATE\_TEST\_IN\_4 |
| AE23 | QE0\_5 | INOUT | PU | 1.8v digital IO | MON\_OUT\_21 /GPIO\_B3\_5/PDATA0\_5/ATE\_TEST\_IN\_5 |
| AF23 | QE0\_6 | INOUT | PU | 1.8v digital IO | MON\_OUT\_22/GPIO\_B3\_6/PDATA0\_6/ATE\_TEST\_IN\_6 |
| AD22 | QE0\_7 | INOUT | PU | 1.8v digital IO | MON\_OUT\_23/GPIO\_B3\_7/PDATA0\_7/ATE\_TEST\_IN\_7 |

**Share function**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Name** | **Function\_0** | **Function\_1** | **Function\_2** | **Function\_3** | **Function\_4** | **Function\_5** |
| PCLK1 | PCLK1 | GPIO\_A2\_2 | I2C\_SDA3 | TYPEC\_DIG\_OUT\_0 | MON\_OUT\_0 | ATE\_TEST\_OUT\_0 |
| DE1 | PDE1 | GPIO\_A2\_3 | I2C\_SCLK3 | TYPEC\_DIG\_OUT\_1 | MON\_OUT\_1 | ATE\_TEST\_OUT\_1 |
| VSYNC1 | PVSYNC1 | GPIO\_A2\_4 | UART\_SIN7 | TYPEC\_DIG\_OUT\_2 | MON\_OUT\_2 | ATE\_TEST\_OUT\_2 |
| HSYNC1 | PHSYNC1 | GPIO\_A2\_5 | UART\_SOUT7 | TYPEC\_DIG\_OUT\_3 | MON\_OUT\_3 | ATE\_TEST\_OUT\_3 |
| QE1\_0 | PDATA1\_0 | GPIO\_A3\_0 | UART\_SIN8 | TYPEC\_DIG\_OUT\_4 | MON\_OUT\_4 | ATE\_TEST\_OUT\_4 |
| QE1\_1 | PDATA1\_1 | GPIO\_A3\_1 | UART\_SOUT8 | TYPEC\_DIG\_OUT\_5 | MON\_OUT\_5 | ATE\_TEST\_OUT\_5 |
| QE1\_2 | PDATA1\_2 | GPIO\_A3\_2 | I2C\_SDA4 | TYPEC\_DIG\_IN\_6 | MON\_OUT\_6 | ATE\_TEST\_OUT\_6 |
| QE1\_3 | PDATA1\_3 | GPIO\_A3\_3 | I2C\_SCLK4 | TYPEC\_DIG\_IN\_7 | MON\_OUT\_7 | ATE\_TEST\_OUT\_7 |
| QE1\_4 | PDATA1\_4 | GPIO\_A3\_4 | SPI\_M3\_CS1N | TYPEC\_DIG\_IN\_8 | MON\_OUT\_8 | ATE\_TEST\_OUT\_8 |
| QE1\_5 | PDATA1\_5 | GPIO\_A3\_5 | SPI\_M3\_CS2N | TYPEC\_DIG\_IN\_9 | MON\_OUT\_9 | ATE\_TEST\_OUT\_9 |
| QE1\_6 | PDATA1\_6 | GPIO\_A3\_6 | SPI\_M3\_CS3N | TYPEC\_DIG\_OUT\_10 | MON\_OUT\_10 | ATE\_TEST\_OUT\_10 |
| QE1\_7 | PDATA1\_7 | GPIO\_A3\_7 | SPI\_M3\_CS4N | TYPEC\_DIG\_OUT\_11 | MON\_OUT\_11 | ATE\_TEST\_OUT\_11 |
| PCLK0 | PCLK0 | GPIO\_A2\_6 |  |  | MON\_OUT\_12 | ATE\_TEST\_OUT\_12 |
| DE0 | PDE0 | GPIO\_A2\_7 |  |  | MON\_OUT\_13 | ATE\_TEST\_OUT\_13 |
| VSYNC0 | PVSYNC0 | GPIO\_B0\_0 |  |  | MON\_OUT\_14 | ATE\_TEST\_OUT\_14 |
| HSYNC0 | PHSYNC0 | GPIO\_B0\_1 |  |  | MON\_OUT\_15 | ATE\_TEST\_OUT\_15 |
| QE0\_0 | MON\_OUT\_16 | GPIO\_B3\_0 |  |  | PDATA0\_0 | ATE\_TEST\_IN\_0 |
| QE0\_1 | MON\_OUT\_17 | GPIO\_B3\_1 |  |  | PDATA0\_1 | ATE\_TEST\_IN\_1 |
| QE0\_2 | MON\_OUT\_18 | GPIO\_B3\_2 |  |  | PDATA0\_2 | ATE\_TEST\_IN\_2 |
| QE0\_3 | MON\_OUT\_19 | GPIO\_B3\_3 |  |  | PDATA0\_3 | ATE\_TEST\_IN\_3 |
| QE0\_4 | MON\_OUT\_20 | GPIO\_B3\_4 |  |  | PDATA0\_4 | ATE\_TEST\_IN\_4 |
| QE0\_5 | MON\_OUT\_21 | GPIO\_B3\_5 |  |  | PDATA0\_5 | ATE\_TEST\_IN\_5 |
| QE0\_6 | MON\_OUT\_22 | GPIO\_B3\_6 |  |  | PDATA0\_6 | ATE\_TEST\_IN\_6 |
| QE0\_7 | MON\_OUT\_23 | GPIO\_B3\_7 |  |  | PDATA0\_7 | ATE\_TEST\_IN\_7 |

## EMMC Interface (11)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin No.** | **Name** | **Pin Direction** | **Reset** | **IO Type** | **Description** |
| J28 | EMMC\_CLKOUT | OUT | N/A | 1.8/3.3v digital IO | EMMC\_CCLK\_OUT/GPIO\_B0\_2 |
| J27 | EMMC\_CCMD | INOUT | PU | 1.8/3.3v digital IO | EMMC\_CCMD/GPIO\_B0\_3 |
| K22 | EMMC\_PWR | OUT | N/A | 1.8/3.3v digital IO | EMMC\_PWR/GPIO\_B0\_4 |
| H25 | EMMC\_D0 | INOUT | PU | 1.8/3.3v digital IO | EMMC\_D0/GPIO\_C3\_0 |
| H26 | EMMC\_D1 | INOUT | PU | 1.8/3.3v digital IO | EMMC\_D1/GPIO\_C3\_1 |
| J25 | EMMC\_D2 | INOUT | PU | 1.8/3.3v digital IO | EMMC\_D2/GPIO\_C3\_2 |
| J26 | EMMC\_D3 | INOUT | PU | 1.8/3.3v digital IO | EMMC\_D3/GPIO\_C3\_3 |
| K27 | EMMC\_D4 | INOUT | PU | 1.8/3.3v digital IO | EMMC\_D4/GPIO\_C3\_4 |
| K28 | EMMC\_D5 | INOUT | PU | 1.8/3.3v digital IO | EMMC\_D5/GPIO\_C3\_5 |
| L28 | EMMC\_D6 | INOUT | PU | 1.8/3.3v digital IO | EMMC\_D6/GPIO\_C3\_6 |
| L27 | EMMC\_D7 | INOUT | PU | 1.8/3.3v digital IO | EMMC\_D7/GPIO\_C3\_7 |

**Share function**

|  |  |  |
| --- | --- | --- |
| **Name** | **Function\_0** | **Function\_1** |
| EMMC\_CLKOUT | EMMC\_CCLK\_OUT | GPIO\_B0\_2 |
| EMMC\_CCMD | EMMC\_CCMD | GPIO\_B0\_3 |
| EMMC\_PWR | EMMC\_PWR | GPIO\_B0\_4 |
| EMMC\_D0 | EMMC\_D0 | GPIO\_C3\_0 |
| EMMC\_D1 | EMMC\_D1 | GPIO\_C3\_1 |
| EMMC\_D2 | EMMC\_D2 | GPIO\_C3\_2 |
| EMMC\_D3 | EMMC\_D3 | GPIO\_C3\_3 |
| EMMC\_D4 | EMMC\_D4 | GPIO\_C3\_4 |
| EMMC\_D5 | EMMC\_D5 | GPIO\_C3\_5 |
| EMMC\_D6 | EMMC\_D6 | GPIO\_C3\_6 |
| EMMC\_D7 | EMMC\_D7 | GPIO\_C3\_7 |
|  |  |  |

## Ethernet Interface (17)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin No.** | **Name** | **Pin Direction** | **Reset** | **IO Type** | **Description** |
| L26 | GBE\_TXC | INOUT | PD | 3.3v digital IO | GBE\_TXC/GPIO\_D3\_0/BB\_SPI\_ENB\_A/SPI\_M3\_DI |
| M26 | GBE\_TXEN | INOUT | PU | 3.3v digital IO | GBE\_TXEN/GPIO\_D3\_1/BB\_SPI\_DI\_A/SPI\_M3\_DO |
| M28 | GBE\_TXD0 | INOUT | PU | 3.3v digital IO | GBE\_TXD0/GPIO\_D3\_2/BB\_SPI\_DO\_A/SPI\_M3\_SCLK |
| M27 | GBE\_TXD1 | INOUT | PU | 3.3v digital IO | GBE\_TXD1/GPIO\_D3\_3/BB\_SPI\_CLK\_A/SPI\_M3\_CS0N |
| N27 | GBE\_TXD2 | INOUT | PU | 3.3v digital IO | GBE\_TXD2/GPIO\_D3\_4/BB\_RXTX\_A/SPI\_M3\_CS1N |
| N28 | GBE\_TXD3 | INOUT | PD | 3.3v digital IO | GBE\_TXD3/GPIO\_D3\_5/BB\_ENABLE\_A/SPI\_M3\_CS2N |
| P28 | GBE\_RXC | INOUT | PD | 3.3v digital IO | GBE\_RXC/GPIO\_D3\_6/BB\_RXHP\_A/SPI\_M3\_CS3N |
| P27 | GBE\_RXEN | INOUT | PD | 3.3v digital IO | GBE\_RXEN/GPIO\_D3\_7/BB\_RX\_LNA\_VBIAS\_2G/SPI\_M3\_CS4N |
| R28 | GBE\_RXD0 | INOUT | PD | 3.3v digital IO | GBE\_RXD0/GPIO\_B4\_0/BB\_RX\_LNA\_VBIAS\_5G/I2S\_SDO\_3 |
| R27 | GBE\_RXD1 | INOUT | PD | 3.3v digital IO | GBE\_RXD1/GPIO\_B4\_1/BB\_PA\_ON\_2G/I2S\_SDO\_2 |
| T28 | GBE\_RXD2 | INOUT | PD | 3.3v digital IO | GBE\_RXD2/GPIO\_B4\_2/BB\_PA\_ON\_5G/I2S\_SDO\_1 |
| T27 | GBE\_RXD3 | INOUT | PD | 3.3v digital IO | GBE\_RXD3/GPIO\_B4\_3/BB\_ANT\_SW\_SEL/I2S\_SDO\_0 |
| L25 | GBE\_MDC | INOUT | PU | 3.3v digital IO | GBE\_MDC/GPIO\_B4\_4/BB\_ANT\_SW\_SEL\_N/I2S\_CLK\_3 |
| M25 | GBE\_MDIO | INOUT | PU | 3.3v digital IO | GBE\_MDIO/GPIO\_B4\_5/BS\_SEL/I2S\_WS\_3 |
| H23 | GBE\_INT | INOUT | PD | 3.3v digital IO | GBE\_INT/GPIO\_A4\_0/UART\_SIN5/I2C\_SCLK3 |
| J23 | GBE\_CLK | INOUT | PU | 3.3v digital IO | GBE\_CLK/GPIO\_A4\_1/UART\_SOUT5/I2C\_SDA3 |
| G23 | GBE\_RST | INOUT | PU | 3.3v digital IO | GBE\_RST/GPIO\_B0\_7/BS\_SEL\_N |

**Share function**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Function\_0** | **Function\_1** | **Function\_2** | **Function\_3** |
| GBE\_TXC | GBE\_TXC | GPIO\_D3\_0 | BB\_SPI\_ENB\_A | SPI\_M3\_DI |
| GBE\_TXEN | GBE\_TXEN | GPIO\_D3\_1 | BB\_SPI\_DI\_A | SPI\_M3\_DO |
| GBE\_TXD0 | GBE\_TXD0 | GPIO\_D3\_2 | BB\_SPI\_DO\_A | SPI\_M3\_SCLK |
| GBE\_TXD1 | GBE\_TXD1 | GPIO\_D3\_3 | BB\_SPI\_CLK\_A | SPI\_M3\_CS0N |
| GBE\_TXD2 | GBE\_TXD2 | GPIO\_D3\_4 | BB\_RXTX\_A | SPI\_M3\_CS1N |
| GBE\_TXD3 | GBE\_TXD3 | GPIO\_D3\_5 | BB\_ENABLE\_A | SPI\_M3\_CS2N |
| GBE\_RXC | GBE\_RXC | GPIO\_D3\_6 | BB\_RXHP\_A | SPI\_M3\_CS3N |
| GBE\_RXEN | GBE\_RXEN | GPIO\_D3\_7 | BB\_RX\_LNA\_VBIAS\_2G | SPI\_M3\_CS4N |
| GBE\_RXD0 | GBE\_RXD0 | GPIO\_B4\_0 | BB\_RX\_LNA\_VBIAS\_5G | I2S\_SDO\_3 |
| GBE\_RXD1 | GBE\_RXD1 | GPIO\_B4\_1 | BB\_PA\_ON\_2G | I2S\_SDO\_2 |
| GBE\_RXD2 | GBE\_RXD2 | GPIO\_B4\_2 | BB\_PA\_ON\_5G | I2S\_SDO\_1 |
| GBE\_RXD3 | GBE\_RXD3 | GPIO\_B4\_3 | BB\_ANT\_SW\_SEL | I2S\_SDO\_0 |
| GBE\_MDC | GBE\_MDC | GPIO\_B4\_4 | BB\_ANT\_SW\_SEL\_N | I2S\_CLK\_3 |
| GBE\_MDIO | GBE\_MDIO | GPIO\_B4\_5 | BS\_SEL | I2S\_WS\_3 |
| GBE\_INT | GBE\_INT | GPIO\_A4\_0 | UART\_SIN5 | I2C\_SCLK3 |
| GBE\_CLK | GBE\_CLK | GPIO\_A4\_1 | UART\_SOUT5 | I2C\_SDA3 |
| GBE\_RST | GBE\_RST | GPIO\_B0\_7 | BS\_SEL\_N |  |

## HDMI Interface (12)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin No.** | **Name** | **Pin Direction** | **Reset** | **IO Type** | **Description** |
| AB21 | HDMI\_RREF | INOUT | NA | Analog | Reference resistor connection |
| AG24 | HDMI\_RX0N | IN | NA | Analog | Negative TMDS differential line data input for data channel 0 |
| AH24 | HDMI\_RX0P | IN | NA | Analog | Positive TMDS differential line data input for data channel 0 |
| AG23 | HDMI\_RX1N | IN | NA | Analog | Negative TMDS differential line data input for data channel 1 |
| AH23 | HDMI\_RX1P | IN | NA | Analog | Positive TMDS differential line data input for data channel 1 |
| AG22 | HDMI\_RX2N | IN | NA | Analog | Negative TMDS differential line data input for data channel 2 |
| AH22 | HDMI\_RX2P | IN | NA | Analog | Positive TMDS differential line data input for data channel 2 |
| AG25 | HDMI\_RXCN | IN | NA | Analog | Negative TMDS differential line clock input |
| AH25 | HDMI\_RXCP | IN | NA | Analog | Positive TMDS differential line clock input |
| AD21 | HDMI\_SCL\_PAD | INOUT | PU | 1.8v digital IO | HDMI\_SCL/GPIO\_A4\_2/I2C\_SCLK4 |
| AE21 | HDMI\_SDA\_PAD | INOUT | PU | 1.8v digital IO | HDMI\_SDA/GPIO\_A4\_3/I2C\_SDA4 |
| AF20 | HDMI\_CEC\_PAD | INOUT | PU | 1.8v digital IO | HDMI\_CEC/GPIO\_A4\_4 |

**Share function**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Function\_0** | **Function\_1** | **Function\_2** |
| HDMI\_SCL | HDMI\_SCL | GPIO\_A4\_2 | I2C\_SCLK4 |
| HDMI\_SDA | HDMI\_SDA | GPIO\_A4\_3 | I2C\_SDA4 |
| HDMI\_CEC | HDMI\_CEC | GPIO\_A4\_4 |  |

## MIPI Interface (56)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin No.** | **Name** | **Pin Direction** | **Reset** | **IO Type** | **Description** |
| AE14 | MIPI0\_CLKN | INOUT | NA | Analog | MIPI Differential Clock Lane of Link\_0 |
| AD14 | MIPI0\_CLKP | INOUT | NA | Analog |
| AH14 | MIPI0\_D0N | INOUT | NA | Analog | MIPI Differential Data Lane of Link\_0 |
| AG14 | MIPI0\_D0P | INOUT | NA | Analog |
| AH13 | MIPI0\_D1N | INOUT | NA | Analog |
| AG13 | MIPI0\_D1P | INOUT | NA | Analog |
| AC15 | MIPI0\_REXT | INOUT | NA | Analog | Analog Probing Pin of Link\_0 |
| AE12 | MIPI1\_CLKN | INOUT | NA | Analog | MIPI Differential Clock Lane of Link\_1 |
| AD12 | MIPI1\_CLKP | INOUT | NA | Analog |
| AH11 | MIPI1\_D0N | INOUT | NA | Analog | MIPI Differential Data Lane of Link\_1 |
| AG11 | MIPI1\_D0P | INOUT | NA | Analog |
| AH12 | MIPI1\_D1N | INOUT | NA | Analog |
| AG12 | MIPI1\_D1P | INOUT | NA | Analog |
| AC12 | MIPI1\_REXT | INOUT | NA | Analog | Analog Probing Pin of Link\_1 |
| AE17 | MIPI2\_CLKN | INOUT | NA | Analog | MIPI Differential Clock Lane of Link\_2 |
| AF17 | MIPI2\_CLKP | INOUT | NA | Analog |
| AH18 | MIPI2\_D0N | INOUT | NA | Analog | MIPI Differential Data Lane of Link\_2 |
| AG18 | MIPI2\_D0P | INOUT | NA | Analog |
| AH17 | MIPI2\_D1N | INOUT | NA | Analog |
| AG17 | MIPI2\_D1P | INOUT | NA | Analog |
| AC17 | MIPI2\_REXT | INOUT | NA | Analog | Analog Probing Pin of Link\_2 |
| AE15 | MIPI3\_CLKN | INOUT | NA | Analog | MIPI Differential Clock Lane of Link\_3 |
| AF15 | MIPI3\_CLKP | INOUT | NA | Analog |
| AH16 | MIPI3\_D0N | INOUT | NA | Analog | MIPI Differential Data Lane of Link\_3 |
| AG16 | MIPI3\_D0P | INOUT | NA | Analog |
| AH15 | MIPI3\_D1N | INOUT | NA | Analog |
| AG15 | MIPI3\_D1P | INOUT | NA | Analog |
| AD15 | MIPI3\_REXT | INOUT | NA | Analog | Analog Probing Pin of Link\_3 |
| AE11 | MIPI4\_CLKN | INOUT | NA | Analog | MIPI Differential Clock Lane of Link\_4 |
| AF11 | MIPI4\_CLKP | INOUT | NA | Analog |
| AH10 | MIPI4\_D0N | INOUT | NA | Analog | MIPI Differential Data Lane of Link\_4 |
| AG10 | MIPI4\_D0P | INOUT | NA | Analog |
| AH9 | MIPI4\_D1N | INOUT | NA | Analog |
| AG9 | MIPI4\_D1P | INOUT | NA | Analog |
| AD11 | MIPI4\_REXT | INOUT | NA | Analog | Analog Probing Pin of Link\_4 |
| AE9 | MIPI5\_CLKN | INOUT | NA | Analog | MIPI Differential Clock Lane of Link\_5 |
| AF9 | MIPI5\_CLKP | INOUT | NA | Analog |
| AH8 | MIPI5\_D0N | INOUT | NA | Analog | MIPI Differential Data Lane of Link\_5 |
| AG8 | MIPI5\_D0P | INOUT | NA | Analog |
| AH7 | MIPI5\_D1N | INOUT | NA | Analog |
| AG7 | MIPI5\_D1P | INOUT | NA | Analog |
| AE8 | MIPI5\_REXT | INOUT | NA | Analog | Analog Probing Pin of Link\_5 |
| AE6 | MIPI6\_CLKN | INOUT | NA | Analog | MIPI Differential Clock Lane of Link\_6 |
| AF6 | MIPI6\_CLKP | INOUT | NA | Analog |
| AH6 | MIPI6\_D0N | INOUT | NA | Analog | MIPI Differential Data Lane of Link\_6 |
| AG6 | MIPI6\_D0P | INOUT | NA | Analog |
| AH5 | MIPI6\_D1N | INOUT | NA | Analog |
| AG5 | MIPI6\_D1P | INOUT | NA | Analog |
| AD9 | MIPI6\_REXT | INOUT | NA | Analog | Analog Probing Pin of Link\_6 |
| AE5 | MIPI7\_CLKN | INOUT | NA | Analog | MIPI Differential Clock Lane of Link\_7 |
| AF5 | MIPI7\_CLKP | INOUT | NA | Analog |
| AH4 | MIPI7\_D0N | INOUT | NA | Analog | MIPI Differential Data Lane of Link\_7 |
| AG4 | MIPI7\_D0P | INOUT | NA | Analog |
| AH3 | MIPI7\_D1N | INOUT | NA | Analog |
| AG3 | MIPI7\_D1P | INOUT | NA | Analog |
| AD8 | MIPI7\_REXT | INOUT | NA | Analog | Analog Probing Pin of Link\_7 |

## PCIE Interface (9)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin No.** | **Name** | **Pin Direction** | **Reset** | **IO Type** | **Description** |
| B18 | PCIE\_RX0N | INOUT | NA | Analog | High-Speed Differential Receive Pair |
| A18 | PCIE\_RX0P | INOUT | NA | Analog | High-Speed Differential Receive Pair |
| B17 | PCIE\_RX1N | INOUT | NA | Analog | High-Speed Differential Receive Pair |
| A17 | PCIE\_RX1P | INOUT | NA | Analog | High-Speed Differential Receive Pair |
| A19 | PCIE\_TX0P | INOUT | NA | Analog | High-Speed Differential Transmit Pair |
| B19 | PCIE\_TX0N | INOUT | NA | Analog | High-Speed Differential Transmit Pair |
| B16 | PCIE\_TX1N | INOUT | NA | Analog | High-Speed Differential Transmit Pair |
| A16 | PCIE\_TX1P | INOUT | NA | Analog | High-Speed Differential Transmit Pair |
| G16 | PCIE\_RESREF | INOUT | NA | Analog | Reference Resistor Connection |

## USB Interface (11)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin No.** | **Name** | **Pin Direction** | **Reset** | **IO Type** | **Description** |
| AG19 | USB\_DN | INOUT | NA | Analog | USB D– Signal |
| AH19 | USB\_DP | INOUT | NA | Analog | USB D+ Signal |
| AD17 | USB\_ID | IN | NA | Analog | USB Mini-Receptacle Identifier and Test Point for DC Points Probes |
| AD18 | USB\_RESREF | INOUT | NA | Analog | Reference Resistor Connection |
| AG21 | USB\_RX0N | IN | NA | Analog | High-Speed Differential Receive Pair |
| AH21 | USB\_RX0P | IN | NA | Analog | High-Speed Differential Receive Pair |
| AG20 | USB\_TX0N | OUT | NA | Analog | High-Speed Differential Transmit Pair |
| AH20 | USB\_TX0P | OUT | NA | Analog | High-Speed Differential Transmit Pair |
| AE18 | USB\_VBUS | INOUT | NA | Analog | USB 5-V Power Supply Pin |
| AD20 | USB\_OC\_PAD | IN | PU | 1.8v digital IO | USB\_OC/GPIO\_B0\_5 |
| AE20 | USB\_PWR\_PAD | OUT | PU | 1.8v digital IO | USB\_PWR\_CTRL/GPIO\_B0\_6 |

**Share function**

|  |  |  |
| --- | --- | --- |
| **Name** | **Function\_0** | **Function\_1** |
| USB\_OC | USB\_OC | GPIO\_B0\_5 |
| USB\_PWR | USB\_PWR\_CTRL | GPIO\_B0\_6 |

## TYPEC Interface (17)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin No.** | **Name** | **Pin Direction** | **Reset** | **IO Type** | **Description** |
| D18 | TYPEC\_AUXN | I/O | NA | Analog | AUX differential TX/RX serial data |
| C17 | TYPEC\_AUXP | I/O | NA | Analog | AUX differential TX/RX serial data |
| E15 | TYPEC\_AUX\_PDPUP | O | NA | Analog | AUX pull-up/pull-down polarity reversal pins. Normal connector orientation, weak pull-up. Used to reverse this for the flipped connector case |
| D15 | TYPEC\_AUX\_PUPDN | O | NA | Analog | AUX pull-up/pull-down polarity reversal pins. Normal connector orientation, weak pull-down. Used to reverse this for the flipped connector case |
| A21 | TYPEC\_CC1 | I/O | NA | Analog | Configuration channel 1 pin used for connection detect interface configuration and VCONN |
| B21 | TYPEC\_CC2 | I/O | NA | Analog | Configuration channel 2 pin used for connection detect interface configuration and VCONN |
| A20 | TYPEC\_REXT | I | NA | Analog | PMA external calibration resistor. An external resistor must be connected between this pin and package ground. 3.01kΩ with 1% tolerance. |
| A22 | TYPEC\_REXT\_CC | I | NA | Analog | Bump to connect external precision resistors for internal calibration circuits |
| E17 | TYPEC\_TX0N | O | NA | Analog | PMA lane0 transmitter serial data-USB TX or DP TX. TX1+/TX1- USB Type-C receptacle pins |
| D17 | TYPEC\_TX0P | O | NA | Analog | PMA lane0 transmitter serial data-USB TX or DP TX. TX1+/TX1- USB Type-C receptacle pins |
| E20 | TYPEC\_TX3N | O | NA | Analog | PMA lane0 transmitter serial data-USB TX or DP TX. TX2+/TX2- USB Type-C receptacle pins |
| F20 | TYPEC\_TX3P | O | NA | Analog | PMA lane0 transmitter serial data-USB TX or DP TX. TX2+/TX2- USB Type-C receptacle pins |
| E18 | TYPEC\_TXRX1N | I/O | NA | Analog | PMA lane0 transmitter serial data-USB RX or DP TX. RX1+/RX1- USB Type-C receptacle pins |
| F18 | TYPEC\_TXRX1P | I/O | NA | Analog | PMA lane0 transmitter serial data-USB RX or DP TX. RX1+/RX1- USB Type-C receptacle pins |
| D20 | TYPEC\_TXRX2N | I/O | NA | Analog | PMA lane0 transmitter serial data-USB RX or DP TX. RX2+/RX2- USB Type-C receptacle pins |
| C20 | TYPEC\_TXRX2P | I/O | NA | Analog | PMA lane0 transmitter serial data-USB RX or DP TX. RX2+/RX2- USB Type-C receptacle pins |
| B20 | TYPEC\_VBUS | I | NA | Analog | vbus Bump into the PHY for VBUS monitor. This is a divided input from the VBUS pin of the USB2 IP or an independent input from the connector |

## Analog block Interface (49)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin No.** | **Name** | **Pin Direction** | **Reset** | **IO Type** | **Description** |
| E23 | AD\_IN\_0 | SAR3 input pad | in |  | SAR3 input pad |
| E22 | AD\_IN\_1 | SAR3 input pad | in |  | SAR3 input pad |
| B28 | AD\_IN\_2 | SAR3 input pad | in |  | SAR3 input pad |
| C26 | AD\_IN\_3 | SAR3 input pad | in |  | SAR3 input pad |
| F21 | AD\_IN\_4 | SAR3 input pad | in |  | SAR3 input pad |
| D21 | AD\_IN\_5 | SAR3 input pad | in |  | SAR3 input pad |
| E21 | AD\_IN\_6 | SAR3 input pad | in |  | SAR3 input pad |
| G21 | AD\_IN\_7 | SAR3 input pad | in |  | SAR3 input pad |
| J20 | AVDD1V8\_A | Analog 1.8v power supply | in |  | Analog 1.8v power supply |
| J21 | AVDD1V8\_A | Analog 1.8v power supply | in |  | Analog 1.8v power supply |
| G19 | AVDD1V8\_OSC | Cystal 1.8v power supply | in |  | Cystal 1.8v power supply |
| K21 | AVDD1V8\_PLL | PLL 1.8v power supply | in |  | PLL 1.8v power supply |
| H21 | AVSS\_A | Analog ground | in |  | Analog ground |
| H20 | AVSS\_A | Analog ground | in |  | Analog ground |
| G20 | AVSS\_OSC | Cystal ground | in |  | Cystal ground |
| K20 | AVSS\_PLL | PLL ground | in |  | PLL ground |
| B22 | CLKREF\_SEL\_PAD | Cystal mode selection(dedication pin to select) 0:40MHz cystal 1:20MHz cystal | in |  | Cystal mode selection(dedication pin to select) 0:40MHz cystal 1:20MHz cystal |
| A26 | IADC\_VINN\_A | IADC\_A N input pad | in |  | IADC\_A N input pad |
| D28 | IADC\_VINN\_B | IADC\_B N input pad | in |  | IADC\_B N input pad |
| E26 | IADC\_VINN\_C | IADC\_C N input pad | in |  | IADC\_C N input pad |
| G28 | IADC\_VINN\_D | IADC\_D N input pad | in |  | IADC\_D N input pad |
| B26 | IADC\_VINP\_A | IADC\_A P input pad | in |  | IADC\_A P input pad |
| D27 | IADC\_VINP\_B | IADC\_B P input pad | in |  | IADC\_B P input pad |
| E25 | IADC\_VINP\_C | IADC\_C P input pad | in |  | IADC\_C P input pad |
| G27 | IADC\_VINP\_D | IADC\_D P input pad | in |  | IADC\_D P input pad |
| A25 | IDAC\_OUTN\_A | IDAC\_A N output pad | out |  | IDAC\_A N output pad |
| E28 | IDAC\_OUTN\_B | IDAC\_B N output pad | out |  | IDAC\_B N output pad |
| B25 | IDAC\_OUTP\_A | IDAC\_A P output pad | out |  | IDAC\_A P output pad |
| E27 | IDAC\_OUTP\_B | IDAC\_B P output pad | out |  | IDAC\_B P output pad |
| C25 | PDET\_A\_2G | SAR1 input pad | in |  | SAR1 input pad |
| C24 | PDET\_A\_5G | SAR2 input pad | in |  | SAR2 input pad |
| D24 | PDET\_B\_2G | SAR1 input pad | in |  | SAR1 input pad |
| D23 | PDET\_B\_5G | SAR2 input pad | in |  | SAR2 input pad |
| A27 | QADC\_VINN\_A | QADC\_A N input pad | in |  | QADC\_A N input pad |
| C28 | QADC\_VINN\_B | QADC\_B N input pad | in |  | QADC\_B N input pad |
| F26 | QADC\_VINN\_C | QADC\_C N input pad | in |  | QADC\_C N input pad |
| H28 | QADC\_VINN\_D | QADC\_D N input pad | in |  | QADC\_D N input pad |
| B27 | QADC\_VINP\_A | QADC\_A P input pad | in |  | QADC\_A P input pad |
| C27 | QADC\_VINP\_B | QADC\_B P input pad | in |  | QADC\_B P input pad |
| F25 | QADC\_VINP\_C | QADC\_C P input pad | in |  | QADC\_C P input pad |
| H27 | QADC\_VINP\_D | QADC\_D P input pad | in |  | QADC\_D P input pad |
| A24 | QDAC\_OUTN\_A | QADC\_A N output pad | out |  | QADC\_A N output pad |
| F28 | QDAC\_OUTN\_B | QADC\_B N output pad | out |  | QADC\_B N output pad |
| B24 | QDAC\_OUTP\_A | QADC\_A P output pad | out |  | QADC\_A P output pad |
| F27 | QDAC\_OUTP\_B | QADC\_B P output pad | out |  | QADC\_B P output pad |
| D26 | RSSI\_1 | SAR1 input pad | in |  | SAR1 input pad |
| C23 | RSSI\_2 | SAR2 input pad | in |  | SAR2 input pad |
| A23 | XTAL1 | 20MHz cystal oscillator input | in |  | 20MHz cystal oscillator input |
| B23 | XTAL2 | 20MHz cystal oscillator output | out |  | 20MHz cystal oscillator output |

## DDR Interface (152)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin No.** | **Name** | **Pin Direction** | **Reset** | **IO Type** | **Description** |
| M1 | DDR\_A0 | out |  |  | SDRAM address |
| L2 | DDR\_A1 | out |  |  | SDRAM address |
| F1 | DDR\_A10 | out |  |  | SDRAM address |
| G1 | DDR\_A11 | out |  |  | SDRAM address |
| E1 | DDR\_A12 | out |  |  | SDRAM address |
| E2 | DDR\_A13 | out |  |  | SDRAM address |
| D1 | DDR\_A14 | out |  |  | SDRAM address |
| D2 | DDR\_A15 | out |  |  | SDRAM address |
| C2 | DDR\_A16 | out |  |  | SDRAM address |
| C1 | DDR\_A17 | out |  |  | SDRAM address |
| J1 | DDR\_A2 | out |  |  | SDRAM address |
| K1 | DDR\_A3 | out |  |  | SDRAM address |
| L1 | DDR\_A4 | out |  |  | SDRAM address |
| K2 | DDR\_A5 | out |  |  | SDRAM address |
| H2 | DDR\_A6 | out |  |  | SDRAM address |
| H1 | DDR\_A7 | out |  |  | SDRAM address |
| J3 | DDR\_A8 | out |  |  | SDRAM address |
| G2 | DDR\_A9 | out |  |  | SDRAM address |
| J6 | DDR\_ACTN | out |  |  | SDRAM act |
| G6 | DDR\_ALERTN | in |  |  | SDRAM alert output |
| C5 | DDR\_ATO | out |  |  | Analog test output |
| H13 | DDR\_AVDD18 | in |  |  | DDR PLL analog 1.8v power supply |
| H12 | DDR\_AVSS1V8 | in |  |  | DDR PLL analog ground |
| H3 | DDR\_BA0 | out |  |  | SDRAM bank address |
| J4 | DDR\_BA1 | out |  |  | SDRAM bank address |
| F4 | DDR\_BG0 | out |  |  | SDRAM bank group address |
| F3 | DDR\_BG1 | out |  |  | SDRAM bank group address |
| B1 | DDR\_CK | out |  |  | SDRAM clock |
| D3 | DDR\_CKE0 | out |  |  | SDRAM clock enable |
| C3 | DDR\_CKE1 | out |  |  | SDRAM clock enable |
| B2 | DDR\_CKN | out |  |  | SDRAM clock# |
| E3 | DDR\_CSN0 | out |  |  | SDRAM chip select |
| E4 | DDR\_CSN1 | out |  |  | SDRAM chip select |
| R4 | DDR\_DM0 | inout |  |  | SDRAM data mask |
| Y1 | DDR\_DM1 | inout |  |  | SDRAM data mask |
| N2 | DDR\_DM2 | inout |  |  | SDRAM data mask |
| L5 | DDR\_DM3 | inout |  |  | SDRAM data mask |
| F11 | DDR\_DM4 | inout |  |  | SDRAM data mask |
| A7 | DDR\_DM5 | inout |  |  | SDRAM data mask |
| B14 | DDR\_DM6 | inout |  |  | SDRAM data mask |
| F15 | DDR\_DM7 | inout |  |  | SDRAM data mask |
| U5 | DDR\_DQ0 | inout |  |  | SDRAM data |
| V4 | DDR\_DQ1 | inout |  |  | SDRAM data |
| AD1 | DDR\_DQ10 | inout |  |  | SDRAM data |
| AB2 | DDR\_DQ11 | inout |  |  | SDRAM data |
| AB1 | DDR\_DQ12 | inout |  |  | SDRAM data |
| AA1 | DDR\_DQ13 | inout |  |  | SDRAM data |
| Y2 | DDR\_DQ14 | inout |  |  | SDRAM data |
| W2 | DDR\_DQ15 | inout |  |  | SDRAM data |
| V1 | DDR\_DQ16 | inout |  |  | SDRAM data |
| U2 | DDR\_DQ17 | inout |  |  | SDRAM data |
| W1 | DDR\_DQ18 | inout |  |  | SDRAM data |
| U1 | DDR\_DQ19 | inout |  |  | SDRAM data |
| Y5 | DDR\_DQ2 | inout |  |  | SDRAM data |
| R1 | DDR\_DQ20 | inout |  |  | SDRAM data |
| P1 | DDR\_DQ21 | inout |  |  | SDRAM data |
| P2 | DDR\_DQ22 | inout |  |  | SDRAM data |
| N1 | DDR\_DQ23 | inout |  |  | SDRAM data |
| R6 | DDR\_DQ24 | inout |  |  | SDRAM data |
| R3 | DDR\_DQ25 | inout |  |  | SDRAM data |
| P6 | DDR\_DQ26 | inout |  |  | SDRAM data |
| P5 | DDR\_DQ27 | inout |  |  | SDRAM data |
| M3 | DDR\_DQ28 | inout |  |  | SDRAM data |
| M4 | DDR\_DQ29 | inout |  |  | SDRAM data |
| AA4 | DDR\_DQ3 | inout |  |  | SDRAM data |
| L3 | DDR\_DQ30 | inout |  |  | SDRAM data |
| L4 | DDR\_DQ31 | inout |  |  | SDRAM data |
| E6 | DDR\_DQ32 | inout |  |  | SDRAM data |
| D6 | DDR\_DQ33 | inout |  |  | SDRAM data |
| C6 | DDR\_DQ34 | inout |  |  | SDRAM data |
| E7 | DDR\_DQ35 | inout |  |  | SDRAM data |
| D9 | DDR\_DQ36 | inout |  |  | SDRAM data |
| F9 | DDR\_DQ37 | inout |  |  | SDRAM data |
| E9 | DDR\_DQ38 | inout |  |  | SDRAM data |
| C9 | DDR\_DQ39 | inout |  |  | SDRAM data |
| AA3 | DDR\_DQ4 | inout |  |  | SDRAM data |
| A2 | DDR\_DQ40 | inout |  |  | SDRAM data |
| A3 | DDR\_DQ41 | inout |  |  | SDRAM data |
| B4 | DDR\_DQ42 | inout |  |  | SDRAM data |
| A4 | DDR\_DQ43 | inout |  |  | SDRAM data |
| A6 | DDR\_DQ44 | inout |  |  | SDRAM data |
| B7 | DDR\_DQ45 | inout |  |  | SDRAM data |
| B8 | DDR\_DQ46 | inout |  |  | SDRAM data |
| A8 | DDR\_DQ47 | inout |  |  | SDRAM data |
| A9 | DDR\_DQ48 | inout |  |  | SDRAM data |
| B10 | DDR\_DQ49 | inout |  |  | SDRAM data |
| U4 | DDR\_DQ5 | inout |  |  | SDRAM data |
| A10 | DDR\_DQ50 | inout |  |  | SDRAM data |
| A13 | DDR\_DQ51 | inout |  |  | SDRAM data |
| A12 | DDR\_DQ52 | inout |  |  | SDRAM data |
| B13 | DDR\_DQ53 | inout |  |  | SDRAM data |
| A14 | DDR\_DQ54 | inout |  |  | SDRAM data |
| A15 | DDR\_DQ55 | inout |  |  | SDRAM data |
| D11 | DDR\_DQ56 | inout |  |  | SDRAM data |
| C11 | DDR\_DQ57 | inout |  |  | SDRAM data |
| E12 | DDR\_DQ58 | inout |  |  | SDRAM data |
| F12 | DDR\_DQ59 | inout |  |  | SDRAM data |
| V3 | DDR\_DQ6 | inout |  |  | SDRAM data |
| D14 | DDR\_DQ60 | inout |  |  | SDRAM data |
| C14 | DDR\_DQ61 | inout |  |  | SDRAM data |
| F14 | DDR\_DQ62 | inout |  |  | SDRAM data |
| C15 | DDR\_DQ63 | inout |  |  | SDRAM data |
| U3 | DDR\_DQ7 | inout |  |  | SDRAM data |
| AE2 | DDR\_DQ8 | inout |  |  | SDRAM data |
| AE1 | DDR\_DQ9 | inout |  |  | SDRAM data |
| Y4 | DDR\_DQS0 | inout |  |  | SDRAM data strobe |
| Y3 | DDR\_DQS0N | inout |  |  | SDRAM data strobe |
| AC2 | DDR\_DQS1 | inout |  |  | SDRAM data strobe |
| AC1 | DDR\_DQS1N | inout |  |  | SDRAM data strobe |
| T2 | DDR\_DQS2 | inout |  |  | SDRAM data strobe |
| T1 | DDR\_DQS2N | inout |  |  | SDRAM data strobe |
| P4 | DDR\_DQS3 | inout |  |  | SDRAM data strobe |
| P3 | DDR\_DQS3N | inout |  |  | SDRAM data strobe |
| C8 | DDR\_DQS4 | inout |  |  | SDRAM data strobe |
| D8 | DDR\_DQS4N | inout |  |  | SDRAM data strobe |
| B5 | DDR\_DQS5 | inout |  |  | SDRAM data strobe |
| A5 | DDR\_DQS5N | inout |  |  | SDRAM data strobe |
| B11 | DDR\_DQS6 | inout |  |  | SDRAM data strobe |
| A11 | DDR\_DQS6N | inout |  |  | SDRAM data strobe |
| D12 | DDR\_DQS7 | inout |  |  | SDRAM data strobe |
| C12 | DDR\_DQS7N | inout |  |  | SDRAM data strobe |
| D5 | DDR\_DTO0 | out |  |  | Digital test out |
| F7 | DDR\_DTO1 | out |  |  | Digital test out |
| G5 | DDR\_ODT0 | out |  |  | SDRAM on-die termination |
| H5 | DDR\_ODT1 | out |  |  | SDRAM on-die termination |
| H4 | DDR\_PARITY | out |  |  | SDRAM parity input |
| F8 | DDR\_PLL\_VDD | in |  |  | DDR PHY PLL power supply |
| G8 | DDR\_PLL\_VDD | in |  |  | DDR PHY PLL power supply |
| C4 | DDR\_RAM\_RSTN | out |  |  | SDRAM reset |
| G11 | DDR\_VDDQ | in |  |  | DDR IO power supply |
| T7 | DDR\_VDDQ | in |  |  | DDR IO power supply |
| J8 | DDR\_VDDQ | in |  |  | DDR IO power supply |
| K8 | DDR\_VDDQ | in |  |  | DDR IO power supply |
| N7 | DDR\_VDDQ | in |  |  | DDR IO power supply |
| P7 | DDR\_VDDQ | in |  |  | DDR IO power supply |
| L7 | DDR\_VDDQ | in |  |  | DDR IO power supply |
| L8 | DDR\_VDDQ | in |  |  | DDR IO power supply |
| U6 | DDR\_VDDQ | in |  |  | DDR IO power supply |
| M8 | DDR\_VDDQ | in |  |  | DDR IO power supply |
| G9 | DDR\_VDDQ | in |  |  | DDR IO power supply |
| H7 | DDR\_VDDQ | in |  |  | DDR IO power supply |
| G10 | DDR\_VDDQ | in |  |  | DDR IO power supply |
| R7 | DDR\_VDDQ | in |  |  | DDR IO power supply |
| J7 | DDR\_VDDQ | in |  |  | DDR IO power supply |
| R8 | DDR\_VDDQ | in |  |  | DDR IO power supply |
| U7 | DDR\_VDDQ | in |  |  | DDR IO power supply |
| H8 | DDR\_VDDQ | in |  |  | DDR IO power supply |
| H6 | DDR\_VREFI | in |  |  | DDR power supply |
| M6 | DDR\_VREFI\_ZQ | in |  |  | DDR power supply |
| K7 | DDR\_VREFO\_0 | out |  |  | DDR power supply |
| M7 | DDR\_VREFO\_1 | out |  |  | DDR power supply |
| L6 | DDR\_ZQ | in |  |  | DDR power supply |

## P/G Interface (242)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pin No.** | **Name** | **Pin Direction** | **Reset** | **IO Type** | **Description** |
| R10 | VDD |  |  |  | core power supply |
| K19 | VDD |  |  |  | core power supply |
| N17 | VDD |  |  |  | core power supply |
| U18 | VDD |  |  |  | core power supply |
| R17 | VDD |  |  |  | core power supply |
| P12 | VDD |  |  |  | core power supply |
| AA13 | VDD |  |  |  | core power supply |
| AA16 | VDD |  |  |  | core power supply |
| P15 | VDD |  |  |  | core power supply |
| N16 | VDD |  |  |  | core power supply |
| Y18 | VDD |  |  |  | core power supply |
| U16 | VDD |  |  |  | core power supply |
| P14 | VDD |  |  |  | core power supply |
| K17 | VDD |  |  |  | core power supply |
| AA15 | VDD |  |  |  | core power supply |
| N14 | VDD |  |  |  | core power supply |
| K18 | VDD |  |  |  | core power supply |
| P11 | VDD |  |  |  | core power supply |
| N13 | VDD |  |  |  | core power supply |
| T17 | VDD |  |  |  | core power supply |
| P17 | VDD |  |  |  | core power supply |
| V15 | VDD |  |  |  | core power supply |
| V19 | VDD |  |  |  | core power supply |
| P16 | VDD |  |  |  | core power supply |
| V18 | VDD |  |  |  | core power supply |
| AA14 | VDD |  |  |  | core power supply |
| L18 | VDD |  |  |  | core power supply |
| U19 | VDD |  |  |  | core power supply |
| Y17 | VDD |  |  |  | core power supply |
| U17 | VDD |  |  |  | core power supply |
| P10 | VDD |  |  |  | core power supply |
| V17 | VDD |  |  |  | core power supply |
| K14 | VDD |  |  |  | core power supply |
| R18 | VDD |  |  |  | core power supply |
| K10 | VDD |  |  |  | core power supply |
| W18 | VDD |  |  |  | core power supply |
| N12 | VDD |  |  |  | core power supply |
| W17 | VDD |  |  |  | core power supply |
| K15 | VDD |  |  |  | core power supply |
| U15 | VDD |  |  |  | core power supply |
| M10 | VDD |  |  |  | core power supply |
| M18 | VDD |  |  |  | core power supply |
| N15 | VDD |  |  |  | core power supply |
| T18 | VDD |  |  |  | core power supply |
| L17 | VDD |  |  |  | core power supply |
| Y19 | VDD |  |  |  | core power supply |
| P19 | VDD |  |  |  | core power supply |
| P13 | VDD |  |  |  | core power supply |
| P18 | VDD |  |  |  | core power supply |
| M17 | VDD |  |  |  | core power supply |
| N19 | VDD |  |  |  | core power supply |
| N10 | VDD |  |  |  | core power supply |
| K16 | VDD |  |  |  | core power supply |
| N11 | VDD |  |  |  | core power supply |
| AA17 | VDD |  |  |  | core power supply |
| N18 | VDD |  |  |  | core power supply |
| V16 | VDD |  |  |  | core power supply |
| L10 | VDD |  |  |  | core power supply |
| AA5 | VSS |  |  |  | core ground |
| M2 | VSS |  |  |  | core ground |
| P8 | VSS |  |  |  | core ground |
| AA8 | VSS |  |  |  | core ground |
| B12 | VSS |  |  |  | core ground |
| AA9 | VSS |  |  |  | core ground |
| J16 | VSS |  |  |  | core ground |
| Y8 | VSS |  |  |  | core ground |
| V9 | VSS |  |  |  | core ground |
| R16 | VSS |  |  |  | core ground |
| Y7 | VSS |  |  |  | core ground |
| V8 | VSS |  |  |  | core ground |
| U20 | VSS |  |  |  | core ground |
| R13 | VSS |  |  |  | core ground |
| P20 | VSS |  |  |  | core ground |
| AF24 | VSS |  |  |  | core ground |
| P21 | VSS |  |  |  | core ground |
| H9 | VSS |  |  |  | core ground |
| R15 | VSS |  |  |  | core ground |
| M19 | VSS |  |  |  | core ground |
| Y15 | VSS |  |  |  | core ground |
| T16 | VSS |  |  |  | core ground |
| AA11 | VSS |  |  |  | core ground |
| T19 | VSS |  |  |  | core ground |
| G13 | VSS |  |  |  | core ground |
| AD2 | VSS |  |  |  | core ground |
| AA21 | VSS |  |  |  | core ground |
| AB9 | VSS |  |  |  | core ground |
| J9 | VSS |  |  |  | core ground |
| T9 | VSS |  |  |  | core ground |
| R12 | VSS |  |  |  | core ground |
| T8 | VSS |  |  |  | core ground |
| H19 | VSS |  |  |  | core ground |
| N8 | VSS |  |  |  | core ground |
| V20 | VSS |  |  |  | core ground |
| R19 | VSS |  |  |  | core ground |
| AB16 | VSS |  |  |  | core ground |
| C18 | VSS |  |  |  | core ground |
| J19 | VSS |  |  |  | core ground |
| M9 | VSS |  |  |  | core ground |
| W13 | VSS |  |  |  | core ground |
| N9 | VSS |  |  |  | core ground |
| J2 | VSS |  |  |  | core ground |
| B15 | VSS |  |  |  | core ground |
| J5 | VSS |  |  |  | core ground |
| Y12 | VSS |  |  |  | core ground |
| L19 | VSS |  |  |  | core ground |
| AA12 | VSS |  |  |  | core ground |
| P9 | VSS |  |  |  | core ground |
| B6 | VSS |  |  |  | core ground |
| H15 | VSS |  |  |  | core ground |
| W15 | VSS |  |  |  | core ground |
| J12 | VSS |  |  |  | core ground |
| T20 | VSS |  |  |  | core ground |
| M5 | VSS |  |  |  | core ground |
| M15 | VSS |  |  |  | core ground |
| K9 | VSS |  |  |  | core ground |
| AB10 | VSS |  |  |  | core ground |
| M14 | VSS |  |  |  | core ground |
| F17 | VSS |  |  |  | core ground |
| E14 | VSS |  |  |  | core ground |
| Y26 | VSS |  |  |  | core ground |
| U8 | VSS |  |  |  | core ground |
| L16 | VSS |  |  |  | core ground |
| L9 | VSS |  |  |  | core ground |
| W19 | VSS |  |  |  | core ground |
| M12 | VSS |  |  |  | core ground |
| W20 | VSS |  |  |  | core ground |
| R9 | VSS |  |  |  | core ground |
| N20 | VSS |  |  |  | core ground |
| M16 | VSS |  |  |  | core ground |
| F2 | VSS |  |  |  | core ground |
| R14 | VSS |  |  |  | core ground |
| AA2 | VSS |  |  |  | core ground |
| R5 | VSS |  |  |  | core ground |
| F5 | VSS |  |  |  | core ground |
| AB15 | VSS |  |  |  | core ground |
| J15 | VSS |  |  |  | core ground |
| AA20 | VSS |  |  |  | core ground |
| R2 | VSS |  |  |  | core ground |
| T12 | VSS |  |  |  | core ground |
| J24 | VSS |  |  |  | core ground |
| M13 | VSS |  |  |  | core ground |
| Y13 | VSS |  |  |  | core ground |
| E8 | VSS |  |  |  | core ground |
| V5 | VSS |  |  |  | core ground |
| W12 | VSS |  |  |  | core ground |
| U21 | VSS |  |  |  | core ground |
| H10 | VSS |  |  |  | core ground |
| P26 | VSS |  |  |  | core ground |
| AB17 | VSS |  |  |  | core ground |
| T15 | VSS |  |  |  | core ground |
| H11 | VSS |  |  |  | core ground |
| AA10 | VSS |  |  |  | core ground |
| T14 | VSS |  |  |  | core ground |
| T13 | VSS |  |  |  | core ground |
| W8 | VSS |  |  |  | core ground |
| J17 | VSS |  |  |  | core ground |
| Y14 | VSS |  |  |  | core ground |
| Y16 | VSS |  |  |  | core ground |
| W16 | VSS |  |  |  | core ground |
| L14 | VSS |  |  |  | core ground |
| W14 | VSS |  |  |  | core ground |
| L12 | VSS |  |  |  | core ground |
| B9 | VSS |  |  |  | core ground |
| B3 | VSS |  |  |  | core ground |
| C21 | VSS |  |  |  | core ground |
| E11 | VSS |  |  |  | core ground |
| U9 | VSS |  |  |  | core ground |
| G12 | VSS |  |  |  | core ground |
| V2 | VSS |  |  |  | core ground |
| J11 | VSS |  |  |  | core ground |
| J10 | VSS |  |  |  | core ground |
| AC21 | VSS |  |  |  | core ground |
| L15 | VSS |  |  |  | core ground |
| AF21 | VSS |  |  |  | core ground |
| Y20 | VSS |  |  |  | core ground |
| L13 | VSS |  |  |  | core ground |
| J14 | OTP\_VDDIO1V8 |  |  |  | OTP IO 1.8v power supply |
| H14 | CA7\_AVDD1V8 |  |  |  | CA7 PLL 1.8v analog power supply |
| J13 | CA7\_AVSS1V8 |  |  |  | CA7 PLL analog ground |
| K11 | CA7\_VDD |  |  |  | CA7 core power supply |
| K13 | CA7\_VDD |  |  |  | CA7 core power supply |
| M11 | CA7\_VDD |  |  |  | CA7 core power supply |
| L11 | CA7\_VDD |  |  |  | CA7 core power supply |
| K12 | CA7\_VDD |  |  |  | CA7 core power supply |
| AB13 | CEVA\_AVDD1V8 |  |  |  | CEVA PLL 1.8v analog power supply |
| AB14 | CEVA\_AVSS1V8 |  |  |  | CEVA PLL analog ground |
| U11 | CEVA\_VDD |  |  |  | CEVA core power supply |
| U10 | CEVA\_VDD |  |  |  | CEVA core power supply |
| V10 | CEVA\_VDD |  |  |  | CEVA core power supply |
| V11 | CEVA\_VDD |  |  |  | CEVA core power supply |
| Y11 | CEVA\_VDD |  |  |  | CEVA core power supply |
| U14 | CEVA\_VDD |  |  |  | CEVA core power supply |
| W10 | CEVA\_VDD |  |  |  | CEVA core power supply |
| Y9 | CEVA\_VDD |  |  |  | CEVA core power supply |
| R11 | CEVA\_VDD |  |  |  | CEVA core power supply |
| Y10 | CEVA\_VDD |  |  |  | CEVA core power supply |
| V14 | CEVA\_VDD |  |  |  | CEVA core power supply |
| W11 | CEVA\_VDD |  |  |  | CEVA core power supply |
| U13 | CEVA\_VDD |  |  |  | CEVA core power supply |
| W9 | CEVA\_VDD |  |  |  | CEVA core power supply |
| U12 | CEVA\_VDD |  |  |  | CEVA core power supply |
| V12 | CEVA\_VDD |  |  |  | CEVA core power supply |
| T10 | CEVA\_VDD |  |  |  | CEVA core power supply |
| T11 | CEVA\_VDD |  |  |  | CEVA core power supply |
| V13 | CEVA\_VDD |  |  |  | CEVA core power supply |
| L20 | VDD18\_EMMC\_0 |  |  |  | EMMC IO 1.8v power supply for domain-0 |
| M20 | VDD18\_EMMC\_1 |  |  |  | EMMC IO 1.8v power supply for domain-1 |
| L21 | VDD3\_EMMC |  |  |  | EMMC IO 3v power supply |
| R21 | VDD18\_SD\_0 |  |  |  | SD IO 1.8v power supply for domain-0 |
| R20 | VDD18\_SD\_1 |  |  |  | SD IO 1.8v power supply for domain-1 |
| T21 | VDD3\_SD |  |  |  | SD IO 3v power supply |
| M21 | VDD33\_RGM |  |  |  | RGM II IO 3.3v power supply |
| N21 | VDD33\_RGM |  |  |  | RGM II IO 3.3v power supply |
| AB19 | VP\_HDMI | INOUT |  |  | HDMI 0.9 V core devices power supply |
| AC20 | VPH\_HDMI | INOUT |  |  | HDMI 1.8V I/O devices power supply |
| AB20 | VP3V3\_TERM\_HDMI | INOUT |  |  | HDMI 3.3Vtermination resistors analog power supply |
| AF14 | MIPI\_AGND |  |  |  | MIPI analog ground |
| AF4 | MIPI\_AGND |  |  |  | MIPI analog ground |
| AF18 | MIPI\_AGND |  |  |  | MIPI analog ground |
| AF12 | MIPI\_AGND |  |  |  | MIPI analog ground |
| AC11 | MIPI\_AGND |  |  |  | MIPI analog ground |
| AC9 | MIPI\_AGND |  |  |  | MIPI analog ground |
| AC14 | MIPI\_AGND |  |  |  | MIPI analog ground |
| AF8 | MIPI\_AGND |  |  |  | MIPI analog ground |
| AB12 | MIPI\_AVDD1V8 |  |  |  | MIPI analog power supply |
| AB11 | MIPI\_AVDD1V8 |  |  |  | MIPI analog power supply |
| G14 | PCIE\_VP |  |  |  | PCIE Low voltage supply |
| G15 | PCIE\_VPH |  |  |  | PCIE High voltage supply |
| H16 | PCIE\_VPTX |  |  |  | PCIE Transmitter supply voltage |
| AC18 | USB\_VDD3V3 |  |  |  | USB high-speed SuperSpeed, High-voltage supply |
| AB18 | USB\_VDDH3V3 |  |  |  | USB high-speed, High-voltage supply |
| AA19 | USB\_VP0V9 |  |  |  | USB SuperSpeed, low-voltage supply |
| AA18 | USB\_DVDD0V9 |  |  |  | USB high-speed, low-voltage supply |
| J18 | TYPEC\_AVDD |  |  |  | PMA digital core supply |
| H17 | TYPEC\_AVDD |  |  |  | PMA transceiver core supply |
| H18 | TYPEC\_AVDD\_CLK |  |  |  | Clean analog power for HS clock applications |
| G18 | TYPEC\_AVDD\_H\_1V8 |  |  |  | High voltage power for the bias and parts of the PLL |
| G17 | TYPEC\_AVDD\_VH\_3V3 |  |  |  | AUX 3.3v IO Supply |
| Y21 | VDD18 |  |  |  | 1.8v digital IO power supply |
| V21 | VDD18 |  |  |  | 1.8v digital IO power supply |
| W21 | VDD18 |  |  |  | 1.8v digital IO power supply |
| V7 | VDD18\_R |  |  |  | 1.8v digital IO power supply for right bar |