
reComputer Mini Extension Board Datasheet



Introduction

reComputer Mini Extension Board is designed to be connected to reComputer Mini Carrier board, and has a JST board attached to it. It provides IO extensions (Ethernet, I2C, CAN etc) that are widely used on autonomous machines such as drones, patrol robots, delivering robots, etc. It is attached to the bottom of reComputer Mini Carrier Board and needs to be used along with the reComputer Mini Carrier Board.

Part list

- Extension Board x1

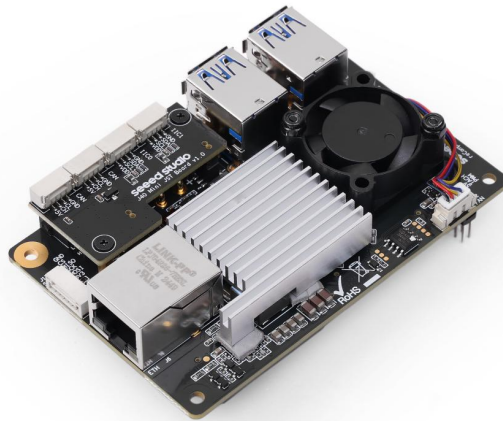
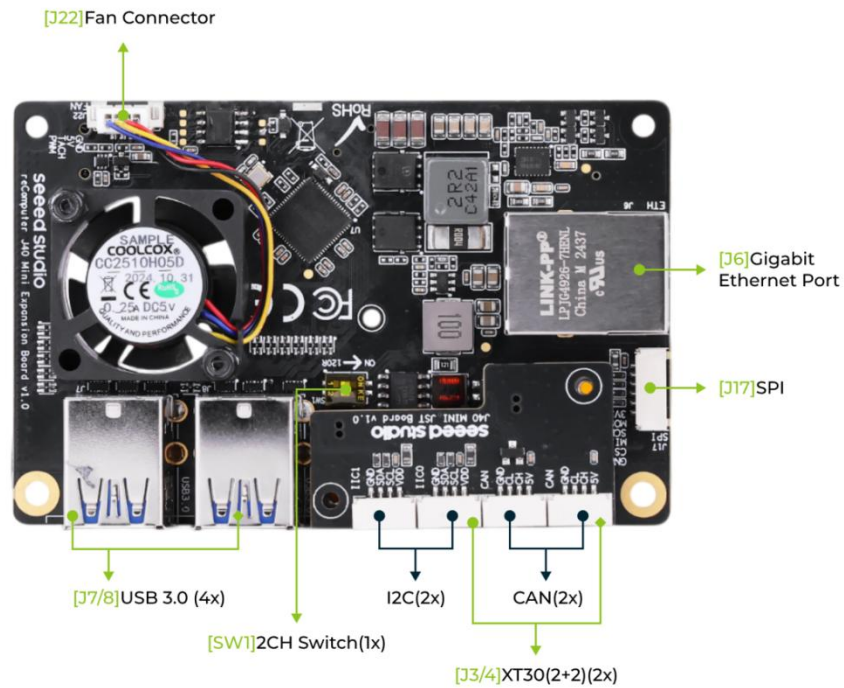


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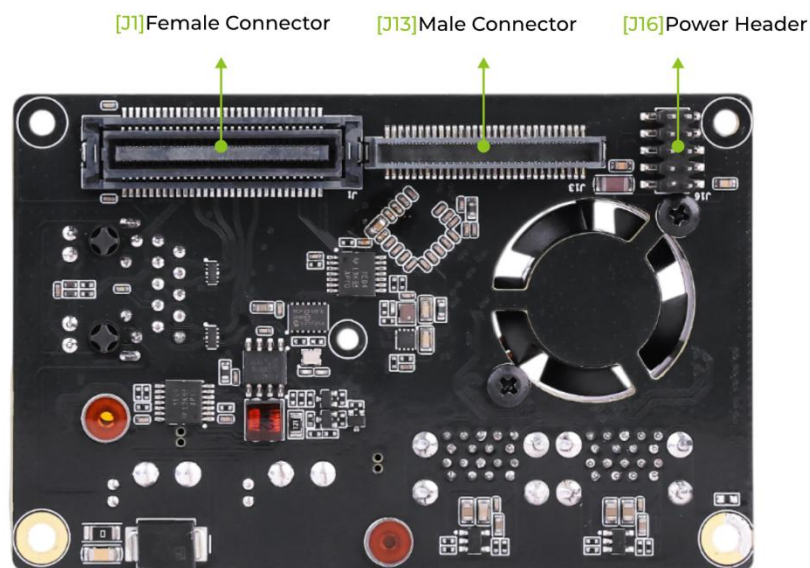
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reComputer Mini Extension Board

Extension Board(with JST board) - Front View



Extension Board - Bottom View



Extension Board Technical Specifications

Ethernet	1x RJ45 Gigabit Ethernet (10/100/1000M)
USB	4x USB 3.0 Type-A (5Gbps);
FAN	1x 4 pin Fan Connector(5V PWM)
JST Port	1x SPI JST 6PIN Connector
Power and CAN	2x XT30(2+2) Connector, DC12-54VIN/OUT
Switch	1x 2CH Switch, for switching the CAN terminal resistor. By default, a 120Ω resistor is connected.
SPI	1x SPI

Note: Dual stacked USB 3.2 Type-A share 2.4A.

JST Board Technical Specifications

I2C	2x I2C
CAN	2x CAN Connector

USB Ports

The extension board supports 4 USB 3.0 Type A connectors.

USB Ports List

Extension Board			
4 x	USB 3.0 Type-A	Host Mode	J7/J8

USB 3.0 Type-A - J7(convert from PCIe2)

Pin #	Module Pin Name	Module Pin #	Net Name2	Usage/Description	Type/Dir
USB 3.0 Type A (2)					
1	-	-	-	VBUS Supply1	Power
2	-	-	HUB_USB2_DN	USB 2.0 #2 Data from Hub(Pcie2 to USB3.0)	Bidir
3	-	-	HUB_USB2_DP		
4	-	-	-	Ground	Ground
5	-	-	USB2_SSRX_N	USB3.0 Receive #2 Data from Hub(Pcie2 to USB3.0)	Input
6	-	-	USB2_SSRX_P		

7	-	-	-	Ground	Ground
8	-	-	USB2_SSTX_N	USB3.0 Transmit #2 Data from Hub(PCIe2 to USB3.0)	Output
9	-	-	USB2_SSTX_P		
USB 3.0 Type A (1)					
10	-	-	-	VBUS Supply	Power
11	-	-	HUB_USB1_DN	USB 2.0 #1 Data from Hub(PCIe2 to USB3.0)	Bidir
12	-	-	HUB_USB1_DP		
13	-	-	-	Ground	Ground
14	-	-	USB1_SSRX_N	USB3.0 Receive #1 Data from Hub(PCIe2 to USB3.0)	Input
15	-	-	USB1_SSRX_P		
16	-	-	-	Ground	Ground
17	-	-	USB1_SSTX_N	USB3.0 Transmit #1 Data from Hub(PCIe2 to USB3.0)	Output
18	-	-	USB1_SSTX_P		
Note: Dual stacked USB 3.0 Type-A share 2.4A. USB3.0 Signals Come From PCIe to USB3.0 IC.					

USB 3.0 Type-A - J8

Pin #	Module Pin Name	Module Pin #	Net Name2	Usage/Description	Type/Dir
USB 3.0 Type A (4)					
1	-	-	-	VBUS Supply1	Power
2	-	-	HUB_USB4_DN	USB 2.0 #4 Data from Hub(PCIe2 to USB3.0)	Bidir
3	-	-	HUB_USB4_DP		
4	-	-	-	Ground	Ground
5	-	-	USB4_SSRX_N	USB3.0 Receive #4 Data from Hub(PCIe2 to USB3.0)	Input
6	-	-	USB4_SSRX_P		
7	-	-	-	Ground	Ground
8	-	-	USB4_SSTX_N	USB3.0 Transmit #4 Data from Hub(PCIe2 to USB3.0)	Output
9	-	-	USB4_SSTX_P		
USB 3.0 Type A (3)					
10	-	-	-	VBUS Supply	Power
11	-	-	HUB_USB3_DN	USB 2.0 #3 Data from	Bidir

12	-	-	HUB_USB3_DP	Hub(PCIe2 to USB3.0)	
13	-	-	-	Ground	Ground
14	-	-	USB3_SSRX_N	USB3.0 Receive #3 Data from Hub(PCIe2 to USB3.0)	Input
15	-	-	USB3_SSRX_P		
16	-	-	-	Ground	Ground
17	-	-	USB3_SSTX_N	USB3.0 Transmit #3 Data from Hub(PCIe2 to USB3.0)	Output
18	-	-	USB3_SSTX_P		
Note: Dual stacked USB 3.0 Type-A share 2.4A. USB3.0 Signals Come From PCIe to USB3.0 IC.					

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_	188	GBE_LED_	Green LED Cathode. On for	Output

	LINK		LINK	1000Mbps link. Off for 10/100Mbps.	
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

CAN0 - J4, J5

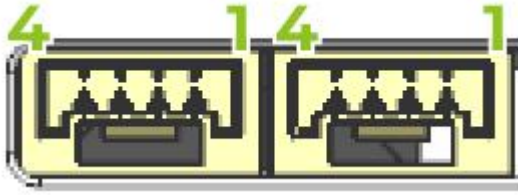


Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
1	-	-	Power IN/OUT	Power
2	-	-	Ground	Ground
3	-	-	CAN0_H	
4	-	-	CAN0_L	

Note:

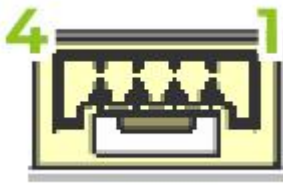
CAN Transmitter Power is 5V .

CAN1(JST board) - J5, J6



Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
1	-	-	Ground	Ground
2	-	-	CAN1_L	Input
3	-	-	CAN1_H	Output
4	-	-	Power	Power, 5V
Note: CAN Transmitter Power is 5V .				

IIC0(JST board) - J7



Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
1	-	-	Ground	Ground
2	I2C0_SDA		I2C0_SDA_3V3	OD
3	I2C0_SCL		I2C0_SCL_3V3	
4	-	-	Power	Power, 3.3V

Note:

All JST Connectors support Max 1A output.

IIC1(JST board) - J4



Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
1	-	-	Ground	Ground
2	I2C1_SDA		I2C1_SDA_3V3	OD
3	I2C1_SCL		I2C1_SCL_3V3	
4	-	-	Power	Power, 3.3V
Note: All JST Connectors support Max 1A output.				

SPI0 - J17



Pin #	Module Pin Name	Module Pin #	Usage/Description	Type/Dir Default
1	-	-	Ground	Ground
2	SPI0_CS0	95	SPI0_CS0_3V3	NOTE: Built-in bidirectional level conversion, the connection line should not be too long
3	SPI0_MISO	93	SPI0_MISO_3V3	
4	SPI0_SCK	91	SPI0_SCK_3V3	
5	SPI0_MOSI	89	SPI0_MOSI_3V3	
6	-	-	Power	Power, 3.3V
Note: All JST Connectors support Max 1A output.				

Revision History

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