深圳大经技术有限公司
Shenzhen Dajtech Co.,Ltd

# CES-AM335X-CORE（PIN）

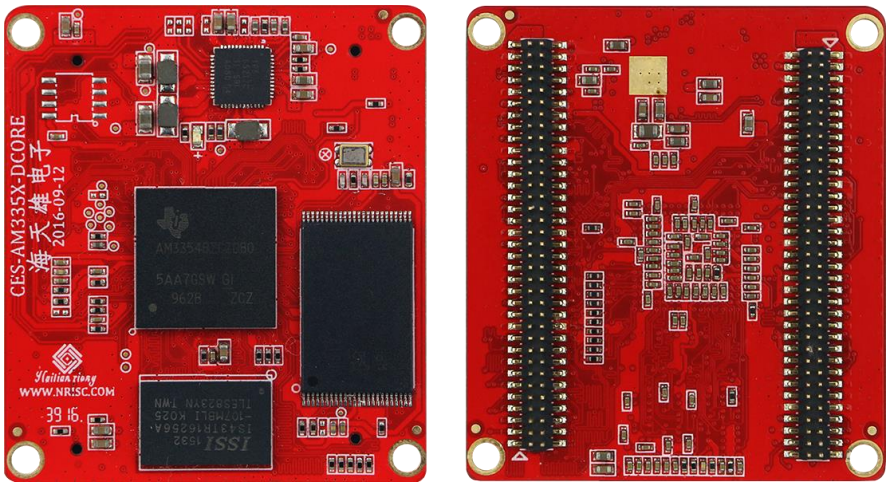
# Product Manual

ARM SOC Module

Rev. V1.0

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www.nrisc.cn




## Introduction

CES-AM335X SOC Module is the core board for industrial application. Based on TI Sitara Series ARM processor AM3354, which is designed with a highly integrated system module SOM. This board integrates 512MB of DDR3 particles, 1GB SLC NANDFLASH and power management chip.

CES-AM335X SOC board fully supports CAN, PROFIBUS, RS485 and other mainstream industrial bus, support dual Gigabit Ethernet interface. The maximum operating frequency up to 800MHz, using 45nm process technology, integrated ARM Cortex-A8 microprocessor unit (MPU), POWERVR SGX Graphic Accelerator for 3D Graphic Acceleration to Support Display and Game Effects, Programmable Real-Time Unit and Industrial Communication Subsystem (PRU-ICSS) (separated from ARM core, to realize the possibility of flexible configuration and be more efficient in transmission and control) to ensure the system always in high performance while in low-power consumption.

## Feature

- Based on TI Sitara™ ARM® Cortex®-A8 AM3354 1GHz 32‑Bit RISC Processor
- Onboard 512MB DDR3 and 1GB SLC NANDFLASH
- Support 24bit RGB LCD
- Two industrial Gigabit Ethernet MAC (10/100/1000Mbps)
- Rich I/O，such as CAN，MMC，SDIO，UART，GbE LAN，USB 2.0，GPIO，I2C，SPI
- Support Android4.2，Embedded Linux3.2

# Specification

| | |
|---|---|
| **Processor** | |
| CPU | TI Sitara™ ARM® Cortex-A8 AM3354 1GHz 32‑Bit RISC processor |
| Cache | 32KB（Instruction）/32KB（Data）Cache and 256KB L2 Cache |
| **Storage** | |
| Memory | On-board 512MB DDR3 |
| Flash | 1GB SLC NANDFLASH |
| **PMIC** | |
| Chipset | TPS65217C |
| **B2B Connectors** | |
| Connectors | 2* Precision 1.27 double row 2 * 35PIN connector |
| Pin Numbers | 140PIN |
| Pin Function | GPIO、RS485、LAN、RGB、CAN、I2C、Audio I2S、UART、SPI、USB HOST/OTG etc. |
| **B2B Fixed Hole** | |
| Fixed Hole | No |
| **Operation System** | |
| OS | Optional Android 4.2、Embedded Linux 3.2 |
| **Environment** | |
| Work Environment | Temperature: -20~60℃，Humidity: 5%~90%RH@31℃, no condensation |
| Storage Environment | Temperature: -40~85℃，Humidity: 5%-95%RH@39℃, no condensation |
| **Size** | |
| Size(mm) | 46*52mm |

# Pin Definition

| J1 | | | | |
|---|---|---|---|---|
| PIN NO. | Signal Name | CPU Ball Number | CPU Ball Name | Remark |
| 1 | VDD_5V | | | DC 5V Power（input） |
| 2 | DGND | | | Power Ground |
| 3 | VDD_5V | | | DC 5V Power（input） |
| 4 | VRTC | | | RTC Power（input） |
| 5 | DGND | | | Power Ground |
| 6 | DGND | | | Power Ground |
| 7 | I2C0_SDA | C17 | I2C0_SDA/TIMER4/UART2_CTSN/ECAP2_IN_PWM2_OUT/GPIO3_5 | I2C |
| 8 | I2C1_SDA | B16 | SPI0_D1/MMC1_SDWP/I2C1_SDA/EHRPWM0_TRIPZONE_INPUT/PR1_UART0_RXD/PR1_EDIO_DATA_IN0/PR1_EDIO_DATA_OUT0/GPIO0_4 | I2C |
| 9 | I2C0_SCL | C16 | I2C0_SCL/TIMER7/UART2_RTSN/ECAP1_IN_PWM1_OUT/GPIO3_6 | I2C |
| 10 | I2C1_SCL | A16 | SPI0_CS0/MMC2_SDWP/I2C1_SCL/EHRPWM0_SYNCI_O/PR1_UART0_TXD/PR1_EDIO_DATA_IN1/PR1_EDIO_DATA_OUT1/GPIO0_5 | I2C |
| 11 | GPIO0_29 | H18 | RMII1_REFCLK/XDMA_EVENT_INTR2/SPI1_CS0/UART5_TXD/MCASP1_AXR3/MMC0_POW/MCASP1_AHCLKX/GPIO0_29 | GPIO |
| 12 | GPIO0_31 | U17 | GPMC_WPN/GMII2_RXERR/GPMC_CSN5/RMII2_RXERR/MMC2_SDCD/PR1_MDIO_MDCLK/UART4_TXD/GPIO0_31 | GPIO |
| 13 | GPIO1_31 | V9 | GPMC_CSN2/GPMC_BE1N/MMC1_CMD/PR1_EDIO_DATA_IN7/PR1_EDIO_DATA_OUT7/PR1_PRU1_PRU_R30_13/PR1_PRU1_PRU_R31_13/GPIO1_31 | GPIO |
| 14 | GPIO1_28 | U18 | GPMC_BE1N/GMII2_COL/GPMC_CSN6/MMC2_DAT3/GPMC_DIR/PR1_MII1_RXLINK/MCASP0_ACLKR/GPIO1_28 | GPIO |
| 15 | MMC0_DAT2 | F18 | MMC0_DAT2/GPMC_A21/UART4_RTSN/TIMER6/UART1_DSRN/PR1_PRU0_PRU_R30_9/PR1_PRU0_PRU_R31_9/GPIO2_27 | SD/MMC |
| 16 | MMC0_DAT3 | F17 | MMC0_DAT3/GPMC_A20/UART4_CTSN/TIMER5/UART1_DCDN/PR1_PRU0_PRU_R30_8/PR1_PRU0_PRU_R31_8/GPIO2_26 | SD/MMC |
| 17 | MMC0_DAT0 | G16 | MMC0_DAT0/GPMC_A23/UART5_RTSN/UART3_TXD/UART1_RIN/PR1_PRU0_PRU_R30_11/PR1_PRU0_PRU_R31_11/GPIO2_29 | SD/MMC |
| 18 | MMC0_DAT1 | G15 | MMC0_DAT1/GPMC_A22/UART5_CTSN/UART3_R | SD/MMC |

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|---|---|---|---|---|
| | | | XD/UART1_DTRN/PR1_PRU0_PRU_R30_10/PR1_PRU0_PRU_R31_10/GPIO2_28 | |
| 19 | MMC0_CMD | G18 | MMC0_CMD/GPMC_A25/UART3_RTSN/UART2_TXD/DCAN1_RX/PR1_PRU0_PRU_R30_13/PR1_PRU0_PRU_R31_13/GPIO2_31 | SD/MMC |
| 20 | MMC0_CLKO | G17 | MMC0_CLK/GPMC_A24/UART3_CTSN/UART2_RXD/DCAN1_TX/PR1_PRU0_PRU_R30_12/PR1_PRU0_PRU_R31_12/GPIO2_30 | SD/MMC |
| 21 | CD/EMU4 | C15 | SPI0_CS1/UART3_RXD/ECAP1_IN_PWM1_OUT/MMC0_POW/XDMA_EVENT_INTR2/MMC0_SDCD/EMU4/GPIO0_6 | SD/MMC |
| 22 | SYS_RESETn | A10 | NRESET_INOUT | NRESET |
| 23 | DGND | | | Power Ground |
| 24 | GPIO3_0 | H16 | GMII1_COL/RMII2_REFCLK/SPI1_SCLK/UART5_RXD/MCASP1_AXR2/MMC2_DAT3/MCASP0_AXR2/GPIO3_0 | SPI/GPIO(SPI1_SCLK) |
| 25 | CLKOUT2 | D14 | EVENT_INTR1/TCLKIN/CLKOUT2/TIMER7/PR1PRU0_PRUR31_16/EMU3/GPIO0_20 | CLKOUT2 |
| 26 | GPIO3_1 | H17 | GMII1_CRS/RMII1_CRS_DV/SPI1_D0/I2C1_SDA/MCASP1_ACLKX/UART5_CTSN/UART2_RXD/GPIO3_ | SPI/GPIO(SPI1_D0) |
| 27 | CLKOUT1 | A15 | EVENT_INTR0/TIMER4/CLKOUT1/SPI1_CS1/PR1PRU1R31_16/EMU2/GPIO0_19 | CLKOUT1 |
| 28 | GPIO3_2 | J15 | GMII1_RXERR/RMII1_RXERR/SPI1_D1/I2C1_SCL/MCASP1_FSX/UART5_RTSN/UART2_TXD/GPIO3_2 | SPI/GPIO(SPI1_D1) |
| 29 | DGND | | | Power Ground |
| 30 | GPIO2_0 | T13 | GPMC_CSN3/MMC2_CMD/PR1_MDIO_DATA/GPIO2_0 | GPIO |
| 31 | GPIO1_30 | U9 | GPMC_CSN1/GPMC_CLK/MMC1_CLK/PRT1EDIO_DATA_IN6/PRT1_EDIO_DATA_OUT6/PR1_PRU1_PRU_R30_12/PR1_PRU1_PRU_R31_12/GPIO1_30 | GPIO |
| 32 | GPIO2_1 | V12 | GPMC_CLK/LCD_MEM_CLK/GPMC_WAIT1/MMC2_CLK/PRT1_MII1_TXEN/MCASP0_FSR/GPIO2_1 | GPIO |
| 33 | GPIO0_7 | C18 | ECAP0_IN_PWM0_OUT/UART3_TXD/SPI1_CS1/PR1_ECAP0_ECAP_CAPIN_APWM_O/SPI1_SCLK/MMC0_SDWP/XDMA_EVENT_INTR2/GPIO0_7 | SPI/GPIO(SPI1_CS1) |
| 34 | DGND | | | Power Ground |
| 35 | UART0_TXD | E16 | UART0_TXD/SPI1_CS1/DCAN0_RX/I2C2_SCL/ECAP1_IN_PWM1_OUT/PR1_PRU1_PRU_R30_15/PR1_PRU1_PRU_R31_15/GPIO1_11 | UART |
| 36 | UART1_TXD | D15 | UART1_TXD/MMC2_SDWP/DCAN1_RX/I2C1_SCL//PR1_UART0_TXD/PR1_PRU0_PRU_R31_16/GPIO0_15 | UART |
| 37 | UART0_RXD | E15 | UART0_RXD/SPI1_CS0/DCAN0_TX/I2C2_SDA/EC | UART |

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|---|---|---|---|---|
| | | | AP2_IN_PWM2_OUT/PR1_PRU1_PRU_R30_14/PR1_PRU1_PRU_R31_14/GPIO1_10 | |
| 38 | UART1_RXD | D16 | UART1_RXD/MMC1_SDWP/DCAN1_TX/I2C1_SDA//PR1_UART0_RXD/PR1_PRU1_PRU_R31_16/GPIO0_14 | UART |
| 39 | UART2_TXD | B17 | SPI0_D0/UART2_TXD/I2C2_SCL/EHRPWM0B/PR1_UART0_RTS_N/PR1_EDIO_LATCH_IN/EMU3/GPIO0_3 | UART |
| 40 | DGND | | | Power Ground |
| 41 | UART2_RXD | A17 | SPI0_SCLK/UART2_RXD/I2C2_SDA/EHRPWM0A/PR1_UART0_CTS_N/PR1_EDIO_SOF/EMU2/GPIO0_2 | UART |
| 42 | DGND | | | Power Ground |
| 43 | VDD_ADC | B9 | VREFP | VREFP |
| 44 | GNDA_ADC | A9 | VREFN | VREFN |
| 45 | AIN0 | B6 | AIN0 | ADC |
| 46 | AIN1 | C7 | AIN1 | ADC |
| 47 | AIN2 | B7 | AIN2 | ADC |
| 48 | AIN3 | A7 | AIN3 | ADC |
| 49 | AIN4 | C8 | AIN4 | ADC |
| 50 | AIN5 | B8 | AIN5 | ADC |
| 51 | AIN6 | A8 | AIN6 | ADC |
| 52 | GNDA_ADC | A9 | VREFN | VREFN |
| 53 | MCASP0_FSR | C13 | MCASP0_FSR/EQEP0B_IN/MCASP0_AXR3/MCASP1_FSX/EMU2/PR1_PRU0_PRU_R30_5/PR1_PRU0_PRU_R31_5/GPIO3_19 | AUDIO |
| 54 | MCASP0_AHCLKX | A14 | MCASP0_AHCLKX/EQEP0_STROBE/MCASP0_AXR3/MCASP1_AXR1/EMU4/PR1_PRU0_PRU_R30_7/PR1_PRU0_PRU_R31_7/GPIO3_21 | AUDIO |
| 55 | MCASP0_ACLKX | A13 | MCASP0_ACLKX/EHRPWM0A//SPI1_SCLK/MMC0_SDCD/PR1_PRU0_PRU_R30_0/PR1_PRU0_PRU_R31_0/GPIO3_14 | AUDIO |
| 56 | MCASP0_FSX | B13 | MCASP0_FSX/EHRPWM0B//SPI1_D0/MMC1_SDCD/PR1_PRU0_PRU_R30_1/PR1_PRU0_PRU_R31_1/GPIO3_15 | AUDIO |
| 57 | MCASP0_AHCLKR | C12 | MCASP0_AHCLKR/EHRPWM0_SYNCI_O/MCASP0_AXR2/SPI1_CS0/ECAP2_IN_PWM2_OUT/PR1_PRU0_PRU_R30_3/PR1_PRU0_PRU_R31_3/GPIO3_17 | AUDIO |
| 58 | MCASP0_AXR1 | D13 | MCASP0_AXR1/EQEP0_INDEX//MCASP1_AXR0/EMU3/PR1_PRU0_PRU_R30_6/PR1_PRU0_PRU_R31_6/GPIO3_20 | AUDIO |
| 59 | MCASP0_AXR0 | D12 | MCASP0_AXR0/EHRPWM0_TRIPZONE_INPUT//SPI1_D1/MMC2_SDCD/PR1_PRU0_PRU_R30_2/PR1 | AUDIO |

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| | | | _PRU0_PRU_R31_2/GPIO3_16 | |
| 60 | MCASP0_ACLKR | B12 | MCASP0_ACLKR/EQEP0A_IN/MCASP0_AXR2/MCASP1_ACLKX/MMC0_SDWP/PR1_PRU0_PRU_R30_4/PR1_PRU0_PRU_R31_4/GPIO3_18 | AUDIO |
| 61 | DGND | | | Power Ground |
| 62 | DGND | | | Power Ground |
| 63 | GPIO2_10 | T1 | LCD_DATA4/GPMC_A4//EQEP2A_IN//PR1_PRU1_PRU_R30_4/PR1_PRU1_PRU_R31_4/GPIO2_10 | LCD(R7) |
| 64 | GPIO2_9 | R4 | LCD_DATA3/GPMC_A3//EHRPWM2_SYNCI_O//PR1_PRU1_PRU_R30_3/PR1_PRU1_PRU_R31_3/GPIO2_9 | LCD(R6) |
| 65 | GPIO2_8 | R3 | LCD_DATA2/GPMC_A2//EHRPWM2_TRIPZONE_INPUT//PR1_PRU1_PRU_R30_2/PR1_PRU1_PRU_R31_2/GPIO2_8 | LCD(R5) |
| 66 | GPIO2_7 | R4 | LCD_DATA1/GPMC_A1//EHRPWM2B//PR1_PRU1_PRU_R30_1/PR1_PRU1_PRU_R31_1/GPIO2_7 | LCD(R4) |
| 67 | GPIO2_6 | R1 | LCD_DATA0/GPMC_A0//EHRPWM2A//PR1_PRU1_PRU_R30_0/PR1_PRU1_PRU_R31_0/GPIO2_6 | LCD(R3) |
| 68 | GPIO1_15 | U13 | GPMC_AD15/LCD_DATA16/MMC1_DAT7/MMC2_DAT3/EQEP2_STROBE/PR1_ECAP0_ECAP_CAPIN_APWM_O/PR1_PRU0_PRU_R31_15/GPIO1_15 | LCD(R2) |
| 69 | GPIO1_13 | R12 | GPMC_AD13/LCD_DATA18/MMC1_DAT5/MMC2_DAT1/EQEP2B_IN/PR1_MII0_TXD1/PR1_PRU0_PRU_R30_15/GPIO1_13 | LCD(R1) |
| 70 | GPIO0_26 | T11 | GPMC_AD10/LCD_DATA21/MMC1_DAT2/MMC2_DAT6/EHRPWM2_TRIPZONE_INPUT/PR1_MII0_TXEN//GPIO0_26 | LCD(R0) |

## J2

| PIN NO. | Signal Name | CPU Ball Number | CPU Ball Name | Remark |
|---|---|---|---|---|
| 1 | UART3_CTSN | U3 | LCD_DATA10/GPMC_A14/EHRPWM1A/MCASP0_AXR0//PR1_MII0_RXD1/UART3_CTSN/GPIO2_16 | LCD(G7) |
| 2 | UART5_RXD | U2 | LCD_DATA9/GPMC_A13/EHRPWM1_SYNCI_O/MCASP0_FSX/UART5_RXD/PR1_MII0_RXD2/UART2_RTSN/GPIO2_15 | LCD(G6) |
| 3 | UART5_TXD | U1 | LCD_DATA8/GPMC_A12/EHRPWM1_TRIPZONE_INPUT/MCASP0_ACLKX/UART5_TXD/PR1_MII0_RXD3/UART2_CTSN/GPIO2_14 | LCD(G5) |
| 4 | GPIO2_13 | T4 | LCD_DATA7/GPMC_A7/PR1_EDIO_DATA_IN7/EQEP2_STROBE/PR1_EDIO_DATA_OUT7/PR1_PRU1_PRU_R30_7/PR1_PRU1_PRU_R31_7/GPIO2_13 | LCD(G4) |
| 5 | GPIO2_12 | T3 | LCD_DATA6/GPMC_A6/PR1_EDIO_DATA_IN6/EQ | LCD(G3) |

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|---|---|---|---|---|
| | | | EP2_INDEX/PR1_EDIO_DATA_OUT6/PR1_PRU1_PRU_R30_6/PR1_PRU1_PRU_R31_6/GPIO2_12 | |
| 6 | GPIO2_11 | T2 | LCD_DATA5/GPMC_A5//EQEP2B_IN//PR1_PRU1_PRU_R30_5/PR1_PRU1_PRU_R31_5/GPIO2_11 | LCD(G2) |
| 7 | GPIO1_12 | T12 | GPMC_AD12/LCD_DATA19/MMC1_DAT4/MMC2_DAT0/EQEP2A_IN/PR1_MII0_TXD2/PR1_PRU0_PRU_R30_14/GPIO1_12 | LCD(G1) |
| 8 | EHRPWM2B | T10 | GPMC_AD9/LCD_DATA22/MMC1_DAT1/MMC2_DAT5/EHRPWM2B/PR1_MII0_CRS//GPIO0_23 | LCD(G0) |
| 9 | UART5_RTSN | T5 | LCD_DATA15/GPMC_A19/EQEP1_STROBE/MCASP0_AHCLKX/MCASP0_AXR3/PR1_MII0_RXDV/UART5_RTSN/GPIO0_11 | LCD(B7) |
| 10 | UART5_CTSN | V4 | LCD_DATA14/GPMC_A18/EQEP1_INDEX/MCASP0_AXR1/UART5_RXD/PR1_MII_MR0_CLK/UART5_CTSN/GPIO0_10 | LCD(B6) |
| 11 | UART4_RTSN | V3 | LCD_DATA13/GPMC_A17/EQEP1B_IN/MCASP0_FSR/MCASP0_AXR3/PR1_MII0_RXER/UART4_RTSN/GPIO0_9 | LCD(B5) |
| 12 | UART4_CTSN | V2 | LCD_DATA12/GPMC_A16/EQEP1A_IN/MCASP0_ACLKR/MCASP0_AXR2/PR1_MII0_RXLINK/UART4_CTSN/GPIO0_8 | LCD(B4) |
| 13 | UART3_RTSN | U4 | LCD_DATA11/GPMC_A15/EHRPWM1B/MCASP0_AHCLKR/MCASP0_AXR2/PR1_MII0_RXD0/UART3_RTSN/GPIO2_17 | LCD(B3) |
| 14 | GPIO1_14 | V13 | GPMC_AD14/LCD_DATA17/MMC1_DAT6/MMC2_DAT2/EQEP2_INDEX/PR1_MII0_TXD0/PR1_PRU0_PRU_R31_14/GPIO1_14 | LCD(B2) |
| 15 | GPIO0_27 | U12 | GPMC_AD11/LCD_DATA20/MMC1_DAT3/MMC2_DAT7/EHRPWM2_SYNCI_O/PR1_MII0_TXD3//GPIO0_27 | LCD(B1) |
| 16 | EHRPWM2A | U10 | GPMC_AD8/LCD_DATA23/MMC1_DAT0/MMC2_DAT4/EHRPWM2A/PR1_MII_MT0_CLK//GPIO0_22 | LCD(B0) |
| 17 | GPIO2_25 | R6 | LCD_AC_BIAS_EN/GPMC_A11//PR1_EDIO_DATA_IN5/PR1_EDIO_DATA_OUT5/PR1_PRU1_PRU_R30_11/PR1_PRU1_PRU_R31_11/GPIO2_25 | LCD(DE) |
| 18 | GPIO2_23 | R5 | LCD_HSYNC/GPMC_A9//PR1_EDIO_DATA_IN3/PR1_EDIO_DATA_OUT3/PR1_PRU1_PRU_R30_9/PR1_PRU1_PRU_R31_9/GPIO2_23 | LCD(HSYNC) |
| 19 | GPIO2_22 | U5 | LCD_VSYNC/GPMC_A8//PR1_EDIO_DATA_IN2/PR1_EDIO_DATA_OUT2/PR1_PRU1_PRU_R30_8/PR1_PRU1_PRU_R31_8/GPIO2_22 | LCD(VSYNC) |
| 20 | GPIO2_24 | V5 | LCD_PCLK/GPMC_A10//PR1_EDIO_DATA_IN4/PR1_EDIO_DATA_OUT4/PR1_PRU1_PRU_R30_10/PR1_PRU1_PRU_R31_10/GPIO2_24 | LCD(PCLK) |
| 21 | DGND | | | Power Ground |

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|---|---|---|---|---|
| 22 | DGND | | | Power Ground |
| 23 | RGMII2_RCTL | V14 | GPMC_A1/GMII2_RXDV/RGMII2_RCTL/MMC2_DAT0/GPMC_A17/PR1_MII1_TXD3/EHRPWM1_SYNCI_O/GPIO1_17 | LAN2 |
| 24 | RGMII2_RXD3 | V16 | GPMC_A8/GMII2_RXD3/RGMII2_RD3/MMC2_DAT6/GPMC_A24/PR1_MII1_RXD0/MCASP0_ACLKX/GPIO1_24 | LAN2 |
| 25 | RGMII2_RXD2 | U16 | GPMC_A9/GMII2_RXD2/RGMII2_RD2/MMC2_DAT7/GPMC_A25/PR1_MII_MR1_CLK/MCASP0_FSX/GPIO1_25 | LAN2 |
| 26 | RGMII2_RXD1 | T16 | GPMC_A10/GMII2_RXD1/RGMII2_RD1/RMII2_RXD1/GPMC_A26/PR1_MII1_CRS/MCASP0_AXR0/GPIO1_26 | LAN2 |
| 27 | RGMII2_RXD0 | V17 | GPMC_A11/GMII2_RXD0/RGMII2_RD0/RMII2_RXD0/GPMC_A27/PR1_MII1_RXER/MCASP0_AXR1/GPIO1_27 | LAN2 |
| 28 | RGMII2_RCLK | T15 | GPMC_A7/GMII2_RXCLK/RGMII2_RCLK/MMC2_DAT5/GPMC_A23/PR1_MII1_RXD1/EQEP1_STROBE/GPIO1_23 | LAN2 |
| 29 | RGMII2_TCLK | U15 | GPMC_A6/GMII2_TXCLK/RGMII2_TCLK/MMC2_DAT4/GPMC_A22/PR1_MII1_RXD2/EQEP1_INDEX/GPIO1_22 | LAN2 |
| 30 | RGMII2_TXD3 | U14 | GPMC_A2/GMII2_TXD3/RGMII2_TD3/MMC2_DAT1/GPMC_A18/PR1_MII1_TXD2/EHRPWM1A/GPIO1_18 | LAN2 |
| 31 | RGMII2_TXD2 | T14 | GPMC_A3/GMII2_TXD2/RGMII2_TD2/MMC2_DAT2/GPMC_A19/PR1_MII1_TXD1/EHRPWM1B/GPIO1_19 | LAN2 |
| 32 | RGMII2_TXD1 | R14 | GPMC_A4/GMII2_TXD1/RGMII2_TD1/RMII2_TXD1/GPMC_A20/PR1_MII1_TXD0/EQEP1A_IN/GPIO1_20 | LAN2 |
| 33 | RGMII2_TXD0 | V15 | GPMC_A5/GMII2_TXD0/RGMII2_TD0/RMII2_TXD0/GPMC_A21/PR1_MII1_RXD3/EQEP1B_IN/GPIO1_21 | LAN2 |
| 34 | RGMII2_TCTL | R13 | GPMC_A0/GMII2_TXEN/RGMII2_TCTL/RMII2_TXEN/GPMC_A16/PR1_MII_MT1_CLK/EHRPWM1_TRIPZONE_INPUT/GPIO1_16 | LAN2 |
| 35 | MDIO_DATA | M17 | MDIO_DATA/TIMER6/UART5_RXD/UART3_CTSN/MMC0_SDCD/MMC1_CMD/MMC2_CMD/GPIO0_0 | LAN |
| 36 | MDIO_CLK | M18 | MDIO_CLK/TIMER5/UART5_TXD/UART3_RTSN/MMC0_SDWP/MMC1_CLK/MMC2_CLK/GPIO0_1 | LAN |
| 37 | DGND | | | Power Ground |
| 38 | DGND | | | Power Ground |
| 39 | RGMII1_RXD3 | L17 | GMII1_RXD3/UART3_RXD/RGMII1_RD3/MMC0_ | LAN1 |

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|---|---|---|---|---|
| | | | DAT5/MMC1_DAT2/UART1_DTRN/MCASP0_AXR0/GPIO2_18 | |
| 40 | RGMII1_RCTL | J17 | GMII1_RXDV/LCD_MEMORY_CLK/RGMII1_RCTL/UART5_TXD/MCASP1_ACLKX/MMC2_DAT0/MCASP0_ACLKR/GPIO3_4 | LAN1 |
| 41 | RGMII1_RXD1 | L15 | GMII1_RXD1/RMII1_RXD1/RGMII1_RD1/MCASP1_AXR3/MCASP1_FSR/EQEP0_STROBE/MMC2_CLK/GPIO2_20 | LAN1 |
| 42 | RGMII1_RXD2 | L16 | GMII1_RXD2/UART3_TXD/RGMII1_RD2/MMC0_DAT4/MMC1_DAT3/UART1_RIN/MCASP0_AXR1/GPIO2_19 | LAN1 |
| 43 | RGMII1_RCLK | L18 | GMII1_RXCLK/UART2_TXD/RGMII1_RCLK/MMC0_DAT6/MMC1_DAT1/UART1_DSRN/MCASP0_FSX/GPIO3_10 | LAN1 |
| 44 | RGMII1_RXD0 | M16 | GMII1_RXD0/RMII1_RXD0/RGMII1_RD0/MCASP1_AHCLKX/MCASP1_AHCLKR/MCASP1_ACLKR/MCASP0_AXR3/GPIO2_21 | LAN1 |
| 45 | RGMII1_TXD3 | J18 | GMII1_TXD3/DCAN0_TX/RGMII1_TD3/UART4_RXD/MCASP1_FSX/MMC2_DAT1/MCASP0_FSR/GPIO0_16 | LAN1 |
| 46 | RGMII1_TCTL | J16 | GMII1_TXEN/RMII1_TXEN/RGMII1_TCTL/TIMER4/MCASP1_AXR0/EQEP0_INDEX/MMC2_CMD/GPIO3_3 | LAN1 |
| 47 | RGMII1_TXD1 | K16 | GMII1_TXD1/RMII1_TXD1/RGMII1_TD1/MCASP1_FSR/MCASP1_AXR1/EQEP0A_IN/MMC1_CMD/GPIO0_21 | LAN1 |
| 48 | RGMII1_TXD2 | K15 | GMII1_TXD2/DCAN0_RX/RGMII1_TD2/UART4_TXD/MCASP1_AXR0/MMC2_DAT2/MCASP0_AHCLKX/GPIO0_17 | LAN1 |
| 49 | RGMII1_TCLK | K18 | GMII1_TXCLK/UART2_RXD/RGMII1_TCLK/MMC0_DAT7/MMC1_DAT0/UART1_DCDN/MCASP0_ACLKX/GPIO3_9 | LAN1 |
| 50 | RGMII1_TXD0 | K17 | GMII1_TXD0/RMII1_TXD0/RGMII1_TD0/MCASP1_AXR2/MCASP1_ACLKR/EQEP0B_IN/MMC1_CLK/GPIO0_28 | LAN1 |
| 51 | DGND | | | Power Ground |
| 52 | DGND | | | Power Ground |
| 53 | USB0_ID | P16 | USB0_ID | USB |
| 54 | USB1_ID | P17 | USB1_ID | USB |
| 55 | USB0_DM | N18 | USB0_DM | USB |
| 56 | USB1_DM | R18 | USB1_DM | USB |
| 57 | USB0_DP | N17 | USB0_DP | USB |
| 58 | USB1_DP | R17 | USB1_DP | USB |
| 59 | USB_DC | P15 | USB0_VBUS | USB |
| 60 | USB1_VBUS | T18 | USB1_VBUS | USB |

| | | | | |
|---|---|---|---|---|
| 61 | DGND | | | Power Ground |
| 62 | USB1_DRVVBUS | F15 | USB1_DRVVBUS | USB |
| 63 | CAN0_RX | D17 | UART1_RTSN/TIMER5/DCAN0_RX/I2C2_SCL/SPI1_CS1/PR1_UART0_RTS_N/PR1_EDC_LATCH1_IN/GPIO0_13 | CAN BUS |
| 64 | CAN1_RX | E17 | UART0_RTSN/UART4_TXD/DCAN1_RX/I2C1_SCL/SPI1_D1/SPI1_CS0/PR1_EDC_SYNC1_OUT/GPIO1_9 | CAN BUS |
| 65 | CAN0_TX | D18 | UART1_CTSN/TIMER6/DCAN0_TX/I2C2_SDA/SPI1_CS0/PR1_UART0_CTS_N/PR1_EDC_LATCH0_IN/GPIO0_12 | CAN BUS |
| 66 | CAN1_TX | E18 | UART0_CTSN/UART4_RXD/DCAN1_TX/I2C1_SDA/SPI1_D0/TIMER7/PR1_EDC_SYNC0_OUT/GPIO1_8 | CAN BUS |
| 67 | DGND | | | Power Ground |
| 68 | DGND | | | Power Ground |
| 69 | VDD_5V | | | DC 5V Power（input） |
| 70 | DGND | | | Power Ground |

# Service Support

Technical Support Mailbox：

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E-mail：ces_support@ces-tech.com

Technical Support Service Hours：

Monday to Friday：9：00～12：00，13：30～18：00

# Statement

The information in this manual is for reference only and is subject to change without notice.

For more product information, visit www.nrisc.cn

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