



LattePanda Mu Mini Carrier Board Product Manual

First Edition, April 2026

If this manual doesn't solve your issue, you can also try getting help through the following means:

- **LattePanda DOCS:**
Visit <https://docs.lattepanda.com/> for the latest product information.
- **LattePanda Forum:**
Join the LattePanda community at <https://www.lattepanda.com/forum/>, search for similar issues or post a description of the problem you are facing.
- **Product Warranty:**
You can contact LattePanda Technical Support (techsupport@lattepanda.com).
After getting approval from Technical Support, you can send the defective product to the LattePanda warranty department.

After-sales Service

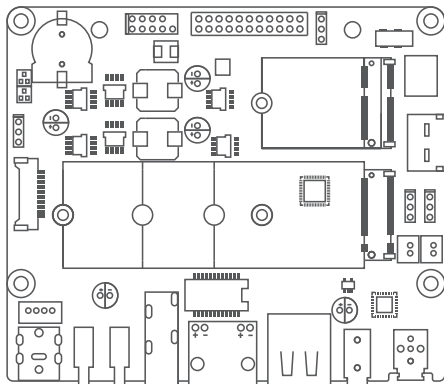
1. The warranty period for this product is 90 days.
2. LattePanda guarantees that the LattePanda products you purchase will not have material and workmanship defects under normal usage during the warranty period.
3. LattePanda will repair or replace any products found to be defective upon receipt, or those that develop defects during the standard warranty period after inspection by LattePanda After-sales Department.

For technical support issues and requests for returns or exchanges, please contact: techsupport@lattepanda.com.

Catalogue

Package Contents	1
Product Specifications	2
Board Layout	3
Top Layout	3
Power Supply Input	4
M.2 Expansion Slots	5
OCuLink Port	5
CR1220 Battery Holder	6
Front Panel Header	7
Speaker Output Connector	8
GPIO Pin Header	8
GPIO_LEVEL Jumper	9
USB Type A Power Control Jumper	10
Auto Power-On Jumper	10
Bottom Layout	11
CPU_FAN Connector	12
LattePanda Mu Slot	13

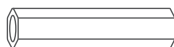
Package Contents



● LattePanda Mu Mini Carrier Board



● Product Manual x1



● M3 Standoff x5



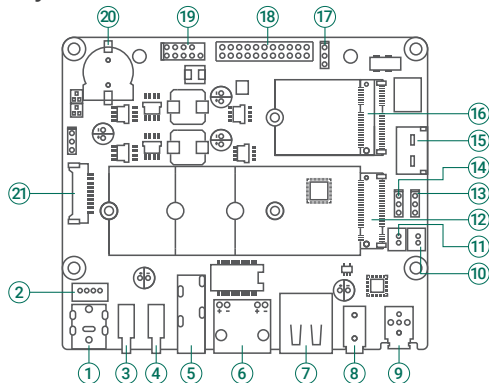
● M3 Screw x5

Product Specifications

Product Name	Mini Carrier Board for LattePanda Mu/Mu Ultra
Top Expansion Slot	1 x M.2 E Key (PCIe x1, USB2.0, CNVio, supports 2230) 1 x M.2 M Key (PCIe 4.0 x2, supports 2230 and 2280)
Top External I/O	1 x 3.5mm Microphone Headphone Combo Jack (Realtek ALC269) 1 x DC 5.5x2.5mm Power Jack 1 x Power Button with LED 1 x HDMI 2.1 Port (4K@60Hz) 1 x 2.5Gb Ethernet Port (Intel I226-V) 1 x OCuLink Port (PCIe 4.0 x4) 1 x PWR MGMT Port (for LattePanda UPS Expansion Board) 2 x USB 3.2 Gen2 Port 2 x USB Type-C Port (USB 3.2 Gen2, USB 2.0, PD, DisplayPort)
Bottom Internal I/O	1 x LattePanda Mu Slot 1 x CPU FAN Connector
Header Pins & Jumpers	1 x DC_IN Connector (PH2.0-4Pin) 1 x F_PANEL Header 1 x GPIO Header 1 x GPIO_LEVEL Header 1 x R_USB_PWR Jumper 1 x AUTO_PWR Jumper 2 x Speaker Output Connector
RTC	1 x CR1220 Battery Holder
Dimension	110mm x 94mm
Compute Module Compatibility	- LattePanda Mu Ultra (native support) - LattePanda Mu (BIOS reflash required)

Board Layout

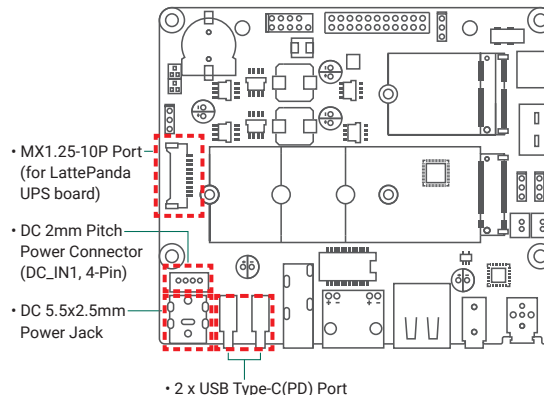
Top Layout



1. DC 5.5x2.5mm Power Jack	12. M.2 M Key Slot (PCIe 4.0 x2, 2230/2280)
2. DC 2mm Pitch Power Connector (DC_IN1, PH2.0-4Pin)	13. Auto Power-On Jumper (AUTO_PWR)
3. USB Type-C Port 2 (USB 3.2 Gen2, USB 2.0, PD, DisplayPort)	14. USB Type A Power Control Jumper (R_USB_PWR)
4. USB Type-C Port 1 (USB 3.2 Gen2, USB 2.0, PD, DisplayPort)	15. OCuLink Port (PCIe 4.0 x4)
5. HDMI 2.1 Port (4K@60Hz)	16. M.2 E Key Slot (PCIe x1, USB 2.0, CNVio, 2230)
6. RJ45 (2.5Gb Ethernet Port)	17. GPIO_LEVEL Jumper
7. Dual USB Type A Port (USB 3.2 Gen2)	18. GPIO Header
8. 3.5mm Microphone Headphone Combo Jack	19. Front Panel Header (F_PANEL)
9. Power Button with LED	20. CR1220 Battery Holder (RTC)
10. Speaker Output Connector (Left Channel)	21. MX1.25-10P Port (for LattePanda UPS Board)
11. Speaker Output Connector (Right Channel)	

Power Supply Input

This carrier board provides four power input options, each accepting a wide input voltage range from 12V to 20V. You may use any one of them to power the board:



The power requirements for this carrier board depend on the module installed:

- With LattePanda Mu: Minimum **30W**.
- With LattePanda Mu Ultra: Minimum **50W**.

If additional hardware is connected to the carrier board, the power supply capacity must be increased accordingly.

⚠ Power Input Caution

- You may use any one of the available power input ports. If multiple sources are connected simultaneously, the board will automatically default to the source with the higher voltage.
- The DC 5.5x2.5mm power jack and the DC 2mm Pitch Power Connector (DC_IN1, 4-Pin) are internally hardwired. Strictly avoid connecting different power sources to these two ports at the same time to prevent hardware damage.

M.2 Expansion Slots

The LattePanda Mu Mini carrier board provides two M.2 slots:

- **M.2 E Key:** Includes PCIe x1, USB 2.0 and CNVio. Supports 2230 WLAN cards.
- **M.2 M Key:** Includes PCIe x2. Supports 2230/2280 NVMe SSDs.

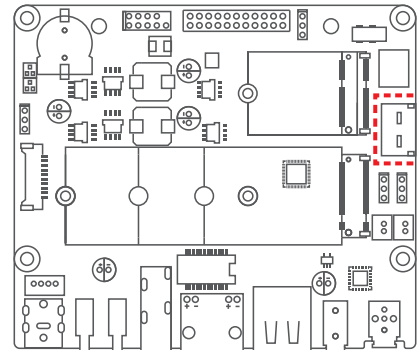
The interface speed and compatibility of the M.2 slots depend on the installed module:

- **With LattePanda Mu:**
 - M.2 M Key: Operates at PCIe 3.0 x1.
 - M.2 E Key: Supports PCIe x1, USB2.0.
- **With LattePanda Mu Ultra:**
 - M.2 M Key: Operates at PCIe 4.0 x2.
 - M.2 E Key: Supports PCIe x1, USB2.0 and CNVio.

OCuLink Port

The OcuLink connector is designed for high-performance hardware expansion, providing a direct PCIe link to the CPU for external devices via high-speed cabling.

- **High Bandwidth:** Supports native PCIe 3.0 and PCIe 4.0 protocols.
- **Maximum Throughput:** Delivers up to 64 Gbps total bandwidth when operating at PCIe 4.0 x4.
- **Standard Connector:** SFF-8611



⚠ Important Notes

- **No Hot-Plugging:** Standard OcuLink does not support hot-plugging. Always power off the LattePanda before connecting or disconnecting any OcuLink device to prevent hardware damage.
- OcuLink carries high-speed signals. Use reliable cables and ensure the cable length does not exceed **1 meter** to maintain stable data transmission.
- The OcuLink port transmits **data signals only** and does not provide power to external devices. High-power peripherals, such as external graphics cards (eGPUs), require a dedicated external power source.

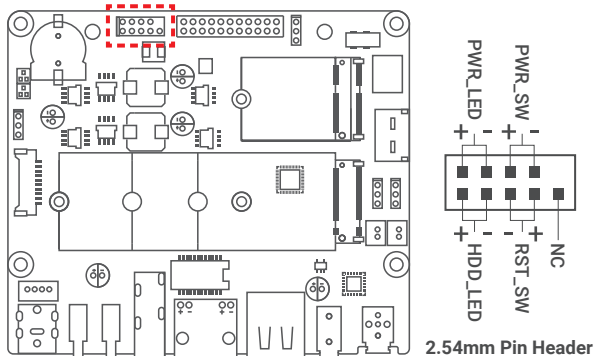
CR1220 Battery Holder

The carrier board features a battery holder for a **CR1220 3V lithium coin cell**, which powers the Real-Time Clock (RTC).

The LattePanda Mu compute module requires an RTC battery to maintain its internal clock and preserve BIOS configurations. If the battery is missing or depleted, the system will automatically reset to factory BIOS defaults whenever the main power is disconnected.

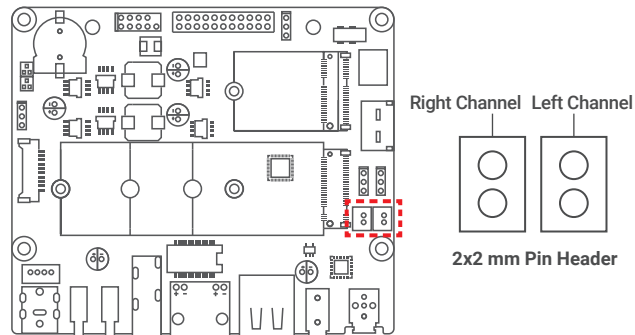
Front Panel Header

These pins allow for the connection of external switches and LEDs to manage and monitor the system's power and activity status.



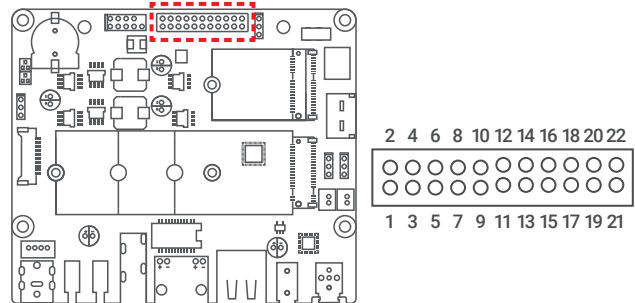
- 🔌 **PWR_SW (Power Switch):** Shorting these two pins will toggle the system's power (On/Off).
- 🔄 **RST_SW (Reset Switch):** Shorting these two pins will perform a system reset.
- 💡 **PWR_LED (Power LED):** Connect an LED to this header to serve as the system power indicator. The LED will illuminate when the system is powered on.
- 💡 **HDD_LED (Hard Drive LED):** Connect an LED to this header to monitor storage activity. The LED will flash or illuminate whenever the drive is being accessed.

Speaker Output Connector



GPIO Pin Header

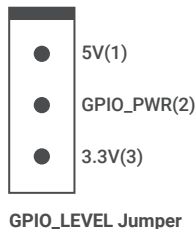
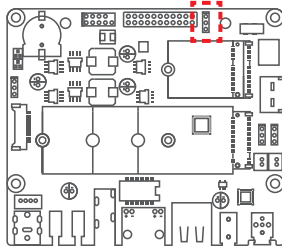
The carrier board features a 22-pin GPIO header. The specific signal assignments vary depending on whether a LattePanda Mu or LattePanda Mu Ultra module is installed.



LattePanda Mu Ultra GPIO		LattePanda Mu GPIO	
1. GND	2. GND	1. GND	2. GND
3. SIO_UART_TX	4. SIO_UART_RX	3. SIO_UART_TX	4. SIO_UART_RX
5. UART0_TXD	6. UART0_RXD	5. UART0_TXD	6. UART0_RXD
/GPP_H9	/GPP_H8	/GPP_H11	/GPP_H10
7. UART1_TXD	8. UART1_RXD	7. UART1_TXD	8. UART1_RXD
/GPP_H7	/GPP_H6	/GPP_H18	/GPP_H17
9. I2C2_SCL	10. I2C2_SDA	9. I2C3_SCL	10. I2C3_SDA
11. I2C3_SCL	12. I2C3_SDA	11. I2C4_SCL	12. I2C4_SDA
13. GPP_E11	14. GPP_E12	13. GPP_F16	14. GPP_F12
15. GPP_E13	16. GPP_E14	15. GPP_F14	16. GPP_F15
17. GPP_E17	18. GPP_B06	17. GPP_F13	18. GPP_D2
19. GPP_B07	20. GND	19. GPP_D3	20. GND
21. GPIO_PWR	22. GPIO_PWR	21. GPIO_PWR	22. GPIO_PWR

GPIO_LEVEL Jumper

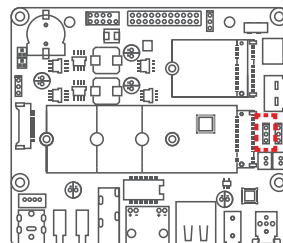
This jumper determines the logic level and output voltage for the GPIO pins (excluding the fixed 3.3V pins: SIO_UART 3-4 and I2C 9-12).



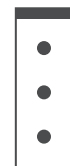
GPIO_LEVEL	Setting	Function
	Pin 1-2 Short/Closed	GPIO Logic Level: 5V
	Pin 2-3 Short/Closed	GPIO Logic Level: 3.3V

USB Type A Power Control Jumper

This jumper controls the power delivery mode of the USB Type-A ports.



AUTO



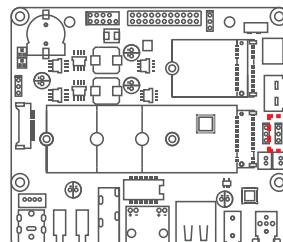
ON

USB Type A Power Control Jumper

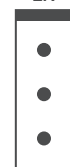
R_USB_PWR	Setting	Function
	Pin 1-2 Short/Closed	Enable USB power supply during system power-on and sleep states
	Pin 2-3 Short/Closed	Always enable USB power supply

Auto Power-On Jumper

This jumper enables you to set the LattePanda Mu to automatically power on or not when external power is applied.



EN

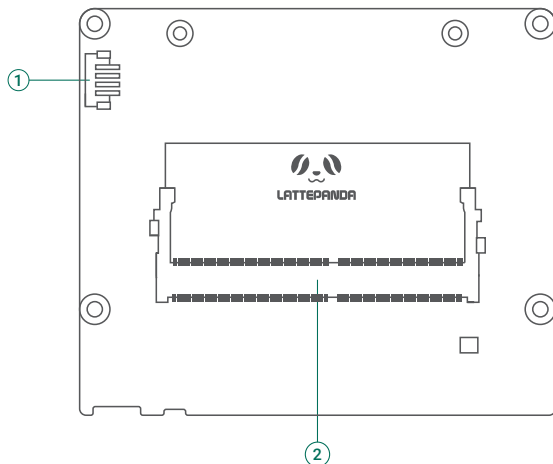


DIS

Auto Power-On Jumper

AUTO_PWR	Setting	Function
	Pin 1-2 Short/Closed	Enable Auto Power-On (Starts automatically when power is connected)
	Pin 2-3 Short/Closed	Disable Auto Power-On (Requires manual power button press)

Bottom Layout



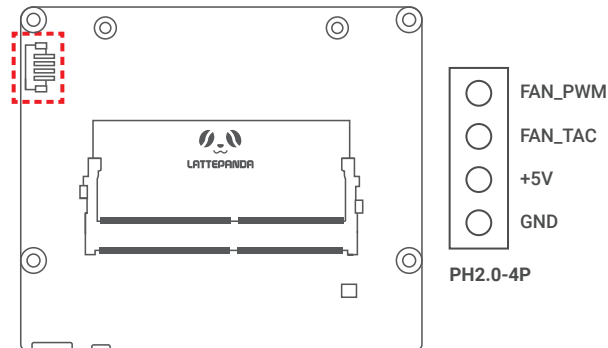
1. CPU FAN Connector

2. LattePanda Mu Slot

CPU_FAN Connector

4-Pin CPU fan connector, supports 5V PWM fans for dynamic fan speed control.

- **Maximum Current:** 1.0A (Max)

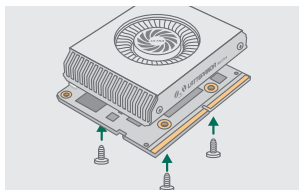


LattePanda Mu Slot

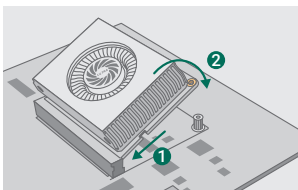
LattePanda Mu Mini Carrier Board supports both LattePanda Mu and LattePanda Mu Ultra compute modules.

Installation Guide

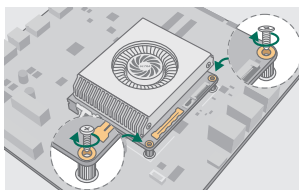
1 Install heatsink



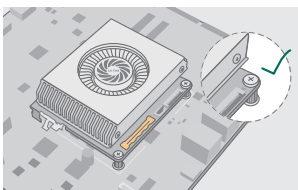
2 Insert Mu into slot



3 Install screws



4 Check installation



- Before installing or removing the LattePanda Mu compute module, make sure that the Mini carrier board is completely powered off and the power connector is disconnected.
- The LattePanda Mu slot is the same size as the DDR4 SODIMM slot, but the pin configuration is different, hence they are not compatible. You cannot insert a DDR4 SODIMM into the LattePanda Mu slot, nor can you insert a LattePanda Mu into a DDR4 SODIMM slot in other devices. Incorrect installation can result in hardware damage.
- This carrier board is fully compatible with the LattePanda Mu Ultra compute module. For users utilizing the LattePanda Mu module, please flash the specified BIOS to ensure optimal performance and compatibility.
- Damage to the Mini carrier board caused by incorrect installation of the LattePanda Mu is not covered under the LattePanda warranty.



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 <https://docs.lattepanda.com>

 <https://www.lattepanda.com/forum/>

 <https://discord.com/invite/UHgtJbf978>

Due to continuous improvement of the product,
if there were any changes, sorry for no further notice.

