

Computer On Module

- Processor Freescale i.MX 6 Solo, 800MHz
- RAM 256MB / 512MB DDR3 SDRAM
- ROM 128MB NAND Flash / 4GB eMMC
- Power supply Single 3.1V to 5.5V
- Size 31mm SO-DIMM
- Temperature industrial grade
(-40°C/-25°C to 105°C Tj)

Key Features

- 10/100Mbps Ethernet
- Two High Speed USB 2.0 ports
- Full HD LCD controller, 24bpp
- OpenGL ES 2.0 hardware accelerator
- Multi-format HD 1080p60 video decoder and 1080p30 encoder hardware engine
- Two Camera Interfaces
- NEON MPE coprocessor
 - SIMD Media Processing Architecture
 - dual, single-precision floating point execute pipeline
- Unified 1MB L2 cache
- Several interfaces:
 - 3x UART, 2x SDIO, 2x SSI/AC97/I2S,
 - I2C, CSPI, Keypad, Ext. Memory I/F
- 3.3V I/O
- 2x Controller Area Network (FlexCAN)
- PCIe 2.0 (1-lane)

OS Support

- Linux



**800 MHz
Cortex A9**

Board highlights:

- Highly integrated
- Standard TX-DIMM pinout
- as small as possible - only 31mm
- 3.3V I/O

The TX6 is a member of the TX module series, specially designed for Freescales i.MX multimedia processors. TX modules are complete computers, implemented on a board smaller than a credit card, and ready to be designed into your embedded system. TX modules includes a Freescale® i.MX processor, SDRAM and Flash memory. The integrated LCD-controller enables direct connection of an LCD screen. The TX6 is specifically targeted at embedded applications where size, high cpu-performance and cost are critical factors.

Computer on module

- Freescale® i.MX Solo up to 800 MHz
- 256 Mbyte (16bit) / 512 MByte (32bit) SDRAM DDR3-800
- 128 Mbyte NAND Flash memory / 4GB eMMC
- DIMM200-module (67,6mm x 31 mm x 4mm)
- Operating temperature ranges (Processor junction temperature)
 - Extended Consumer Grade: -20°C ..105°C
 - Industrial Grade: -40°C (eMMC: -25°C) ..105°C
 - Automotive Grade: -40°C ..125°C, AEC-Q100 Grade 3

Processor

The i.MX 6Solo processors represent Freescale Semiconductor's latest achievement in integrated multimedia applications processors. These processors are part of a growing family of multimedia-focused products that offer high performance processing and are optimized for lowest power consumption. The i.MX 6Solo processors feature Freescale's advanced implementation of the dual ARM Cortex™-A9 core, which operates at speeds up to 1 GHz. They include 2D and 3D graphics processors, 3D 1080p video processing, and integrated power management. Each processor provides a 64-bit DDR3/LVDDR3/LPDDR2-800 memory interface and a number of other interfaces for connecting peripherals, such as WLAN, Bluetooth™, GPS, hard drive, displays, and camera sensors.

High Performance CPU : ARM Cortex-A9

- ARM Cortex-A9, with ARMv7™, Neon, VFPv3 and Trustzone support
- 32K instruction and data L1 caches and 256 KB to 1 MB of L2 cache
- Multi-stream-capable HD video engine delivering 1080p60 decode, 1080p30 encode and 3D video playback in HD in high performance families
- Superior 3D graphics performance with a shader performing up to 50 MT/s. Separate 2D and/or Vertex acceleration engines for an optimal user interface experience
- Stereoscopic image sensor support for 3D imaging

Standard TX-DIMM pinout:

- 4-wire UARTs (x3)
- LCD
- I2C / PWM
- Serial Audio Interfaces (x2)
- 4-wire SD-Card/SDIO

High-Speed communication interfaces incl. onboard Ethernet PHY / on-chip USB PHY allows direct use of connectors/magnetics on the baseboard without the need for additional logic:

- 10/100 Mbps Ethernet
- 480 Mbps USB OTG (Host or Device)
- 480 Mbps USB Host

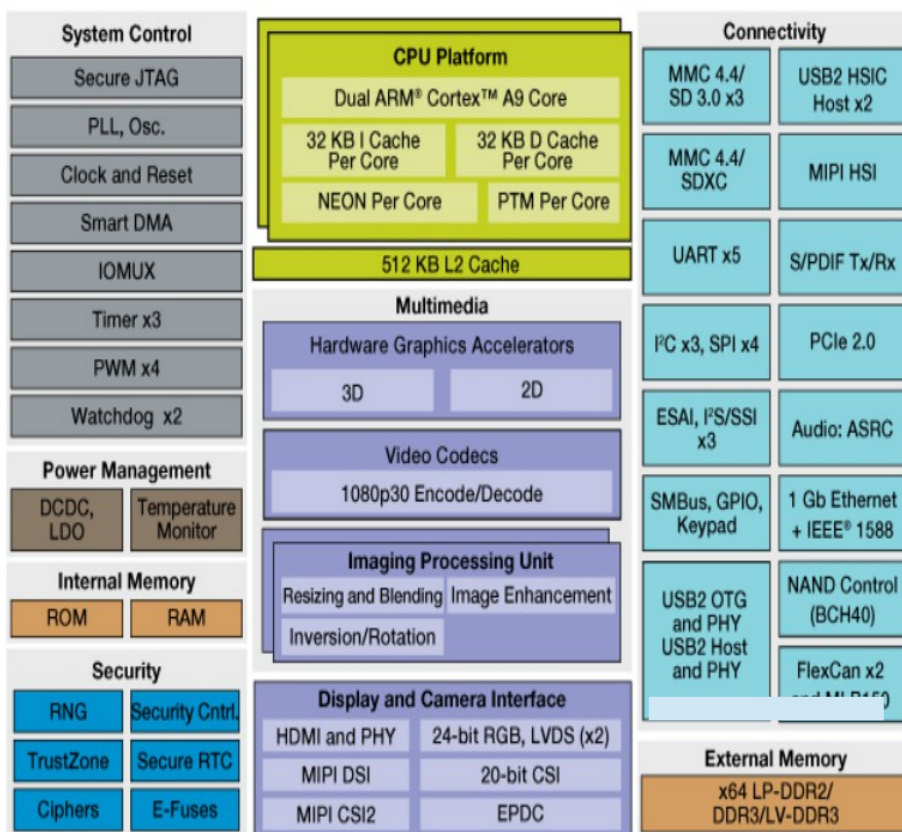
Power Supply

The TX6 accepts an input voltage from various sources:

- 1-cell Li-Ion/Polymer (up to 4.2V)
- 5.0V USB supply or AC wall adapter
- 3.3V

Read more in our TX-Guide:

www.karo-electronics.com/TX-Guide



| Order Number | CPU | SDRAM | Flash | Temp. Grade |
|-----------------------|-----------------|-------|-------|---------------------------|
| TX6S/800/256S/128F/I | 800MHz MCIMX6S7 | 256MB | 128MB | industrial -40°C..85°C |
| TX6S/800/512S/4GF/E85 | 800MHz MCIMX6S7 | 512MB | 4GB | industrial -25°C..85°C |

| PINOUT | | | | | | |
|---------------------------------|--------|--------------|----------------|--|---------------------|--|
| PIN | Type | Function | i.MX6 Pad Name | Alternate functions | GPIO | Description (refer to i.MX6 Dual manuals for details) |
| POWER SUPPLY & RESET | | | | | | |
| 1-4 | power | VIN | | | | Module power supply input (3.3V-5V, observe DIMM socket contact current rating) |
| 5-7, 9-12 | power | VOUT | | | | 3.3V power supply output (up to 1A under observance of the max. rated VIN current) |
| 8 | 3V3 | BOOTMODE | | | | Boot mode select H: Boot from NAND / L: Boot from UART/USB |
| 13 | power | VBACKUP | VDD_SNV5_IN | | | i.MX6 RTC backup power supply. Supply voltage must be held between 1.3V and 3.7V for proper RTC operation. This pin can be connected to a primary cell such as a lithium button cell. Additionally, this pin can be connected to a rechargeable cell or a super cap. |
| 14 | VIN | PMIC_PWR_BTN | | | | TBD |
| 15 | 3V3 | #RESET_OUT | GPIO_17 | ESAI_TX0 ENET_1588_EVENT3_IN CCM_PMIC_READY SDMA_EXT_EVENT0 SPDIF_OUT | GPIO7[12] | #RESET_OUT may be used to reset peripherals on the carrier board. This signal can be controller by a GPIO function during runtime. |
| 16 | | #POR | POR_B | | | Power On Reset — Active low input signal Leave unconnected, if not used. |
| 17 | | #RESET_IN | POR_B | | | Wire ored to pin 16 |
| 18 | GND | GND | | | | |
| Ethernet | | | | | | |
| 19 | analog | ETN_TXN | | | | Transmit Data Negative: 100Base-TX or 10Base-T differential transmit output to magnetics. |
| 20 | 3V3 | #ETN_LED2 | | | | Active low - output is driven active when the operating speed is 100Mbps. This LED will go inactive when the operating speed is 10Mbps or during line isolation. |
| 21 | analog | ETN_TXP | | | | Transmit Data Positive: 100Base-TX or 10Base-T differential transmit output to magnetics. |
| 22 | power | ETN_3V3 | | | | +3.3V analog power supply output to magnetics |
| 23 | analog | ETN_RXN | | | | Receive Data Negative: 100Base-TX or 10Base-T differential receive input from magnetics. |
| 24 | 3V3 | #ETN_LED1 | | | | Active low - output is driven active whenever the device detects a valid link, and blinks indicating activity. |
| 25 | analog | ETN_RXP | | | | Receive Data Positive: 100Base-TX or 10Base-T differential receive input from magnetics. |
| 26 | GND | GND | | | | |
| USB-HOST | | | | | | |
| 27 | 3V3 | USBH_VBUSEN | EIM_D31 | EIM_DATA31 IPU1_DISP1_DATA20 IPU1_DIO_PIN12 IPU1_CSI0_DATA02 UART3_RTS_B USB_H1_PWR EPDC_SDCLK_P EIM_ACLK_FREERUN | GPIO3[31] | Active high external 5V supply enable. This pin is used to enable the external VBUS power supply. |
| 28 | 3V3 | #USBH_OC | EIM_D30 | EIM_DATA30 IPU1_DISP1_DATA21 IPU1_DIO_PIN11 IPU1_CSI0_DATA03 UART3_CTS_B USB_H1_OC EPDC_SDOEZ | GPIO3[30] 10K-PU | Active low over-current indicator input connected to a GPIO. |
| 29 | analog | USBH_DM | USB_H1_DN | | | D- pin of the USB cable |
| 30 | analog | USBH_VBUS | USB_H1_VBUS | | | VBUS pin of the USB cable. This pin is used for the VBUS comparator inputs. |
| 31 | analog | USBH_DP | USB_H1_DP | | | D+ pin of the USB cable |
| 32 | GND | GND | | | | |

| PIN | Type | Function | i.MX6 Pad Name | Alternate functions | GPIO | Description (refer to i.MX6 Dual manuals for details) |
|--|--------|-------------------------|----------------|--|--------------------|---|
| USB-OTG / 2nd CAN | | | | | | |
| 33 | 3V3 | USBOTG_ID | EIM_D23 | EIM_DATA23 IPU1_D10_D0_CS UART3_CTS_B UART1_DCD_B IPU1_CSI1_DATA_EN IPU1_DI1_PIN02 IPU1_DI1_PIN14 EPDC_DATA11 | GPIO3[23] | |
| 34 | 3V3 | USBOTG_VBUSEN CAN_TX | GPIO_7 | ESAI_TX4_RX1 EPIT1_OUT FLEXCAN1_TX UART2_TX_DATA SPDIF_LOCK USB_OTG_HOST_MODE I2C4_SCL | GPIO1[7] | Active high external 5V supply enable. This pin is used to enable the external VBUS power supply. |
| 35 | analog | USBOTG_DM | USB_OTG_DN | | | D- pin of the USB cable |
| 36 | 3V3 | #USBOTG_OC CAN_RX | GPIO_8 | ESAI_TX5_RX0 XTALOSC_REF_CLK_32K EPIT2_OUT FLEXCAN1_RX UART2_RX_DATA SPDIF_SR_CLK USB_OTG_PWR_CTL_WAKE I2C4_SDA | GPIO1[8] 10K-PU | Active low over-current indicator input connected to a GPIO. |
| 37 | analog | USBOTG_DP | USB_OTG_DP | | | D+ pin of the USB cable |
| 38 | analog | USBOTG_VBUS | USB_OTG_VBUS | | | VBUS pin of the USB cable. This pin is used for the VBUS comparator inputs. |
| 39 | GND | GND | | | | |
| I2C | | | | | | |
| 40 | 3V3 | I2C_DATA | GPIO_6 | ESAI_TX_CLK I2C3_SDA SD2_LCTL MLB_SIG | GPIO1[6] | I2C Data |
| 41 | 3V3 | I2C_CLK | GPIO_3 | ESAI_RX_HF_CLK I2C3_SCL XTALOSC_REF_CLK_24M CCM_CLKO2 USB_H1_OC MLB_CLK | GPIO1[3] | I2C Clock |
| PWM | | | | | | |
| 42 | 3V3 | PWM | GPIO_1 | ESAI_RX_CLK WDOG2_B KEY_ROW5 USB_OTG_ID PWM2_OUT SD1_CD_B | GPIO1[1] | PWM Output |
| 1-WIRE | | | | | | |
| 43 | 3V3 | OWDAT | GPIO_18 | ESAI_TX1 ENET_RX_CLK SD3_VSELECT SDMA_EXT_EVENT1 ASRC_EXT_CLK SNVS_VIO_5_CTL | GPIO7[13] | 1-Wire bus. Requires an external pull-up resistor. The recommended resistor is specified by the generic 1-Wire device used in a given system. |
| CSPI – Configurable Serial Peripheral Interface | | | | | | |
| 44 | 3V3 | CSPI_SS | EIM_EB2 | EIM_EB2 ECSPI1_SS0 IPU1_CSI1_DATA19 HDMI_TX_DDC_SCL I2C2_SCL SRC_BOOT_CFG30 EPDC_DATA05 | GPIO2[30] | Slave Select (Selectable polarity) signal |
| 45 | 3V3 | CSPI_SS | EIM_D19 | EIM_DATA19 ECSPI1_SS1 IPU1_D10_PIN08 IPU1_CSI1_DATA16 UART1_CTS_B EPIT1_OUT EPDC_DATA12 | GPIO3[19] | Slave Select (Selectable polarity) signal |

| PIN | Type | Function | i.MX6 Pad Name | Alternate functions | GPIO | Description (refer to i.MX6 Dual manuals for details) |
|-----|------|-----------|----------------|---|-----------|---|
| 46 | 3V3 | CSPI_MOSI | EIM_D18 | EIM_DATA18 ECSPI1_MOSI IPU1_DI0_PIN07 IPU1_CSI1_DATA17 IPU1_DI1_D0_CS I2C3_SDA EPDC_VCOM1 | GPIO3[18] | Master Out/Slave In signal |
| 47 | 3V3 | CSPI_MISO | EIM_D17 | EIM_DATA17 ECSPI1_MISO IPU1_DI0_PIN06 IPU1_CSI1_PIXCLK DCIC1_OUT I2C3_SCL EPDC_VCOM0 | GPIO3[17] | Master In/Slave Out signal |
| 48 | 3V3 | CSPI_SCLK | EIM_D16 | EIM_DATA16 ECSPI1_SCLK IPU1_DI0_PIN05 IPU1_CSI1_DATA18 HDMI_TX_DDC_SDA I2C2_SDA EPDC_DATA10 | GPIO3[16] | Serial Clock signal |
| 49 | 3V3 | CSPI_RDY | GPIO_19 | KEY_COL5 ENET_1588_EVENT0_OUT SPDIF_OUT CCM_CLKO1 ECSPI1_RDY ENET_TX_ER | GPIO4[5] | Serial Data Ready signal |
| 50 | GND | GND | | | | |

SD – Secure Digital Interface 1

| | | | | | | |
|----|-----|----------|----------|---|-----------------|---|
| 51 | 3V3 | SD1_CD | SD3_CMD | SD3_CMD UART2_CTS_B FLEXCAN1_TX | GPIO7[2] | SD Card Detect – connected to a GPIO |
| 52 | 3V3 | SD1_D[0] | SD1_DAT0 | SD1_DATA0 GPT_CAPTURE1 | GPIO1[16] | SD Data bidirectional signals—If the system designer does not want to make use of the internal pull-up, via the Pull-up enable register, a 50 K–69 K external pull up resistor must be added. |
| 53 | 3V3 | SD1_D[1] | SD1_DAT1 | SD1_DATA1 PWM3_OUT GPT_CAPTURE2 | GPIO1[17] | |
| 54 | 3V3 | SD1_D[2] | SD1_DAT2 | SD1_DATA2 GPT_COMPARE2 PWM2_OUT WDOG1_B WDOG1_RESET_B_DEB | GPIO1[19] | |
| 55 | 3V3 | SD1_D[3] | SD1_DAT3 | SD1_DATA3 GPT_COMPARE3 PWM1_OUT WDOG2_B WDOG2_RESET_B_DEB | GPIO1[21] | |
| 56 | 3V3 | SD1_CMD | SD1_CMD | SD1_CMD PWM4_OUT GPT_COMPARE1 | GPIO1[18] | SD Command bidirectional signal |
| 57 | 3V3 | SD1_CLK | SD1_CLK | SD1_CLK GPT_CLKIN | GPIO1[20] | SD Output Clock. |
| 58 | GND | GND | | | | |

1st UART

| | | | | | | |
|----|-----|-----|----------|---|-----------|--|
| 59 | 3V3 | TXD | SD3_DAT7 | SD3_DATA7 UART1_TX_DATA | GPIO6[17] | Application UART 1 Transmit Data output signal |
| 60 | 3V3 | RXD | SD3_DAT6 | SD3_DATA6 UART1_RX_DATA | GPIO6[18] | Application UART 1 Receive Data input signal |
| 61 | 3V3 | RTS | SD3_DAT1 | SD3_DATA1 UART1_RTS_B FLEXCAN2_RX | GPIO7[5] | Application UART 1 Request to Send input signal |
| 62 | 3V3 | CTS | SD3_DAT0 | SD3_DATA0 UART1_CTS_B FLEXCAN2_TX | GPIO7[4] | Application UART 1 Clear to Send output signal |

2nd UART

| | | | | | | |
|----|-----|-----|----------|----------------------------|-----------|--|
| 63 | 3V3 | TXD | SD4_DAT7 | SD4_DATA7 UART2_TX_DATA | GPIO2[15] | Application UART 2 Transmit Data output signal |
| 64 | 3V3 | RXD | SD4_DAT4 | SD4_DATA4 UART2_RX_DATA | GPIO2[12] | Application UART 2 Receive Data input signal |
| 65 | 3V3 | RTS | SD4_DAT5 | SD4_DATA5 UART2_RTS_B | GPIO2[13] | Application UART 2 Request to Send input signal |
| 66 | 3V3 | CTS | SD4_DAT6 | SD4_DATA6 UART2_CTS_B | GPIO2[14] | Application UART 2 Clear to Send output signal |

| PIN | Type | Function | i.MX6 Pad Name | Alternate functions | GPIO | Description (refer to i.MX6 Dual manuals for details) |
|------------------------------------|------|-----------|----------------|---|-----------|--|
| 3rd UART | | | | | | |
| 67 | 3V3 | TXD | EIM_D24 | EIM_DATA24 ECSP14_SS2 UART3_TX_DATA ECSP11_SS2 ECSP12_SS2 AUD5_RXFS UART1_DTR_B EPDC_SDCE7 | GPIO3[24] | Application UART 3 Transmit Data output signal |
| 68 | 3V3 | RXD | EIM_D25 | EIM_DATA25 ECSP14_SS3 UART3_RX_DATA ECSP11_SS3 ECSP12_SS3 AUD5_RXC UART1_DSR_B EPDC_SDCE8 | GPIO3[25] | Application UART 3 Receive Data input signal |
| 69 | 3V3 | RTS | SD3_RST | SD3_RESET UART3_RTS_B | GPIO7[8] | Application UART 3 Request to Send input signal |
| 70 | 3V3 | CTS | SD3_DAT3 | SD3_DATA3 UART3_CTS_B | GPIO7[7] | Application UART 3 Clear to Send output signal |
| 71 | GND | GND | | | | |
| KEYPAD / 1st CAN | | | | | | |
| 72 | 3V3 | KP_COL[0] | GPIO_9 | ESAI_RX_FS WDOG1_B KEY_COL6 CCM_REF_EN_B PWM1_OUT SD1_WP | GPIO1[9] | |
| 73 | 3V3 | KP_COL[1] | GPIO_4 | ESAI_TX_HF_CLK KEY_COL7 SD2_CD_B | GPIO1[4] | |
| 74 | 3V3 | KP_COL[2] | KEY_COL2 | ECSP11_SS1 ENET_RX_DATA2 FLEXCAN1_TX KEY_COL2 ENET_MDC USB_H1_PWR_CTL_WAKE | GPIO4[10] | |
| 75 | 3V3 | KP_COL[3] | KEY_COL3 | ECSP11_SS3 ENET_CRIS HDMI_TX_DDC_SCL KEY_COL3 I2C2_SCL SPDIF_IN | GPIO4[12] | |
| 76 | 3V3 | TXCAN | KEY_COL4 | FLEXCAN2_TX IPU1_SISG4 USB_OTG_OC KEY_COL4 UART5_RTS_B | GPIO4[14] | |
| 77 | 3V3 | KP_ROW[0] | GPIO_2 | ESAI_TX_FS KEY_ROW6 SD2_WP MLB_DATA | GPIO1[2] | |
| 78 | 3V3 | KP_ROW[1] | GPIO_5 | ESAI_TX2_RX3 KEY_ROW7 CCM_CLKO1 I2C3_SCL ARM_EVENTI | GPIO1[5] | |
| 79 | 3V3 | KP_ROW[2] | KEY_ROW2 | ECSP11_SS2 ENET_TX_DATA2 FLEXCAN1_RX KEY_ROW2 SD2_VSELECT HDMI_TX_CEC_LINE | GPIO4[11] | |
| 80 | 3V3 | KP_ROW[3] | KEY_ROW3 | ASRC_EXT_CLK HDMI_TX_DDC_SDA KEY_ROW3 I2C2_SDA SD1_VSELECT | GPIO4[13] | |
| 81 | 3V3 | RXCAN | KEY_ROW4 | FLEXCAN2_RX IPU1_SISG5 USB_OTG_PWR KEY_ROW4 UART5_CTS_B | GPIO4[15] | |
| 82 | GND | GND | | | | |

| PIN | Type | Function | i.MX6 Pad Name | Alternate functions | GPIO | Description (refer to i.MX6 Dual manuals for details) |
|------------------------------------|------|----------|----------------|--|-----------|---|
| SSI 1 - Serial Audio Port 1 | | | | | | |
| 83 | 3V3 | SSI1_INT | EIM_D26 | EIM_DATA26 IPU1_DI1_PIN11 IPU1_CSI0_DATA01 IPU1_CSI1_DATA14 UART2_TX_DATA IPU1_SISG2 IPU1_DISP1_DATA22 EPDC_SDOED | GPIO3[26] | GPIO |
| 84 | 3V3 | SSI1_RXD | KEY_ROW1 | ECSPI1_SS0 ENET_COL AUD5_RXD KEY_ROW1 UART5_RX_DATA SD2_VSELECT | GPIO4[9] | Serial Audio Interface serial data line 1 |
| 85 | 3V3 | SSI1_TXD | KEY_ROW0 | ECSPI1_MOSI ENET_TX_DATA3 AUD5_TXD KEY_ROW0 UART4_RX_DATA DCIC2_OUT | GPIO4[7] | Serial Audio Interface serial data line 0 |
| 86 | 3V3 | SSI1_CLK | KEY_COL0 | ECSPI1_SCLK ENET_RX_DATA3 AUD5_TXC KEY_COL0 UART4_TX_DATA DCIC1_OUT | GPIO4[6] | Serial Audio Interface serial bit clock |
| 87 | 3V3 | SSI1_FS | KEY_COL1 | ECSPI1_MISO ENET_MDIO AUD5_TXFS KEY_COL1 UART5_TX_DATA SD1_VSELECT | GPIO4[8] | Serial Audio Interface left/right clock |
| 88 | GND | GND | | | | |
| SSI 2 - Serial Audio Port 2 | | | | | | |
| 89 | 3V3 | SSI2_INT | EIM_D27 | EIM_DATA27 IPU1_DI1_PIN13 IPU1_CSI0_DATA00 IPU1_CSI1_DATA13 UART2_RX_DATA IPU1_SISG3 IPU1_DISP1_DATA23 EPDC_SDOE | GPIO3[27] | GPIO |
| 90 | 3V3 | SSI2_RXD | CSI0_DAT7 | IPU1_CSI0_DATA07 EIM_DATA05 ECSPI1_SS0 KEY_ROW6 AUD3_RXD ARM_TRACE04 | GPIO5[25] | Serial Audio Interface serial data line 1 |
| 91 | 3V3 | SSI2_TXD | CSI0_DAT5 | IPU1_CSI0_DATA05 EIM_DATA03 ECSPI1_MOSI KEY_ROW5 AUD3_TXD ARM_TRACE02 | GPIO5[23] | Serial Audio Interface serial data line 0 |
| 92 | 3V3 | SSI2_CLK | CSI0_DAT4 | IPU1_CSI0_DATA04 EIM_DATA02 ECSPI1_SCLK KEY_COL5 AUD3_TXC ARM_TRACE01 | GPIO5[22] | Serial Audio Interface serial bit clock |
| 93 | 3V3 | SSI2_FS | CSI0_DAT6 | IPU1_CSI0_DATA06 EIM_DATA04 ECSPI1_MISO KEY_COL6 AUD3_TXFS ARM_TRACE03 | GPIO5[24] | Serial Audio Interface left/right clock |
| 94 | GND | GND | | | | |

| PIN | Type | Function | i.MX6 Pad Name | Alternate functions | GPIO | Description (refer to i.MX6 Dual manuals for details) |
|-----------------------------------|------|-------------|----------------|--|-----------|---|
| Secure Digital Interface 2 | | | | | | |
| 95 | 3V3 | SD2_CD | SD3_CLK | SD3_CLK UART2_RTS_B FLEXCAN1_RX | GPIO7[3] | SD Card Detect – connected to a GPIO |
| 96 | 3V3 | SD2_D[0] | SD2_DAT0 | SD2_DATA0 AUD4_RXD KEY_ROW7 / DCIC2_OUT | GPIO1[15] | SD Data bidirectional signals—If the system designer does not want to make use of the internal pull-up, via the Pull-up enable register, a 50 K–69 K external pull up resistor must be added. |
| 97 | 3V3 | SD2_D[1] | SD2_DAT1 | SD2_DATA1 EIM_CS2 AUD4_TXFS / KEY_COL7 | GPIO1[14] | |
| 98 | 3V3 | SD2_D[2] | SD2_DAT2 | SD2_DATA2 EIM_CS3 AUD4_TXD KEY_ROW6 | GPIO1[13] | |
| 99 | 3V3 | SD2_D[3] | SD2_DAT3 | SD2_DATA3 KEY_COL6 AUD4_TXC | GPIO1[12] | |
| 100 | 3V3 | SD2_CMD | SD2_CMD | SD2_CMD KEY_ROW5 AUD4_RXC | GPIO1[11] | SD Command bidirectional signal |
| 101 | 3V3 | SD2_CLK | SD2_CLK | SD2_CLK KEY_COL5 AUD4_RXFS | GPIO1[10] | SD Output Clock. |
| 102 | GND | GND | | | | |
| CMOS Sensor Interface | | | | | | |
| 103 | 3V3 | CSI0_DAT12 | CSI0_DAT12 | IPU1_CSI0_DATA12 EIM_DATA08 UART4_TX_DATA ARM_TRACE09 | GPIO5[30] | |
| 104 | 3V3 | CSI0_DAT13 | CSI0_DAT13 | IPU1_CSI0_DATA13 EIM_DATA09 UART4_RX_DATA ARM_TRACE10 | GPIO5[31] | |
| 105 | 3V3 | CSI0_DAT14 | CSI0_DAT14 | IPU1_CSI0_DATA14 EIM_DATA10 UART5_TX_DATA ARM_TRACE11 | GPIO6[0] | |
| 106 | 3V3 | CSI0_DAT15 | CSI0_DAT15 | IPU1_CSI0_DATA15 EIM_DATA11 UART5_RX_DATA ARM_TRACE12 | GPIO6[1] | |
| 107 | 3V3 | CSI0_DAT16 | CSI0_DAT16 | IPU1_CSI0_DATA16 EIM_DATA12 UART4_RTS_B ARM_TRACE13 | GPIO6[2] | |
| 108 | 3V3 | CSI0_DAT17 | CSI0_DAT17 | IPU1_CSI0_DATA17 EIM_DATA13 UART4_CTS_B ARM_TRACE14 | GPIO6[3] | |
| 109 | 3V3 | CSI0_DAT18 | CSI0_DAT18 | IPU1_CSI0_DATA18 EIM_DATA14 UART5_RTS_B ARM_TRACE15 | GPIO6[4] | |
| 110 | 3V3 | CSI0_DAT19 | CSI0_DAT19 | IPU1_CSI0_DATA19 EIM_DATA15 UART5_CTS_B | GPIO6[5] | |
| 111 | GND | GND | | | | |
| 112 | 3V3 | CSI0_HSYNC | CSI0_MCLK | IPU1_CSI0_HSYNC CCM_CLKO1 ARM_TRACE_CTL | GPIO5[19] | |
| 113 | 3V3 | CSI0_VSYNC | CSI0_VSYNC | IPU1_CSI0_VSYNC EIM_DATA01 ARM_TRACE00 | GPIO5[21] | |
| 114 | 3V3 | CSI0_PIXCLK | CSI0_PIXCLK | IPU1_CSI0_PIXCLK ARM_EVENTO | GPIO5[18] | |
| 115 | 3V3 | CSI0_MCLK | GPIO_0 | CCM_CLKO1 KEY_COL5 ASRC_EXT_CLK EPIT1_OUT USB_H1_PWR SNVS_VIO_5 | GPIO1[0] | |
| 116 | GND | GND | | | | |

| PIN | Type | Function | i.MX6 Pad Name | Alternate functions | GPIO | Description (refer to i.MX6 Dual manuals for details) |
|--|------|----------|--------------------|--|-----------|---|
| LCD Controller and Smart LCD Controller | | | | | | |
| 117 | 3V3 | LD0 | DISPO_DAT0 | IPU1_DISP0_DATA00 LCD_DATA00 ECSPI3_SCLK | GPIO4[21] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS1_TX2_N | not available | | TX6S LVDS version: LVDS display output port 1 |
| 118 | 3V3 | LD1 | DISPO_DAT1 | IPU1_DISP0_DATA01 LCD_DATA01 ECSPI3_MOSI | GPIO4[22] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS1_TX1_N | not available | | TX6S LVDS version: LVDS display output port 1 |
| 119 | 3V3 | LD2 | DISPO_DAT2 | IPU1_DISP0_DATA02 LCD_DATA02 ECSPI3_MISO | GPIO4[23] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS1_TX2_P | not available | | TX6S LVDS version: LVDS display output port 1 |
| 120 | 3V3 | LD3 | DISPO_DAT3 | IPU1_DISP0_DATA03 LCD_DATA03 ECSPI3_SS0 | GPIO4[24] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS1_TX1_P | not available | | TX6S LVDS version: LVDS display output port 1 |
| 121 | 3V3 | LD4 | DISPO_DAT4 | IPU1_DISP0_DATA04 LCD_DATA04 ECSPI3_SS1 | GPIO4[25] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS1_TX3_N | not available | | TX6S LVDS version: LVDS display output port 1 |
| 122 | 3V3 | LD5 | DISPO_DAT5 | IPU1_DISP0_DATA05 LCD_DATA05 ECSPI3_SS2 AUD6_RXFS | GPIO4[26] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS1_TX0_N | not available | | TX6S LVDS version: LVDS display output port 1 |
| 123 | 3V3 | LD6 | DISPO_DAT6 | IPU1_DISP0_DATA06 LCD_DATA06 ECSPI3_SS3 AUD6_RXC | GPIO4[27] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS1_TX3_P | not available | | TX6S LVDS version: LVDS display output port 1 |
| 124 | 3V3 | LD7 | DISPO_DAT7 | IPU1_DISP0_DATA07 LCD_DATA07 ECSPI3_RDY | GPIO4[28] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS1_TX0_P | not available | | TX6S LVDS version: LVDS display output port 1 |
| 125 | 3V3 | LD8 | DISPO_DAT8 | IPU1_DISP0_DATA08 LCD_DATA08 PWM1_OUT WDOG1_B | GPIO4[29] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS1_CLK_N | not available | | TX6S LVDS version: LVDS display output port 1 |
| 126 | 3V3 | LD9 | DISPO_DAT9 | IPU1_DISP0_DATA09 LCD_DATA09 PWM2_OUT WDOG2_B | GPIO4[30] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS0_TX3_P | not available | | TX6S LVDS version: LVDS display output port 0 |
| 127 | 3V3 | LD10 | DISPO_DAT10 | IPU1_DISP0_DATA10 LCD_DATA10 | GPIO4[31] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS1_CLK_P | not available | | TX6S LVDS version: LVDS display output port 1 |
| 128 | 3V3 | LD11 | DISPO_DAT11 | IPU1_DISP0_DATA11 LCD_DATA11 | GPIO5[5] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS0_TX3_N | not available | | TX6S LVDS version: LVDS display output port 0 |
| 129 | GND | GND | | | | |
| 130 | 3V3 | LD12 | DISPO_DAT12 | IPU1_DISP0_DATA12 LCD_DATA12 | GPIO5[6] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS0_CLK_P | not available | | TX6S LVDS version: LVDS display output port 0 |
| 131 | 3V3 | LD13 | DISPO_DAT13 | IPU1_DISP0_DATA13 LCD_DATA13 AUD5_RXFS | GPIO5[7] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS0_TX2_P | not available | | TX6S LVDS version: LVDS display output port 0 |

| PIN | Type | Function | i.MX6 Pad Name | Alternate functions | GPIO | Description (refer to i.MX6 Dual manuals for details) |
|-----|------|----------|--------------------|---|-----------|---|
| 132 | 3V3 | LD14 | DISPO_DAT14 | IPU1_DISP0_DATA14 LCD_DATA14 AUD5_RXC | GPIO5[8] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS0_CLK_N | not available | | TX6S LVDS version: LVDS display output port 0 |
| 133 | 3V3 | LD15 | DISPO_DAT15 | IPU1_DISP0_DATA15 LCD_DATA15 ECSPI1_SS1 ECSPI2_SS1 | GPIO5[9] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS0_TX2_N | not available | | TX6S LVDS version: LVDS display output port 0 |
| 134 | 3V3 | LD16 | DISPO_DAT16 | IPU1_DISP0_DATA16 LCD_DATA16 ECSPI2_MOSI AUD5_TXC SDMA_EXT_EVENT0 | GPIO5[10] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS0_TX1_P | not available | | TX6S LVDS version: LVDS display output port 0 |
| 135 | 3V3 | LD17 | DISPO_DAT17 | IPU1_DISP0_DATA17 LCD_DATA17 ECSPI2_MISO AUD5_TXD SDMA_EXT_EVENT1 | GPIO5[11] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS0_TX0_P | not available | | TX6S LVDS version: LVDS display output port 0 |
| 136 | 3V3 | LD18 | DISPO_DAT18 | IPU1_DISP0_DATA18 LCD_DATA18 ECSPI2_SS0 AUD5_TXFS / AUD4_RXFS EIM_CS2 | GPIO5[12] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS0_TX1_N | not available | | TX6S LVDS version: LVDS display output port 0 |
| 137 | 3V3 | LD19 | DISPO_DAT19 | IPU1_DISP0_DATA19 LCD_DATA19 ECSPI2_SCLK AUD5_RXD / AUD4_RXC EIM_CS3 | GPIO5[13] | TX6S standard version: LCD Data Bus |
| | LVDS | | LVDS0_TX0_N | not available | | TX6S LVDS version: LVDS display output port 0 |
| 138 | 3V3 | LD20 | DISPO_DAT20 | IPU1_DISP0_DATA20 LCD_DATA20 ECSPI1_SCLK AUD4_TXC | GPIO5[14] | TX6S standard version: LCD Data Bus |
| | SATA | | | Not connected | | |
| 139 | 3V3 | LD21 | DISPO_DAT21 | IPU1_DISP0_DATA21 LCD_DATA21 ECSPI1_MOSI AUD4_TXD | GPIO5[15] | TX6S standard version: LCD Data Bus |
| | SATA | | | Not connected | | |
| 140 | 3V3 | LD22 | DISPO_DAT22 | IPU1_DISP0_DATA22 LCD_DATA22 ECSPI1_MISO AUD4_TXFS | GPIO5[16] | TX6S standard version: LCD Data Bus |
| | SATA | | | Not connected | | |
| 141 | 3V3 | LD23 | DISPO_DAT23 | IPU1_DISP0_DATA23 LCD_DATA23 ECSPI1_SS0 AUD4_RXD | GPIO5[17] | TX6S standard version: LCD Data Bus |
| | SATA | | | Not connected | | |
| 142 | GND | GND | | | | |
| 143 | 3V3 | HSYNC | DI0_PIN2 | IPU1_DIO_PIN02 LCD_HSYNC AUD6_TXD / LCD_RS | GPIO4[18] | |
| 144 | 3V3 | VSYNC | DI0_PIN3 | IPU1_DIO_PIN03 LCD_VSYNC AUD6_TXFS LCD_CS | GPIO4[19] | |
| 145 | 3V3 | OE_ACD | DI0_PIN15 | IPU1_DIO_PIN15 LCD_ENABLE AUD6_TXC LCD_RD_E | GPIO4[17] | |
| 146 | 3V3 | LSCLK | DI0_DISP_CLK | IPU1_DIO_DISP_CLK LCD_CLK LCD_WR_RWN | GPIO4[16] | |
| 147 | GND | GND | | | | |

| PIN | Type | Function | i.MX6 Pad Name | Alternate functions | GPIO | Description (refer to i.MX6 Dual manuals for details) |
|--------------------------------|------|-------------|----------------|---|-----------|---|
| Module Specific Signals | | | | | | |
| 148 | 3V3 | CSI1_MCLK | NANDF_CS2 | NAND_CE2_B IPU1_SISG0 ESAI_TX0 EIM_CRE CCM_CLKO2 | GPIO6[15] | |
| 149 | 3V3 | CSI1_PIXCLK | EIM_A16 | EIM_ADDR16 IPU1_DI1_DISP_CLK IPU1_CSI1_PIXCLK SRC_BOOT_CFG16 EPDC_DATA00 | GPIO2[22] | |
| 150 | 3V3 | CSI1_VSYNC | EIM_D29 | EIM_DATA29 IPU1_DI1_PIN15 ECSPI4_SS0 UART2_RTS_B IPU1_CSI1_VSYNC IPU1_DIO_PIN14 EPDC_PWR_WAKE | GPIO3[29] | |
| 151 | 3V3 | CSI1_HSYNC | EIM_EB3 | EIM_EB3 ECSPI4_RDY UART3_RTS_B UART1_RI_B IPU1_CSI1_HSYNC IPU1_DI1_PIN03 SRC_BOOT_CFG31 EPDC_SDCE0 EIM_ACLK_FREERUN | GPIO2[31] | |
| 152 | 3V3 | CSI1_D[12] | EIM_A17 | EIM_ADDR17 IPU1_DISP1_DATA12 IPU1_CSI1_DATA12 SRC_BOOT_CFG17 EPDC_PWR_STAT | GPIO2[21] | |
| 153 | 3V3 | CSI1_D[13] | EIM_A18 | EIM_ADDR18 IPU1_DISP1_DATA13 IPU1_CSI1_DATA13 SRC_BOOT_CFG18 EPDC_PWR_CTRL0 | GPIO2[20] | |
| 154 | 3V3 | CSI1_D[14] | EIM_A19 | EIM_ADDR19 IPU1_DISP1_DATA14 IPU1_CSI1_DATA14 SRC_BOOT_CFG19 EPDC_PWR_CTRL1 | GPIO2[19] | |
| 155 | 3V3 | CSI1_D[15] | EIM_A20 | EIM_ADDR20 IPU1_DISP1_DATA15 IPU1_CSI1_DATA15 SRC_BOOT_CFG20 EPDC_PWR_CTRL2 | GPIO2[18] | |
| 156 | 3V3 | CSI1_D[16] | EIM_A21 | EIM_ADDR21 IPU1_DISP1_DATA16 IPU1_CSI1_DATA16 SRC_BOOT_CFG21 EPDC_GDCLK | GPIO2[17] | |
| 157 | 3V3 | CSI1_D[17] | EIM_A22 | EIM_ADDR22 IPU1_DISP1_DATA17 IPU1_CSI1_DATA17 SRC_BOOT_CFG22 EPDC_GDSP | GPIO2[16] | |
| 158 | 3V3 | CSI1_D[18] | EIM_A23 | EIM_ADDR23 IPU1_DISP1_DATA18 IPU1_CSI1_DATA18 IPU1_SISG3 SRC_BOOT_CFG23 EPDC_GDOE | GPIO6[6] | |
| 159 | 3V3 | CSI1_D[19] | EIM_A24 | EIM_ADDR24 IPU1_DISP1_DATA19 IPU1_CSI1_DATA19 IPU1_SISG2 SRC_BOOT_CFG24 EPDC_GDRL | GPIO5[4] | |
| 160 | GND | GND | | | | |
| 161 | 3V3 | | CSI0_DAT8 | IPU1_CSI0_DATA08 EIM_DATA06 ECSPI2_SCLK KEY_COL7 I2C1_SDA ARM_TRACE05 | GPIO5[26] | |

| PIN | Type | Function | i.MX6 Pad Name | Alternate functions | GPIO | Description (refer to i.MX6 Dual manuals for details) |
|-----|------|----------|----------------|---|-----------|---|
| 162 | 3V3 | | CSIO_DAT9 | IPU1_CSI0_DATA09 EIM_DATA07 ECSPI2_MOSI KEY_ROW7 I2C1_SCL ARM_TRACE06 | GPIO5[27] | |
| 163 | 3V3 | | CSIO_DAT10 | IPU1_CSI0_DATA10 AUD3_RXC ECSPI2_MISO UART1_TX_DATA ARM_TRACE07 | GPIO5[28] | |
| 164 | 3V3 | | CSIO_DAT11 | IPU1_CSI0_DATA11 AUD3_RXFS ECSPI2_SS0 UART1_RX_DATA ARM_TRACE08 | GPIO5[29] | |
| 165 | 3V3 | | EIM_D22 | EIM_DATA22 ECSPI4_MISO IPU1_DI0_PIN01 IPU1_CSI1_DATA10 USB_OTG_PWR SPDIF_OUT EPDC_SDCE6 | GPIO3[22] | |
| 166 | LVDS | | CLK1_N | | | Alternate reference clock for PCIe |
| 167 | LVDS | | PCIE_RXM | | | |
| 168 | LVDS | | CLK1_P | | | Alternate reference clock for PCIe |
| 169 | LVDS | | PCIE_RXP | | | |
| 170 | LVDS | | PCIE_TXM | | | |
| 171 | GND | GND | | | | |
| 172 | LVDS | | PCIE_TXP | | | |
| 173 | 3V3 | EIM_CS0 | EIM_CS0 | EIM_CS0 IPU1_DI1_PIN05 ECSPI2_SCLK EPDC_DATA06 | GPIO2[23] | |
| 174 | 3V3 | EIM_CS1 | EIM_CS1 | EIM_CS1 IPU1_DI1_PIN06 ECSPI2_MOSI EPDC_DATA08 | GPIO2[24] | |
| 175 | 3V3 | GPIO | CSIO_DATA_EN | IPU1_CSI0_DATA_EN EIM_DATA00 ARM_TRACE_CLK | GPIO5[20] | |
| 176 | 3V3 | EIM_WAIT | EIM_WAIT | EIM_WAIT EIM_DTACK_B SRC_BOOT_CFG25 | GPIO5[0] | |
| 177 | 3V3 | EIM_EB0 | EIM_EB0 | EIM_EB0 IPU1_DISP1_DATA11 IPU1_CSI1_DATA11 CCM_PMIC_READY SRC_BOOT_CFG27 EPDC_PWR_COM | GPIO2[28] | |
| 178 | 3V3 | EIM_EB1 | EIM_EB1 | EIM_EB1 IPU1_DISP1_DATA10 IPU1_CSI1_DATA10 SRC_BOOT_CFG28 EPDC_SDSHR | GPIO2[29] | |
| 179 | 3V3 | EIM_OE | EIM_OE | EIM_OE IPU1_DI1_PIN07 ECSPI2_MISO EPDC_PWR_IRQ | GPIO2[25] | |
| 180 | 3V3 | EIM_LBA | EIM_LBA | EIM_LBA IPU1_DI1_PIN17 ECSPI2_SS1 SRC_BOOT_CFG26 EPDC_DATA04 | GPIO2[27] | |
| 181 | 3V3 | EIM_RW | EIM_RW | EIM_RW IPU1_DI1_PIN08 ECSPI2_SS0 SRC_BOOT_CFG29 EPDC_DATA07 | GPIO2[26] | |
| 182 | 3V3 | EIM_BCLK | EIM_BCLK | EIM_BCLK IPU1_DI1_PIN16 EPDC_SDCE9 | GPIO6[31] | |
| 183 | GND | GND | | | | |

| PIN | Type | Function | i.MX6 Pad Name | Alternate functions | GPIO | Description (refer to i.MX6 Dual manuals for details) |
|-----|------|----------|----------------|---|-----------|---|
| 184 | 3V3 | EIM_DA0 | EIM_DA0 | EIM_AD00 IPU1_DISP1_DATA09 IPU1_CSI1_DATA09 SRC_BOOT_CFG00 EPDC_SDCLK_N | GPIO3[0] | |
| 185 | 3V3 | EIM_DA1 | EIM_DA1 | EIM_AD01 IPU1_DISP1_DATA08 IPU1_CSI1_DATA08 SRC_BOOT_CFG01 EPDC_SDLE | GPIO3[1] | |
| 186 | 3V3 | EIM_DA2 | EIM_DA2 | EIM_AD02 IPU1_DISP1_DATA07 IPU1_CSI1_DATA07 SRC_BOOT_CFG02 EPDC_BDR0 | GPIO3[2] | |
| 187 | 3V3 | EIM_DA3 | EIM_DA3 | EIM_AD03 IPU1_DISP1_DATA06 IPU1_CSI1_DATA06 SRC_BOOT_CFG03 EPDC_BDR1 | GPIO3[3] | |
| 188 | 3V3 | EIM_DA4 | EIM_DA4 | EIM_AD04 IPU1_DISP1_DATA05 IPU1_CSI1_DATA05 SRC_BOOT_CFG04 EPDC_SDCE0 | GPIO3[4] | |
| 189 | 3V3 | EIM_DA5 | EIM_DA5 | EIM_AD05 IPU1_DISP1_DATA04 IPU1_CSI1_DATA04 SRC_BOOT_CFG05 EPDC_SDCE1 | GPIO3[5] | |
| 190 | 3V3 | EIM_DA6 | EIM_DA6 | EIM_AD06 IPU1_DISP1_DATA03 IPU1_CSI1_DATA03 SRC_BOOT_CFG06 EPDC_SDCE2 | GPIO3[6] | |
| 191 | 3V3 | EIM_DA7 | EIM_DA7 | EIM_AD07 IPU1_DISP1_DATA02 IPU1_CSI1_DATA02 SRC_BOOT_CFG07 EPDC_SDCE3 | GPIO3[7] | |
| 192 | 3V3 | EIM_DA8 | EIM_DA8 | EIM_AD08 IPU1_DISP1_DATA01 IPU1_CSI1_DATA01 SRC_BOOT_CFG08 EPDC_SDCE4 | GPIO3[8] | |
| 193 | 3V3 | EIM_DA9 | EIM_DA9 | EIM_AD09 IPU1_DISP1_DATA00 IPU1_CSI1_DATA00 SRC_BOOT_CFG09 EPDC_SDCE5 | GPIO3[9] | |
| 194 | 3V3 | EIM_DA10 | EIM_DA10 | EIM_AD10 IPU1_DI1_PIN15 IPU1_CSI1_DATA_EN SRC_BOOT_CFG10 EPDC_DATA01 | GPIO3[10] | |
| 195 | 3V3 | EIM_DA11 | EIM_DA11 | EIM_AD11 IPU1_DI1_PIN02 IPU1_CSI1_HSYNC SRC_BOOT_CFG11 EPDC_DATA03 | GPIO3[11] | |
| 196 | 3V3 | EIM_DA12 | EIM_DA12 | EIM_AD12 IPU1_DI1_PIN03 IPU1_CSI1_VSYNC SRC_BOOT_CFG12 EPDC_DATA02 | GPIO3[12] | |
| 197 | 3V3 | EIM_DA13 | EIM_DA13 | EIM_AD13 IPU1_DI1_D0_CS SRC_BOOT_CFG13 EPDC_DATA13 | GPIO3[13] | |
| 198 | 3V3 | EIM_DA14 | EIM_DA14 | EIM_AD14 IPU1_DI1_D1_CS SRC_BOOT_CFG14 EPDC_DATA14 | GPIO3[14] | |
| 199 | 3V3 | EIM_DA15 | EIM_DA15 | EIM_AD15 IPU1_DI1_PIN01 IPU1_DI1_PIN04 SRC_BOOT_CFG15 EPDC_DATA09 | GPIO3[15] | |
| 200 | GND | GND | | | | |