
reComputer J401B datasheet



Introduction

The reComputer J401B is an iteration on reComputer classic, with NVIDIA Jetson Orin Nano/Orin NX modules. It is powerful and compact edge AI device with multiple interfaces: 2x USB 3.2, HDMI, Ethernet, M.2 Key E for Wi-Fi module, M.2 Key M for SSD, mini-PCIe for LTE module, CAN, 40-pin and more. The whole system is designed for embedding into public system of smart grid and community projects, such as smart lamppost, recycling system, and EV battery charging / swapping system.

Part list

- Jetson Orin™ NX 16GB/NX 8GB /Nano 8GB/Nano 4GB module x1
- Seeed Carrier Board (reComputer J401B) x1
- 128GB NVMe SSD x1
- Aluminum Case and Heatsink with Fan x1
- DC Jack power connector x1

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Revision History

Version	Date	Editor	Description
V1.0	2025/02/19	Chen Feijun	Initial version

Jetson Orin™ Nano (production version)

Module Technical Specifications

Jetson Orin Nano series		
Name	reComputer J3010B	reComputer J3011B
Module	Jetson Orin Nano 4GB	Jetson Orin Nano 8GB
AI Performance	20 TOPS 34 TOPS MAXN_SUPER	40 TOPS 67 TOPS MAXN_SUPER
GPU	512-core NVIDIA Ampere architecture GPU with 16 Tensor Cores	1024-core NVIDIA Ampere architecture GPU with 32 Tensor Cores
GPU Max Frequency	625 MHz	
CPU	6-core Arm® Cortex®-A78AE v8.2 64-bit CPU 1.5MB L2 + 4MB L3	
CPU Max Frequency	1.5 GHz	
Memory	4GB 64-bit LPDDR5 34 GB/s 51 GB/s MAXN_SUPER	8GB 128-bit LPDDR5 68 GB/s 102 GB/s MAXN_SUPER
Storage	pre-installed 128GB NVMe SSD	
Video Encode	1, 080p30 supported by 1-2 CPU cores	
Video Decode	1x 4K60 (H.265) 2x 4K30 (H.265) 5x 1080p60 (H.265) 11x 1, 080p30 (H.265)	
Camera	Up to 4 cameras (8 via virtual channels*)	
	2x 2-lanes MIPI CSI	
	D-PHY 2.1 (up to 20Gbps)	
PCIe	1 x4 + 3 x1 (PCIe Gen3, Root Port, & Endpoint)	
Power	7W - 25W	7W - 25W
USB	2x USB 3.2 Gen2 (10 Gbps); 3x USB 2.0	
Other I/O	3x UART, 2x SPI, 2x I2S, 4x I2C, 1x CAN, DMIC & DSPK, PWM, GPIOs	
Display	1x 4K30 multi-mode DP 1.2 (+MST)/DP 1.4/HDMI 1.4*	
Networking	1x M.2 Key E for Wi-Fi/Bluetooth module* 1x mini-PCIe for LTE cat4 module*	
Mechanical	130mm x120mm x 58.5mm	
	260-pin SO-DIMM connector	
Temperature	-10~60 °C	
Product lifetime	Until 2032	
Statement	Options marked with * require additional purchase	

Jetson Orin™ NX (production version)

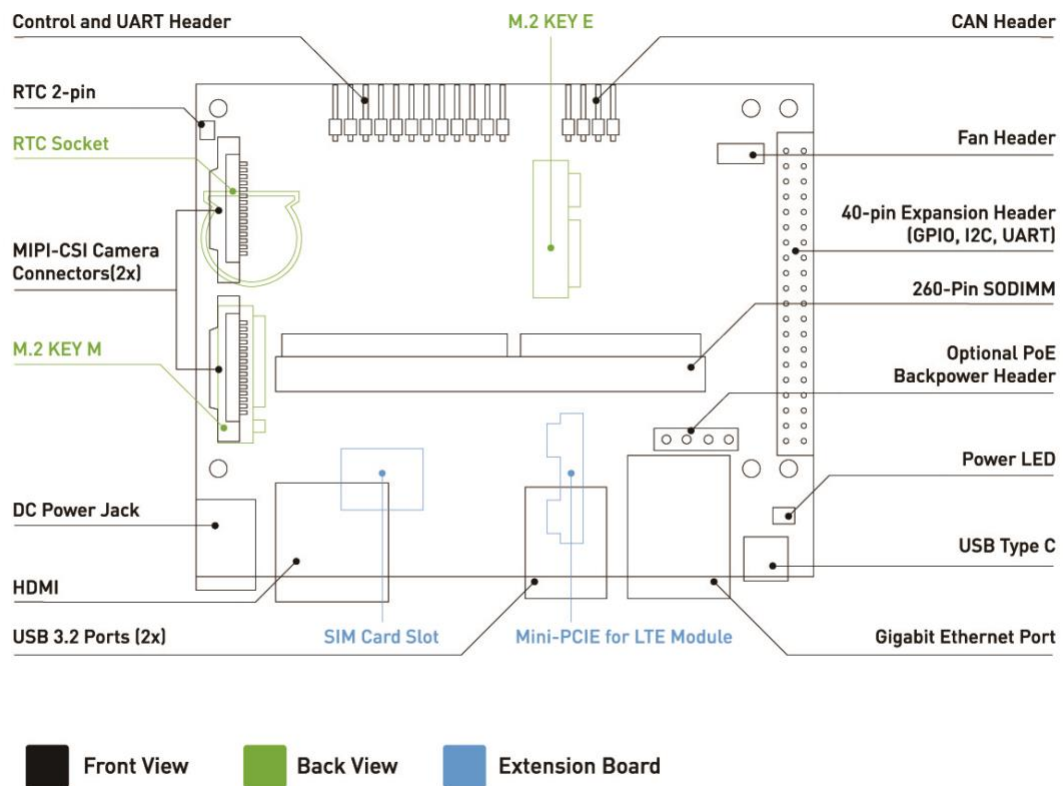
Module Technical Specifications

Jetson Orin NX series		
Name	reComputer J4011B	reComputer J4012B
Module	Jetson Orin NX 8GB	Jetson Orin NX 16GB
AI Performance	70 TOPS	100 TOPS
GPU	1, 024-core NVIDIA Ampere architecture GPU with 32 Tensor Cores	
GPU Max Frequency	765 MHz	918 MHz
CPU	6-core Arm® Cortex®-A78AE v8.2 64-bit CPU 1.5MB L2 + 4MB L3	8-core Arm® Cortex®-A78AE v8.2 64-bit CPU 2MB L2 + 4MB L3
CPU Max Frequency	2 GHz	
DL Accelerator	1x NVDLA v2	2x NVDLA v2
DLA Max Frequency	614 MHz	
Vision Accelerator	1x PVA v2	
Memory	8GB 128-bit LPDDR5 102.4GB/s	16GB 128-bit LPDDR5 102.4GB/s
Storage	pre-installed 128GB NVMe SSD	
Video Encode	1x 4K60(H.265) 3x 4K30(H.265)	
	6x 1080p60(H.265) 12x 1080p30(H.265)	
Video Decode	1x 8K30 (H.265) 2x 4K60 (H.265) 4x 4K30 (H.265) 9x 1080p60 (H.265) 18x 1080p30 (H.265)	
Camera	Up to 4 cameras (8 via virtual channels***)	
	2x 2-lanes MIPI CSI-2	
	D-PHY 2.1 (up to 20Gbps)	
PCIe	1 x4 + 3 x1 (PCIe Gen4, Root Port, & Endpoint)	
Power	10W - 40W	10W - 40W
Display	1x 8K30 multi-mode DP 1.4 (+MST)/DP 1.4a/HDMI 2.1	
Networking	1x M.2 Key E for Wi-Fi/Bluetooth module* 1x mini-PCIe for LTE cat4 module*	
Module Connector	260-pin SO-DIMM connector	
Dimension	130mm x120mm x 58.5mm	
Temperature	-10~60 °C	
Product lifetime	Until 2032	

Statement

1. Options marked with * require additional purchase
2. Orin NX 40W(MAXN_SUPER) is NOT supported on the reComputer J401B carrier board.

reComputer J401B



Carrier Board Technical Specifications

	reComputer J401B
Module Compatibility	Jetson Orin™ NX /Orin™ Nano
PCB Size	100mmx80mm
Display	1x HDMI 2.1
USB	2x USB 3.2 Type-A (10Gbps); 1x USB 2.0 Type-C (Device Mode)
M.2 Key M	1x M.2 Key M for NVMe 2280 SSD
M.2 Key E	1x M.2 Key E for Wi-Fi Module*
Mini-PCle	1x mini-PCle for LTE Module*
FAN	1x 4-pin JST Fan Connector(5V PWM)
CAN	1x CAN
RTC	RTC 2-pin connector, RTC socket
Multifunctional port	1x 40-pin Expansion header; 1x 12-pin Control and UART header
Power supply	DC 9-19V(DC Barrel Jack 5525)
Jetpack	Jetpack 5.1.3(support 6.2)

Note: USB 3.2 Type-A MAX 1.5A; Options marked with * require additional purchase.

USB Ports

The carrier board supports several USB Connectors. There are two USB 3.0 Type A connectors with 10Gbps speed for Host mode only. And one USB 2.0 Type-C Connector supports Device Mode (including USB Recovery).

USB Ports List

Carrier Board			
1 x	USB 2.0 Type-C	Device Mode	J1
2 x	USB 3.0 Type-A	Host Mode	J3
1 x	USB 3.0 Type-A	For extension	J21

USB 2.0 Type-C – J1

Pin #	Module Pin Name	Module Pin #	Net Name	Usage/Description	Type/Dir
A4/B9	GPIO00 (USB_VUSB_EN0)	87	USB0_VBUS_DET*	VBUS Supply	Power
A9/B4					
A5	-	-	DAT_CC1	-	-
B5	-	-	DAT_CC2	-	-
A7	USB1_D_N	115	USB1_AP_N	Orin Module USB1 2.0 Data	Bidir
B7					
A6	USB1_D_P	117	USB1_AP_P		
B6					
A8	-	-	-	-	-

B8	-	-	-	-	-
A1/B12	-	-	-	Ground	Ground
A12/B1	-	-	-		
Note: In the Type/Dir column, output is to USB connectors. Input is from USB connectors. Input is from USB connector. Bidir is for bidirectional signals.					

USB 3.0 Type-A – J3

Pin #	Module Pin Name	Module Pin #	Net Name2	Usage/Description	Type/Dir
USB 3.0 Type A (2)					
1	-	-	-	VBUS Supply1	Power
2	USB1_D_N	115	HUB_HSD4_N	USB 2.0 #4 Data from Hub	Bidir
3	USB1_D_P	117	HUB_HSD4_P		
4	-	-		Ground	Ground
5	USBSS_RX_N	161	HUB_SSRX4_N	USB3.0 Receive #4 Data from Hub	Input
6	USBSS_RX_P	163	HUB_SSRX4_P		
7	-	-	-	Ground	Ground
8	USBSS_TX_N	166	HUB_SSTX4_N	USB3.0 Transmit #4 Data from Hub	Output
9	USBSS_RX_P	168	HUB_SSTX4_P		
USB 3.0 Type A (1)					
10	-	-	-	VBUS Supply1	Power
11	USB1_D_N	115	HUB_HSD4_N	USB 2.0 #4 Data from Hub	Bidir

12	USB1_D_P	117	HUB_HSD4_P		
13	-	-		Ground	Ground
14	USBSS_RX_N	161	HUB_SSRX4_N	USB3.0 Receive #4 Data from Hub	Input
15	USBSS_RX_P	163	HUB_SSRX4_P		
16	-	-	-	Ground	Ground
17	USBSS_TX_N	166	HUB_SSTX4_N	USB3.0 Transmit #4 Data from Hub	Output
18	USBSS_RX_P	168	HUB_SSTX4_P		

Note:

1. Orin Nano module comes with 2x USB3.0, only one of which is used in reComputer J301XB and converted to 4 ways.
2. The Type A is 10Gbps for all USB ports, and only supports USB Host, not Device mode.
3. The upper and lower USB ports share a current-limiting IC, with a total power supply capacity of 2.1A maximum output current(single can also be 2.1A). If over 2.1A, it will enter the over-current protection state.
4. Hot-swappable

USB 3.0 Type-A – J21

Pin #	Module Pin Name	Module Pin #	Net Name2	Usage/Description	Type/Dir
USB 3.0 Type A (2)					
1	-	-	-	VBUS Supply1	Power
2	USB1_D_N	115	HUB_HSD4_N	USB 2.0 #4 Data from Hub	Bidir
3	USB1_D_P	117	HUB_HSD4_P		
4	-	-		Ground	Ground

5	USBSS_ RX_N	161	HUB_SSRX4_N	USB3.0 Receive #4 Data from Hub	Input
6	USBSS_ RX_P	163	HUB_SSRX4_P		
7	-	-	-	Ground	Ground
8	USBSS_ TX_N	166	HUB_SSTX4_N	USB3.0 Transmit #4 Data from Hub	Output
9	USBSS_ RX_P	168	HUB_SSTX4_P		

RJ45 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_MDI0_N	184	GBE_MDI0_N	Gigabit Ethernet MDI 0-	Bidir
3	GBE_MDI1_P	192	GBE_MDI1_P	Gigabit Ethernet MDI 1+	Bidir
4	-	-	-	MCT	-
5	-	-	-	MCT	-
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	-	-	-	Power-Over-Ethernet	Power
12					
13					
14					
15	-	-	-	Green LED Anode	Input
16	GBE_LED_LINK	188	GBE_LED_LINK	Green LED Cathode. On for 1000Mbps link. Off for 10/100Mbps.	Output
17				Yellow LED Anode	Input
18	GBE_LED_ACT	194	GBE_LED_ACT	Yellow LED Cathode. On indicates activity	Output
19	-	-	-	Shield Ground	Ground
20					

Note:

1. Gigabit Ethernet (10/100/1000M)

2. Normal working condition: Green LED: always on, Yellow LED: flashing

HDMI-J5

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	DP1_TXD1_P	71	HDMI_TXD1_P	HDMI Transmit Data 1+	Output
5	-	-		Ground	Ground
6	DP1_TXD1_N	69	HDMI_TXD1_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	Unuse d
15	DP1_AUX_P	100	HDMI_DDC_SCL	HDMI DDC Clock	Output /OD
16	DP1_AUX_N	98	HDMI_DDC_SDA	HDMI DDC Data	Bidir/O D
17	-	-		Ground	Ground
18	-	-		HDMI 5V Power	Power
19	DP1_HPD	96	HDMI_HPD	HDMI Hot Plug Detect	Input

Note:

1. HDMI 2.1
2. Hot-swappable
3. Can be connected to 4K resolution HDMI display

M.2 Key E Expansion Slot – J20

Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir
1	-	-	Ground	Ground
3	USB2_D_P	123	USB 2.0 Data	Bidir
5	USB2_D_N	121		
7	-	-	Ground	Ground
9	-	-	Unused	Unused
11				
13				
15				
17				
19				
21				
23				
25	-	-	Key	Unused
27				
29				
31				
33	-	-	Ground	Ground
35	PCIE1_TX0_P	174	PCIe #1 Transmit Lane0	Output
37	PCIE1_TX0_N	172		
39	-	-	Ground	Ground
41	PCIE1_RX0_P	169	PCIe #1 Receive Lane0	Input
43	PCIE1_RX0_N	167		
45	-	-	Ground	Ground
47	PCIE1_CLK_P	175	PCIe #1 Reference clock	Output

49	PCIE1_CLK_N	173		
51	-	-	Ground	Ground
53	PCIE1_CLKREQ*	182	PCIe #1 Clock Request	Bidir, 3.3V
55	PCIE_WAKE*	179	PCIe Wake	Input, 3.3V
57	-	-	Ground	Ground
59	-	-	Unused	Unused
61				
63	-	-	Ground	Ground
65	-	-	Unused	Unused
67				
69	-	-	Ground	Ground
71	-	-	Unused	Unused
73				
75	-	-	Ground	Ground

Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir
2	-	-	Main 3.3V Supply	Power
4				
6	-	-	Unused	Unused
8	I2S1_CLK	226	I2S #1 Clock	Bidir, 1.8V
10	I2S1_FS	224	I2S #1 Left/Right Clock	Bidir, 1.8V
12	I2S1_DIN	222	I2S #1 Data In	Input, 1.8V
14	I2S1_DOUT	220	I2S #1 Data Out	Output, 1.8V
16	-	-	Unused	Unused
18	-	-	Ground	Ground
20	GPIO02	124	Bluetooth #2 Wake AP	Input, 3.3V

22	UART0_RXD	101	UART #0 Receive	Input, 1.8V
24	-	-	Key	Unused
26				
28				
30				
32	UART0_TXD	99	UART #0 Transmit	Output, 1.8V
34	UART0_CTS*	105	UART #0 Clear to Send	Input, 1.8V
36	UART0_RTS*	103	UART #0 Request to Send	Output, 1.8V
38	-	-	Unused	Unused
40				
42				
44				
46				
48				
50	CLK_32K_OUT	210	Suspend Clock(32KHz)	Output, 3.3V
52	PCIE1_RST*	183	PCIE #0 Reset	Output, 3.3V
54	-	-	Unused	Unused
56				
58	I2C2_SDA	234	General I2C #2(optional)	Bidir/OD, 1.8V
60	I2C2_SCL	232		
62	GPIO10	212	M.2 Key E Connector Alert	Input, 1.8V
64	-	-	Unused	Unused
66				
68				
70				

72	-	-	Main 3.3V Supply	Power
74				
Note: Support Wi-Fi/Bluetooth				

M.2 Key M Expansion Slot - J21

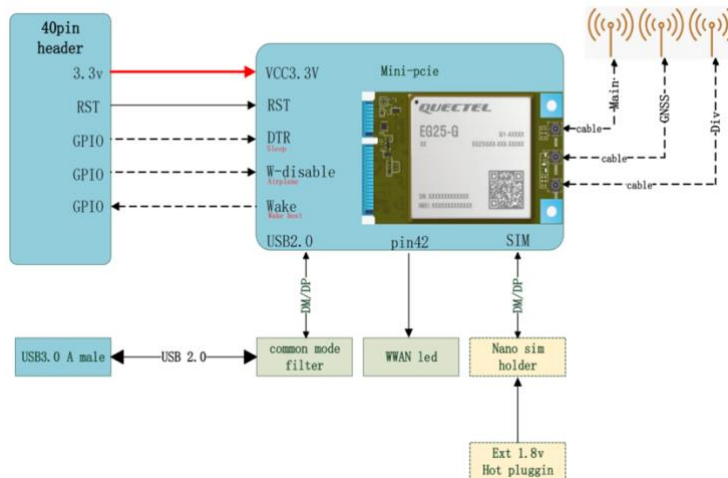
Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
1	-	-	Ground	Ground
3				
5	PCIE0_RX3_N	155	PCIe IF #0 Lane 3 Receive	Input
7	PCIE0_RX3_P	157		
9	-	-	Ground	Ground
11	PCIE0_TX3_N	154	PCIe IF #0 Lane 3 Transmit	Output
13	PCIE0_TX3_P	156		
15	-	-	Ground	Ground
17	PCIE0_RX2_N	149	PCIe IF #0 Lane 2 Receive	Input
19	PCIE0_RX2_P	151		
21	-	-	Ground	Ground
23	PCIE0_TX2_N	148	PCIe IF #0 Lane 2 Transmit	Output
25	PCIE0_TX2_P	150		
27	-	-	Ground	Ground
29	PCIE0_RX1_N	137	PCIe IF #0 Lane 1 Receive	Input
31	PCIE0_RX1_P	139		
33	-	-	Ground	Ground
35	PCIE0_TX1_N	140	PCIe IF #0 Lane 1 Transmit	Output
37	PCIE0_TX1_P	142		
39	-	-	Ground	Ground
41	PCIE0_RX0_N	131	PCIe IF #0 Lane 0 Receive	Input
43	PCIE0_RX0_P	133		
45	-	-	Ground	Ground
47	PCIE0_TX0_N	134	PCIe IF #0 Lane 0 Transmit	Output
49	PCIE0_TX0_P	136		
51	-	-	Ground	Ground
53	PCIE0_CLK_N	160	PCIe IF #0 Reference Clock	Output

55	PCIE0_CLK_P	162		
57	-	-	Ground	Ground
59	-	-	Unused (Key)	Unused
61				
63				
65				
67	-	-	Unused	Unused
69				
71	-	-	Ground	Ground
73				
75				

Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
2	-	-	Main 3.3V Supply	Power
4				
6	-	-	Unused	Unused
8				
10				
12	-	-	Main 3.3V Supply	Power
14				
16				
18				
20	-	-	Unused	Unused
22				
24				
26				
28				
30				
32				

34				
36				
38				
40	I2C2_SCL	232	General I2C #2 (optional)	Bidir/OD, 1.8V
42	I2C2_SDA	234		
44	SDMMC_DAT1	221	M.2 Key M Alert	Output, 1.8V
46	-	-	Unused	Unused
48				
50	PCIE0_RST*	181	PCIe IF #0 Reset	Output, 3.3V
52	PCIE0_CLKREQ*	180	PCIe IF #0 Clock Request	Input, 3.3V
54	PCIE_WAKE*	179	PCIe Wake (Level Shifted from 3.3V to 1.8V)	Input, 3.3V
56	-	-	Unused	Unused
58				
60	-	-	Unused (Key)	Unused (Key)
62				
64				
66				
68	-	-	32KHz Suspend Clock	Output, 3.3V
70	-	-	Main 3.3V Supply	Power
72				
74				
Note: For NVMe SSD, 2280. Support PCIe Gen4.0.				

Mini PCIe Slot -J4 extension board



Pin#	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
1	Wake#	118	Unused	
2	VCC_3.3V	—	Main 3.3v Supply	Input, 3.3v
3	—	—		
4	Ground	—	Ground	Ground
5	—	—		
6	—	—		
7	—	—		
8	SIM_PWR	—	SIM_PWR	
9	Ground	—	Ground	Ground
10	SIM_DATA	—	SIM_DATA	
11	—	—		
12	SIM_CLK	—	SIM_CLK	
13	—	—		
14	SIM_RST	—	SIM_RST	
15	Ground	—	Ground	Ground
16	—	—		
17	—	—		
18	Ground	—	Ground	Ground
19	—	—		

20	W_DISABLE	228	Unused	
21	Ground	—	Ground	Ground
22	PCIE_RST	218	PCIE_RST	Input, 3.3v, Default Low,Active High
23	—	—		
24	—	—		
25	—	—		
26	Ground	—	Ground	Ground
27	Ground	—	Ground	Ground
28	—	—		
29	Ground	—	Ground	Ground
30	—	—		
31	PCIE_DTR	216	Unused	
32	—	—		
33	—	—		
34	Ground	—	Ground	Ground
35	Ground	—	Ground	Ground
36	USB_DM	—	USB_DM	
37	Ground	—	Ground	Ground
38	USB_DP	—	USB_DP	
39	VCC_3.3V	—	Main 3.3v Supply	Input, 3.3v
40	Ground	—	Ground	Ground
41	VCC_3.3V	—	Main 3.3v Supply	Input, 3.3v
42	PCIE_LED_WWAN	—		
43	Ground	—	Ground	Ground
44	SIM_DET	—	SIM_DET	
45	—	—		
46	—	—		
47	—	—		
48	—	—		
49	—	—		

50	Ground	—	Ground	Ground
51	—	—		
52	VCC_3.3V	—	Main 3.3v Supply	Input, 3.3v
Note: For 4G LTE module(need to purchase additionally).				

CSI -J12

Pin#	Module Pin Name	Usage/Description	Type/Dir Default
1	-	Ground	Ground
2	CSI0_D0_N	CSI0 Data 0	Input
3	CSI0_D0_P		
4	-	Ground	Ground
5	CSI0_D1_N	CSI0 Data 1	Input
6	CSI0_D1_P		
7	-	Ground	Ground
8	CSI0_CLK_N	CSI0 Clock	Input
9	CSI0_CLK_P		
10	-	Ground	Ground
11	CAM0_PWDN	Camera #0 Power-down	Output
12	CAM0_MCLK	Camera #0 Master Clock	Output
13	CAM0_I2C_SCL	Camera I2C. 2.2k Ω pull-ups on module. 2.2k Ω pull-ups on the carrier board. The module CAM_I2C pins connect to an I2C mux. The camera connector #1 receives the I2C from the mux(1 st output). The I2C signals on the camera side of the mux have 47k Ω pull-ups.	Output
14	CAM0_I2C_SDA		Bidir
15	-	+3.3V	Power
16	-	Unused	-
17			
18			
19			
20			
21			
22			
23			
24			

25			
26			
27			
28			
29			
30			
Note: 2*CSI(2-lane 15pin)			

CSI -J9

Pin#	Module Pin Name	Usage/Description	Type/Dir Default
1	-	Ground	Ground
2	CSI0_D0_N	CSI0 Data 0	Input
3	CSI0_D0_P		
4	-	Ground	Ground
5	CSI0_D1_N	CSI0 Data 1	Input
6	CSI0_D1_P		
7	-	Ground	Ground
8	CSI0_CLK_N	CSI0 Clock	Input
9	CSI0_CLK_P		
10	-	Ground	Ground
11	CAM0_PWDN	Camera #0 Power-down	Output
12	CAM0_MCLK	Camera #0 Master Clock	Output
13	CAM0_I2C_SCL	Camera I2C. 2.2kΩ pull-ups on module. 2.2kΩ pull-ups on the carrier board. The module CAM_I2C pins connect to an I2C mux. The camera connector #1 receives the I2C from the mux(1 st output). The I2C signals on the camera side of the mux have 47kΩ pull-ups.	Output
14	CAM0_I2C_SDA		Bidir
15	-	+3.3V	Power
16	-	Unused	-
17			

18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
Note: 2*CSI(2-lane 15pin)			

40 Pin Expansion Header -J10

Pin #	Module Pin Name	Module Pin #	SoC Pin name	Usage/Description	Alternative Functionality
1	-	-	-	Main 3.3V Supply	-
2	-	-	-	Main 5.0V Supply	-
3	I2C1_SDA	191	DP_AUX_CH3_N	I2C #1 Data	-
4	-	-	-	Main 5.0V Supply	-
5	I2C1_SCL	189	DP_AUX_CH3_P	I2C #1 Clock	-
6	-	-	-	Ground	-
7	GPIO09	211	AUD_MCLK	GPIO	Audio Master Clock
8	UART1_TXD	203	UART1_TX	UART #1 Transmit	GPIO
9	-	-	-	Ground	-
10	UART1_RXD	205	UART1_RX	UART #1 Receive	GPIO
11	UART1_RTS*	207	UART1_RTS	GPIO	UART #2 Request to Send
12	I2S0_SCLK	199	DAP5_SCLK	GPIO	Audio I2S #0 Clock
13	SPI1_SCK	106	SPI3_SCK	GPIO	SPI #1 Shift Clock
14	-	-	-	Ground	-
15	GPIO12	218	TOUCH_CLK	GPIO	-
16	SPI1_CSI1*	112	SPI3_CSI	GPIO	SPI #1 Chip Select #1
17	-	-	-	Main 3.3V Supply	-
18	SPI1_CSI0*	110	SPI3_CSI	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	SPI3_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	SPI0_CS1*	97	SPI1_CS1	GPIO	SPI #0 Chip Select #1
27	I2C0_SDA	187	GEN2_I2C_SDA	I2C #0 Data	GPIO
28	I2C0_SCL	185	GEN2_I2C_SCL	I2C #0 Clock	GPIO
29	GPIO01	118	SOC_GPIO41	GPIO	General Purpose Clock #0
30	-	-	-	Ground	-
31	GPIO11	216	SOC_GPIO42	GPIO	General Purpose Clock #1
32	GPIO07	206	SOC_GPIO44	GPIO	PWM
33	GPIO13	228	SOC_GPIO54	GPIO	PWM
34	-	-	-	Ground	-
35	I2S0_FS	197	DAP5_FS	GPIO	Audio I2S #0 Field Select
36	UART1_CTS*	209	UART1_CTS	GPIO	UART #1 Clear to Send
37	SPI1_MOSI	104	SPI3_MOSI	GPIO	SPI #1 Master Out/Slave In
38	I2S0_DIN	195	DAP5_DIN	GPIO	Audio I2S #0 Data in
39	-	-	-	Ground	-

40	I2S0_DOUT	193	DAP5_DOUT	GPIO	Audio I2S #0 Data Out
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Pin #	Type/Dir	Pin Drive or Power Pin Max Current	SoC GPIO Port #	Power-on Default	PU/PD on Module	Notes
1	Power(input)	1A	-	-	-	1
2	Power(input/output)	1A	-	-	-	1
3	Bidir OD	±2mA	-	z	2.2KΩ PU	2
4	Power	1A	-	-	-	-
5	Bidir OD	±2mA	-	z	2.2KΩ PU	2
6	Ground	-	-	-	-	-
7	Bidir/Output	±20μA	PS.04	pd		3
8	Output/Bidir	±20μA	PR.02	pd		3
9	Ground	-	-	-	-	-
10	Input/Bidir	±20μA	PR.03	pu		3
11	Bidir/Output	±20μA	PR.04	pd		3
12	Bidir	±20μA	PT.05	pd		3
13	Bidir/Output	±20μA	PY.00	pd		3
14	Ground	-	-	-	-	-
15	Bidir	±20μA	PCC.04	pd		3
16	Bidir/Output	±20μA	PY.04	pd		3
17	Power	1A	-	-	-	-

18	Bidir/Output	$\pm 20\mu\text{A}$	PY.03	pu		3
19	Bidir/Output	$\pm 20\mu\text{A}$	PZ.05	pd		3
20	Ground	-	-	-	-	-
21	Bidir/Input	$\pm 20\mu\text{A}$	PZ.04	pd		3
22	Bidir/Input	$\pm 20\mu\text{A}$	PY.01	pd		3
23	Bidir/Output	$\pm 20\mu\text{A}$	PZ.03	Pd		3
24	Bidir/Output	$\pm 20\mu\text{A}$	PZ.06	pu		3
25	Ground	-	-	-	-	-
26	Bidir/Output	$\pm 20\mu\text{A}$	PZ.07	pu		3
27	Bidir OD/ Bidir	$\pm 2\text{mA}$	PDD.00	z	2.2K Ω PU	2
28	Bidir OD/ Bidir	$\pm 2\text{mA}$	PCC.07	z	2.2K Ω PU	2
29	Bidir/Output	$\pm 20\mu\text{A}$	PQ.05	pd		3
30	Ground	-	-	-	-	-
31	Bidir/Output	$\pm 20\mu\text{A}$	PQ.06	pd		3
32	Bidir/Output	$\pm 20\mu\text{A}$	PR.00	pd		3
33	Bidir/Output	$\pm 20\mu\text{A}$	PN.01	pd		3
34	Ground	-	-	-	-	-
35	Bidir	$\pm 20\mu\text{A}$	PU.00	pd		3
36	Bidir/Input	$\pm 20\mu\text{A}$	PR.05	pd		3

37	Bidir/Output	$\pm 20\mu\text{A}$	PY.02	pd		3
38	Bidir/Input	$\pm 20\mu\text{A}$	PT.07	pd		3
39	Ground	-	-	-	-	-
40	Bidir/Output	$\pm 20\mu\text{A}$	PT.06	pd		3

Note:

1. Compatible with Raspberry Pi 40pin GPIO.
2. 5V pin: can supply 1A continuously.
3. 3.3V pin: can supply 1A continuously.

Button Header -J15

Pin #	Module Pin Name	Module Pin #	Net Name	Usage/Description	Type/Dir Default
1	-	-		PC_LED-: Connects to LED Cathode to indicate System Sleep/Wake up(Off when system in sleep mode)	Input, 5V
2	-	-		PC_LED+: Connects to LED Anode (see above)	Output
3	UART2_RXD(DEBUG)	238	UART2_RXD	UART #2 Receive	Input, 3.3V
4	UART2_TXD(DEBUG)	236	UART2_TXD	UART #2 Transmit	Output, 3.3V
5	-	-		AC OK: Connect pins 5 and 6 to disable Auto-Power-On and require power button press.	Input, 3.3V
6	-	-		Auto Power-on disable: Pulled to GND. See Pin 5.	NaN
7	-	-		Ground	Ground
8	SYS_RESET*	239	SYS_RESET	Temporarily connect pins 7 and 8 to reset system.	Input, 1.8V
9	-	-		Ground	Ground
10	FORCE_RECOVERY*	214	FORCE_RECOVERY*	Connect pins 9 and 10 during power-on to put system in USB	Input, 1.8V

				Force Recovery mode.	
11	-	-		Ground	Ground
12	SLEEP/WAKE*	240	PWR_BTN*	Connect pins 11 and 12 to initiate power-on if Auto-Power-On disabled (Pins 5 and 6 connected).	Input, 5V
Note: In the Type/Dir column, Output is to button header. Input is from button header. Bidir is for bidirectional signals.					

Fan Connector -J13

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, 5V
4	GPIO14(PWM)	230	FAN_PWM	Fan Pulse Width Modulation signal	Output, 5V
Note: 1. CPU on the SoM can control the fan automatically, fan turns on automatically when the temperature is too high. 2. Connect 4Pin 5V fan, you can control the fan speed, and detect the speed.					

CAN Bus Header -J16

Pin#	Module Pin Name	Module Pin #	Net Name	Usage/Description	Type/Dir Default
1	CAN_TX	145	CAN_TX	CAN Bus transmit	Output, 3.3v
2	CAN_RX	143	CAN_RX	CAN Bus receive	Input, 3.3v
3	-	-	GND	Ground	Ground
4	-	-		Main 3.3V Supply	Power

Note:

1. The CAN signal is led directly from the SOM and is TTL/CMOS level, a non-standard CAN differential signal that requires the addition of a CAN transceiver.
2. Support CAN FD Frame formats

RTC

Connect 3V button battery, 1.25MM pitch, 2Pin	clock can be timed and saved in case of power failure
Connect 3V button cell, CR1220	clock can be timed and saved in case of power failure
RTC: selects one of them to use.	

RTC-Coin Cell Battery Holder -J19

Pin#	Module Pin Name	Module Pin #	Net Name	Usage/Description	Type/Dir Default
1	-			Ground	Ground
2	PMIC_BBAT	235	BBAT	Power Management IC (PMIC) real-time clock battery back-up. Optionally used to provide backup power for the Real-Time-Clock (RTC). Connects to coin cell (lithium or other). PMIC is supply when charging rechargeable cells. Coin cell is source when system is disconnected from power. Charging is enabled by default in software. If non-rechargeable battery is to be used, charging should be disabled.	Power

RTC 2-PIN Header -J14

Pin#	Module Pin Name	Module Pin #	Net Name	Usage/Description	Type/Dir Default
1	-			Ground	Ground
2	PMIC_BBAT	235	BBAT	Power Management IC (PMIC) real-time clock battery back-up. Optionally used to provide backup power for the Real-Time-Clock (RTC). Connects to coin cell (lithium or other). PMIC is supply when charging rechargeable cells. Coin cell is source when system is disconnected from power. Charging is enabled by default in software. If non-rechargeable battery is to be used, charging should be disabled.	Power

On-board operation indicator LED

When the board is powered on and working in normal condition, the power LED will light up Green.

PoE Header – J8

Pin#	Module Pin Name	Module Pin #	Net Name	Usage/Description	Type/Dir Default
1	-	-	POE_VC1	Ethernet RJ45 connector PoE VC1 power	Power
2	-	-	POE_VC2	Ethernet RJ45 connector PoE VC2 power	Power

3	-	-	POE_VC3	Ethernet RJ45 connector PoE VC3 power	Power
4	-	-	POE_VC4	Ethernet RJ45 connector PoE VC4 power	Power

DC Power Jack -J2

Pin#	Module Pin Name	Module Pin #	Net Name	Usage/Description	Type/Dir Default
1	-	-	-	Main DC input supplying DC jack input (9-19V)	Power
2	-	-	-	Ground	Ground
Note: When the input power supply voltage exceeds about 22.5V, it will shut down the board to protect the board and power will be completely shut off to the board.					

More information

Please check our wiki to learn more about this board and if you have any questions, feel

free to reach out to our Forum and Discord community.

For more information, you can also refer to NVIDIA official Jetson Download Center.