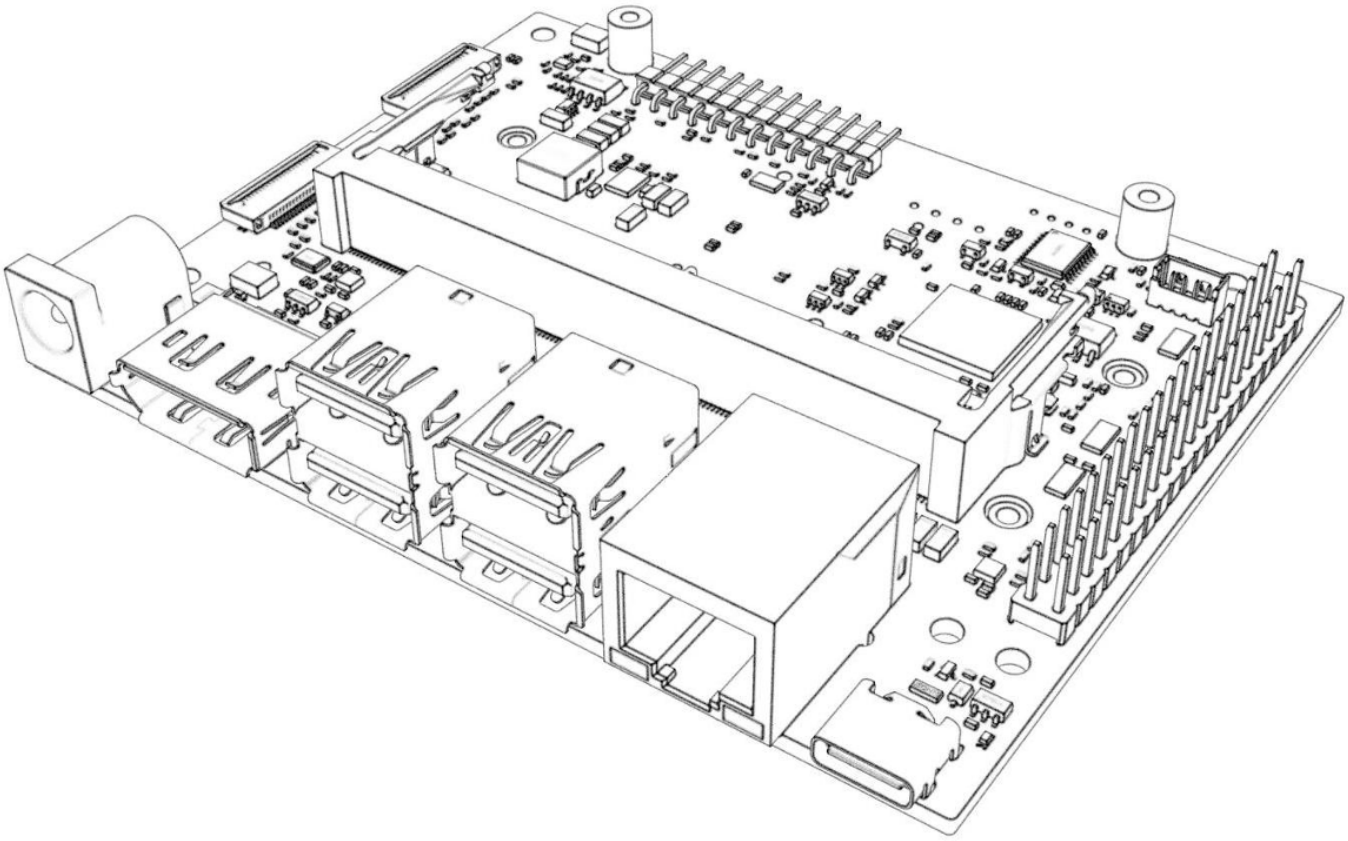
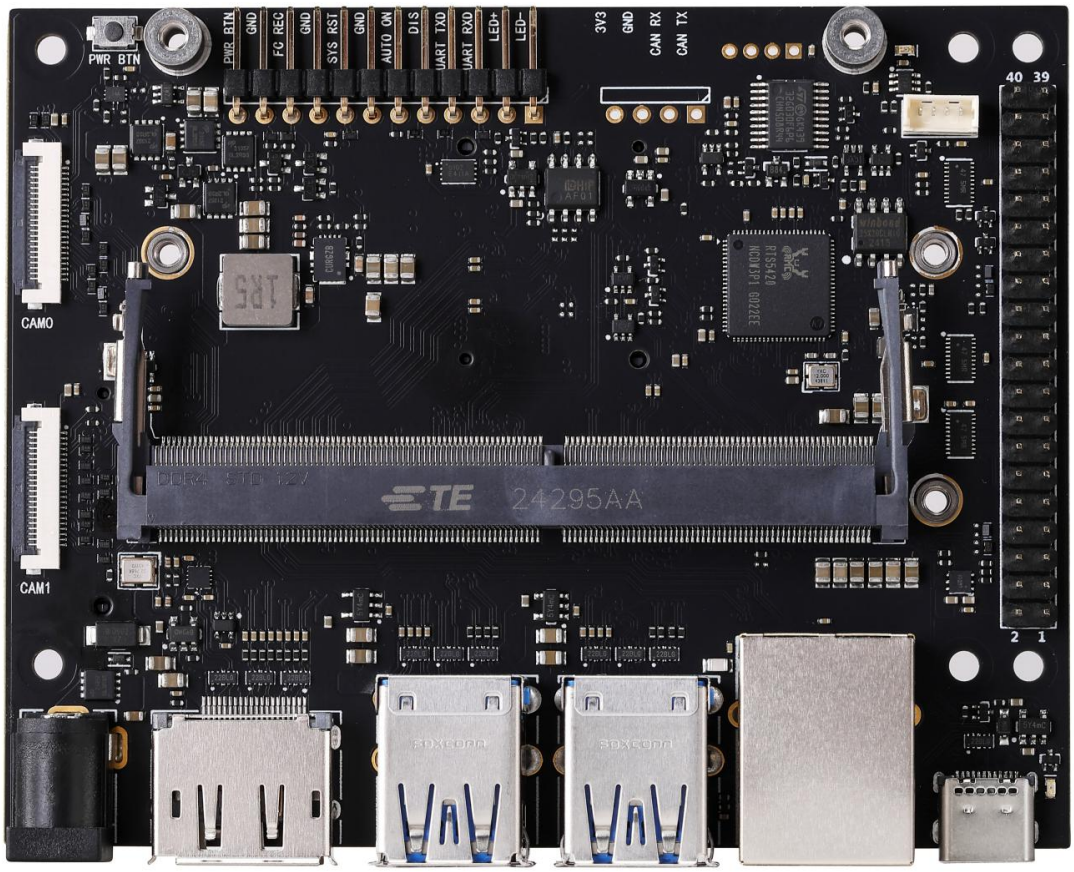
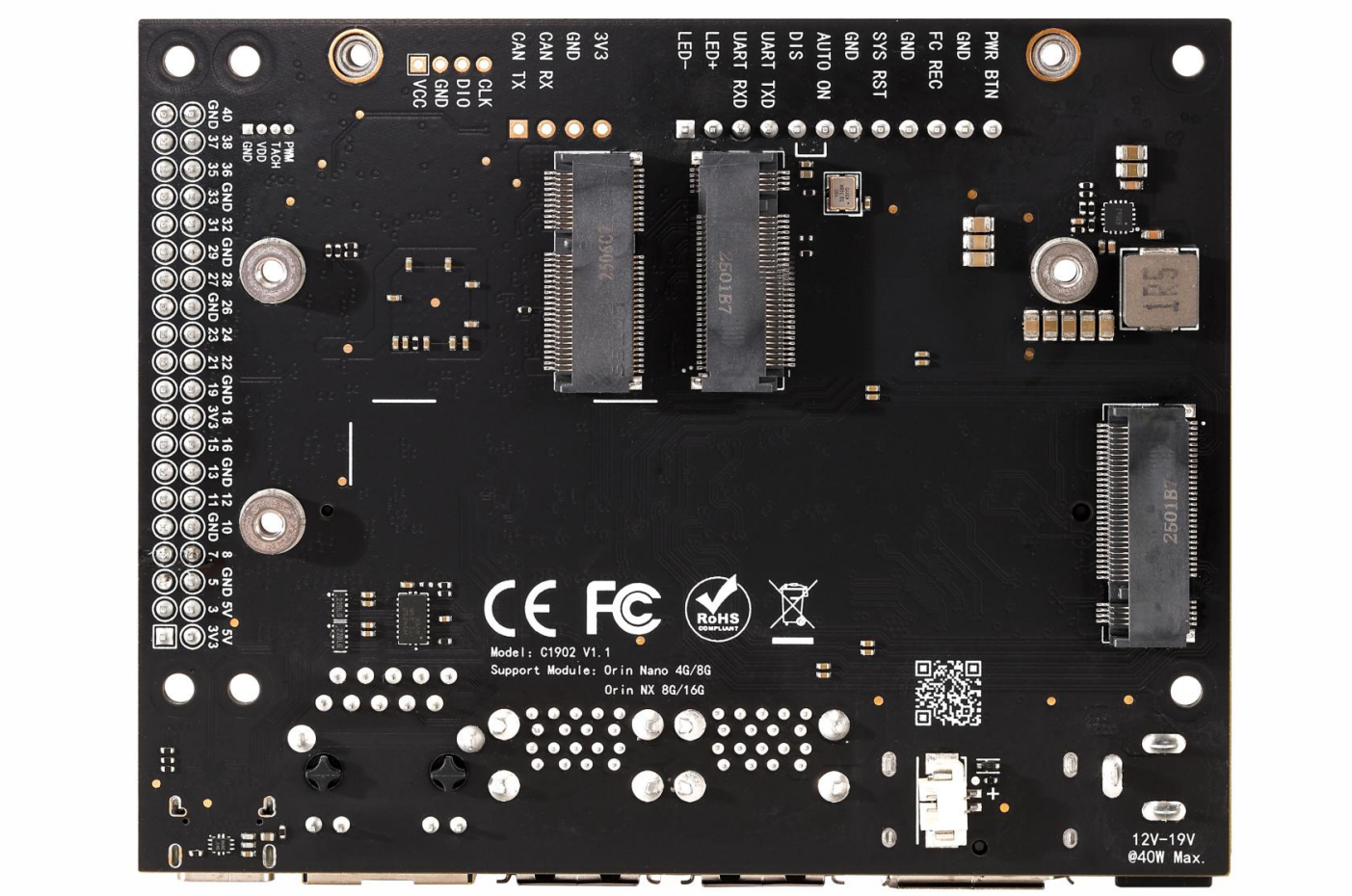
C1902 Introduction



Introduction

The C1902 is a development board specifically designed for Jetson Orin Nano & NX modules. Built on a standard board design, it fully supports the official developer kit's features, including full-speed USB3.0 and Type-C ports.


PWR BTN
PWR_BTN
GND
FC REC
GND
SYS RST
GND
AUTO ON
DIS
UART TXD
UART RXD
LED+
LED-
3V3
GND
CAN RX
CAN TX
40 39
2 1
CAM0
CAM1
TE
24295AA



Fearture

- C1902 was developed based on the original manufacturer's solution, with all interface functions matching the original manufacturer's and supporting direct firmware flashing via Developer Kit
- Compatible with NVIDIA® Jetson Orin Nano (4GB/8GB) and Orin NX (8GB/16GB) modules.
- Premium 6-layer gold-plated PCB with full MLCC capacitors and gold-plated connectors
- Supports M.2 NVMe SSD and M.2 Wi-Fi module

History

Version	Date	Description
V1.0	2024 Q3	The first version of C1902

Version	Date	Description
V1.1	2025 Q1	1. Fixed a GPIO issue that previously caused pins 12/35/38/40 to be unavailable under the original device tree. 2. Enhanced support for the SUPER mode across the entire ORIN NANO/NX series
V1.1.1	2025 Q2	3. Modify the DC power input socket specifications from DC5521 to DC5525

Datasheet

Supply Voltage	12V (compatible with 9-19V)
Operating Temperature	0℃~45℃
Supported Module	Orin Nano 4G/8G Orin NX 8G/16G
Power Connector	DC5525
Ethernet	1x Gigabit Ethernet Socket (RJ45)
Wireless Network Adapter	1x M.2 Key E
External Storage	2x M.2 Key M (NVME SSD)
DisplayPort	1x DP V1.2
USB	4x USB3.2 (10Gbps)
USB C	1x Type C (USB3.0)
Camera	2x CSI-22P
Other	Consistent with original specs
RTC	support
POE	not supported

- The carrier board requires a 12V(compatible with 9-19V) DC power supply. To ensure normal system operation, a power adapter with sufficient current output must be used. Additionally, under high load conditions with an input voltage exceeding 15V, adequate heat dissipation must be provided to prevent overheating.
- This product includes reverse-polarity protection. Nevertheless, do not connect the power supply in reverse.
- The over-current protection (OCP) threshold for all USB ports is 2.5A. Exceeding this limit will trigger an automatic shutdown of the power output.
- In contrast to the original M.2 2230 interface, the backplane's network interface now features a symmetrical layout.

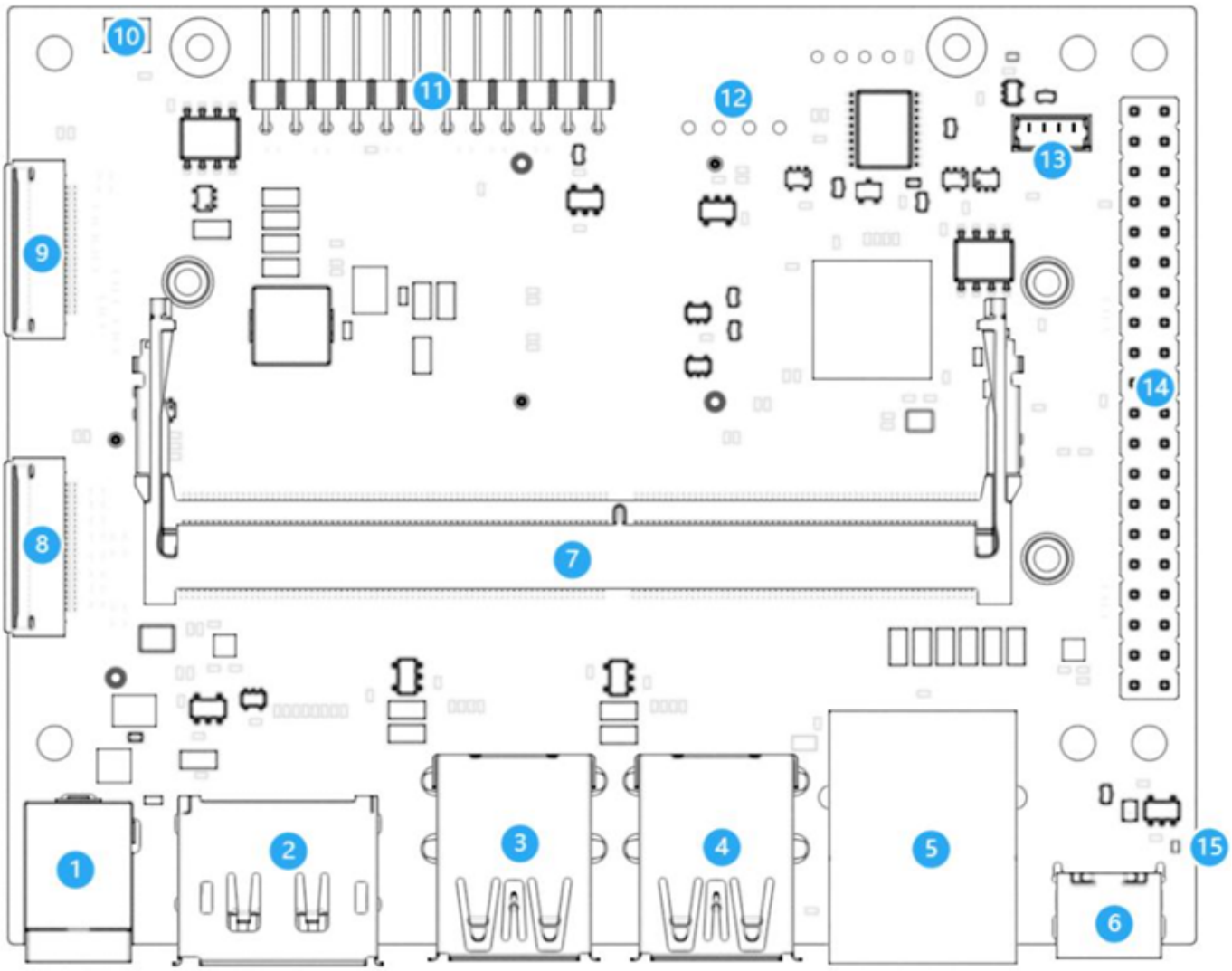
- Do not hot-swap the module. Always power off the board before inserting or removing the module. Failure to do so may damage the module and the carrier board. Damage caused by improper operation is not covered under warranty.

Camparison

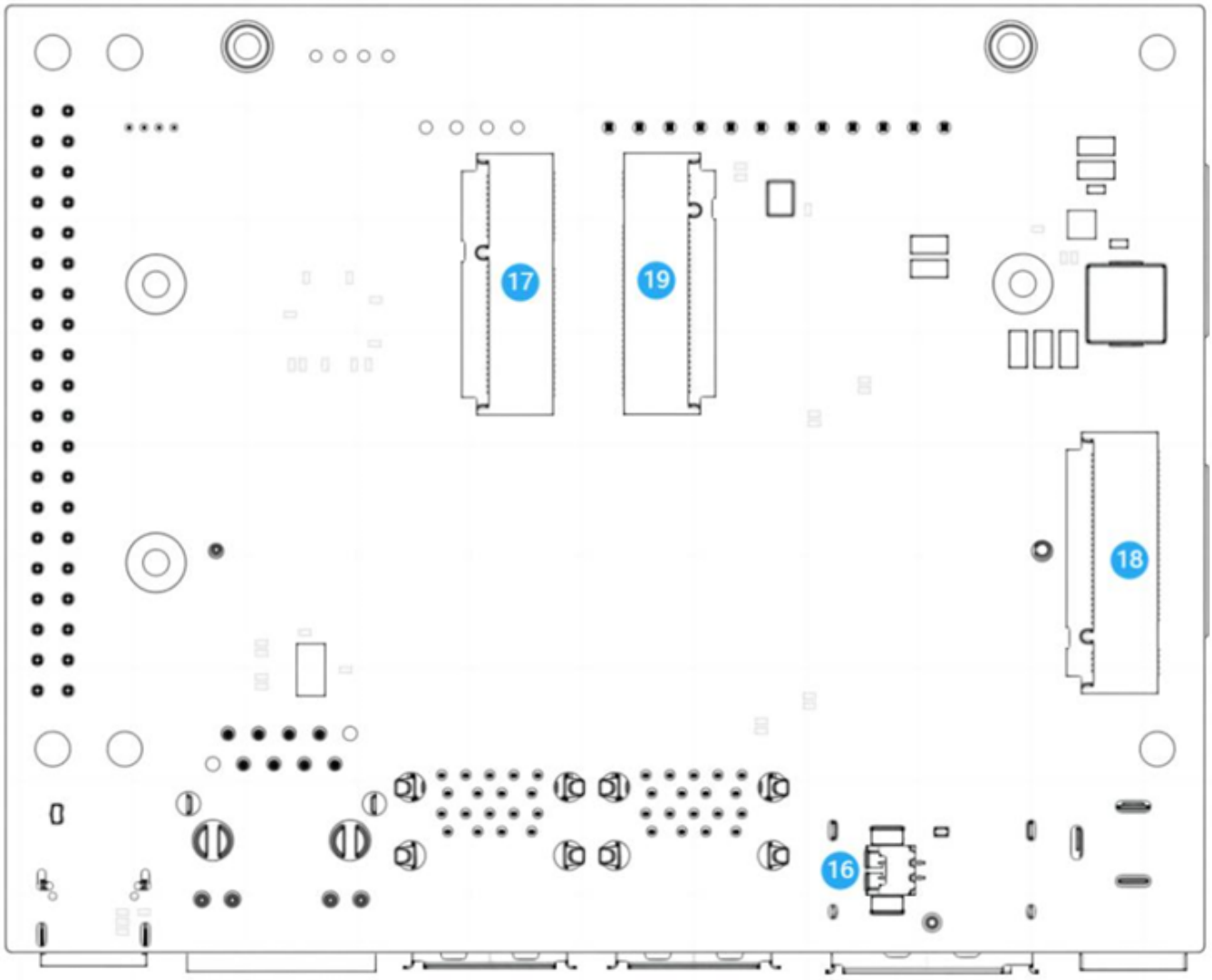
	Original	C1901 V1.3	C1902 V1.1
Supply Voltage	19V	12V (compatible with 9-19V)	12V (compatible with 9-19V)
Power Connector	DC5525	DC5521 (compatible with DC5525)	DC5525
Ethernet	1x Gigabit Ethernet Socket (RJ45)	1x Gigabit Ethernet Socket (RJ45)	1x Gigabit Ethernet Socket (RJ45)
Wireless Network Adapter	1x M.2 Key E	1x M.2 Key E	1x M.2 Key E
External Storage	2x M.2 Key M	2x M.2 Key M	2x M.2 Key M
Display	1x DP V1.2	1x HDMI (1080P)	1x DP V1.2
USB	4x USB3.0	3x USB3.0+1 xUSB2.0 (requires device tree modification)	4x USB3.0
USB C	1x Type C (USB3.0)	1x Type C (USB2.0)	1x Type C (USB3.0)
Camera	2x CSI-22P	2x CSI-22P	2x CSI-22P
RTC	Not Supported	Supported	Supported
Other	-	Match the original	Match the original
POE	Supported (Not Populated)	Not Supported	Not Supported
SUPER Mode	Only ORIN NANO series is supported	Only ORIN NANO series is supported	Supports the ORIN Nano/NX series

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Interface Layout



1	Power Jack	**9**	Camera (#0) Connector (22p, 0.5 mm)
2	DP Connector	**10**	Power Button
3	USB 3.0 Type A(x2 Stacked)	**11**	Button Header (1x12, 2.54 mm)
4	USB 3.0 Type A(x2 Stacked)	**12**	CAN Bus Header (1x4, 2.54 mm)
5	RJ45 Ethernet Socket	**13**	Fan Header
6	USB Type C	**14**	40-pin Expansion Header(2x20, 2.54 mm)
7	Jetson Orin Module Connector	**15**	Power LED
8	Camera (#1) Connector (22p, 0.5 mm)		



16	RTC Socket	**18**	M.2 Key M Socket (4-lane)
17	M.2 Key E Socket (75-pin)	**19**	M.2 Key M Socket (2-lane)

Feature Deatial

- Power Button **(10)**: The C1902 incorporates an additional function button not present on the reference board. Its operation is as follows:
  System Running:A short press enters the shutdown menu; a long press (10 seconds) forces a power-off.When the system is off: press once to power on.
  System Off: A short press powers on the system.

- Expansion Header **(14):** The 40-pin GPIO header provides a 5V output rail with reverse current protection. It supports a maximum current of 0.8A and is safeguarded by over-current protection (OCP), which automatically disables the output upon detecting a fault. Actual performance depends on the specific system-on-module (SOM) in use. Please refer

to the specifications below.

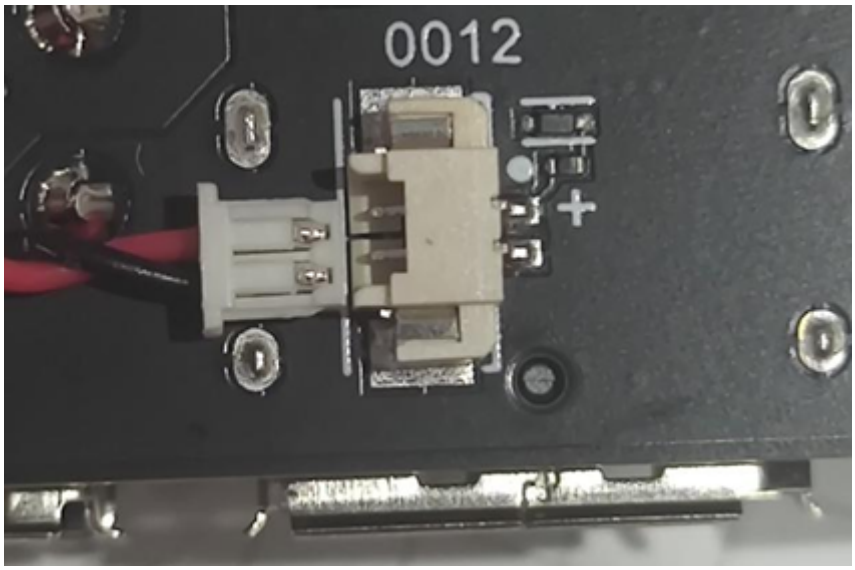
Sysfs GPIO	Name	Pin	Pin	Name	Sysfs GPIO
	3.3 VDC *Power*	1	2	**5.0 VDC** *Power*	
	I2C1_SDA *I2C Bus 7*	3	4	**5.0 VDC** *Power*	
	I2C1_SCL *I2C Bus 7*	5	6	**GND**	
144 gpio492	**GPIO9** *AUDIO_MCLK*	7	8	**UART1_TX** */dev/ttyTHS0*	
	GND	9	10	**UART1_RX** */dev/ttyTHS0*	
112 gpio460	**UART1_RTS**	11	12	**I2S0_SCLK**	*50* gpio398
122 gpio470	**SPI1_SCK**	13	14	**GND**	
85 gpio433	**GPIO12** *Alt: PWM*	15	16	**SPI1_CS1**	*126* gpio474
	3.3 VDC *Power*	17	18	**SPI1_CS0**	*125* gpio473
135 gpio483	**SPI0_MOSI**	19	20	**GND**	
134 gpio482	**SPI0_MISO**	21	22	**SPI1_MISO**	*123* gpio471
133 gpio481	**SPI0_SCK**	23	24	**SPI0_CS0**	*136* gpio484
	GND	25	26	**SPI0_CS1**	*137* gpio485
	I2C0_SDA *I2C Bus 1*	27	28	**I2C0_SCL** *I2C Bus 1*	
105 gpio453	**GPIO01**	29	30	**GND**	

Reference link: https://jetsonhacks.com/pinouts/

- The 12Pin Header **(11)** is defined as follows:

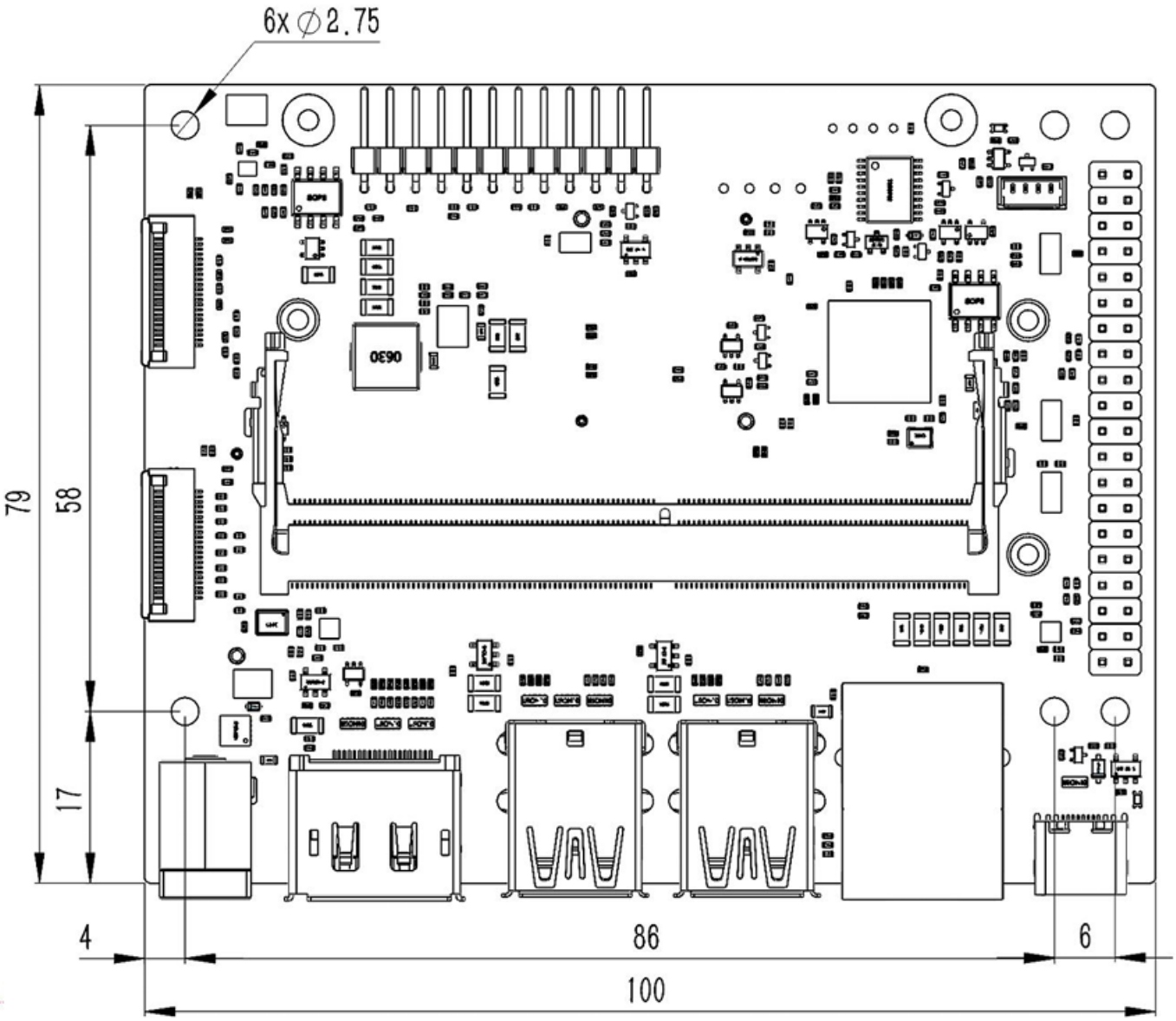
Pin Function	
Power LED-	1
Power LED+	2
UART2_RXD	3
UART2_TXD	4
Latch Set	5
Latch Set Button	6
GND	7
System Reset*	8
GND	9
Force Recovery	10
GND	11
Power Button	12

- The RTC battery port (16) on the C1902 board features an additional MX1.25-2P connector compared to the original factory board. When using RTC batteries, ensure correct polarity and avoid reverse connections.



After connecting the battery, configure the device to enable RTC clock. For details on RTC configuration and UART interface usage, please refer to RTC

Mechanical Dimensions (mm)



Screw Location	Recommended Specification	Note
Carrier Board Mounting Holes	M2.5 screws or standoffs	The diameter of the screw or standoff must not exceed 5mm.
Module	M2.5 × 4 pan head screws	
Hard Drive & Network Card	M2.5 × 4 pan head screws	Pan head screws are recommended.

Support

- Jetson Orin C1902 □□□□
- Jetson □□□□

JetPack 配置说明
Jetson AI 视觉教程
Jetson 大模型教程
C1901/1902 USB 设备树替换说明

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