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Shenzhen Haitianxiong Electronic Co., Ltd.

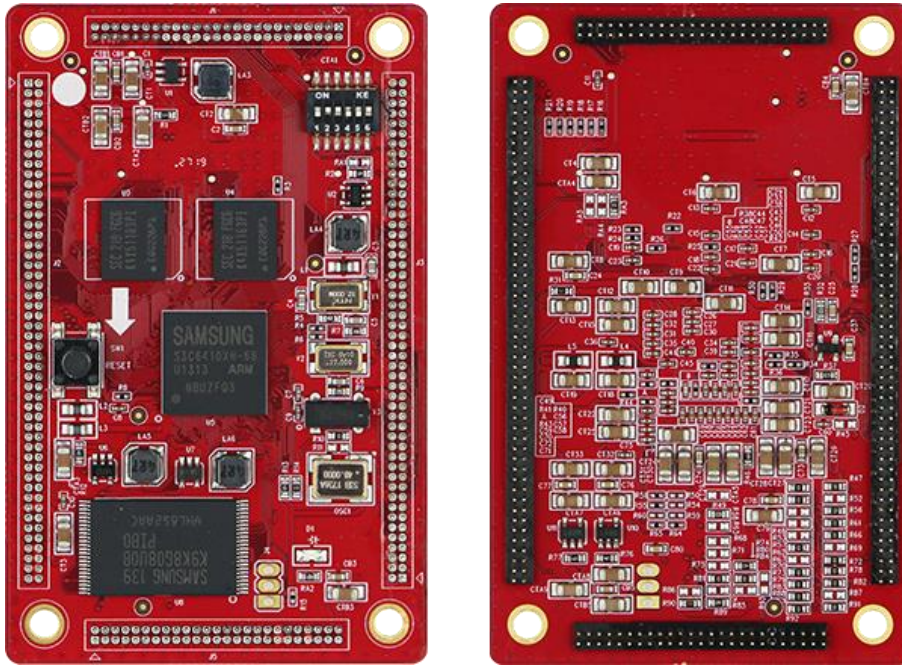
CES-6410-CORE

Product Manual

ARM SOC Module

Rev. V1.0

Date: 2017-06-02



Introduction

CES-6410 soc module, based on Samsung classic ARM11 S3C6410 processor, is greatly improved both in hardware performance and software support compared with ARM9 series and achieved 2D/3D support for images, which also support for MPEG4/MPEG2/H.264/H.263 video format encoding and decoding. Since going public, its high reliability and stability features had been proven on car navigation, hand-held PDA, industrial control, human-computer interaction terminals etc.

The supporting development platform of CES-6410 soc module provides a complete platform solution for users. In addition to the function of processors, which also adds WiFi, GPS, Bluetooth, and camera to provide corresponding underlying driver.

We advocate the “one and one” design model to simplify the design. The complex soc module design is completed by us. Users only need to design an interface expansion board based on their own requirements to acquire their own products quickly.

Features

- Based on Samsung classic ARM11 S3C6410 667MHz processor
- Onboard 128MB DDR SDRAM, 1GB SLC Nand Flash.
- External power supply: 5V and 3.3V
- Support 2D/3D image acceleration, MPEG-4/H.263/H.264 format codec and OpenGL ES1.1/2.0.
- Support OpenGL ES1.1/2.0.
- Support 10M/100M ethernet function.
- Support USB HOST 1.1, USB OTG2.0, UART, SD CARD, GPIO, Camera.
- Support Android, Linux, WinCE operating systems

Specification

| Processor | |
|-------------------------|---|
| CPU | Samsung ARM1176JZF-S S3C6410 processor |
| CPU | FBGA-424pins, 0.5mm pitch |
| I/D-Cache | 16KB |
| I/D-TCM | 16KB |
| Storage | |
| Process | 128MB DDR SDRAM, optional 256MB |
| Memory | 1GB SLC NAND FLASH |
| B2B Connector | |
| Connector Type | High-precision 1.27MM pitch double-row pin (2 (2*50) PIN and 2 (2*25) PIN pins, total 300PIN) |
| PIN Number | 300PIN |
| B2B Fixing Hole | |
| Fixing hole | 4 |
| Start Mode | |
| Start mode | NAND FLASH、SD card |
| Operating System | |
| OS | Support Android 2.1、Linux 3.8.0、Linux2.6.24、WinCE6.0、WinCE7.0 |
| Environment | |
| Working Environment | Temperature: -10~60℃, Humidity: 5%~95%RH@31℃ no condensation |
| Storage Environment | Temperature: -40~85℃, Humidity: 5%~95%RH@39℃ no condensation |
| Size | |
| Size(mm) | 83*53mm |

Pin Definition

| J1 | | | | |
|-----------|---------------------------------|-----------------|------------------|--------------|
| PIN NO. | Signal Name | CPU Ball Number | CPU Ball Name | Remark |
| 1 | XHI_A0/ADDR_CF0/KP_COL0 | U19 | XHIADR0/GPL0 | KEYPAD |
| 2 | XHI_A1/ADDR_CF1/KP_COL1 | W24 | XHIADR1/GPL1 | KEYPAD |
| 3 | XHI_A2/ADDR_CF2/KP_COL2 | U18 | XHIADR2/GPL2 | KEYPAD |
| 4 | XHI_A3/KP_COL3/XM0INTATA | W23 | XHIADR3/GPL3 | KEYPAD |
| 5 | XHI_A4/KP_COL4/XM0RSTATA | U22 | XHIADR4/GPL4 | KEYPAD |
| 6 | XHI_A5/KP_COL5/XM0INPACK ATA | V25 | XHIADR5/GPL5 | KEYPAD |
| 7 | XHI_A6/KP_COL6/XM0REGATA | V23 | XHIADR6/GPL6 | KEYPAD |
| 8 | XHI_A7/KP_COL7/XM0CDATA | T18 | XHIADR7/GPL7 | KEYPAD |
| 9 | XHI_A8/CE_CF0 | U25 | XHIADR8/GPL8 | GPIO |
| 10 | XHI_A9/CE_CF1 | T19 | XHIADR9/GPL9 | GPIO |
| 11 | XHI_A10/IORD_CF | U24 | XHIADR10/GPL10 | GPIO |
| 12 | XHI_A11/IOWR_CF | U23 | XHIADR11/GPL11 | GPIO |
| 13 | XHI_A12/IORDY_CF | R19 | XHIADR12/GPL12 | GPIO |
| 14 | GND | | | Power Ground |
| 15 | XHICSN/CE_CF0 | AA23 | XHICSN/GPM0 | GPIO |
| 16 | XHICSNMAIN/CE_CF1 | V18 | XHICSN_MAIN/GPM1 | GPIO |
| 17 | XHICSN_SUB/CF_IORD | Y24 | XHICSN_SUB/GPM2 | GPIO |
| 18 | XHIWEN/CF_IOWR | Y23 | XHIWEN/GPM3 | GPIO |
| 19 | XHIOEN/CF_IORDY | V22 | XHIOEN/GPM4 | GPIO |
| 20 | XHIINTR | W25 | XHIIRQN/GPM5 | GPIO |
| 21 | XHI_D0/RXREADY/DATA_CF0 | T25 | XHIDATA0/GPK0 | GPIO |
| 22 | XHI_D1/RXWAKE/DATA_CF1 | T22 | XHIDATA1/GPK1 | GPIO |
| 23 | XHI_D2/RXFLAG/DATA_CF2 | T24 | XHIDATA2/GPK2 | GPIO |
| 24 | XHI_D3/RXDATA/DATA_CF3 | T23 | XHIDATA3/GPK3 | GPIO |
| 25 | XHI_D4/TXREADY/DATA_CF4 | R23 | XHIDATA4/GPK4 | GPIO |
| 26 | XHI_D5/TXWAKE/DATA_CF5 | R22 | XHIDATA5/GPK5 | GPIO |
| 27 | XHI_D6/TXFLAG/DATA_CF6 | R24 | XHIDATA6/GPK6 | GPIO |
| 28 | XHI_D7/TXDATA/DATA_CF7 | R25 | XHIDATA7/GPK7 | GPIO |
| 29 | XHI_D8/DATA_CF8/KP_ROW0 | P25 | XHIDATA8/GPK8 | KEYPAD |
| 30 | XHI_D9/DATA_CF9/KP_ROW1 | P19 | XHIDATA9/GPK9 | KEYPAD |
| 31 | XHI_D10/DATA_CF10/KP_ROW2 | P23 | XHIDATA10/GPK10 | KEYPAD |
| 32 | XHI_D11/DATA_CF11/KP_ROW3 | P18 | XHIDATA11/GPK11 | KEYPAD |
| 33 | XHI_D12/DATA_CF12/KP_ROW4 | N25 | XHIDATA12/GPK12 | KEYPAD |
| 34 | XHI_D13/DATA_CF13/KP_ROW5 | N24 | XHIDATA13/GPK13 | KEYPAD |

| | | | | |
|----|---------------------------|-----|-----------------|----------------|
| 35 | XHI_D14/DATA_CF14/KP_ROW6 | N18 | XHIDATA14/GPK14 | KEYPAD |
| 36 | XHI_D15/DATA_CF15/KP_ROW7 | N23 | XHIDATA15/GPK15 | KEYPAD |
| 37 | XHI_D16 | N17 | XHIDATA16/GPL13 | GPIO |
| 38 | XHI_D17 | M25 | XHIDATA17/GPL14 | GPIO |
| 39 | GND | | | Power Ground |
| 40 | NC | | | NC |
| 41 | NC | | | NC |
| 42 | NC | | | NC |
| 43 | NC | | | NC |
| 44 | NC | | | NC |
| 45 | NC | | | NC |
| 46 | GND | | | Power Ground |
| 47 | VDD_3V3_CORE | | | DC 3.3V(input) |
| 48 | VDD_3V3_CORE | | | DC 3.3V(input) |
| 49 | VDD_3V3_CORE | | | DC 3.3V(input) |
| 50 | VDD_3V3_CORE | | | DC 3.3V(input) |

J2

| PIN NO. | Signal Name | CPU Ball Number | CPU Ball Name | Remark |
|---------|--------------|-----------------|-----------------|----------------|
| 1 | VDD_3V3_CORE | | | DC 3.3V(input) |
| 2 | VDD_3V3_CORE | | | DC 3.3V(input) |
| 3 | VDD_3V3_CORE | | | DC 3.3V(input) |
| 4 | GND | | | Power Ground |
| 5 | GND | | | Power Ground |
| 6 | GND | | | Power Ground |
| 7 | XCIYDATA0 | C25 | XCIYDATA0/GPF5 | CAMERA |
| 8 | XCIYDATA1 | E23 | XCIYDATA1/GPF6 | CAMERA |
| 9 | XCIYDATA2 | C24 | XCIYDATA2/GPF7 | CAMERA |
| 10 | XCIYDATA3 | G18 | XCIYDATA3/GPF8 | CAMERA |
| 11 | XCIYDATA4 | H17 | XCIYDATA4/GPF9 | CAMERA |
| 12 | XCIYDATA5 | B24 | XCIYDATA5/GPF10 | CAMERA |
| 13 | XCIYDATA6 | G17 | XCIYDATA6/GPF11 | CAMERA |
| 14 | XCIYDATA7 | B23 | XCIYDATA7/GPF12 | CAMERA |
| 15 | XCICLK | G22 | XCICLK/GPF0 | CAMERA |
| 16 | XCIPCLK | F22 | XCIPCLK/GPF2 | CAMERA |
| 17 | XPWM_TOUT1 | D23 | XPWMTOUT1/GPF15 | PWM |

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|----|--|------|------------------|--------------|
| 18 | XPWM_TOUT0 | H16 | XPWMTOUT0/GPF14 | PWM |
| 19 | XCIRSTN | H19 | XCIRSTN/GPF3 | CAMERA |
| 20 | XCIVSYNC | D24 | XCIVSYNC/GPF4 | CAMERA |
| 21 | XPWM_ECLK | C23 | XPWMECLK/GPF13 | PWM |
| 22 | XCIHREF | D25 | XCIHREF/GPF1 | CAMERA |
| 23 | GND | | | Power Ground |
| 24 | GND | | | Power Ground |
| 25 | XURXD_0 | D20 | XURXD0/GPA0 | UART |
| 26 | XURXD_1 | J15 | XURXD1/GPA4 | UART |
| 27 | XUTXD_0 | A23 | XUTXD0/GPA1 | UART |
| 28 | XUTXD_1 | B22 | XUTXD1/GPA5 | UART |
| 29 | XUCTSN_0 | G16 | XUCTSN0/GPA2 | UART |
| 30 | XUCTSN_1 | H15 | XUCTSN1/GPA6 | UART |
| 31 | XURTSN_0 | A22 | XURTSN0/GPA3 | UART |
| 32 | XURTSN_1 | C22 | XURTSN1/GPA7 | UART |
| 33 | XURXD_2/EXDREQ/IRRXD/AD DR_CF0 | D19 | XURXD2/GPB0 | UART |
| 34 | XURXD_3/EXDREQ/IRRXD/AD DR_CF2/XI2CSCL1 | J14 | XURXD3/GPB2 | UART |
| 35 | XUTXD_2/EXDACK/IRTXD/AD DR_CF1 | A21 | XUTXD2/GPB1 | UART |
| 36 | XUTXD_3/EXDACK/IRTXD/XI2 CSDA1 | B21 | XUTXD3/GPB3 | UART |
| 37 | XI2CSDA0 | G14 | XI2CSDA/GPB6 | I2C |
| 38 | XIRSDBW | G15 | XIRSDBW/GPB4 | IrDA |
| 39 | XI2CSCL0 | A20 | XI2CSCL/GPB5 | I2C |
| 40 | XNRSTOUT | AD16 | XNRSTOUT | XNRSTOUT |
| 41 | XNRESET | V9 | XNRESET | XNRESET |
| 42 | GND | | | Power Ground |
| 43 | XPCM_DCLK0/I2S_CLK0/AC97_ BITCLK0 | D7 | XPCMDCLK0/GPD0 | AUDIO |
| 44 | XPCM_DCLK1/I2S_CLK1/AC97_ BITCLK0 | C5 | XPCMDCLK1/GPE0 | AUDIO |
| 45 | XPCM_EXTCLK0/I2S_CDCLK0/ AC97_RSTN0 | B5 | XPCMEXTCLK0/GPD1 | AUDIO |
| 46 | XPCM_EXTCLK1/I2S_CDCLK1/ AC97_RSTN0 | B3 | XPCMEXTCLK1/GPE1 | AUDIO |
| 47 | XPCM_FSYNC0/I2S_LRCLK0/A C97_SYNC0 | D6 | XPCMFSYNC0/GPD2 | AUDIO |
| 48 | XPCM_FSYNC1/I2S_LRCLK1/A C97_SYNC0 | C4 | XPCMFSYNC1/GPE2 | AUDIO |
| 49 | XPCM_SIN0/I2S_DI0/AC97_SDI0 | B4 | XPCMSIN0/GPD3 | AUDIO |

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|----|-------------------------------------|------|------------------|--------------|
| 50 | XPCM_SIN1/I2S_DI1/AC97_SDI0 | B2 | XPCMSIN1/GPE3 | AUDIO |
| 51 | XPCM_SOUT0/I2S_DO0/AC97_SDO0 | A3 | XPCMSOUT0/GPD4 | AUDIO |
| 52 | XPCM_SOUT1/I2S_DO1/AC97_SDO0 | C3 | XPCMSOUT1/GPE4 | AUDIO |
| 53 | VDD_RTC | AC11 | VDDRTC | RTC Prower |
| 54 | GND | | | Power Ground |
| 55 | XMMCCLK1 | J11 | XMMCCLK1/GPH0 | SD/MMC |
| 56 | XMMCCMD1 | A16 | XMMCCMD1/GPH1 | SD/MMC |
| 57 | XMMCDATA1_0 | H11 | XMMCDATA1_0/GPH2 | SD/MMC |
| 58 | XMMCDATA1_1 | C17 | XMMCDATA1_1/GPH3 | SD/MMC |
| 59 | XMMCDATA1_2 | B16 | XMMCDATA1_2/GPH4 | SD/MMC |
| 60 | XMMCDATA1_3 | H10 | XMMCDATA1_3/GPH5 | SD/MMC |
| 61 | XMMCDATA1_4/MMCDATA2_0/ ADDR_CF0 | A15 | XMMCDATA1_4/GHP6 | SD/MMC |
| 62 | XMMCDATA1_5/MMCDATA2_1/ ADDR_CF1 | G11 | XMMCDATA1_5/GPH7 | SD/MMC |
| 63 | XMMCDATA1_6/MMCDATA2_2/ ADDR_CF2 | C16 | XMMCDATA1_6/GPH8 | SD/MMC |
| 64 | XMMCDATA1_7/MMCDATA2_3 | H9 | XMMCDATA1_7/GPH9 | SD/MMC |
| 65 | GND | | | Power Ground |
| 66 | XDACOUT_0 | AC6 | XDACOUT0 | DACOUT |
| 67 | XDACOUT_1 | AE5 | XDACOUT1 | DACOUT |
| 68 | GND | | | Power Ground |
| 69 | XSPIMISO0 | B20 | XSPIMISO0/GPC0 | SPI |
| 70 | XSPIMISO1/MMCCMD2 | B19 | XSPIMISO1/GPC4 | SPI |
| 71 | XSPICS0 | C20 | XSPICS0/GPC3 | SPI |
| 72 | XSPICS1 | D17 | XSPICS1/GPC7 | SPI |
| 73 | XSPIMOSI0 | A19 | XSPIMOSI0/GPC2 | SPI |
| 74 | XSPIMOSI1 | C19 | XSPIMOSI1/GPC6 | SPI |
| 75 | GND | | | Power Ground |
| 76 | XUSBHDP | N22 | XUHDP | USB |
| 77 | XUSBHDN | P22 | XUHDN | USB |
| 78 | XOTGDP | AE10 | XUSBDP | USB |
| 79 | XOTGDM | AE9 | XUSBDM | USB |
| 80 | XVBUS | AD9 | XUSBVBUS | USB |
| 81 | XOTGID | AD10 | XUSBID | USB |
| 82 | XOTGDRV_VBUS | AE11 | XUSBDRVVBUS | USB |
| 83 | GND | | | Power Ground |
| 84 | GND | | | Power Ground |
| 85 | GND | | | Power Ground |

| | | | | |
|-----|--------|------|---------|--------------|
| 86 | GND | | | Power Ground |
| 87 | XRTCK | AE13 | XJRTCK | JTAG |
| 88 | XTDO | AC12 | XJTDO | JTAG |
| 89 | XTDI | AB12 | XJTDI | JTAG |
| 90 | XTCK | AB11 | XJTCK | JTAG |
| 91 | XTMS | AE12 | XJTMS | JTAG |
| 92 | XTRSTN | AB10 | XJTRSTN | JTAG |
| 93 | GND | | | Power Ground |
| 94 | GND | | | Power Ground |
| 95 | GND | | | Power Ground |
| 96 | GND | | | Power Ground |
| 97 | GND | | | Power Ground |
| 98 | GND | | | Power Ground |
| 99 | GND | | | Power Ground |
| 100 | GND | | | Power Ground |

J3

| PIN NO. | Signal Name | CPU Ball Number | CPU Ball Name | Remark |
|---------|-------------|-----------------|-----------------|--------------|
| 1 | XM0ADDR0 | C1 | XM0ADDR0 | Memory Port0 |
| 2 | XM0ADDR1 | E3 | XM0ADDR1 | Memory Port0 |
| 3 | XM0ADDR2 | D1 | XM0ADDR2 | Memory Port0 |
| 4 | XM0ADDR3 | D2 | XM0ADDR3 | Memory Port0 |
| 5 | XM0ADDR4 | H7 | XM0ADDR4 | Memory Port0 |
| 6 | XM0ADDR5 | E1 | XM0ADDR5 | Memory Port0 |
| 7 | XM0ADDR6 | F2 | XM0ADDR6/GPO6 | Memory Port0 |
| 8 | XM0ADDR7 | G4 | XM0ADDR7/GPO7 | Memory Port0 |
| 9 | XM0ADDR8 | F1 | XM0ADDR8/GPO8 | Memory Port0 |
| 10 | XM0ADDR9 | J8 | XM0ADDR9/GPO9 | Memory Port0 |
| 11 | XM0ADDR10 | G2 | XM0ADDR10/GPO10 | Memory Port0 |
| 12 | XM0ADDR11 | G1 | XM0ADDR11/GPO11 | Memory Port0 |
| 13 | XM0ADDR12 | H4 | XM0ADDR12/GPO12 | Memory Port0 |
| 14 | XM0ADDR13 | H2 | XM0ADDR13/GPO13 | Memory Port0 |
| 15 | XM0ADDR14 | J4 | XM0ADDR14/GPO14 | Memory Port0 |
| 16 | XM0ADDR15 | H3 | XM0ADDR15/GPO15 | Memory Port0 |
| 17 | M0ADDR16 | J1 | XM0ADDR16/GPQ8 | Reserve |
| 18 | M0ADDR17 | U3 | XM0ADDR17/GPQ7 | Reserve |

| | | | | |
|----|--------------------------|-----|--------------------|--------------|
| 19 | M0ADDR18 | U2 | XM0ADDR18/GPQ0 | Reserve |
| 20 | M0ADDR19 | P8 | XM0ADDR19/GPQ1 | Reserve |
| 21 | NC | | | NC |
| 22 | XM0DATA0 | N2 | XM0DATA0 | Memory Port0 |
| 23 | XM0DATA1 | N1 | XM0DATA1 | Memory Port0 |
| 24 | XM0DATA2 | M7 | XM0DATA2 | Memory Port0 |
| 25 | XM0DATA3 | N3 | XM0DATA3 | Memory Port0 |
| 26 | XM0DATA4 | M8 | XM0DATA4 | Memory Port0 |
| 27 | XM0DATA5 | P2 | XM0DATA5 | Memory Port0 |
| 28 | XM0DATA6 | N4 | XM0DATA6 | Memory Port0 |
| 29 | XM0DATA7 | P3 | XM0DATA7 | Memory Port0 |
| 30 | XM0DATA8 | M2 | XM0DATA8 | Memory Port0 |
| 31 | XM0DATA9 | M4 | XM0DATA9 | Memory Port0 |
| 32 | XM0DATA10 | L7 | XM0DATA10 | Memory Port0 |
| 33 | XM0DATA11 | M3 | XM0DATA11 | Memory Port0 |
| 34 | XM0DATA12 | L8 | XM0DATA12 | Memory Port0 |
| 35 | XM0DATA13 | L2 | XM0DATA13 | Memory Port0 |
| 36 | XM0DATA14 | K4 | XM0DATA14 | Memory Port0 |
| 37 | XM0DATA15 | K1 | XM0DATA15 | Memory Port0 |
| 38 | XM0RSTATA/SS_IMG_IN | W3 | XM0RESETATA/GPP9 | Memory Port0 |
| 39 | XM0BE1 | K7 | XM0BEN1 | Memory Port0 |
| 40 | XM0BE0 | L1 | XM0BEN0 | Memory Port0 |
| 41 | XM0CSN0 | N7 | XM0CSN0 | Memory Port0 |
| 42 | XM0CSN1 | R3 | XM0CSN1 | Memory Port0 |
| 43 | XM0CSN2 | P4 | XM0CSN2/GPO0 | Memory Port0 |
| 44 | XM0CSN3 | R2 | XM0CSN3/GPO1 | Memory Port0 |
| 45 | XM0CSN4 | T3 | XM0CSN4/GPO2 | Memory Port0 |
| 46 | XM0CSN5 | N8 | XM0CSN5/GPO3 | Memory Port0 |
| 47 | XM0WEN/NIOWR_CF | J2 | XM0WEN | Memory Port0 |
| 48 | XM0OEN/NIORD_CF | L4 | XM0OEN | Memory Port0 |
| 49 | XM0ADV | Y2 | XM0ADRVALID/GPP0 | Memory Port0 |
| 50 | XM0SMCLK | L3 | XM0SMCLK/GPP1 | Memory Port0 |
| 51 | XM0WAITN/IORDY | R4 | XM0WAITN/GPP2 | Memory Port0 |
| 52 | XM0INTATA/SS_REAL_IN | R7 | XM0INTATA/GPP8 | Memory Port0 |
| 53 | XM0WEATA/SS_GPO1 | V4 | XM0WEATA/GPP12 | Memory Port0 |
| 54 | XM0INPACKATA/SS_TCXO_CLK | AA2 | XM0INPACKATA/GPP10 | Memory Port0 |
| 55 | XM0OEATA/SS_GPO2 | AB3 | XM0OEATA/GPP13 | Memory Port0 |
| 56 | XM0REGATA/SS_GPO0 | AA3 | XM0REGATA/GPP11 | Memory Port0 |
| 57 | XM0CDATA/SS_GPO3 | U7 | XM0CDATA/GPP14 | Memory Port0 |

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|----|------------------|------|---------------------|--------------|
| 58 | XM0RDY1/CLE | W2 | XM0RDY1_CLE/GPP4 | Memory Port0 |
| 59 | XM0RPN/RNB | Y1 | XM0RPN_RNB/GPP7 | Memory Port0 |
| 60 | XM0RDY0/ALE | R8 | XM0RDY0_ALE/GPP3 | Memory Port0 |
| 61 | XM0INTSM0/FWEN | Y3 | XM0INTSM0_FWEN/GPP5 | Memory Port0 |
| 62 | XM0INTSM1/FREN | U4 | XM0INTSM1_FREN/GPP6 | Memory Port0 |
| 63 | GND | | | Power Ground |
| 64 | XPWM_TOUT0 | H16 | XPWMTOUT0/GPF14 | PWM |
| 65 | XPWM_TOUT1 | D23 | XPWMTOUT1/GPF15 | PWM |
| 66 | XGPO5 | P7 | GPO5 | GPIO |
| 67 | XGPO4 | T2 | GPO4 | GPIO |
| 68 | XGPQ2 | T1 | GPQ2 | GPIO |
| 69 | XGPQ3 | U1 | GPQ3 | GPIO |
| 70 | XGPQ4 | V3 | GPQ4 | GPIO |
| 71 | XGPQ5 | T4 | GPQ5 | GPIO |
| 72 | XGPQ6 | V2 | GPQ6 | GPIO |
| 73 | GND | | | Power Ground |
| 74 | GND | | | Power Ground |
| 75 | XEINT0/KP_ROW0 | AE17 | XEINT0/GPN0 | INT/GPIO |
| 76 | XEINT1/KP_ROW1 | V10 | XEINT1/GPN1 | INT/GPIO |
| 77 | XEINT2/KP_ROW2 | AD17 | XEINT2/GPN2 | INT/GPIO |
| 78 | XEINT3/KP_ROW3 | AB17 | XEINT3/GPN3 | INT/GPIO |
| 79 | XEINT4/KP_ROW4 | AE18 | XEINT4/GPN4 | INT/GPIO |
| 80 | XEINT5/KP_ROW5 | AC18 | XEINT5/GPN5 | INT/GPIO |
| 81 | XEINT6/KP_ROW6 | V11 | XEINT6/GPN6 | INT/GPIO |
| 82 | XEINT7/KP_ROW7 | AC19 | XEINT7/GPN7 | INT/GPIO |
| 83 | XEINT8 | W12 | XEINT8/GPN8 | INT/GPIO |
| 84 | XEINT9 | AE19 | XEINT9/GPN9 | INT/GPIO |
| 85 | XEINT10 | AB18 | XEINT10/GPN10 | INT/GPIO |
| 86 | XEINT11 | AD19 | XEINT11/GPN11 | INT/GPIO |
| 87 | XEINT12 | V12 | XEINT12/GPN12 | INT/GPIO |
| 88 | XEINT13 | AE20 | XEINT13/GPN13 | INT/GPIO |
| 89 | XEINT14 | W13 | XEINT14/GPN14 | INT/GPIO |
| 90 | XEINT15 | AD20 | XEINT15/GPN15 | INT/GPIO |
| 91 | XSPICLK0 | H14 | XSPICLK0/GPC1 | SPI/GPIO |
| 92 | XSPICLK1/MMCCLK2 | H12 | XSPICLK1/GPC5 | SPI/GPIO |
| 93 | XMMCCLK0 | A18 | XMMCCLK0/GPG0 | SD/MMC |
| 94 | XMMCDA0_0 | B18 | XMMCDA0_0/GPG2 | SD/MMC |
| 95 | XMMCCMD0 | G13 | XMMCCMD0/GPG1 | SD/MMC |
| 96 | XMMCDA0_2 | C18 | XMMCDA0_2/GPG4 | SD/MMC |
| 97 | XMMCDA0_1 | H13 | XMMCDA0_1/GPG3 | SD/MMC |

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|-----|------------------|-----|------------------|--------------|
| 98 | XMMCCDN0/MMCCDN1 | A17 | XMMCCDN0/GPG6 | SD/MMC |
| 99 | XMMCDATA0_3 | G12 | XMMCDATA0_3/GPG5 | SD/MMC |
| 100 | GND | | | Power Ground |

J4

| PIN NO. | Signal Name | CPU Ball Number | CPU Ball Name | Remark |
|---------|-------------|-----------------|---------------|--------|
| 1 | XVD0 | AE21 | XVVD0/GPI0 | LCD |
| 2 | XVD1 | W14 | XVVD1/GPI1 | LCD |
| 3 | XVD2 | AE22 | XVVD2/GPI2 | LCD |
| 4 | XVD3 | V13 | XVVD3/GPI3 | LCD |
| 5 | XVD4 | AD21 | XVVD4/GPI4 | LCD |
| 6 | XVD5 | AB20 | XVVD5/GPI5 | LCD |
| 7 | XVD6 | W15 | XVVD6/GPI6 | LCD |
| 8 | XVD7 | AE23 | XVVD7/GPI7 | LCD |
| 9 | XVD8 | V14 | XVVD8/GPI8 | LCD |
| 10 | XVD9 | AC21 | XVVD9/GPI9 | LCD |
| 11 | XVD10 | AC22 | XVVD10/GPI10 | LCD |
| 12 | XVD11 | W16 | XVVD11/GPI11 | LCD |
| 13 | XVD12 | V15 | XVVD12/GPI12 | LCD |
| 14 | XVD13 | AD23 | XVVD13/GPI13 | LCD |
| 15 | XVD14 | W17 | XVVD14/GPI14 | LCD |
| 16 | XVD15 | AC24 | XVVD15/GPI15 | LCD |
| 17 | XVD16 | V16 | XVVD16/GPJ0 | LCD |
| 18 | XVD17 | AD24 | XVVD17/GPJ1 | LCD |
| 19 | XVD18 | Y22 | XVVD18/GPJ2 | LCD |
| 20 | XVD19 | AC25 | XVVD19/GPJ3 | LCD |
| 21 | XVD20 | AB25 | XVVD20/GPJ4 | LCD |
| 22 | XVD21 | AB24 | XVVD21/GPJ5 | LCD |
| 23 | XVD22 | W18 | XVVD22/GPJ6 | LCD |
| 24 | XVD23 | AB23 | XVVD23/GPJ7 | LCD |
| 25 | XVSYNC | W22 | XVVSYNC/GPJ9 | LCD |
| 26 | XVDEN | AA24 | XVDEN/GPJ10 | LCD |
| 27 | XHSYNC | AA25 | XVHSYNC/GPJ8 | LCD |
| 28 | XVCLK | V19 | XVCLK/GPJ11 | LCD |
| 29 | XADC_AIN0 | AC1 | XADCAIN0 | ADC |
| 30 | XADC_AIN1 | AC2 | XADCAIN1 | ADC |

| | | | | |
|----|--------------|-----|----------|----------------------|
| 31 | XADC_AIN2 | AD2 | XADCAIN2 | ADC |
| 32 | XADC_AIN3 | AD3 | XADCAIN3 | ADC |
| 33 | XADC_AIN4 | AE3 | XADCAIN4 | ADC |
| 34 | XADC_AIN5 | AD4 | XADCAIN5 | ADC |
| 35 | XADC_AIN6 | AE4 | XADCAIN6 | ADC |
| 36 | XADC_AIN7 | AC3 | XADCAIN7 | ADC |
| 37 | GND | | | Power Ground |
| 38 | GND | | | Power Ground |
| 39 | GND | | | Power Ground |
| 40 | NRESET_IN | | | Reset signal (input) |
| 41 | NC | | | NC |
| 42 | NC | | | NC |
| 43 | GND | | | Power Ground |
| 44 | GND | | | Power Ground |
| 45 | VDD_5V | | | DC 5V(input) |
| 46 | VDD_5V | | | DC 5V(input) |
| 47 | VDD_3V3_CORE | | | DC 3.3V(input) |
| 48 | VDD_3V3_CORE | | | DC 3.3V(input) |
| 49 | VDD_3V3_CORE | | | DC 3.3V(input) |
| 50 | VDD_3V3_CORE | | | DC 3.3V(input) |

Service Support

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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.com

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