
reComputer Mini Carrier Board Datasheet



Introduction

reComputer Mini carrier board is a carrier board designed for NVIDIA Jetson Orin Nano/Orin NX module. It is equipped with PCIe ports at the bottom to provide rich IO expansion capabilities, which can also be customized flexibly. The carrier board along with NVIDIA Jetson module is designed to be embedded inside autonomous machines such as drones, patrol robots, delivering robots, etc. It can be directly connected to max 54V DC input, and can be used in 48V battery-powered systems.

Part list

- Seeed Carrier Board (reComputer Mini) x1
- XT30 to DC power connector x1
- Micro USB cable x1

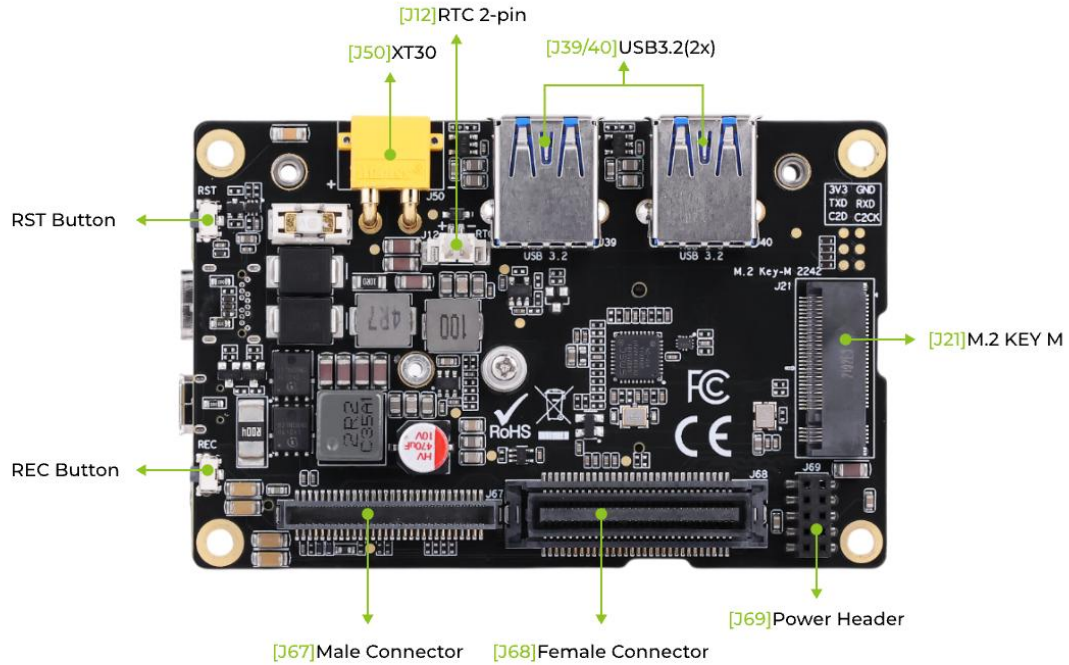


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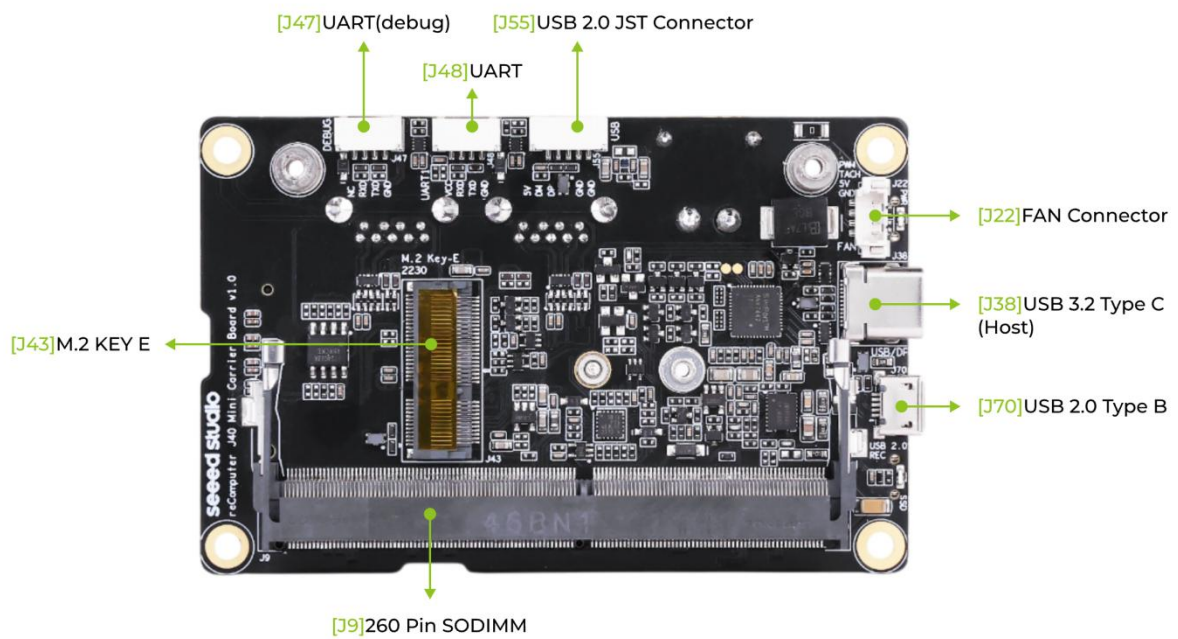
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reComputer Mini Carrier Board

Carrier Board - Front View



Carrier Board - Bottom View



Carrier Board Technical Specifications

Module Compatibility	Jetson Orin™ NX /Orin™ Nano
PCB Size	87.8mm*56.7mm*1.6mm
Display	1x Type C (Output DP Signal)
USB	2x USB 3.2 Type-A (10Gbps) 1x Micro USB 2.0 (Device Mode) 1x USB 3.2 Type C (Host Mode/DP)
M.2 Key M	1x M.2 Key M, for NVMe 2242 SSD
M.2 Key E	1x M.2 Key E, for M.2 2230 WIFI Module
FAN	1x 4 pin Fan Connector(5V PWM)
JST Port	1x USB 2.0 JST 5PIN Connector 1x UART JST 4PIN Connector 1x UART Debug JST 4PIN Connector
RTC	RTC 2PIN
LED	1x PWR LED, Green 1x SSD LED, Red
Button	1x REC Button 1x RST Button

Multifunctional port(for extension board)	1x 2x30PIN Female Connector 1x 2x30PIN Male Connector 1x 2x5PIN Power Header
Temperature	-10°C~50°C
Power supply	XT30 Connector, DC 12-54V
Jetpack	Jetpack 6.0

Note: USB 3.2 Type-A MAX 1.5A

USB Ports

The carrier board supports several USB Connectors. One of them is a USB 2.0 Micro-B connector supporting Device mode only (including USB Recovery). There are two USB 3.2 Type A connectors with 10Gbps speed for Host mode only. And one USB 3.2 Type-C Connector supports Host mode and DP signal inside. There are also one USB 2.0 in the form of a xh1.25 JST-5pin connector for Host mode.

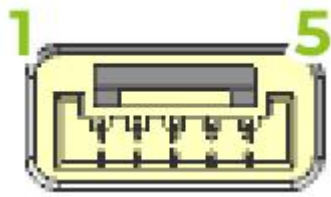
USB Port List

Carrier Board			
1 x	USB 2.0 Micro-B	Device Mode	J70
2 x	USB 3.2 Type-A	Host Mode	J39/J40
1 x	USB 3.2 Type-C	Host Mode/DP	J38
1 x	USB 2.0 JST-5pin	Host Mode	J55

USB 2.0 Micro-B data only - J70

Pin #	Module Pin Name	Module Pin #	Net Name	Usage/Description	Type/Dir Default
1	GPIO00 (USB_VBUS_EN0)	87	USB0_VBUS_DET	VBUS Supply	Power
2	USB0_D_N	109	-	USB 2.0 #0 Data	Bidir
3	USB0_D_P	111	-		
4	-	-	-	-	-
5	-	-	-	Ground	Ground

USB 2.0 xh1.25 JST 5pin - J55



Pin #	Module Pin Name	Module Pin #	Net Name	Usage/Description	Type/Dir Default
1	-	-	-	Ground	Ground
2	-	-	-	Ground	Ground
3	-	-	HUB_DP4_JST	USB 2.0 #4 Data from hub1	Bidir
4	-	-	HUB_DN4_JST		
5	-	-	-	VBUS Supply2	Power, 5V

1. Orin Module USB2.0(USB2) is connected to Hub. It's used to converted to 4 ways.

2. Max:5V/500mA

USB 3.2 Type-A - J39

Pin #	Module Pin Name	Module Pin #	Net Name	Usage/Description	Type/Dir
1	-	-	-	VBUS Supply	Power
2	-	-	USB_HUB_DN1	USB 2.0 #1 Data from hub1	Bidir
3	-	-	USB_HUB_DP1		
4	-	-	-	Ground	Ground
5	USBSS_RX_N	161	USBSS_RX_N	USBSS Receive Data from Orin Module2	Input
6	USBSS_RX_P	163	USBSS_RX_P		
7	-	-	-	Ground	Ground
8	USBSS_TX_N	166	USBSS_TX_N	USBSS Transmit Data from Orin Module2	Output
9	USBSS_TX_P	168	USBSS_TX_P		

Note:

Orin Module USB2.0(USB2) is connected to Hub. It's used to converted to 4 ways.

Orin Module USB3.2 Signals.

USB 3.2 Type-A - J40

Pin #	Module Pin Name	Module Pin #	Net Name	Usage/Description	Type/Dir
1	-	-	-	VBUS Supply	Power
2	-	-	USB_HUB_DN2	USB 2.0 #2 Data from hub	Bidir
3	-	-	USB_HUB_DP2		
4	-	-	-	Ground	Ground
5	USBSS2_RX_N	51	USBSS2_RX_N	USBSS2 Receive Data from Orin Module1	Input
6	USBSS2_RX_P	53	USBSS2_RX_P		
7	-	-	-	Ground	Ground
8	USBSS2_TX_N	57	USBSS2_TX_N	USBSS2 Transmit Data from Orin Module1	Output
9	USBSS2_TX_P	59	USBSS2_TX_P		

Note:

Orin Module USB2.0(USB2) is connected to Hub. It's used to converted to 4 ways.

Orin Module USB3.2 Signals.

USB3.0 Type-C (including DP) - J38

Pin #	Module Pin Name	Module Pin #	Net Name	Usage/Description	Type/Dir
A4/B9	-	-	VBUS_TYPEC	VBUS Supply	Power
A9/B4					
A5	-	-	TYPEC_CC1	Connect to ANX74471	Bidir
B5	-	-	TYPEC_CC2		
A8	-	-	MUX_TYPEC_SBU1	Connect to ANX7447	Input
B8	-	-	MUX_TYPEC_SBU2		
B10	-	-	MUX_TYPEC_RXN1	TYPE C front Receive Signals	Input
B11	-	-	MUX_TYPEC_RXP1		
A3	-	-	MUX_TYPEC_TXN1	TYPE C front Transmit Signals	Output
A2	-	-	MUX_TYPEC_TXP1		
A10	-	-	MUX_TYPEC_RXN2	TYPE C Reverse Receive Signals	Input
A11	-	-	MUX_TYPEC_RXP2		
B3	-	-	MUX_TYPEC_TXN2	TYPE C Reverse Transmit Signals	Output
B2	-	-	MUX_TYPEC_TXP2		
A7	USB1_D_N	115	USB1_AP_N	Orin Module USB1	Bidir

B7				2.0 Data	
A6	USB1_D_P	117	USB1_AP_P		
B6					
A1/B12	-	-	-	Ground	Ground
A12/B1	-	-	-		
Note:					
Orin Module USBSS1 and DP1 Signals are connected to AN7447.					

M.2 Key E Expansion Slot - J43

Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
1	-	-	Ground	Ground
3			USB 2.0 #3 Data from hub	
5				Input
7	-	-	Ground	Ground
9	-	-	Unused	Unused
11				
13				
15				
17				
19				
21				
23				
25	-	-	Unused (Key)	Unused (Key)
27				
29				

31				
33	-	-	Ground	Ground
35	PCIE1_TX0_P	174	PCIe IF #1 Lane 0 Transmit	Output
37	PCIE1_TX0_N	172		
39	-		Ground	Ground
41	PCIE1_RX0_N	167	PCIe IF #0 Lane 0 Receive, P/N Swap	Input
43	PCIE1_RX0_P	169		
45	-		Ground	Ground
47	PCIE1_CLK_N	173	PCIe IF #1 Reference Clock, P/N Swap	Output
49	PCIE1_CLK_P	175		
51	-		Ground	Ground
53	PCIE1_CLKREQ	182	PCIe IF #1 Clock Request	Input, 3.3V
55	PCIE_WAKE	179	PCIe Wake (Level Shifted from 3.3V to 1.8V)	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
2	-	-	Main 3.3V Supply
4			
6	-	-	Unused
8	I2S1_SCLK	226	Audio I2S #1 Clock
10	I2S1_FS	224	Audio I2S #1 Field Select
12	I2S1_DIN	222	Audio I2S #1 Data in
14	I2S1_SDOUT	220	Audio I2S #1 Data Out
16	-	-	Unused
18	-	-	Ground
20	GPIO02	124	BT_M2_WAKE_AP

22	UART0_RXD	101	UART #0 Receive
24	-	-	Unused (Key)
26			
28			
30			
32	UART0_TXD	99	UART #0 Transmit
34	UART0_CTS	105	UART #0 Clear to Send
36	UART0_RTS	103	UART #0 Request to Send
38			
40	-	-	Unused
42			
44			
46			
48			
50	-	-	M2E_SUSCLK_32KHZ
52	PCIE1_RST	183	PCIe IF #1 Reset
54	GPIO03	-	W_DISABLE2, BT enable
56	GPIO05	-	W_DISABLE1, WiFi enable

58	I2C2_SDA	234	General I2C #2 (optional)
60	I2C2_SCL	232	
62	GPIO10	212	M2E_M_ALERT*
64	-	-	Unused
66			
68			
70			
72	-	-	Main 3.3V Supply
74			
Note: For 2230 WiFi Module.			

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				

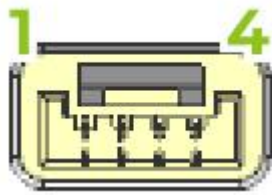
67	-	-	Unused	Unused
69				
71	-	-	Ground	Ground
73				
75				

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, 2242. Supports PCIe Gen4.0.				

UART1 - J48



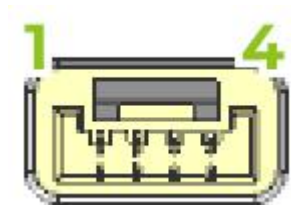
Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
1	-	-	Ground	Ground
2	UART1_TXD	203	UART1_TXD_3V31	Input
3	UART1_RXD	205	UART1_RXD_3V31	Output
4	-	-	3.3V Supply	Power

Note:

Level conversion output 3V3 signal, do not connect too long wire.

All JST Connectors support Max 1A output.

UART Debug - J47



Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
1	-	-	Ground	Ground
2	UART2_TXD	236	UART2_TXD_3V3	Input
3	UART2_RXD	238	UART2_RXD_3V3	Output
4	-	-	Unused	Unused

Note:

Level conversion output 3V3 signal, do not connect too long wire.

All JST Connectors support Max 1A output.

240pin Extension Port - J67

Pin #	Net Name	Pin #	Net Name
1	VDD_5V_SYS	2	VDD_3V3_SYS
3	VDD_5V_SYS	4	VDD_3V3_SYS
5	VDD_1V8	6	BMCU_ACOK
7	VDD_1V8	8	PWR_BTN*
9	GPIO13	10	BUCK_3V3_EN
11	GPIO11	12	MOD_SLEEP*
13	GPIO07	14	Ground
15	GBE_LED_ACT	16	PCIE3_CLK_P
17	GBE_LED_LINK	18	PCIE3_CLK_N
19	Ground	20	Ground
21	GBE_MDI3_P	22	PCIE3_CLKREQ
23	GBE_MDI3_N	24	PCIE3_RST
25	Ground	26	CAM_I2C_SDA
27	GBE_MDI2_P	28	CAM_I2C_SCL
29	GBE_MDI2_N	30	GPIO09
31	Ground	32	UART1_CTS

33	GBE_MDI1_P	34	UART1_RTS
35	GBE_MDI1_N	36	I2S0_SCLK
37	Ground	38	I2S0_LRCK
39	GBE_MDI0_P	40	I2S0_SDIN
41	GBE_MDI0_N	42	I2S0_SDOOUT
43	Ground	44	I2C1_SDA
45	HUB_DN4	46	I2C1_SCL
47	HUB_DP4	48	I2C0_SDA
49	Ground	50	I2C0_SCL
51	SPI1_CS1	52	SPI0_MOSI
53	SPI1_CS0	54	SPI0_SCK
55	SPI1_MISO	56	SPI0_MISO
57	SPI1_SCK	58	SPI0_CS0
59	SPI1_MOSI	60	SPI0_CS1

Note:

Orin Module Signals, 1.8V.

240pin Extension Port - J68

Pin #	Net Name	Pin #	Net Name
1	GPIO01	2	CAN_RX
3	PCIE2_RST	4	CAN_TX
5	PCIE2_CLKREQ	6	CAM1_MCLK
7	Ground	8	CAM1_PWDN
9	PCIE2_CLK_P	10	CAM0_MCLK
11	PCIE2_CLK_N	12	CAM0_PWDN
13	Ground	14	Ground
15	PCIE2_RX1_P	16	PCIE2_TX0_N
17	PCIE2_RX1_N	18	PCIE2_TX0_P
19	Ground	20	Ground
21	PCIE2_RX0_P	22	PCIE2_TX1_N
23	PCIE2_RX0_N	24	PCIE2_TX1_P
25	Ground	26	Ground
27	CSI3_D0_N	28	CSI2_D0_N
29	CSI3_D0_P	30	CSI2_D0_P
31	Ground	32	Ground

33	CSI3_CLK_N	34	CSI2_CLK_N
35	CSI3_CLK_P	36	CSI2_CLK_P
37	Ground	38	Ground
39	CSI3_D1_N	40	CSI2_D1_N
41	CSI3_D1_P	42	CSI2_D1_P
43	Ground	44	Ground
45	CSI1_D0_N	46	CSI0_D0_N
47	CSI1_D0_P	48	CSI0_D0_P
49	Ground	50	Ground
51	CSI1_CLK_N	52	CSI0_CLK_N
53	CSI1_CLK_P	54	CSI0_CLK_P
55	Ground	56	Ground
57	CSI1_D1_N	58	CSI0_D1_N
59	CSI1_D1_P	60	CSI0_D1_P
Note: Orin Module Signals, 1.8V.			

Revision History

Version	Date	Editor	Decription
V1.0	2025/3/3	Zhaotao Xu	Initial version