reComputer Classic J501 Datasheet

Introduction

reComputer Classic J501 is a powerful developer kit built around the NVIDIA® Jetson AGX Orin™ module. It features a rich set of I/O interfaces, including USB, 10Gb Ethernet, PCIe expansion, and a 40-pin expansion header—making it an ideal platform for embodied AI and edge AI prototyping. Designed as a direct replacement for the NVIDIA® Jetson AGX Orin™ 64GB Developer Kit, it offers full compatibility with the existing ecosystem.

Part list

- reComputer Classic J501x (32G or 64G) x1
- 128G SSD x1
- 19V Power Adapter x1
- Power Cord US x1
- Power Cord EU x1
- Power Cord CN x1
- Micro-USB to Type-A cable x1
- USB Type-C to Type-A cable x1
- DP to HDMI cable x1
- User Manual x1

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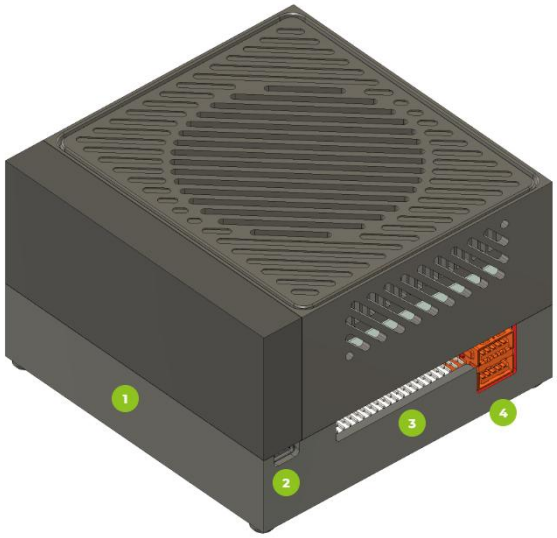
reComputer Classic J501

Side View 1

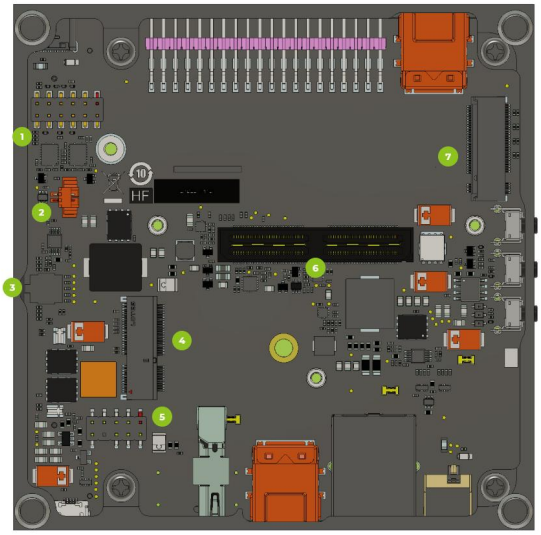
1. Power Button
2. Recovery Button
3. Reset Button
4. LED - Power/ACT
5. USB Type-C - Power
6. DC 5525 9~ 20 V
7. 10 GbE
8. USB Type-A x 2
9. Display Port

Side View 2



1. PCIe x16 Expansion
2. USB Type-C for flashing
3. 40-pin connector
4. USB 3.2 Type-A x 2

Bottom View



1. Automation Header
2. RTC Battery Connector
3. JTAG Header
4. M.2 Key E (WiFi/BT Module Included)
5. Audio Header
6. Camera Connector
7. M.2 Key M (128G SSD included)

Jetson AGX Orin Module Specifications

Product	reComputer Robotics J5011	reComputer Robotics J5012
Module	Jetson AGX Orin 32GB	Jetson AGX Orin 64GB
AI Performance	200 TOPS (INT8)	275 TOPS (INT8)
GPU	1792-core NVIDIA CUDA® cores with 56 Tensor Cores	2048-core NVIDIA CUDA® cores with 64 Tensor cores
CPU	8-core Arm® Cortex-A78AE v8.2 64-bit CPU 2MB L2 + 4MB L3	12-core Arm® Cortex-A78AE v8.2 64-bit CPU 3MB L2 + 6MB L3
DL Accelerator	2x NVDLA v2.0	
Vision Accelerator	PVA v2.0	
Memory	32GB 256-bit LPDDR5 204.8GB/s	64GB 256-bit LPDDR5 204.8GB/s
Storage	64GB eMMC 5.1	
Video Encode	1x 4K60 (H.265) | 3x 4K30 (H.265) | 6x 1080p60 (H.265) |12x 1080p30 (H.265)	2x 4K60 | 4x 4K30 | 8x 1080p60 | 16x 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)	1x 8K30 | 3x 4K60 | 7x 4K30 | 11x 1080p60 | 22x 1080p30 (H.265)

Power	15W - 40W	15W - 60W

Carrrier Board Specifications

Module Compatibility	Jetson AGX Orin™ 32GB / 64GB
Dimension	110mm*110mm*73mm
Display	1x DP
USB	4x USB 3.2 Type-A 1x USB 3.0 Type C (Power) 1x USB 3.0 Type C (Recovery) 1x Micro USB (Debug)
Ethernet	1x RJ45 10GbE
M.2 Key M	1x M.2 Key M, for NVMe 2280 SSD (128G SSD included)
M.2 Key E	1x M.2 Key E, for M.2 2230 WIFI Module (WiFi/BT module included)
FAN	1x 4 Pin Fan Connector(5V PWM)
IO	40-pin IO pin header (I2C,I2S,SPI,UART,GPIO,CAN,I2S)

RTC	RTC 2-Pin
LED	1x PWR/ACT LED, Green
Button	1x Recovery Button 1x RST Button 1x Power Button
Camera	BTB Camera connectors for expansion
Temperature	0℃~40℃
Power supply	DC Jack, DC 9-20V
Jetpack	Jetpack 6.2

Pin Connector Descriptions

USB Ports

The carrier board supports several USB Connectors. One of them is a USB 2.0 Type-C connector for debug. The other USB Type-C connector is for recovery mode. There are two USB 3.2 Type A connectors with 10Gbps speed for Host mode only.

USB Port List

Carrier Board			
4 x	USB 3.1 Type-A	Host Mode	J24,J33
2 x	USB 3.0 Type-C	Recovery, For Flashing	J39,J40
1 x	USB 2.0 Micro USB-B	Debug	J26

USB 3.1 Type-A Connector Pin Description- J24,J33

Pin #	Module Pin Name	Module Pin #	Net Name	Usage/Description	Type/Dir
1	-	-	-	VBUS Supply	Power
2	USB3_N	G10	USB2_3_P	USB 2.0, Port 3 Data	Bidir
3	USB3_P	G11	USB2_3_P		
4	-	-	-	Ground	Ground
5	UPHY_RX20_N	C35	UPHY0_RX2_N	UPHY block 0, Receive Lane 2	Input
6	UPHY_RX20_P	C34	UPHY0_RX2_P		
7	-	-	-	Ground	Ground
8	UPHY_TX20_N	K33	UPHY0_TX2_N	UPHY block 0, Transmit Lane 2	Output
9	UPHY_TX20_P	K32	UPHY0_TX2_P		
10	-	-	-	VBUS Supply	Power
11	USB3_N	C10	USB2_3_P	USB 2.0, Port 3 Data	Bidir
12	USB3_P	C11	USB2_3_P		

13	-	-	-	Ground	Ground
14	UPHY_RX20_N	C35	UPHY0_RX2_N	UPHY block 0, Receive Lane 2	Input
15	UPHY_RX20_P	C34	UPHY0_RX2_P		
16	-	-	-	Ground	Ground
17	UPHY_TX20_N	K33	UPHY0_TX2_N	UPHY block 0, Transmit Lane 2	Output
18	UPHY_TX20_P	K32	UPHY0_TX2_P		

USB 3.0 Type-C Connector Pin Description - J39

Pin #	Module Pin Name	Module Pin #	Net Name	Usage/Description	Type/Dir Default
A4/A9 B4/B9				VBUS Supply	Power
A5	-	-	CC1	USB Type-C Configuration Channel	-
B5	-	-	CC2		
B10	UPHY_RX0_N	A23	UPHY_RX0_N	UPHY block 0, Receive Lane 0	Input
B11	UPHY_RX0_P	A22	UPHY_RX0_P		
A3	UPHY_TX0_N	J23	UPHY_TX0_N	UPHY block 0, Transmit Lane 0	Output
A2	UPHY_TX0_P	J22	UPHY_TX0_P		
A10	UPHY_RX0_N	A23	UPHY_RX0_N	UPHY block 0, Receive Lane 0	Input
A11	UPHY_RX0_P	A22	UPHY_RX0_P		
B3	UPHY_TX0_N	J23	UPHY_TX0_N	UPHY block 0, Transmit Lane 0	Output
B2	UPHY_TX0_P	J22	UPHY_TX0_P		
A7/B7	USB1_N	F13	USB2_1_N	USB 2.0 Port 1 Data	Bidir
A6/B6	USB1_P	F12	USB2_1_P		

A1/B1	-	-	-	Ground	Ground
A12/B12					
S1/S2					
S3/S4					

USB 3.0 Type-C Connector Pin Description - J40

Pin #	Module Pin Name	Module Pin #	Net Name	Usage/Description	Type/Dir Default
A4/A9 B4/B9				VBUS Supply	Power
A5	-	-	CC1	USB Type-C Configuration Channel	-
B5	-	-	CC2		
B10	UPHY_RX1_N	C22	UPHY_RX1_N	UPHY block 0, Receive Lane 1	Input
B11	UPHY_RX1_P	C23	UPHY_RX1_P		
A3	UPHY_TX1_N	G22	UPHY_TX1_N	UPHY block 0, Transmit Lane 1	Output
A2	UPHY_TX1_P	G23	UPHY_TX1_P		
A10	UPHY_RX1_N	C22	UPHY_RX1_N	UPHY block 0, Receive Lane 1	Input
A11	UPHY_RX1_P	C23	UPHY_RX1_P		
B3	UPHY_TX1_N	G22	UPHY_TX1_N	UPHY block 0, Transmit Lane 1	Output
B2	UPHY_TX1_P	G23	UPHY_TX1_P		
A7/B7	USB0_N	F13	USB2_0_N	USB 2.0 Port 0 Data	Bidir
A6/B6	USB0_P	F12	USB2_0_P		

A1/B1	-	-	-	Ground	Ground
A12/B12					
S1/S2					
S3/S4					

USB Micro-B - J26

Pin #	Module Pin Name	Module Pin #	Net Name	Usage/Description	Type/Dir Default
1	-	-	-	VBUS Supply	Power
2	-	-	MCU_USB_DM	-	Bidir
3	-	-	MCU_USB_DP	-	
4	-	-	-	-	-
5	-	-	-	Ground	Ground

Ethernet

10 Gigabit Ethernet - J17

Pin #	Module Pin Name	Module Pin #	Net Name	Usage/Description	Type/ Dir
1	TRCT2	-	-	-	-
2	TRD2-	-	-	-	Bidir
3	TRD2+	-	-	-	Bidir
4	TRD3+	-	-	-	Bidir
5	TRD3-	-	-	-	Bidir
6	TRCT3	-	-	-	-
7	TRCT1	-	-	-	-
8	TRD1+	-	-	-	Bidir
9	TRD1-	-	-	-	Bidir
10	TRD4-	-	-	-	Bidir
11	TRD4+	-	-	-	Bidir
12	TRCT4	-	-	-	-
L1	-	-	MGBE_A_LED0	Left Green LED Cathode	Output
L3	YEL-	-	MGBE_A_LED0	Left Green LED Cathode	Output

L2	COM1	-	RJ45_COM_A	Left Green LED Anode	-
L4	-	-	RJ45_YLWA	MGBE_A_LED1	Input
L6	YEL-	-	RJ45_YLWC	MGBE_A_LED2	Output
L5	COM2	-	MGBE_A_LED0_PS	Right Green LED Anode	-
19 20	-	-	-	Ground	Ground

Note:

1. 10 Gigabit Ethernet

2. Normal working condition: Green LED: Always on, Green LED: Flashing

M.2 Key M Slot - J4

Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
1	-	-	Ground	Ground
3				
5	UPHY_RX22_N	D32	UPHY block 0, Receive Lane 4	Input
7	UPHY_RX22_P	D33		
9	-	-	Ground	Ground
11	UPHY_TX22_N	J34	UPHY block 0, Transmit Lane 4	Output
13	UPHY_TX22_P	J35		
15	-	-	Ground	Ground
17	UPHY_RX23_N	A35	UPHY block 0, Receive Lane 5	Input
19	UPHY_RX23_P	A34		
21	-	-	Ground	Ground
23	UPHY_TX23_N	H33	UPHY block 0, Transmit Lane 5	Output
25	UPHY_TX23_N	H32		
27	-	-	Ground	Ground
29	UPHY_RX10_N	B13	UPHY block 0, Receive Lane 6	Input

31	UPHY_RX10_P	B12		
33	-	-	Ground	Ground
35	UPHY_TX10_N	K12	UPHY block 0, Transmit Lane 6	Output
37	UPHY_TX10_P	K13		
39	-	-	Ground	Ground
41	UPHY_RX11_N	D13	UPHY block 0, Receive Lane 7	Input
43	UPHY_RX11_P	D12		
45	-	-	Ground	Ground
47	UPHY_TX11_N	H13	UPHY block 0, Transmit Lane 7	Output
49	UPHY_TX11_P	H12		
51	-	-	Ground	Ground
53	PEX_CLK4_N	E22	PCIe output Reference Clock for controller #4	Output
55	PEX_CLK4_P	E23		
57	-	-	Ground	Ground
59	-	-	Unused (Key)	Unused
61				
63				
65				

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

Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
2 4	-	-	Main 3.3V Supply	Power
6 8	-	-	Unused	Unused
10			SSD LED	Output
12 14 16 18	-	-	Main 3.3V Supply	Power
20	-	-	Unused	Unused

22				
24				
26				
28				
30				
32				
34				
36				
38				
40	I2C2_CLK	J61	General I2C 2 Clock	Bidir/OD, 1.8V
42	I2C2_DAT	K61	General I2C 2 Data	
44	GPIO34	A55	M.2 Key M Alert	Input, 1.8V
46	-	-	Unused	Unused
48				
50	PEX_L4_RST_N	J9	PCIe Reset for controller #4	Output, 3.3V
52	PEX_L4_CLKREQ_N	G8	PCIe Clock Request for controller #4	Bidir/OD,3.3V
54	PEX_WAKE_N	A8	PCIe Wake	Input/OD, 3.3V

56 58	-	-	Unused	Unused
60 62 64 66	-	-	Unused (Key)	Unused (Key)
68	-	-	32KHz Suspend Clock	Output, 3.3V
70 72 74	-	-	Main 3.3V Supply	Power
Note: For NVMe SSD, 2280. Supports PCIe Gen4.0.				

M.2 Key E Slot - J5

Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
1	-	-	Ground	Ground
3	USB2_P	A11	USB 2.0 Port 2 Data	Bidir
5	USB2_N	A10		
7	-	-	Ground	Ground
9	SDCARD_CLK	B6	SD Card (or SDIO) Clock	Output
11	SDCARD_CMD	A5	SD Card (or SDIO) Command	Bidir
13	SDCARD_D0	E8	SD Card (or SDIO) Data 0	Bidir
15	SDCARD_D1	F8	SD Card (or SDIO) Data 1	Bidir
17	SDCARD_D2	A4	SD Card (or SDIO) Data 2	Bidir
19	SDCARD_D3	D6	SD Card (or SDIO) Data 3	Bidir
21	GPIO02	L6	SD Card Card Detect	Bidir
23	GPIO21	B58	SD Power Enable	Output
25	-	-	Unused (Key)	Unused (Key)
27				
29				

31				
33	-	-	Ground	Ground
35	UPHY_TX21_P	G35	UPHY block 0, Transmit Lane 3	Output
37	UPHY_TX21_N	G34		
39	-		Ground	Ground
41	UPHY_RX21_P	B33	UPHY block 0, Receive Lane 3	Input
43	UPHY_RX21_N	B32		
45	-		Ground	Ground
47	PEX_CLK6_P	D49	PCIe Output Reference Clock for controller #1	Output
49	PEX_CLK6_N	D48		
51	-		Ground	Ground
53	PEX_C7_CLKREQ_N	B37	PCIe Clock Request for controller #1	Input, 3.3V
55	GPIO23	G55	M2E_WIFI_WAKE	Input
57	-	-	Ground	Ground
59	UART2_RTS	G58	M2E_SAR_TOUT	-
61	UART2_CTS	A59	M2E_AP_WAKE_BT	Output
63	-	-	Ground	Ground

65 67	-	-	Unused	Unused
69	-	-	Ground	Ground
71 73	-	-	Unused	Unused
75	-	-	Ground	Ground

Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
2 4	-	-	Main 3.3V Supply	Power
6	-	-	Unused	
8	I2S3_SCLK	C59	Audio I2S Port 3 Clock	Bidir
10	I2S3_FS	C60	I2S Audio Port 3 Left/Right Clock	Bidir
12	I2S3_DIN	J59	Audio I2S #1 Data in	Input
14	I2S3_DOUT	K59	Audio I2S #1 Data Out	Output
16	-	-	Unused	
18	-	-	Ground	

20	GPIO32	J55	M2E_BT_WAKE	Input
22	UART5_RX	H58	UART 2 Receive	Input
24	-	-	Unused (Key)	
26				
28				
30				
32	UART5_TX	J58	UART 5 Transmit	Output
34	UART5_CTS	H57	UART 5 Clear to Send	Input
36	UART5_RTS	K58	UART 5 Request to Send	Output
38	-	-	Unused	-
40	-	-	Unused	-
42	UART2_CTS	A59	M2E_AP_WAKE_BT	Output
44	-	-	Unused	-
46				
48				
50	-	-	SUSCLK_32KHZ_M2E	
52	PEX_C7_RST_N	B36	PCIe Reset for controller #1	Output
54	SPI3_CLK	F55	M2E_BT_DISABLE_N	Output

56	GPIO01	J4	M2E_WIFI_DISABLE_N	Output
58	-	-	Unused	-
60				
62	GPIO30	B55	M2E_ALERT_N	Input
64	-	-	Unused	-
66				
68				
70				
72	-	-	Main 3.3V Supply	Power
74				Power
Note: For 2230 WiFi Module.				

5V Fan Connector - J9

Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
1	-	-	Ground	Ground
2	-	-	12V Power Supply	Power
3	FAN_TACH	E54	Fan Tachometer signal	Bidir
4	FAN_PWM	K62	Fan Pulse Width Modulation signal	Bidir

RTC 2-Pin Header - J13

Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
1	PMIC_BBATT	D37	Real-Time Clock: Optionally used to provide back-up power for RTC in the Power Sequencer.	Input
2	-	-	Ground	Ground

PCIe Connector - J6

Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
A1	-	-	PRSNT1, Tied to Ground	Ground
A2 A3	-	-	12V Power Supply	Power
A4	-	-	Ground	Ground
A5	-	-	PEX_JTAG_TCLK	-
A6	-	-	PEX_JTAG_TDI	-
A7	-	-	PEX_JTAG_TDO	-
A8	-	-	PEX_JTAG_TMS	-
A9 A10	-	-	3V3 Power Supply	Power
A11	PEX_C5_RST_N	H10	PCIe Reset for controller #5	Output
A12	-	-	Ground	Ground
A13	PEX_CLK5_P / UPHY_REFCLK0_P	F24 E31	PCIe #5 Clock output or UPHY Reference clock #0 input (via mux)	Output Input
A14	PEX_CLK5_N /	F25		

	UPHY_REFCLK0_N	E30		
A15	-	-	Ground	Ground
A16	UPHY_RX12_P	D24	UPHY block 1, Receive Lane 0	Input
A17	UPHY_RX12_N	D25		
A18	-	-	Ground	Ground
A19	-	-	Unused	-
A20	-	-	Ground	Ground
A21	UPHY_RX13_P	D24	UPHY block 1, Receive Lane 1	Input
A22	UPHY_RX13_N	D25		
A23	-	-	Ground	Ground
A24				
A25	UPHY_RX14_P	C27	UPHY block 1, Receive Lane 2	Input
A26	UPHY_RX14_N	C26		
A27	-	-	Ground	Ground
A28				
A29	UPHY_RX15_P	A26	UPHY block 1, Receive Lane 3	Input
A30	UPHY_RX15_N	A27		
A31	-	-	Ground	Ground

A32	-	-	Unused	-
A33				
A34	-	-	Ground	Ground
A35	UPHY_RX16_P	D28	UPHY block 1, Receive Lane 4	Input
A36	UPHY_RX16_N	D29		
A37	-	-	Ground	Ground
A38				
A39	UPHY_RX17_P	B29	UPHY block 1, Receive Lane 5	Input
A40	UPHY_RX17_N	B28		
A41	-	-	Ground	Ground
A42				
A43	UPHY_RX18_P	C31	UPHY block 1, Receive Lane 6	Input
A44	UPHY_RX18_N	C30		
A45	-	-	Ground	Ground
A46				
A47	UPHY_RX19_P	A30	UPHY block 1, Receive Lane 7	Input
A48	UPHY_RX19_N	A31		
A49	-	-	Ground	Ground

Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
B1	-	-	12V Power Supply	Power
B2				
B3				
B4	-	-	Ground	Ground
B5	I2C3_CLK	F53	General I2C 3 Clock	Bidir
B6	I2C3_DAT	E53	General I2C 3 Data	
B7	-	-	Ground	Ground
B8	-	-	3V3 Power Supply	Power
B9	-	-	PEX_JTAG_TRST_N	Unused
B10	-	-	3V3 AUX Power Supply	Power
B11	PEX_WAKE_N	A8	PCIe Wake	Input
B12	PEX_C5_CLKREQ_N	C8	PCIe Clock Request for controller #5	Bidir
B13	-	-	Ground	Ground
B14	UPHY_TX12_P	H24	UPHY block 1, Transmit Lane 0	Output
B15	UPHY_TX12_N	H25		

B16	-	-	Ground	Ground
B17	GPIO31	H60	PCIE Present	Output
B18	-	-	Ground	Ground
B19	UPHY_TX13_P	K25	UPHY block 1, Transmit Lane 1	Output
B20	UPHY_TX13_N	K24		
B21	-	-	Ground	Ground
B22				
B23	UPHY_TX14_P	G27	UPHY block 1, Transmit Lane 2	Output
B24	UPHY_TX14_N	G26		
B25	-	-	Ground	Ground
B26				
B27	UPHY_TX15_P	J26	UPHY block 1, Transmit Lane 3	Output
B28	UPHY_TX15_N	J27		
B29	-	-	Ground	Ground
B30	-	-	Unused	-
B31	GPIO31	H60	PCIE Present	Output
B32	-	-	Ground	Ground
B33	UPHY_TX16_P	H28	UPHY block 1, Transmit Lane 4	Output

B34	UPHY_TX16_N	H29		
B35 B36	-	-	Ground	Ground
B37	UPHY_TX17_P	K29	UPHY block 1, Transmit Lane 5	Output
B38	UPHY_TX17_N	K28		
B39 B40	-	-	Ground	Ground
B41	UPHY_TX18_P	G31	UPHY block 1, Transmit Lane 6	Output
B42	UPHY_TX18_N	G30		
B43 B44	-	-	Ground	Ground
B45	UPHY_TX19_P	J30	UPHY block 1, Transmit Lane 7	Output
B46	UPHY_TX19_N	J31		
B47	-	-	Ground	Ground
B48	GPIO31	H60	PCIE Present	Output
B49	-	-	Ground	Ground

40-pin Connector - J30

Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
1	-	-	3V3 Power Supply	Power
2	-	-	5V Power Supply	Power
3	I2C4_DAT	E60	General I2C 4 Data	Bidir
4	-	-	5V Power Supply	Power
5	I2C4_CLK	D61	General I2C 4 Clock	Bidir
6	-	-	Ground	Ground
7	MCLK05	L57	GPIO/Clock	Bidir
8	UART1_TX	K53	UART	Output
9	-	-	Ground	Ground
10	UART_RX	K54	UART	Input
11	UART1_RTS	L51	UART	Output
12	I2S2_CLK	G4	I2S	Bidir
13	PWM01	K57	GPIO	Bidir
14	-	-	Ground	Ground
15	GPIO27	H52	GPIO	Bidir

16	GPIO08	B62	GPIO	Input
17	-	-	3V3 Power Supply	Power
18	GPIO35	L50	GPIO	Bidir
19	SPI1_MOSI	D55	SPI	Bidir
20	-	-	Ground	Ground
21	SPI1_MISO	A56	SPI	Bidir
22	GPIO17	A54	GPIO	Bidir
23	SPI1_CLK	J57	SPI	Bidir
24	SPI1_CS0_N	E55	SPI	Bidir
25	-	-	Ground	Ground
26	SPI1_CS1_N	B56	SPI	Bidir
27	I2C2_DAT	K61	General I2C 2 Data	Bidir
28	I2C2_CLK	J61	General I2C 2 Clock	Bidir
29	CAN0_DIN	F58	CAN	Input
30	-	-	Ground	Ground
31	CAN0_DOUT	D59	CAN	Output
32	GPIO09	C61	GPIO	Bidir
33	CAN1_DOUT	H61	CAN	Output

34	-	-	Ground	Ground
35	I2S2_FS	E4	I2S	Bidir
36	UART1_CTS	H54	UART	Input
37	CAN1_DIN	B61	CAN	Input
38	I2S2_DIN	F6	I2S	Input
39	-	-	Ground	Ground
40	I2S2_DOUT	F5	GPIO	Output

Camera Connector - J509

Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
1	CSI0_D0_P	E42	CSI 0 Data 0	Input
3	CSI0_D0_N	E41		
5	-	-	Ground	Ground
7	CSI0_CLK_P	F43	CSI 0 Clock	Input
9	CSI0_CLK_N	F42		
11	-	-	Ground	Ground
13	CSI0_D1_P	E39	CSI 0 Data 1	Input
15	CSI0_D1_N	E38		
17	-	-	Ground	Ground
19	CSI2_D0_P	E39	CSI 2 Data 0	Input
21	CSI2_D0_N	E38		
23	-	-	Ground	Ground
25	CSI2_CLK_P	B43	CSI 2 Clock	Input
27	CSI2_CLK_N	B42		
29	-	-	Ground	Ground

31	CSI2_D1_P	C42	CSI 2 Data 1	Input
33	CSI2_D1_N	C41		
35	-	-	Ground	Ground
37	CSI4_D0_P	G48	CSI 4 Data 0	Input
39	CSI4_D0_N	G47		
41	-	-	Ground	Ground
43	CSI4_CLK_P	F48	CSI 4 Clock	Input
45	CSI4_CLK_N	F47		
47	-	-	Ground	Ground
49	CSI4_D1_P	E47	CSI 4 Data 1	Input
51	CSI4_D1_N	E48		
53	-	-	Ground	Ground
55	-	-	DVDD_CAM_LV	Unused
57				
59	CSI5_D0_P	D42	CSI 5 Data 0	Input
61	CSI5_D0_N	D43		
63	-	-	Ground	Ground
65	CSI5_CLK_P	C44	CSI 5 Clock	Input

67	CSI5_CLK_N	C45		
69	-	-	Ground	Ground
71	CSI5_D1_P	D46	CSI 5 Data 1	Input
73	CSI5_D1_N	D45		
75	I2C3_CLK	F53	Camera I2C	Bidir
77	I2C3_DAT	E53		
79	-	-	Ground	Ground
81			2.8V Analog Camera supply	Power
83				
85	GPIO10	A62	Camera FRSYNC #1	Output
87	I2C2_CLK	J61	General Purpose I2C 2	Bidir
89	I2C2_DAT	K61		
91	MCLK02	J54	Camera #0 Master Clock	Output
93	UART4_CTS	L49	Camera #0 Powerdown	Output
95	UART4_TX	L5	Camera #0 Reset	Output
97	GPIO6	E59	Camera FRSYNC #3	Output
99	-	-	Ground	Ground

101	-	-	Unused	Unused
103	SPI2_MOSI	F60	Camera Interrupt #3	Input
105	I2C5_CLK	A53	General Purpose I2C 5	Bidir
107	I2C5_DAT	C53		
109	-	-	Unused	Unused
111				
113				
115	-	-	Ground	Ground
117	SPI2_CLK	E61	Camera Interrupt #1	Input
119	GPIO12	E10	System Power Enable	Output

Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
2	CSI1_D0_P	G41	CSI 1 Data 0	Input
4	CSI1_D0_N	G42		
6	-	-	Ground	Ground
8	CSI1_CLK_P	H43	CSI 1 Clock	Input
10	CSI1_CLK_N	H42		
12	-	-	Ground	Ground

14	CSI1_D1_P	J41	CSI 1 Data 1	Input
16	CSI1_D1_N	J42		
18	-	-	Ground	Ground
20	CSI3_D0_P	E45	CSI 3 Data 0	Input
22	CSI3_D0_N	E44		
24	-	-	Ground	Ground
26	CSI3_CLK_P	F46	CSI 3 Clock	Input
28	CSI3_CLK_N	F45		
30	-	-	Ground	Ground
32	CSI3_D1_P	G44	CSI 3 Data 1	Input
34	CSI3_D1_N	G45		
36	-	-	Ground	Ground
38	CSI6_D0_P	K44	CSI 6 Data 0	Input
40	CSI6_D0_N	K43		
42	-	-	Ground	Ground
44	CSI6_CLK_P	J44	CSI 6 Clock	Input
46	CSI6_CLK_N	J45		
48	-	-	Ground	Ground

50	CSI6_D1_P	H46	CSI 6 Data 1	Input
52	CSI6_D1_N	H45		
54	-	-	Ground	Ground
56	-	-	DVDD_CAM_LV	Unused
58				
60	CSI7_D0_P	A44	CSI 7 Data 0	Input
62	CSI7_D0_N	A45		
64	-	-	Ground	Ground
66	CSI7_CLK_P	B45	CSI 7 Clock	Input
68	CSI7_CLK_N	B46		
70	-	-	Ground	Ground
72	CSI7_D1_P	C47	CSI 7 Data 1	Input
74	CSI7_D1_N	C48		
76	GPIO14	L15	Camera Error #1	Bidir
78	GPIO28	L9	Camera Error #2	Bidir
80	-	-	Ground	Ground
82			2.8V Analog Camera supply	Power

84	GPIO29	A7	Camera Error #3	Input
86	UART4_RTS	L4	Camera Error #4	Input
88	MCLK03	H53	Camera #1 Master Clock	Output
90	GPIO15	F10	Camera #1 Powerdown	Output
92	GPIO16	F9	Camera #1 Reset	Output
94	MCLK04	H55	Camera #2 Master Clock	Output
96	GPIO13	G7	Camera FRSYNC #4	Output
98	GPIO7	F59	Camera FRSYNC #2	Output
100	-	-	Ground	Ground
102			1.8V Camera supply	Power
104	SPI2_CS0_N	D60	Camera Interrupt #4	Input
106	SPI2_MISO	D62	Camera Interrupt #2	Input
108			3.3V Supply	Power
110				
112	-	-	Unused	Unused
114				

116	-	-	Ground	Ground
118			3.3V Supply	Power
120				

Audio Panel Header - J511

Pin #	Connector Pin Name	Module Pin #	Usage/Description	Type/Dir Default
1	IN1P	-	Microphone #1 input	Input
2	AGND	-	Ground	Ground
3	IN2P	-	Microphone #2 input	Input
4	LRCK2/GPIO4/PDM_SDA	-	Presence – detects if audio dongle is connected to header	Input
5	HPO_R	-	Headphone output right channel	Output
6	MIC_IN_DET	-	Jack/Microphone detect pin	Input
7	SENSE_SEND		Pulled to analog GND	N/A
8	Key	-	-	-
9	HPO_L	-	Headphone output left channel	Output
10	BCLK2/GPIO3/PDM_SCL	-	Headphone or jack detection	Input

Automation Header - J42

Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
1	-	-	Ground	Ground
2	FORCE_RECOVERY_N	L10	Force Recovery Strap	Input
3	SYS_RESET_N	L60	System Reset – Connected to Reset Button on carrier board	Input
4	-	-	Power Button On – Connected to Power Button on carrier board	Input
5	-	-	Output from USB Type C PD Controller	Output
6	-	-	ACOK	Input
7	MODULE_SLEEP_N	J60	Carrier board sleep	Output
8	SYSTEM_OC_N	A61	System Overcurrent indicator	Input
9	GPIO38	A47	Wake on LAN	Input

10	-	-	Ground	Ground
11	JTAG_TRST_N		JTAG Test Reset	Input
12	-	-	Ground	Ground

Notes:

1. Auto-Power-On is enabled when Pin 5 and Pin 6 are tied together.

JTAG Header - J502

Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
1	-	-	Main 1.8V Power Supply	Power
2	JTAG_TMS	E58	JTAG Test Mode Select	Input
3	-	-	Ground	Ground
4	JTAG_TCK	A60	JTAG Test Clock	Input
5	-	-	Ground	Ground
6	JTAG_TDO	D58	JTAG Test Data Output	Output
7	-	-	Ground	Ground
8	JTAG_TDI	B60	JTAG Test Data In	Input
9	-	-	Ground	Ground
10	SYS_RESET_N	L60	Main carrier board reset	Input