# reComputer J1010



### Introduction

reComputer J1010 are compact edge computers built with NVIDIA advanced AI embedded systems: Jetson Nano and Seeed reference carrier board (J101).

With rich extension modules, industrial peripherals, thermal management combined with decades of Seeed's hardware expertise, reComputer Jetson is ready to help you accelerate and scale the next-gen Al product emerging diverse Al scenarios.

reComputer J1010 is compatible with the entire NVIDIA Jetson software stack, cloud-native workflows, industry-leading AI frameworks, helping deliver seamless AI integration.

Note: We provide SD card function on carrier board, which supports CLK Frequency 48MHz. Increasing CLK by yourself might cause certificates (such as CE/FCC) failure!

### Part list

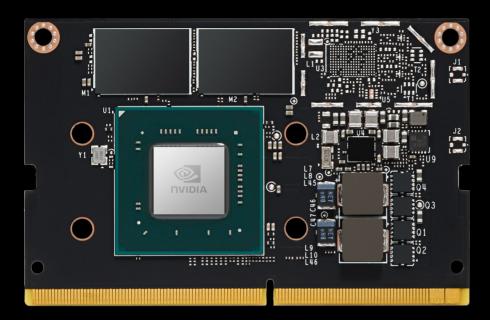
- Jetson Nano x1
- Seeed reference carrier board(J101) x1
- Passive aluminium heatsink x1
- Aluminium case (black) x1



# Category

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# Module - Jetson Nano (production version)



### A new dimension in Al

At just 70 x 45 mm, the Jetson Nano module is smaller than a credit card. But this production-ready System on Module (SOM) delivers big when it comes to deploying AI to devices at the edge across multiple industries—from smart cities and factories to agriculture and robotics.

### Big compute performance

Jetson Nano delivers 472 GFLOPs for taking on modern Al algorithms. It runs multiple neural networks in parallel and processes several high-resolution sensors simultaneously, making it ideal for applications ranging from NVRs to intelligent gateways.

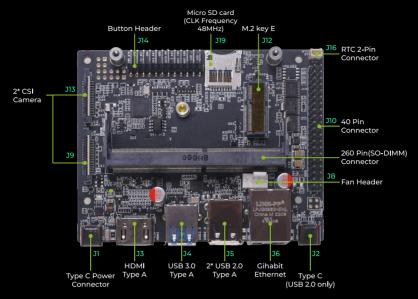
#### Low power demands

Now, you can innovate at the edge with powerful and efficient AI, computer vision, and high-performance computing at just 5 to 10 watts.

# Module Technical Specifications

| GPU          | NVIDIA Maxwell™ architecture with 128 NVIDIA CUDA® cores<br>0.5 TFLOPs (FP16)   |
|--------------|---|
| CPU          | Quad-core ARM® Cortex®-A57 MPCore processor   |
| Memory       | 4 GB 64-bit LPDDR4 1600MHz - 25.6 GB/s  |
| Storage      | 16 GB eMMC 5.1 Flash  |
| Video Encode | 250 MP/sec; 1x 4K @ 30 (HEVC); 2x 1080p @ 60 (HEVC)<br>4x 1080p @ 30 (HEVC); 4x 720p @ 60 (HEVC); 9x 720p @ 30 (HEVC) |
| Video Decode | 500 MP/sec; 1x 4K @ 60 (HEVC); 2x 4K @ 30 (HEVC)<br>4x 1080p @ 60 (HEVC); 8x 1080p @ 30 (HEVC); 9x 720p @ 60 (HEVC)   |
| Camera       | 12 lanes (3x4 or 4x2) MIPI CSI-2 DPHY 1.1 (18 Gbps)   |
| Connectivity | Wi-Fi requires external chip  |
| Connectivity | 10/100/1000 BASE-T Ethernet   |
| Display      | HDMI 2.0 or DP1.2   eDP 1.4   DSI (1 x2) 2 simultaneous   |
| UPHY         | 1 x1/2/4 PCIE, 1x USB 3.0, 3x USB 2.0   |
| 1/0          | 1x SDIO / 2x SPI / 4x I2C / 2x I2S / GPIOs -> I2C, I2S  |
| Size         | 69.6 mm x 45 mm   |
| Mechanical   | 260-pin edge connector  |

# Seeed reference Carrier Board



It has **nearly the same functional design and same size** as the carrier board of NVIDIA® Jetson Nano™ 2GB Developer Kit. Here is the difference between the two carrier boards as shown below.



The Seeed reference carrier board provides several connectors with industry standard pin outs to support additional functionality beyond what is integrated on the main platform board. This includes:

- USB 2.0: Type A Stacked Connectors, Type C Connectors x2
- USB 3.0: Type A Connector
- Gigabit Ethernet: RJ45 Connector
- HDMI: HDMI Type A Connector
- M.2 Key E Socket
- Micro SD card slot

#### **USB Port**

The carrier board supports Five Connectors. One is a USB 2.0 Type C connector for Power In, another one is a USB 2.0 Type C connector supports Device mode only (including USB Recovery). There are also one dual stacked USB 2.0 Type A connectors and one USB 3.0 Type A connectors which supports Host mode only. A single load switch supplies VBUS to all USB Type A ports and is limited to 2A of output current.

#### USB 2.0 Type C power in only - J1:

| Pin#   | Module Pin Name | Module Pin # | Net Name   | Usage/Description | Type/Dir Default |
|--------|-----------------|--------------|------------|-------------------|------------------|
| A4/B9  | -               | -            | _          | VDLIC Committee   | Power            |
| A9/B4  | -               | -            | _          | VBUS Supply       | Power            |
| A5     | _               | -            | PWR_CC1    | _                 | _                |
| B5     | _               | -            | PWR_CC2    | _                 | _                |
| A7     | _               | -            |            | Test Daint Only   | _                |
| В7     | _               | -            | USB 2.0_DN | Test Point Only   | _                |
| A6     | _               | _            |            | T . D O . I       | _                |
| В6     | _               | -            | USB 2.0_DP | Test Point Only   | _                |
| A8     | -               | -            | _          | _                 | _                |
| В8     | _               | -            | _          | _                 | _                |
| A1/B12 | _               | -            | _          |                   | Ground           |
| A12/B1 | _               | -            | _          | Ground            | Ground           |

#### USB 2.0 Type C data only - J2:

| Pin#   | Module Pin Name | Module Pin # | Net Name       | Usage/Description | Type/Dir Default |
|--------|-----------------|--------------|----------------|-------------------|------------------|
| A4/B9  | GPIO00          |              |                | VDUS Committee    |                  |
| A9/B4  | (USB_VBUS_EN0)  | 87           | USB0_VBUS_DET* | VBUS Supply       | Power            |
| A5     | -               | -            | DAT_CC1        | _                 | _                |
| B5     | -               | -            | DAT_CC2        | _                 | _                |
| A7     | LICDO D N       | 100          | T C. LICD. DN  |                   |                  |
| В7     | USB0_D_N        | 109          | Type C_USB_DN  | USB 2.0 #0 Data   | Didia            |
| A6     |                 | 111          | T C LICD DD    |                   | Bidir            |
| В6     | USB0_D_P        | 111          | Type C_USB_DP  |                   |                  |
| A8     | _               | -            | _              | _                 | _                |
| В8     |                 | _            | _              | _                 | _                |
| A1/B12 | _               | _            | _              | Cround            | Ground           |
| A12/B1 | _               | _            | _              | Ground            | Ground           |

Note

In the Type/Dir column, Output Is to USB connector. Input is form USB connector. Bidir is for bidirectional signals.

#### USB 3.0 - J4:

| Pin#      | Module Pin Namel | Module Pin # | Net Name    | Usage/Description          | Type/Dir2 |  |  |  |  |
|-----------|------------------|--------------|-------------|----------------------------|-----------|--|--|--|--|
| USB 3.0 T | JSB 3.0 Type A   |              |             |                            |           |  |  |  |  |
| 1         | _                | _            | _           | VBUS Supply                | Power     |  |  |  |  |
| 2         | USB1_D_N         | 115          | HUB_USB3_DM | LICD 2 O #7 Data frame had | Dialia    |  |  |  |  |
| 3         | USB1_D_P         | 117          | HUB_USB3_DP | USB 2.0 #3 Data from hub   | Bidir     |  |  |  |  |
| 4         | _                | _            |             | Ground                     | Ground    |  |  |  |  |
| 5         | USBSS_RX_N       | 161          | USBSS_RX6_N | USB 3.0 Receive Data from  |           |  |  |  |  |
| 6         | USBSS_RX_P       | 163          | USBSS_RX6_P | module                     | Input     |  |  |  |  |
| 7         | _                | _            |             | Ground                     | Ground    |  |  |  |  |
| 8         | USBSS_TX_N       | 166          | USBSS_TX6_N | USB 3.0 Transmit Data fro  |           |  |  |  |  |
| 9         | USBSS_TX_P       | 168          | USBSS_TX6_P | m module                   | Output    |  |  |  |  |

Note

<sup>1.</sup> The module pin names not directly connected to the USB connector pins but are routed to the input of the USB hub.

<sup>2.</sup> In the Type/Dir column, Output is to USB connectors. Input is from USB connectors. Bidir is for bidirectional signals.

#### Dual stacked USB 2.0 - J5:

| Pin#      | Module Pin Namel | Module Pin # | Net Name    | Usage/Description            | Type/Dir2 |  |  |  |  |
|-----------|------------------|--------------|-------------|------------------------------|-----------|--|--|--|--|
| USB 2.0 T | USB 2.0 Type A   |              |             |                              |           |  |  |  |  |
| 1         | -                | -            | _           | VBUS Supply                  | Power     |  |  |  |  |
| 2         | USB1_D_N         | 115          | HUB_USB1_DM | LICD 2 O #3 Data frame built | Distin    |  |  |  |  |
| 3         | USB1_D_P         | 117          | HUB_USB1_DP | USB 2.0 #1 Data from hub     | Bidir     |  |  |  |  |
| 4         | -                | -            |             | Ground                       | Ground    |  |  |  |  |
| 1         | -                | -            | _           | VBUS Supply                  | Power     |  |  |  |  |
| 2         | USB1_D_N         | 115          | HUB_USB2_DM | 11CD 2 0 #2 Data frama hub   | Bidir     |  |  |  |  |
| 3         | USB1_D_P         | 117          | HUB_USB2_DP | USB 2.0 #2 Data from hub     |           |  |  |  |  |
| 4         | -                | -            |             | Ground                       | Ground    |  |  |  |  |

#### Note:

<sup>1.</sup> The module pin names not directly connected to the USB connector pins but are routed to the input of the USB hub.

<sup>2.</sup> In the Type/Dir column, Output is to USB connectors. Input is from USB connectors. Bidir is for bidirectional signals.

# Gigabit Ethernet - J6

| Pin# | Module Pin Name | Module Pin # | Net Name     | Usage/Description   | Type/Dir |
|------|-----------------|--------------|--------------|---|----------|
| 1    | GBE_MDI0_P      | 186          | GBE_MDI0_P   | Gigabit Ethernet MDI 0+   | Bidir    |
| 2    | GBE_MDIO_N      | 184          | GBE_MDIO_N   | Gigabit Ethernet MDI 0–   | Bidir    |
| 3    | GBE_MDI1_P      | 192          | GBE_MDI1_P   | Gigabit Ethernet MDI 1+   | Bidir    |
| 4    | _               | _            | _            | мст   | _        |
| 5    | _               | _            | _            | мст   | _        |
| 6    | GBE_MDI1_N      | 190          | GBE_MDI1_N   | Gigabit Ethernet MDI 1–   | Bidir    |
| 7    | GBE_MDI2_P      | 198          | GBE_MDI2_P   | Gigabit Ethernet MDI 2+   | Bidir    |
| 8    | GBE_MDI2_N      | 196          | GBE_MDI2_N   | Gigabit Ethernet MDI 2-   | Bidir    |
| 9    | GBE_MDI3_P      | 204          | GBE_MDI3_P   | Gigabit Ethernet MDI 3+   | Bidir    |
| 10   | GBE_MDI3_N      | 202          | GBE_MDI3_N   | Gigabit Ethernet MDI 3–   | Bidir    |
| 11   |                 |              |              |   |          |
| 12   |                 |              |              | Power-Over-Ethernet   | Dower    |
| 13   | _               | _            | _            | Power-Over-Ethernet   | Power    |
| 14   |                 |              |              |   |          |
| 15   | _               | _            | _            | Green LED Anode   | Input    |
| 16   | GBE_LED_LINK    | 188          | GBE_LED_LINK | Green LED Cathode. On for<br>1000Mbps link. Off for 10/10<br>0Mbps. | Output   |
| 17   | _               | -            | _            | Yellow LED Anode  | Input    |
| 18   | GBE_LED_ACT     | 194          | GBE_LED_ACT  | Yellow LED Cathode. On in dicates activity.                         | Output   |
| 19   |                 |              |              | Shield Ground   | Cround   |
| 20   | _               | _            |              | sniela Ground   | Ground   |
|      |                 |              |              |   |          |

Note

In the Type/Dir column, Output is to RJ45 connector. Input is from RJ45 connector. Bidir is for bidirectional signals.

### HDMI - J3

### HDMI Connector Pin Description

| Pin# | Module Pin Name | Module Pin # | Net Name        | Usage/Description     | Type/Dir   |
|------|-----------------|--------------|-----------------|-----------------------|------------|
| 1    | DP1_TXD0_P      | 65           | HDMI_TXD2_ P    | HDMI Transmit Data 2+ | Output     |
| 2    | _               | _            |                 | Ground                | Ground     |
| 3    | DP1_TXD0_N      | 63           | HDMI_TXD2_ N    | HDMI Transmit Data 2– | Output     |
| 4    | DPI_TXDI_P      | 71           | HDMI_TXDI_ P    | HDMI Transmit Data 1+ | Output     |
| 5    | _               | _            |                 | Ground                | Ground     |
| 6    | DPI_TXDI_N      | 69           | HDMI_TXDI_ N    | HDMI Transmit Data 1– | Output     |
| 7    | DP1_TXD2_P      | 77           | HDMI_TXD0_ P    | HDMI Transmit Data 0+ | Output     |
| 8    | _               | _            |                 | Ground                | Ground     |
| 9    | DP1_TXD2_N      | 75           | HDMI_TXD0_ N    | HDMI Transmit Data 0– | Output     |
| 10   | DP1_TXD3_P      | 83           | HDMI_TXC_P      | HDMI Transmit Clock+  | Output     |
| 11   | _               | _            |                 | Ground                | Ground     |
| 12   | DP1_TXD3_N      | 81           | HDMI_TXC_N      | HDMI Transmit Clock–  | Output     |
| 13   | HDMI_CEC        | 94           | HDMI_CEC        | HDMI CEC              | Bidir      |
| 14   | _               | _            |                 | Unused                | Unused     |
| 15   | DP1_AUX_P       | 100          | HDMI_DDC_SCL_PO | HDMI DDC Clock        | Output /OD |
| 16   | DP1_AUX_N       | 98           | DMI_DDC_SDA_POL | HDMI DDC Data         | Bidir/OD   |
| 17   | _               | _            |                 | Ground                | Ground     |
| 18   | _               | _            |                 | HDMI 5V Power         | Power      |
| 19   | DP1_HPD         | 96           | HDMI_HPD        | HDMI Hot Plug Detect  | Input      |

Note:

 $In the \ Type/Dir\ column, Output\ is\ to\ HDMI\ connector.\ Input\ is\ from\ HDMI\ connector.\ Birdir\ is\ for\ bidirectional\ signals.$ 

# M.2 Key E

| Pin#  | Module Pin Name | Usage/Description         | Type/Dir | Pin# | Module Pin Name | Usage/Description          | Type/Dir |  |
|-------|-----------------|---------------------------|----------|------|-----------------|----------------------------|----------|--|
| 1     | -               | Ground                    | Ground   |      | -               | -                          | -        |  |
| 3     | USB2_D_P        | 11000000                  | D. I.    | 2    |                 |                            |          |  |
| 5     | USB2_D_N        | USB 2.0 Data              | Bidir    | 4    | <u> </u>        | Main 3.3V Supply           | Power    |  |
| 7     | -               | Ground                    | Ground   | 6    | -               | Unused                     | Unused   |  |
| 9     |                 |                           |          | 8    | 12S1_CLK        | I2S #1 Clock               | Bidir    |  |
| 11    |                 |                           |          | 10   | 12S1_FS         | I2S #1 Left/Right Clock    | Bidir    |  |
| 13    |                 |                           |          | 12   | 12S1_DIN        | I2S #1 Data In             | Input    |  |
| 15    |                 |                           |          | 14   | I2S1_DOUT       | I2S #1 Data Out            | Bidir    |  |
| 17    | -               | Unused                    | Unused   | 16   | _               | Unused                     | Unused   |  |
| 19    |                 |                           |          | 18   | -               | Ground                     | Ground   |  |
| 21    |                 |                           |          | 20   | GPIO2           | Bluetooth Wake AP          | Input    |  |
| 23    |                 |                           |          | 22   | UARTO_RXD       | UART #0 Receive            | Input    |  |
| 25    |                 |                           |          | 24   |                 |                            |          |  |
| 27    |                 |                           |          | 26   |                 |                            |          |  |
| 29    | -               | Key                       | Unused   | 28   | -               | Key                        | Unused   |  |
| 31    |                 |                           |          | 30   |                 |                            |          |  |
| 33    | -               | Ground                    | Ground   | 32   | UARTO_TXD       | UART #0 Transmit           | Output   |  |
| 35    | PEXO_TXO_P      | PCIe #0 Transmit Lane 0   | Output   | 34   | UARTO_CTS*      | UART #0 Clear to Send      | Input    |  |
| 37    | PEX0_TX0_N      |                           |          | 36   | UARTO_RTS*      | UART #0 Request to Send    | Output   |  |
| 39    | -               | Ground                    | Ground   | 38   |                 |                            |          |  |
| 41    | PEX0_RX0_P      | PCIe #0 Receive Lane 0    | Input    | 40   |                 | Unused                     | Unused   |  |
| 43    | PEX0_RX0_N      | T GIG ITO NECENTE BATTE O | Прас     | 42   |                 |                            |          |  |
| 45    | -               | Ground                    | Ground   | 44   |                 |                            | Offasca  |  |
| 47    | PEX0_CLK_P      | PCIe #0 Reference clock   | Output   | 46   |                 |                            |          |  |
| 49    | PEXO_CLK_N      | FCIe #0 Reference clock   |          | 48   |                 |                            |          |  |
| 51    | -               | Ground                    | Ground   | 50   | CLK_32K_OUT     | Suspend Clock (32KHz)      | Output   |  |
| 53    | PEX0_CLKREQ*    | PCIe #0 Clock Request     | Bidir    | 52   | PEX0_RST*       | PCIe #0 Reset              | Output   |  |
| 55    | PEX_WAKE*       | PCIe Wake                 | Input    | 54   |                 | Unused                     | Unused   |  |
| 57    | -               | Ground                    | Ground   | 56   |                 | Official                   | Offasca  |  |
| 59    |                 | Unused                    | Unused   | 58   | I2C2_SDA        | I2C #2                     | Bidir/OD |  |
| 61    |                 |                           | онавеа   | 60   | I2C2_SCL        | I2C #2                     | Bidir/OD |  |
| 63    | _               | Ground                    | Ground   | 62   | GPIO10          | M.2, Key E Connector Alert | Input    |  |
| 65    |                 | Unused                    | Unused   | 64   |                 |                            |          |  |
| 67    |                 |                           | онавеа   | 66   |                 | Unused                     | Unused   |  |
| 69    | _               | Ground                    | Ground   | 68   |                 |                            |          |  |
| 71    |                 | Unused                    | Unused   | 70   |                 |                            |          |  |
| 73    |                 |                           | онавеа   | 72   |                 | Main 3.3V Supply           | Power    |  |
| 75    | _               | Ground                    | Ground   | 74   |                 | тан ээч эцрргу             | Ovvei    |  |
| Note: |                 |                           |          |      |                 |                            |          |  |

In the Type/Dir column, Output is to M.2 module. Input is from M.2 module. Bidir is for bidirectional signals.

### Camera Connectors

### CSI - J9

| Pin# | Module Pin Name | Usage/Description  | Type/Dir | Pin# | Module Pin Name | Usage/Description | Type/Dir |
|------|-----------------|--|----------|------|-----------------|-------------------|----------|
| 1    | _               | Ground   | Ground   | 16   | _               |                   |          |
| 2    | CSIO_DO_N       |  | la a c   | 17   | _               |                   |          |
| 3    | CSIO_DO_P       | CSI 0 Data 0   | Input    | 18   | _               |                   |          |
| 4    | _               | Ground   | Ground   | 19   | _               |                   |          |
| 5    | CSIO_D1_N       |  | la a c   | 20   | _               |                   |          |
| 6    | CSIO_D1_P       | CSI 0 Data 1   | Input    | 21   | _               |                   |          |
| 7    | _               | Ground   | Ground   | 22   | _               |                   |          |
| 8    | CSIO_CLK_N      | CSI 0 Clock  | Input 23 | 23   | _               | Not Used          | _        |
| 9    | CSIO_CLK_P      | CSI O CIOCK  |          | 24   | _               |                   |          |
| 10   | _               | Ground   | Ground   | 25   | _               |                   |          |
| 11   | CAM0_PWDN       | Camera #0 Power-down   | Output   | 26   | _               |                   |          |
| 12   | CAM0_MCLK       | Camera #0 Master Clock   | Output   | 27   | _               |                   |          |
| 13   | CAM0_I2C_SCL    | Camera I2C. 2.2k $\Omega$ pull-ups<br>on module. 1.6k $\Omega$ pull-ups on the   | Output   | 28   | _               |                   |          |
| 14   | CAM0_I2C_SDA    | carrier board. The module CAM_I2C pins connect to an I2C mux. The camera connector #1 receives the I2C from the mux (1st output) | Bidir :  | 29   | -               |                   |          |
| 15   | _               | +3.3V  | Power    | 30   | _               |                   |          |

### CSI - J13

| Pin# | Module Pin Name | Usage/Description   | Type/Dir    | Pin# | Module Pin Name | Usage/Description | Type/Dir |
|------|-----------------|---|-------------|------|-----------------|-------------------|----------|
| 1    | _               | Ground  | Ground      | 16   | _               |                   |          |
| 2    | CSI2_DO_N       | CCI 2 D-+- 0  | la a contra | 17   | _               |                   |          |
| 3    | CSI2_D0_P       | CSI 2 Data 0  | Input       | 18   | _               |                   |          |
| 4    | -               | Ground  | Ground      | 19   | _               |                   |          |
| 5    | CSI2_D1_N       | CC12 D-+- 1   |             | 20   | _               |                   |          |
| 6    | CSI2_D1_P       | CSI 2 Data 1  | Input       | 21   | _               |                   |          |
| 7    | -               | Ground  | Ground      | 22   | _               |                   |          |
| 8    | CSI2_CLK_N      | CSI 2 Clock   | Input       | 23   | _               | Not Used          | -        |
| 9    | CSI2_CLK_P      | CSI 2 CIOCK   |             | 24   | _               |                   |          |
| 10   | -               | Ground  | Ground      | 25   | _               |                   |          |
| 11   | CAM1_PWDN       | Camera #1 Power-down  | Output      | 26   | _               |                   |          |
| 12   | CAM1_MCLK       | Camera #1 Master Clock  | Output      | 27   | _               |                   |          |
| 13   | CAM1_I2C_SCL    | Camera I2C. 2.2k $\Omega$ pull-ups<br>on module. 1.6k $\Omega$ pull-ups on the  | Output      | 28   | -               |                   |          |
| 14   | CAM1_I2C_SDA    | carrier board. The module CAM_I2C<br>pins connect to an I2C mux. The<br>camera connector #1 receives the I2C<br>from the mux (1st output) | Bidir       | 29   | -               |                   |          |
| 15   | _               | +3.3V   | Power       | 30   | _               |                   |          |

# 40-Pin Expansion Header - J10

### 40-Pin part 1

| Header Pin # | Module Pin Name | Module Pin # | Tegra Pin name | Default Usage / Description | Alternate Functionality    |
|--------------|-----------------|--------------|----------------|-----------------------------|----------------------------|
| 1            | -               | -            | -              | Main 3.3V Supply            | -                          |
| 2            | -               | -            | -              | Main 5.0V Supply            | -                          |
| 3            | I2C1_SDA        | 191          | GEN2_I2C_SDA   | I2C #1 Data                 | GPIO                       |
| 4            | _               | _            | _              | Main 5.0V Supply            | _                          |
| 5            | I2C1_SCL        | 189          | GEN2_I2C_SCL   | I2C #1 Clock                | GPIO                       |
| 6            | _               | _            | _              | Ground                      | _                          |
| 7            | GPIO09          | 211          | AUD_MCLK       | GPIO                        | Audio Master Clock         |
| 8            | UARTI_TXD       | 203          | UART2_TXD      | UART #1 Transmit            | GPIO                       |
| 9            | _               | _            | _              | Ground                      | _                          |
| 10           | UARTI_RXD       | 205          | UART2_RXD      | UART #1 Receive             | GPIO                       |
| 11           | UARTI_RTS*      | 207          | UART2_RTS      | GPIO                        | UART #2 Request to Send    |
| 12           | I2S0_SCLK       | 199          | DAP4_SCLK      | GPIO                        | Audio I2S #0 Clock         |
| 13           | SPII_SCK        | 106          | SPI2_SCK       | GPIO                        | SPI #1 Shift Clock         |
| 14           | _               | _            | _              | Ground                      | _                          |
| 15           | GPIO12          | 218          | LCD_TE         | GPIO                        | _                          |
| 16           | SPI1_CSI1*      | 112          | SPI2_CS1       | GPIO                        | SPI #1 Chip Select #1      |
| 17           | -               | _            | -              | Main 3.3V Supply            | -                          |
| 18           | SPI1_CSI0*      | 110          | SPI2_CS0       | GPIO                        | SPI #0 Chip Select #0      |
| 19           | SPI0_MOSI       | 89           | SPI1_MOSI      | GPIO                        | SPI #0 Master Out/Slave In |
| 20           | _               | _            | -              | Ground                      | _                          |
| 21           | SPI0_MISO       | 93           | SPI1_MISO      | GPIO                        | SPI #0 Master In/Slave Out |
| 22           | SPI1_MISO       | 108          | SPI2_MISO      | GPIO                        | SPI #1 Master In/Slave Out |
| 23           | SPI0_SCK        | 91           | SPI1_SCK       | GPIO                        | SPI #0 Shift Clock         |
| 24           | SPI0_CS0*       | 95           | SPI1_CS0       | GPIO                        | SPI #0 Chip Select #0      |
| 25           | -               | _            | -              | Ground                      | _                          |
| 26           | SPIO_CS1*       | 97           | SPI1_CS1       | GPIO                        | SPI #0 Chip Select #1      |
| 27           | I2C0_SDA        | 187          | GEN1_I2C_SDA   | I2C #0 Data                 | GPIO                       |
| 28           | I2C0_SCL        | 185          | GEN1_I2C_SCL   | I2C #0 Clock                | GPIO                       |
| 29           | GPIO01          | 118          | CAM_AF_EN      | GPIO                        | Camera MCLK #2             |
| 30           | -               | _            | -              | Ground                      | _                          |
| 31           | GPIO11          | 216          | GPIO_PZ0       | GPIO                        | Camera MCLK #3             |
| 32           | GPIO07          | 206          | LCD_BL_PWM     | GPIO                        | PWM                        |
| 33           | GPIO13          | 228          | GPIO_PE6       | GPIO                        | PWM                        |
| 34           | -               | -            | -              | Ground                      | -                          |
| 35           | 12S0_FS         | 197          | DAP4_FS        | GPIO                        | Audio I2S #0 Field Select  |
| 36           | UARTI_CTS*      | 209          | UART2_CTS      | GPIO                        | UART #1 Clear to Send      |
| 37           | SPI1_MOSI       | 104          | SPI2_MOSI      | GPIO                        | SPI #1 Master Out/Slave In |
| 38           | I2S0_DIN        | 195          | DAP4_DIN       | GPIO                        | Audio I2S #0 Data in       |
| 39           |                 |              |                | Ground                      | -                          |
| 40           | I2S0_DOUT       | 193          | DAP4_DOUT      | GPIO                        | Audio I2S #0 Data Out      |

### 40-Pin part 2

| +0 1 III part 2 |                      |                                    |                   |                   |                 |       |  |
|-----------------|----------------------|------------------------------------|-------------------|-------------------|-----------------|-------|--|
| Header Pin #    | Type/ Direction      | Pin Drive or Power Pin Max Current | Tegra GPIO Port # | Power- on Default | PU/PD on Module | Notes |  |
| 1               | Power (input)        | 1A                                 | -                 | _                 | -               | 1     |  |
| 2               | Power (input/output_ | 1A                                 | _                 | _                 | _               | 1     |  |
| 3               | Bidir/OD             | lmA/-lmA                           | PJ.03             | Z                 | 2.2KΩ PU        | 2     |  |
| 4               | Power                | 1A                                 | -                 | -                 | -               | -     |  |
| 5               | Bidir/OD             | lmA/-lmA                           | PJ.02             | Z                 | 2.2KΩ PU        | 2     |  |
| 6               | Ground               | _                                  | _                 | -                 | _               | -     |  |
| 7               | Bidir/Output         | 20uA / -20uA                       | PBB.00            | pd                |                 | 3     |  |
| 8               | Bidir/Output         | 20uA/-20uA                         | PG.00             | pd                |                 | 3     |  |
| 9               | Ground               | -                                  | -                 | -                 | -               | -     |  |
| 10              | Bidir/Input          | 20uA/-20uA                         | PG.01             | pu                |                 | 3     |  |
| 11              | Bidir/Output         | 20uA/-20uA                         | PG.02             | pd                |                 | 3     |  |
| 12              | Bidir                | 20uA/-20uA                         | PJ.07             | pd                |                 | 3     |  |
| 13              | Bidir/Output         | 20uA/-20uA                         | PB.06             | pd                |                 | 3     |  |
| 14              | Ground               | -                                  | _                 | _                 | _               | _     |  |
| 15              | Bidir                | 20uA/-20uA                         | PY.02             | pd                |                 | 3     |  |
| 16              | Bidir/Output         | 20uA/-20uA                         | PDD.00            | pu                |                 | 3     |  |
| 17              | Power                | 1A                                 | _                 | _                 | _               | 1     |  |
| 18              | Bidir/Output         | 20uA/-20uA                         | PB.07             | pu                |                 | 3     |  |
| 19              | Bidir/Output         | 20uA / -20uA                       | PC.00             | pd                |                 | 3     |  |
| 20              | Ground               | -                                  | -                 | _                 | -               | -     |  |
| 21              | Bidir/Input          | 20uA/-20uA                         | PC.01             | pd                |                 | 3     |  |
| 22              | Bidir/Input          | 20uA / -20uA                       | PB.05             | pd                |                 | 3     |  |
| 23              | Bidir/Output         | 20uA / -20uA                       | PC.02             | pd                |                 | 3     |  |
| 24              | Bidir/Output         | 20uA/-20uA                         | PC.03             | pu                |                 | 3     |  |
| 25              | Ground               | -                                  | -                 | _                 | _               | -     |  |
| 26              | Bidir/Output         | 20uA/-20uA                         | PC.01             | pu                |                 | 3     |  |
| 27              | Bidir/OD             | lmA/-lmA                           | PB.05             | Z                 | 2.2KΩ PU        | 2     |  |
| 28              | Bidir/OD             | lmA/-lmA                           | PC.02             | z                 | 2.2ΚΩ PU        | 2     |  |
| 29              | Bidir/Output         | 20uA/-20uA                         | PC.03             | pd                |                 | 3     |  |
| 30              | Ground               | -                                  | -                 | _                 | _               | -     |  |
| 31              | Bidir/Output         | 20uA / -20uA                       | PZ.00             | pd                |                 | 3     |  |
| 32              | Bidir/Output         | 20uA / -20uA                       | PV.00             | pd                |                 | 3     |  |
| 33              | Bidir/Output         | 20uA / -20uA                       | PE.06             | pd                |                 | 3     |  |
| 34              | Ground               | -                                  | -                 | -                 | -               | -     |  |
| 35              | Bidir                | 20uA/-20uA                         | PJ.04             | pd                |                 | 3     |  |
| 36              | Bidir/Input          | 20uA / -20uA                       | PG.03             | pd                |                 | 3     |  |
| 37              | Bidir/Output         | 20uA / -20uA                       | PB.04             | pd                |                 | 3     |  |
| 38              | Bidir/Input          | 20uA/-20uA                         | PJ.05             | pd                |                 | 3     |  |
| 39              | Ground               | -                                  | -                 | _                 | _               | -     |  |
| 40              | Bidir/Output         | 20uA/-20uA                         | PJ.06             | pd                |                 | 3     |  |

#### Note

- 1. This is current capability per power pin.
- 2. These pins are connected to NVIDIA® Tegra® directly. They are open-drain (either pulled up or driven low by Tegra when configured as outputs). The max drive that meets the data sheet VOL is 1 mA.
- 3. These pins connect to TI TXB0108 level translators. Due to the design of these devices, the output drivers are very weak, so they can be overdriven by another connected device output for bidirectional support.
- 4. In the Type/Dir column, output is to expansion header. Input is from expansion header. Bidir is for bidirectional signals. Where two directions are shown, the first is for the primary function (mostly GPIOs) and the second is for the alternate function.
- 5. Where the signal direction is input or output in Table 3-3, this matches the typical special function usage (e.g. SPI, I2S, etc.). The direction is bidirectional if these are configured as GPIOs.
- 6. All signals on the 40-pin header are 3.3V levels.

# Button Header - J14

| Pin# | Module Pin Name   | Module Pin # | Signal Name     | Usage/Description   | Type/Dir Default |
|------|-------------------|--------------|-----------------|---|------------------|
| 1    | -                 | -            | PC_LED-         | Connects to LED Cathode to indicate System Sleep/Wake (Off when system in sleep mode)         | Input            |
| 2    | -                 | -            | PC_LED+         | Connects to LED Anode (see Pin 1)   | Output           |
| 3    | UART2_RXD (DEBUG) |              | UART2_RXD_LS    | UART #2 Receive   | Input            |
| 4    | UARTI_TXD (DEBUG) |              | UART2_TXD_LS    | UART #2 Transmit  | Output           |
| 5    | _                 |              | BMCU_ACOK       | Connect Pin 5 and Pin 6 to disable<br>Auto-Power-On and require power<br>automation press.    | Input            |
| 6    | _                 |              | LEDAUTO_ON_DIS  | Auto Power-on disable: Pulled to<br>GND. See Pin 5.   | na               |
| 7    | -                 |              | GND             | Ground  | Ground           |
| 8    | SYS_RESET         | 239          | SYS_RST*        | Temporarily connect Pin 7 and Pin<br>8 to reset system  | Input            |
| 9    | -                 |              | GND             | Ground  | Ground           |
| 10   | FORCE_RECOVERY    | 214          | FORCE_RECOVERY* | Connect Pin 9 and Pin 10 during<br>power-on to put system in USB Force<br>Recovery mode.      | Input            |
| 11   | -                 |              | GND             | Ground  | Ground           |
| 12   | SLEEP/WAKE        | 240          | PWR_BTN*        | Connect Pin 11 and Pin 12 to initiate<br>power-on if Auto-Power-On<br>disabled (Pin 5 and Pin | Input            |

Note:

In the Type/Dir column, Output is to automation header. Input is from automation header. Bidir is for bidirectional signals.

#### Fan Connector - J8

| Pin# | Module Pin Name   | Module Pin # | Net Name | Usage/Description                 | Type/Dir Default |
|------|-------------------|--------------|----------|-----------------------------------|------------------|
| 1    | _                 | _            | _        | Ground                            | Ground           |
| 2    | _                 | _            | _        | Main 5.0V Supply                  | Power            |
| 3    | GPIO08 (SDMMC_CD) | 208          | FAN_TACH | Fan Tachometer signal             | Input            |
| 4    | GPIO14 (PWM)      | 230          | FAN_PWM  | Fan Pulse Width Modulation signal | Output           |

Note:

In the Type/Dir column, Output is to camera module. Input is from camera module. Bidir is for bidirectional signals.

### RTC-Coin Cell Batter Holder - J18

| Pin# | Module Pin Name | Module Pin # | Net Name | Usage/Description         | Type/Dir Default |
|------|-----------------|--------------|----------|---------------------------|------------------|
| 1    | _               | _            | _        | Ground                    | Ground           |
| 2    | PMIC_BBAT       | 235          | BBAT     | RTC Back-up battery power | Power            |

### RTC-Pin Header - J16

| Pin# | Module Pin Name | Module Pin # | Net Name | Usage/Description         | Type/Dir Default |
|------|-----------------|--------------|----------|---------------------------|------------------|
| 1    | -               |              |          | Ground                    | Ground           |
| 2    | PMIC_BBAT       | 235          | BBAT     | RTC Back-up battery power | Power            |

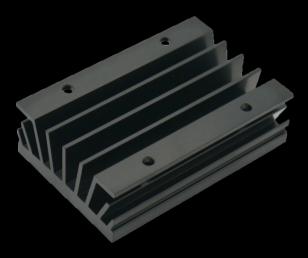
### SDIO Pin Descriptions - J19

| Pin # | Module Pin Name | Module Pin # | Net Name   | Usage/Description       | Type/Dir Default |
|-------|-----------------|--------------|------------|-------------------------|------------------|
| 1     | SDIO_D2         | 223          | SDMMC_DAT2 | SD Card or SDIO Data 2  | Bidir            |
| 2     | SDIO_D3         | 225          | SDMMC_DAT3 | SD Card or SDIO Data 3  | Bidir            |
| 3     | SDIO_CMD        | 227          | SDMMC_CMD  | SD Card or SDIO Command | Bidir            |
| 4     | -               | -            | -          | 1.8V/3.3V               | Power            |
| 5     | SDIO_CLK        | 229          | SDMMC_CLK  | SD Card or SDIO Clock   | Output           |
| 6     | -               | -            | -          | Ground                  | Ground           |
| 7     | SDIO_D0         | 219          | SDMMC_DAT0 | SD Card or SDIO Data 0  | Bidir            |
| 8     | SDIO_D1         | 221          | SDMMC_DATI | SD Card or SDIO Data 1  | Bidir            |

#### Notes

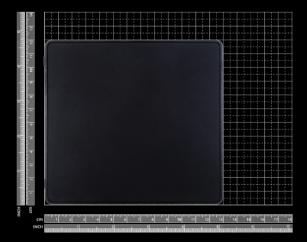
- 1. In the Type/Dir column, Output is from Jetson Nano. Input is to Jetson Nano. Bidir is for Bidirectional signals.
- 2. The direction shown in the table above for SDMMC\_CLK is true when used for that function. If used as a GPIO, the pin supports input or output (bidirectional).
- 3. If the SDMMC pins are connected to a 1.8V only device, the interface voltage should be configured for 1.8V operation in the Pinmux.

#### Passive aluminium heatsink



- Original NVIDIA Jetson Nano Passive Heat Sink
- Designed to fit the NVIDIA Jetson Nano modules
- Dimensions: 58.7mm x 39.4mm x 17.3mm

#### reComputer Case



• Overall dimension: 130mm x120mm x 50mm

### More information

Please check our Wiki and ask question at our Forum or Discord community.
For more information, you can also refer to NVIDIA official Jetson Download Center