DLAP-211-JNX / DLAP-211-JT2 / DLAP-211-Nano Series

Edge Inference System

User's Manual

Manual Rev.: 1.1

Revision Date: November 9, 2022

Part No: 50M-00016-1010

LEADING EDGE COMPUTING

Revision History

Revision	Release Date	Description of Change(s)
1.0	2021-12-06	Initial Release
1.1	2022-11-09	Added DLAP-211-JT2

Preface

Disclaimer

The information in this document is subject to change without prior notice in order to improve reliability, design, and function and does not represent a commitment on the part of the manufacturer.

In no event will the manufacturer be liable for direct, indirect, special, incidental, or consequential damages arising out of the use or inability to use the product or documentation, even if advised of the possibility of such damages.

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ADLINK is committed to fulfill its social responsibility to global environmental preservation through compliance with the European Union's Restriction of Hazardous Substances (RoHS) directive and Waste Electrical and Electronic Equipment (WEEE) directive. Environmental protection is a top priority for ADLINK. We have enforced measures to ensure that our products, manufacturing processes, components, and raw materials have as little impact on the environment as possible. When products are at their end of life, our customers are encouraged to dispose of them in accordance with the product disposal and/or recovery programs prescribed by their nation or company.

Trademarks

Product names mentioned herein are used for identification purposes only and may be trademarks and/or registered trademarks of their respective companies.

Conventions

Take note of the following conventions used throughout this manual to make sure that users perform certain tasks and instructions properly.

Additional information, aids, and tips that help users perform tasks.

Information to prevent ***minor*** physical injury, component damage, data loss, and/or program corruption when trying to complete a task.

Informations destinées à prévenir les blessures corporelles mineures, les dommages aux composants, la perte de données et/ou la corruption de programme lors de l'exécution d'une tâche.

Information to prevent ***serious*** physical injury, component damage, data loss, and/or program corruption when trying to complete a specific task.

Informations destinées à prévenir les blessures corporelles graves, les dommages aux composants, la perte de données et/ou la corruption de programme lors de l'exécution d'une tâche spécifique.

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1 Introduction

ADLINK's DLAP-211 Series Edge Inference System leverages the power of NVIDIA® Jetson™ Nano TX2NX, and NX modules to deliver artificial intelleigence (AI) at the edge. The DLAP-211 Edge AI Platforms with integrated NVIDIA Jetson accelerates deep learning workloads for object detection, recognition, and classification suitable for industrial embedded applications such as medical image processing, logistics automation, autonomous vehicles, smart retail, and AI NVR.

This fanless system provides a wide variety of industrial I/O and visual inferencing capabilities in a compact size. The DLAP-211 also supports reserved AFM connectors for optional I/Os including GPIO, Relay, I^2C, and SPI. With a lockable HDMI display, two GbE ports, four USB 3.0 ports (plus a USB 2.0 OTG port for software updates), one COM port, one isolated CAN bus, one audio jack plus one M.2 NVME/SATA and one SD slot for additional storage options, a Mini PCIe slot and USIM socket to support wireless communications such as Wi-Fi, LoRA, and 3G/4G LTE, the DLAP-211 series enables AI at the edge with exceptional performance and convenience while keeping power consumption to a minimum.

1.1 Features

- Deep learning acceleration with NVIDIA® Jetson™ Xavier NX / TX2NX / Nano
- Compact fanless system: 148(W) x 105(D) x 52(H) mm
- Wide temperature range: -20°C to 70°C
- AFM supporting GPIO, Relay, I^2C, and SPI interfaces

1.2 Specifications

The DLAP-211 series come in six versions supporting Jetson Nano, TX2NX, and NX modules along with different I/O expansion options.

Model	DLAP-211-JNX	DLAP-211-JNXS	DLAP-211-JT2	DLAP-211-JT2S	DLAP-211-NanoS	DLAP-211-NanoS
System						
GPU	384-core NVIDIA Volta GPU with 48 Tensor Cores		NVIDIA Pascal Architecture GPU with 256 CUDA cores		NVIDIA Maxwell architecture with 128 CUDA cores	
CPU	6-core ARM v8.2 64-bit		2-core Denver 2 64-bit and 4-core ARM Cortex-A57		4-core ARM Cortex-A57	
RAM	8/16GB	8GB	4GB			
Storage	16 GB eMMC 5.1					
OS	Linux Ubuntu					
Front Panel I/O Ports						
Button	1x power, 1x reset, 1x recovery					
HDMI	1x lockable					
USB	4x USB 3.0 Type-A					
Ethernet	2x 10/100/1000 Mbps Ethernet					
Audio	Mic-in, Line-out					
Expansion I/O	N/A	2x I2C, 2x SPI, 1x UART, 8x GPIO, 1x Relay through 1x D-sub 37-pin connector	N/A	2x I2C, 2x SPI, 1x UART, 8x GPIO, 1x Relay through, 1x D-sub 37-pin connector	N/A	2x I2C, 2x SPI, 1x UART, 8x GPIO 1x Relay through, 1x D-sub 37-pin connector
Rear Panel I/O Ports						
USB	1x USB 2.0 OTG					
Serial Port	1x COM RS-232/422/485					
CAN Bus	1x 2.0b				N/A	

Table 1-1: Specifications

Model	DLAP-211-JNX	DLAP-211-JNXS	DLAP-211-JT2	DLAP-211-JT2S	DLAP-211-NanoS	DLAP-211-NanoS
Extension Slots						
Mini PCIe	1x Mini PCIe slot					
M.2	1x M.2 B key 2242 socket					
SD Card Slot	1x SD card slot					
Power Supply						
DC Input	12V					
AC Input	60W AC/DC adapter					
Mechanical						
Dimensions (W x D x H)	148 x 120 x 52 mm (DLAP-211-JNX/JT2/Nano) 148 x 120 x 64 mm (DLAP-211-JNXS/JT2S/NanoS)					
Weight	Gross 1.725 KG / Net 1.5 KG					
Mounting	Wall and VESA (DIN rail optional)					
SMA Antenna Connector	4					
Environmental						
Operating Temperature	-20°C to 70°C (system level) -20°C to 85°C (board level)					
Operating Humidity	~95% @40°C (non-condensing)					
Storage Temperature	-40°C to 85°C					
Vibration	Operating 5Grms, 5 to 500 Hz, 3 axes w/ mSATA					

Table 1-1: Specifications

Model	DLAP-211-JNX	DLAP-211-JNXS	DLAP-211-JT2	DLAP-211-JT2S	DLAP-211-NanoS	DLAP-211-NanoS
Shock	Operating 100G, half sine 11 ms duration w/ SD, mSATA					
ESD	Contact +/- 4kV, Air +/- 8kV					
Regulatory	CE & FCC class B, (EN61000-6-4/-6-2), CE-LVD & UL by CB, FCCID (DLAP-211-JNXO & DLAP-211-NanoO support CE & FCC class A with 4V for one camera connected.)					
Firmware						
WDT	WDT Supported					

Table 1-1: Specifications

1.3 Mechanical Dimensions

All dimensions shown in millimeters (mm).

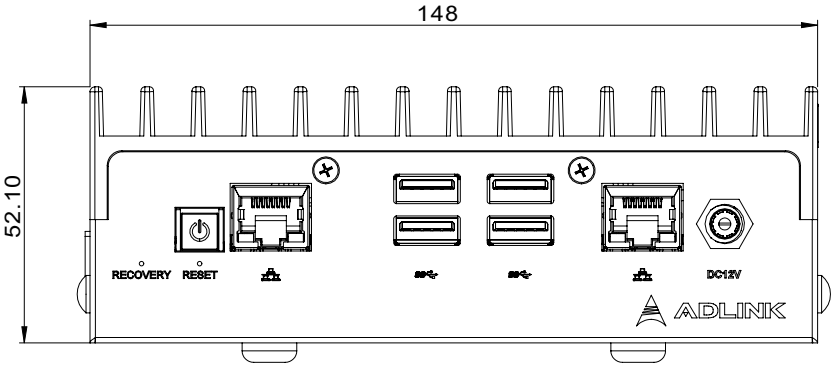


Figure 1-1: DLAP-211-Nano/JT2/NX Front View

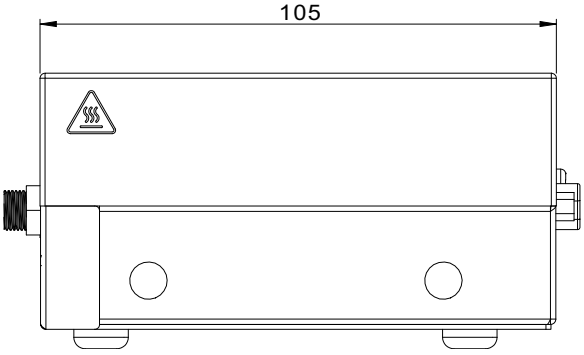


Figure 1-2: DLAP-211-Nano/JT2/NX Side View

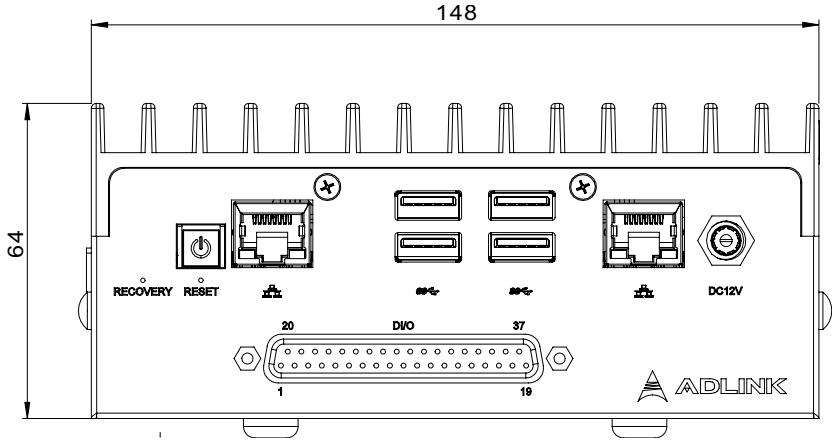


Figure 1-3: DLAP-211-NanoS/JT2S/NXS Front View

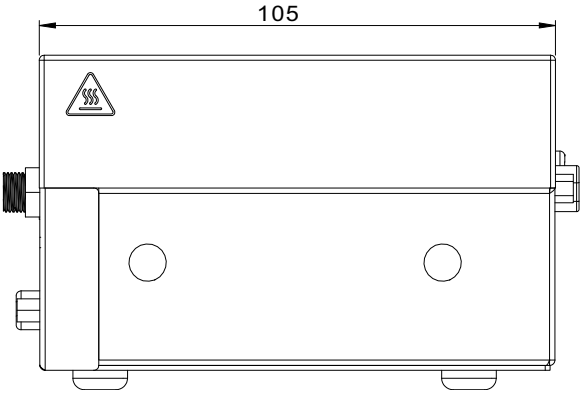


Figure 1-4: DLAP-211-NanoS/JT2S/NXS Side View

1.4 External Layout

DLAP-211-NanoS/JT2S/NXS Front Panel

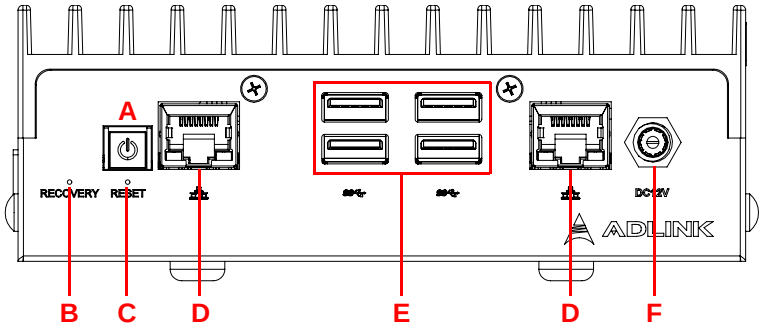


Figure 1-5: DLAP-211-NanoS/JT2S/NXS Front Panel I/O Connectors 1

DLAP-211-NanoS/JT2S/NXS Front Panel

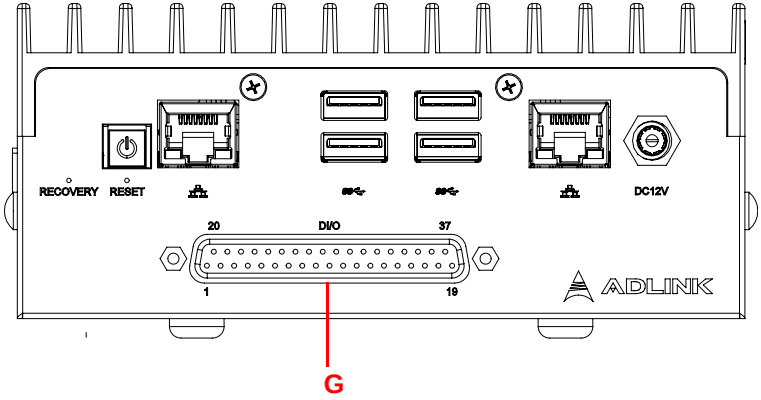


Figure 1-6: DLAP-211-NanoS/JT2S/NXS Front Panel I/O Connectors 2

Item	Name	Description
A	Power button	The power button is a non-latched pushbutton with a blue LED power indicator. Press to power on/power off the system. The button LED lights up when the system is turned on. If the system hangs, pressing and holding the button continuously for 5 seconds performs a hard shutdown on the system.
B	Recovery button	Press this button to force the system into recovery mode. See **Section 3.2 System Recovery**.
C	Reset button	The reset button executes a hard reset on the system.
D	GbE connector (LAN 1)	GbE from NVIDIA® Jetson™ modules. See **Section 1.5 Pin Definitions**.
D	GbE connector (LAN 2)	GbE from Intel® I210. See **Section 1.5 Pin Definitions**.
E	USB 3.0	See **Section 1.5.2 USB 3.0 Connectors**.
F	DC connector 12V	12V DC screw-type connector. See **Section 1.5.3 12V DC Connector**.
G	D-sub 37-pin connector	1x I2C, 1x SPI, 1x UART, 8x GPIO, 1x Relay function

Table 1-2: Front Panel I/O Connectors & Controls

Rear Panel

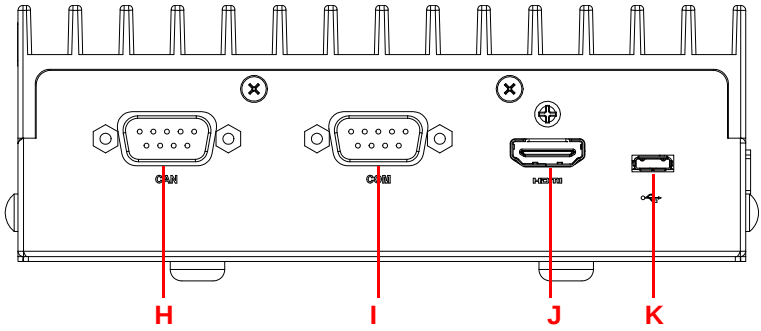


Figure 1-7: Rear Panel I/O Connectors

Item	Name	Description
H	CAN bus	CAN 2.0B (backward compatible with 2.0A)
I	Serial port	COM port (DB-9 connector) RS-232/422/485 (software programmable)
J	HDMI port	HDMI 2.0 with lock
K	USB 2.0	USB 2.0 OTG (Micro USB)

Table 1-3: Rear Panel I/O Connectors

1.5 Pin Definitions

1.5.1 Ethernet GbE Connectors

The DLAP-211 series comes with two RJ45 connectors:

- NVIDIA® Jetson™ modules (LAN 1)
- Intel® I210 (LAN 2)

LAN LED connection speed color indicators:

	Active & Link (Left LED)	Speed (Right LED)
10 Mbps	Yellow (Blinking)	N/A
100 Mbps	Yellow (Blinking)	N/A
1000 Mbps	Yellow (Blinking)	Green

Table 1-4: NX/TX2NX/Nano Module & I210 LAN LED

The following table provides details for the RJ45 GbE pin connections.

Pin #	10BASE-T/ 100BASE-TX	1000BASE-T
1	TX+	LAN_TX0+
2	TX-	LAN_TX0-
3	RX+	LAN_TX1+
4	—	LAN_TX2+
5	—	LAN_TX2-
6	RX-	LAN_TX1-
7	—	LAN_TX3+
8	—	LAN_TX3-

Table 1-5: RJ45 GbE Pin Definition

1.5.2 USB 3.0 Connectors

The USB 3.0 ports support a USB Type-A connection, compatible with SuperSpeed, Hi-Speed, Full-speed, and Low-speed USB devices suitable for USB peripherals including USB cameras.

Pin #	Signal Name
1	USB3.0_P5VA
2	USB2_CMAN
3	USB2_CMAP
4	GND
5	USB3A_CMRXN
6	USB3A_CMRXP
7	GND
8	USB3A_CMTXN
9	USB3A_CMTXP

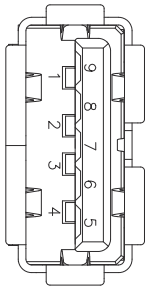
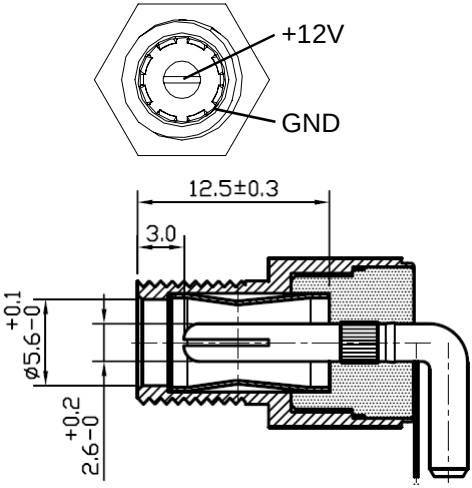


Table 1-6: USB 3.0 Pin Definition

1.5.3 12V DC Connector

The system requires a 12V DC power source with a screw-type connector.



1.5.4 Controller Area Network (CAN) Bus

The Controller Area Network (CAN) enables communication among devices.

Pin	Signal	Description
1	NC	(Not connected)
2	CAN0_Low	Differential CAN signal negative level
3	NC	(Not connected)
4	NC	(Not connected)
5	NC	(Not connected)
6	NC	(Not connected)
7	CAN0_High	Differential CAN signal positive level
8	NC	(Not connected)
9	NC	(Not connected)

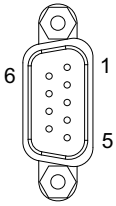


Table 1-7: CAN Bus Pin Definition

1.5.5 COM Port

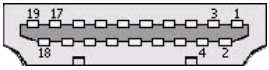
One COM port supports RS-232/422/485.

Pin	RS-232	RS-422	RS-485
1	DCD#	COM_TXD_N	COM_D-
2	COM_RXD	COM_TXD_P	COM_D+
3	COM_TXD	COM_RXD_P	NC
4	DTR#	COM_RXD_N	NC
5	COM_GND	NC	NC
6	NC	NC	NC
7	COM_RTS#	NC	NC
8	COM_RCTS#	NC	NC
9	NC	NC	NC

Table 1-8: RS-232/422/485 Connector Pin Definition

1.5.6 HDMI Connectors

The rear panel HDMI connector supports HDMI 2.0.



Pin #	Signal	Pin #	Signal
1	TMDS Data2+	2	TMDS Data2 Shield
3	TMDS Data2–	4	TMDS Data1+
5	TMDS Data1 Shield	6	TMDS Data1–
7	TMDS Data0+	8	TMDS Data0 Shield
9	TMDS Data0–	10	TMDS Clock+
11	TMDS Clock Shield	12	TMDS Clock–
13	CEC	14	Reserved
15	SCL	16	SDA
17	DDC/CEC Ground	18	+5 V Power
19	Hot Plug Detect		

Table 1-9: HDMI Connector Pin Definition

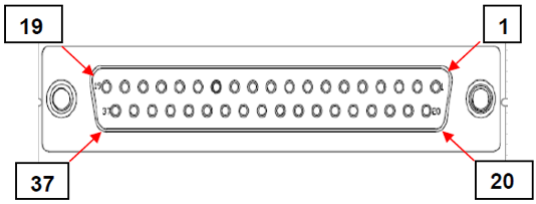
1.5.7 USB 2.0 OTG Connector

The DLAP-211 supports a USB 2.0 OTG Micro USB Type-B connection for system recovery.

Pin	Signal	Description
1	VCC_USBDev	USB device power
2	USB_D1_n	Universal Serial Bus Port 1 / USB-Client differential pair
3	USB_D1_p	
4	USB_ID	USB ID pin
5	GND_USBDev	USB GND

Table 1-10: USB 2.0 OTG Connector Pin Information

1.5.8 D-sub 37-pin Connector



Pin #	Signal	Voltage	Pin #	Signal	Voltage
1	OPEN Relay		2	N/A	
3	COM Relay		4	N/A	
5	SPI0_SCK	3.3V	6	SPI0_CS1_1	3.3V
7	SPI0_MOSI	3.3V	8	SPI0_MISO	3.3V
9	SPI0_CS0_L	3.3V	10	GND	
11	(GPO1)GPIO_14	3.3V	12	(GPO2)GPIO_12	3.3V
13	(GPO3)GPIO_10	3.3V	14	(GPO4)GPIO_06	3.3V
15	(GPI1)GPIO_05	3.3V	16	(GPI2)GPIO_04	3.3V
17	(GPI3)GPIO_03	3.3V	18	(GPI4)GPIO_02	3.3V
19	GND		20	GND	
21	JUMPER2_EN		22	GPIO_07	
23	I2C0_SDA	3.3V	24	I2C0_SCL	3.3V
25	GND		26	GND	
27	3.3V		28	3.3V	
29	GND		30	UART0_RTS	3.3V
31	UART0_CTS	3.3V	32	UART0_TXD	3.3V
33	UART0_RXD	3.3V	34	GND	
35	GND		36	5V	
37	5V				

Table 1-11: D-sub 37-pin Pin Definition

1.5.9 Side I/O Slots

The I/O connectors accessible from the right side panel of the DLAP-211 are described below.

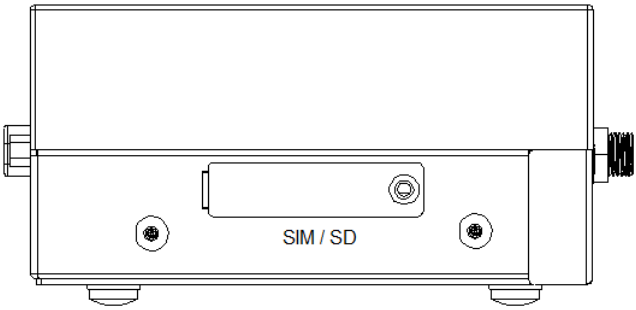


Figure 1-8: USIM / SD Side Door

SD Card Slot

For additional storage, use the side door to install or remove a user-provided SD card.

USIM Slot

The DLAP-211 is equipped with a USIM slot connected to the Mini PCIe connector for use with a user-provided SIM card and 3G/4G Mini PCIe module to provide cellular communication. Install or remove a SIM card module via the side door.

NOTE:

The 3G/4G Mini PCIe module requires a user-provided SIM card for communication via a telecom operator. See Section 2.5 Installing a Mini PCIe Wi-Fi Module on page 21.

Orientation

Insert the SIM and SD cards with the orientations shown below.

2 Getting Started

2.1 Unpacking Checklist

Before unpacking, check the shipping carton for any damage. If the shipping carton and/or contents are damaged, inform your dealer immediately. Retain the shipping carton and packing materials for inspection. Obtain authorization from your dealer before returning any product to ADLINK. Ensure that the following items are included in the package.

- DLAP-211 unit
- Screw pack
- VESA mount kit (plus optional DIN rail kit if applicable)
- >60W Power adapter

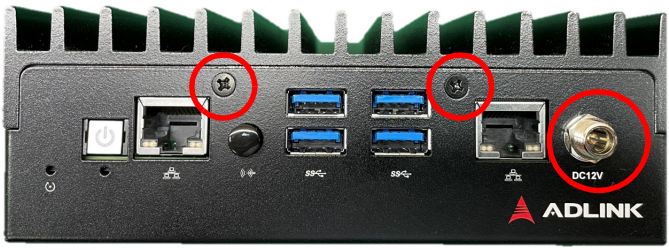
2.2 Cooling Considerations

All heat-generating components of the DLAP-211 are located on the left side of the system. These components directly contact the heat sink via thermal pads to dissipate heat. To maximize efficiency of heat dissipation, maintain a minimum of 2 inches (5cm) clearance on the top of the DLAP-211.

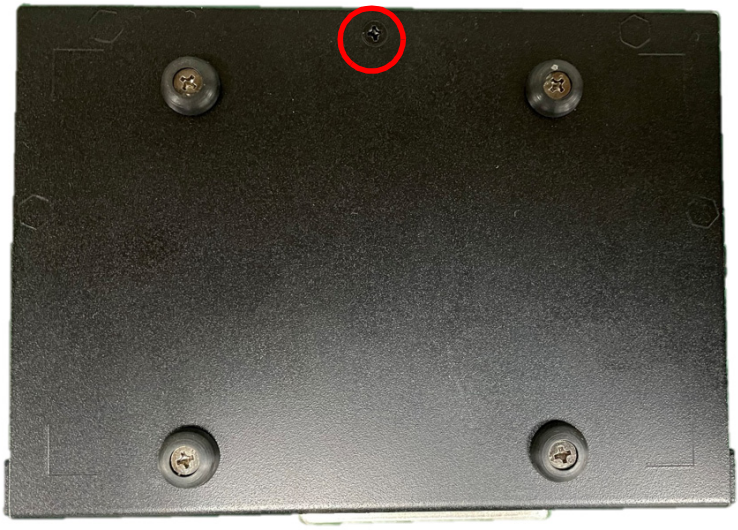
2.3 Removing the Chassis Cover

To access the DLAP-211's internal components, remove the underside of the chassis as follows.

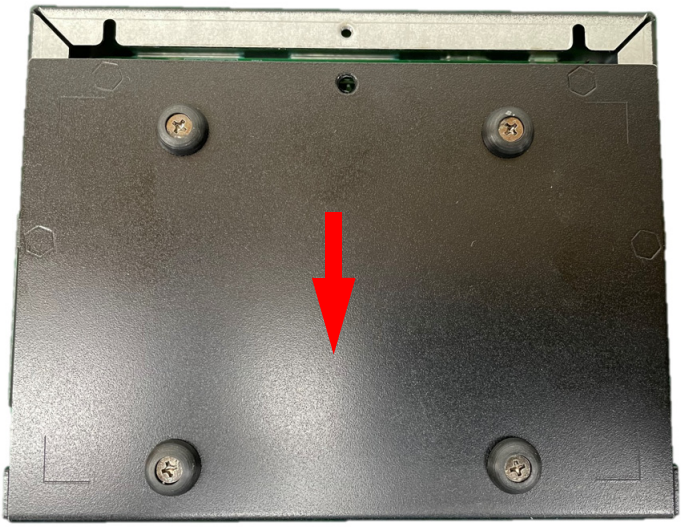
1. On the front panel, remove the nut and washer from the 12V DC connector and remove the two mounting screws, as indicated in the figure below.



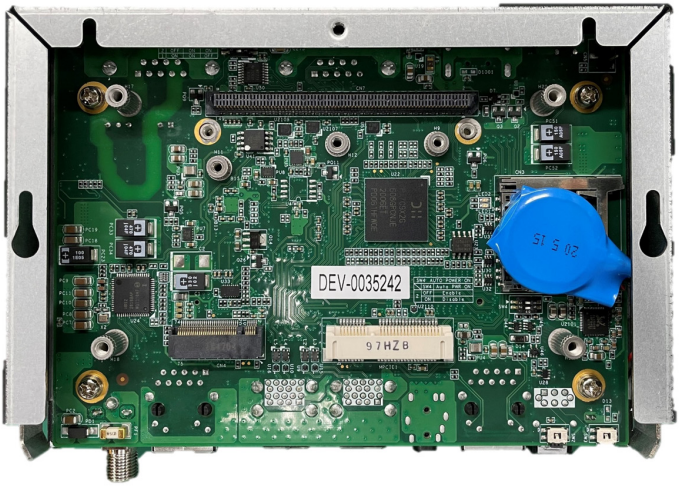
2. Remove one screw on the underside of the device.



3. Slide the cover in the direction indicated by the red arrow.



4. Lift the cover off of the chassis.



Reverse the steps to replace the bottom cover.

2.4 Installing an M.2 SSD Module

Use the following steps to install an M.2 SSD module.

1. Insert the M.2 2242 B or B+M key module into the indicated slot (under the wires) at an angle.

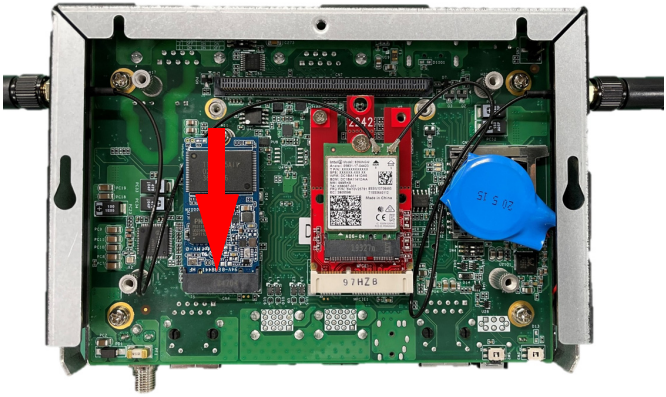


Figure 2-1: M.2 2242 B Key Slot

2. Press down on the M.2 module until it is seated, then secure it with one M2.5-P-head-L5 screw (not provided).
3. Replace the bottom cover of the chassis.

CAUTION:

Take care not to remove or damage any wires while installing the module.

2.5 Installing a Mini PCIe Wi-Fi Module

Use the following steps to install a Mini PCIe Wi-Fi module.

1. Insert the Mini PCIe Wi-Fi module into the indicated slot at an angle.

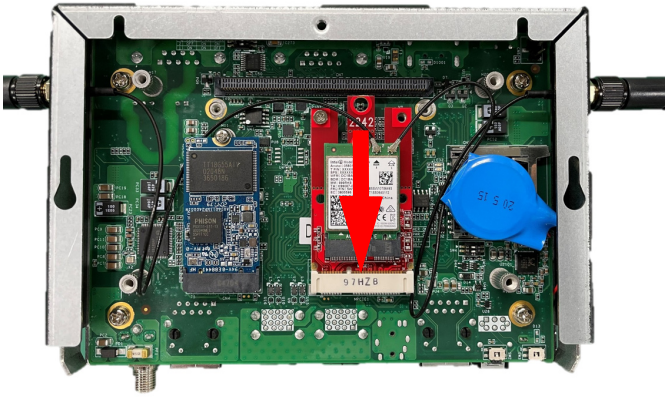


Figure 2-2: Mini PCIe Wi-Fi Slot

2. Press down on the module until it is seated, then secure it to the board using two M2.5-P-head-L5 screws (not provided).
3. Attach the wires and antennas that came with your Wi-Fi kit. It is recommended that the Wi-Fi antenna be connected to the left SMA antenna port, and Wi-Fi+bluetooth antennal be connected to the right SMA antenna port.
4. Replace the bottom cover of the chassis.

2.6 Connecting DC Power

Before providing DC power to the DLAP-211, ensure the voltage and polarity provided are compatible with the DC input. Improper input voltage and/or polarity can be responsible for system damage.

Avant de connecter le PC DLAP-211 à une source de courant continu, veuillez vous assurer de la polarité de la tension conformément à l'entrée CC du PC. Une tension et/ou une polarité incorrectes peuvent causer des dommages irréversibles sur le système.

DC power sources must comply with LPS and SELV (ES1) circuits with no energy hazard, as well as the following:

- IEC 62368-1, IEC 60950-1, and UL 62368-1
- Output voltage: 12V DC
- Output current: 5.0A minimum
- TMA: 55°C with DC input; 40°C with adapter input
- Altitude Operability: 5000m minimum

The DLAP-211 DC power input connector uses V+, V-, and chassis ground pins.

Les sources d'alimentation CC doivent être conformes aux circuits LPS et SELV (ES1) avecaucun risque énergétique, ainsi que:

- *CEI 62368-1, CEI 60950-1 et UL 62368-1*
- *Tension de sortie: 12V DC*
- *Courant de sortie: 5.0A minimum*
- *TMA: 55°C avec entrée DC; 40°C avec entrée adaptateur.*
- *Altitude de fonctionnement: min. 5000 mètres*

Le connecteur d'entrée d'alimentation CC DLAP-211 utilise V+, V- et châssis broches de terre.

For additional assistance and information, contact ADLINK. To reduce potential safety hazards, use only the AC adapter provided with the product, a replacement AC adapter provided by ADLINK, or an AC adapter purchased as an accessory from ADLINK.

Si vous avez besoin d'aide supplémentaire, veuillez contacter ADLINK pour plus d'informations. Pour réduire les problèmes de sécurité potentiels, seul l'adaptateur secteur fourni avec le produit, un adaptateur secteur de remplacement fourni par ADLINK ou un adaptateur secteur acheté comme accessoire auprès d'ADLINK doit être utilisé avec le produit.

2.7 VESA Mount

The DLAP-211 controller ships with a VESA 100 mounting bracket and four M4 screws. Follow the steps below to mount the device.

1. Attach the VESA bracket to the wall (or other suitable mounting surface) such that its keyhole-shaped mounting holes are oriented with the wider openings at the top.
2. Secure the four M4 screws to the bottom of the chassis.
3. Securely attach the device to the VESA bracket by first inserting the heads of the screws into the wider openings of the VESA bracket's mounting holes, then sliding the device down such that the screws are now firmly held by the narrower portions of the mounting holes.

NOTE:

It is recommended that four M4 screws, 6cm in length, be used to attach the assembled brackets to a wall. Actual fastener type and length will be determined by the type of wall being anchored to. (Sample anchors M4x0.7 L8mm with washer.)

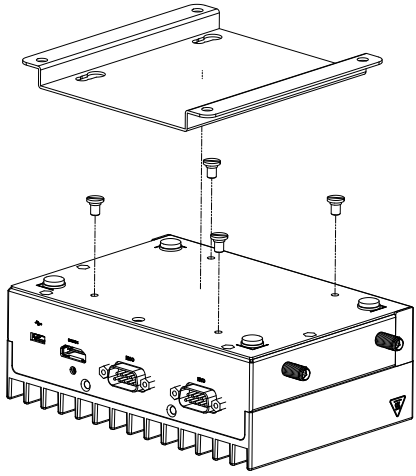


Figure 2-3: VESA Mount

2.8 DIN Rail Mount

The DLAP-211 controller may optionally include a DIN rail mount kit, with its own six M4 screws, in addition to the standard VESA mount kit. Follow these steps to install the DIN rail bracket.

1. Use two M4 screws (pointing upwards in the red box below) to attach the DIN rail bracket to the adapter plate.
2. Use four M4 screws (circled in red below) to attach the DIN rail bracket assembly to the DLAP-211 chassis.

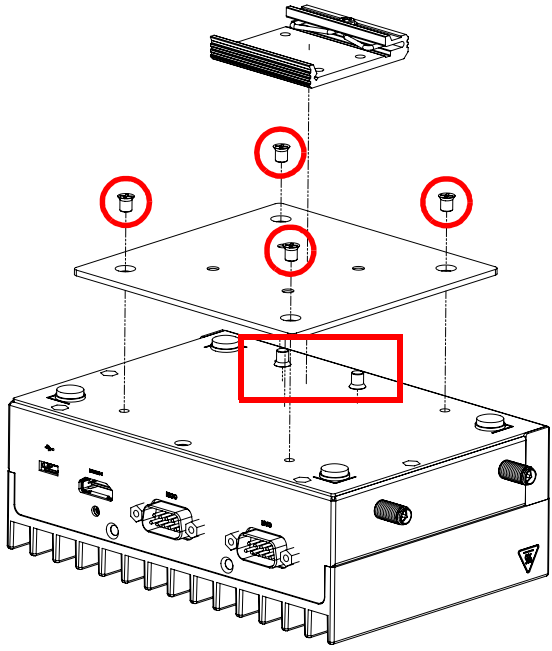


Figure 2-4: DIN Rail Mount

2.9 AT Power Mode Switch (SW4)

The DLAP-211 is set in AT mode by default. By using the AT Power Mode Switch (SW4), users can set the system to be powered-on with the power button.

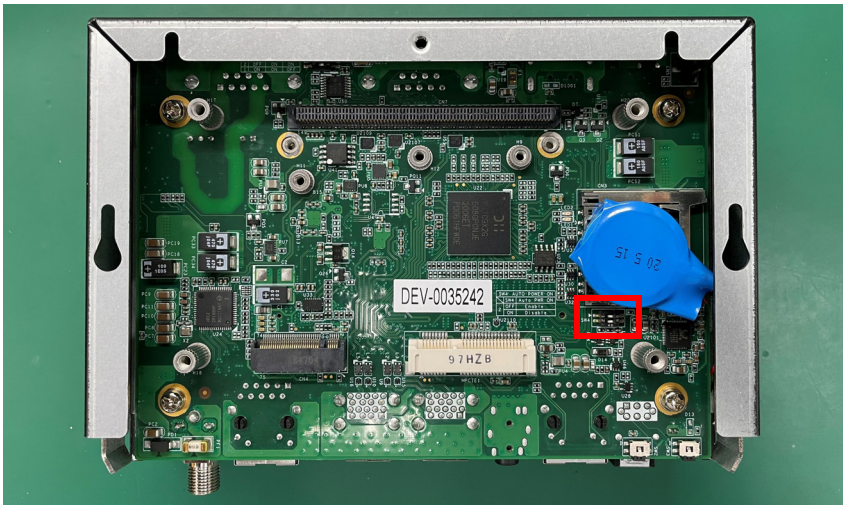


Figure 2-5: AT Power Mode Switch (SW4)

AT mode can be configured as follows.

SW4 Auto Power On		
	SW4	**Auto Power On**
2	OFF	Enable (Default)
	ON	Disable

Table 2-1: AT Mode Switch Configuration

3 Using the System

3.1 Software Configuration

The DLAP-211 ships with a customized NVIDIA Linux for Tegra (L4T) image pre-installed. The latest version of this custom L4T image and other relevant files are available on the ADLINK web-site.

DLAP-211-JNX:

https://www.adlinktech.com/Products/Deep_Learning_Accelerator_Platform_and_Server/Inference_Platform/DLAP-211-JNX

DLAP-211-JT2:

https://www.adlinktech.com/Products/Deep_Learning_Accelerator_Platform_and_Server/Inference_Platform/DLAP-211-JT2

DLAP-211-Nano:

https://www.adlinktech.com/Products/Deep_Learning_Accelerator_Platform_and_Server/Inference_Platform/DLAP-211-Nano

3.2 System Recovery

You will need a Linux host PC (Ubuntu is recommended) in order to flash your client device with a new system image. Complete the following steps on the client before performing the host PC steps.

Client:

1. Connect the OTG cable to the USB 2.0 port.
2. Press the reset and recovery buttons at the same time.
3. Press the power switch.
4. Release the reset button.
5. Release the recovery button.

Host PC:

6. Connect the host PC to the client via OTG cable.
7. Open a terminal on the host PC and run this command:

   ```
   # lsusb
   ```

8. Look for “NVidia Corp.” in the output (an example is circled in red in the screenshot below). If found, the host PC recognizes the client and you may proceed. If not, double-check the OTG cable connection and perform troubleshooting as needed until the client is recognized.

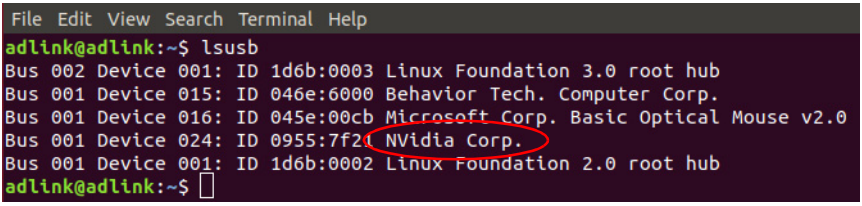


Figure 3-1: Successful Client/Host Connection

9. Download mfi_jetson-xxx-xxx-ver.xxx.tbz2 to the host and client systems.
10. Run the following commands in the directory that contains the downloaded files:

    ```
    # sudo tar xvjf mfi_jetson-xxx-xxx-ver.xxx.tbz2
    # cd mfi_jetson-xxx-xxx-ver.xxx
    # sudo ./nvmflash.sh
    ```

3.3 COM Port Configuration

By default, the DLAP-211 is configured to support the RS-232 protocol.

Model	COM Port Name
DLAP-211-JNX/JNXS	ttyTHS0
DLAP-211-JT2/JT2S	ttyTHS2
DLAP-211-Nano/NanoS	ttyTHS1

Table 3-1: COM Port Names

Switching between RS-232/422/485:

```
$ echo rs232 > /sys/class/sp339_mode_ctl/uartMode
$ echo rs422 > /sys/class/sp339_mode_ctl/uartMode
$ echo rs485 > /sys/class/sp339_mode_ctl/uartMode
```

Checking the current mode of the serial port:

```
cat /sys/class/sp339_mode_ctl/uartMode
```

3.4 SPI, I2C, and Relay Configuration

The DLAP-211-JT2S, DLAP-211-NanoS, and DLAP-211-JNXS support I2C, SPI, GPIO, and Relay functions through a 37-pin D-sub connector that can be accessed through the commands described in the following sections.

3.4.1 GPIO

DLAP-211-JNXS GPIO map table:

Pin	Signal	GPIO Number	Pin	Signal	GPIO Number
11	GPO 1	gpio345	15	GPI 1	gpio266
12	GPO 2	gpio268	16	GPI 2	gpio265
13	GPO 3	gpio417	17	GPI 3	gpio264
14	GPO 4	gpio267	18	GPI 4	gpio419

Table 3-2: DLAP-211-JNXS GPIO Map Table

DLAP-211-JT2S GPIO map table:

Pin	Signal	GPIO Number	Pin	Signal	GPIO Number
11	GPO 1	gpio278	15	GPI 1	gpio408
12	GPO 2	gpio338	16	GPI 2	gpio411
13	GPO 3	gpio337	17	GPI 3	gpio410
14	GPO 4	gpio340	18	GPI 4	gpio409

Table 3-3: DLAP-211-JT2S GPIO Map Table

DLAP-211-NanoS GPIO map table:

Pin	Signal	GPIO Number	Pin	Signal	GPIO Number
11	GPO 1	gpio39	15	GPI 1	gpio63
12	GPO 2	gpio194	16	GPI 2	gpio65
13	GPO 3	gpio169	17	GPI 3	gpio66
14	GPO 4	gpio64	18	GPI 4	gpio62

Table 3-4: DLAP-211-NanoS GPIO Map Table

Examples.

GPO set low command:

```
$echo 0 > /sys/class/gpio/gpio345/value
```

GPI get value command:

```
$cat /sys/class/gpio/gpio266/value
```

3.4.2 SPI, I2C, Relay

DLAP-211-JNXS/JT2S/NanoS SPI, I2C, Relay map table:

Model	I2C Name	SPI Name	Relay GPIO Number
DLAP-211-JNXS	i2c1	/dev/spidev0.0 /dev/spidev0.1	gpio424
DLAP-211-JT2S	i2c2	/dev/spidev0.0 /dev/spidev0.1	gpio264
DLAP-211-NanoS	i2c3	/dev/spidev0.0 /dev/spidev0.1	gpio168

Table 3-5: DLAP-211-NanoS GPIO Map Table

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Important Safety Instructions

For user safety, please read and follow all instructions, Warnings, Cautions, and Notes marked in this manual and on the associated device before handling/operating the device, to avoid injury or damage.

- Read these safety instructions carefully.
- Keep the User's Manual for future reference.
- Read the Specifications section of this manual for detailed information on the recommended operating environment.
- The device can be operated at an ambient temperature of 55ºC with DC input; 40ºC with adapter input.
- It is recommended that the device be installed in Information Technology Rooms that are in accordance with Article 645 of the National Electrical Code and NFPA 75.
- When installing/mounting or uninstalling/removing the device:
  - Turn off power and unplug any power cords/cables.
  - Reinstall all chassis covers before restoring power.
- To avoid electrical shock and/or damage to device:
  - Keep device away from water or liquid sources.
  - Keep device away from high heat or humidity.
  - Keep device properly ventilated (do not block or cover ventilation openings).
  - Always use recommended voltage and power source settings.
  - Always install and operate device near an easily accessible electrical outlet.
  - Secure the power cord (do not place any object on/over the power cord).
  - Only install/attach and operate device on stable surfaces and/or recommended mountings.
  - The Smart Touch Computer is powered by adapter or DC source. Ensure that the adapter or DC source is properly grounded.
- If the device will not be used for long periods of time, turn off and unplug it from its power source

- Never attempt to repair the device, which should only be serviced by qualified technical personnel using suitable tools
- A Lithium-type battery may be provided for uninterrupted backup or emergency power.

Risk of explosion if battery is replaced with one of an incorrect type; please dispose of used batteries appropriately.
Risque d'explosion si la pile est remplacée par une autre de type incorrect. Veuillez jeter les piles usagées de façon appropriée.

- The device must be serviced by authorized technicians when:
  - The power cord or plug is damaged.
  - Liquid has entered the device interior.
  - The device has been exposed to high humidity and/or moisture.
  - The device is not functioning or does not function according to the User's Manual.
  - The device has been dropped and/or damaged and/or shows obvious signs of breakage.
- Disconnect the power supply cord before loosening the thumbscrews and always fasten the thumbscrews with a screwdriver before starting the system up.
- It is recommended that the device be installed only in a server room or computer room where access is:
  - Restricted to qualified service personnel or users familiar with restrictions applied to the location, reasons therefor, and any precautions required.
  - Only afforded by the use of a tool or lock and key, or other means of security, and controlled by the authority responsible for the location.

	**BURN HAZARD** Touching this surface could result in bodily injury. To reduce risk, allow the surface to cool before touching. ***RISQUE DE BRÛLURES*** *Ne touchez pas cette surface, cela pourrait entraîner des blessures.* *Pour éviter tout danger, laissez la surface refroidir avant de la toucher.*

Consignes de Sécurité Importantes

Pour la sécurité de l'utilisateur, veuillez lire et suivre toutes les instructions, avertissements, mises en garde et notes indiquées dans ce manuel et sur les l'appareil avant de manipuler/d'utiliser l'appareil, afin d'éviter toute blessure ou dommage.

- Lisez attentivement ces consignes de sécurité
- Conservez le manuel de l'utilisateur pour pouvoir le consulter ultérieurement
- Lisez la section Spécifications de ce manuel pour des informations détaillées sur l'environnement d'exploitation recommandé
- L'appareil peut fonctionner à une température ambiante de 55°C avec entrée CC; 40ºC avec entrée adaptateur.
- Il est recommandé d'installer l'appareil dans Information Salles technologiques conformes à l'article 645 du Code national de l'électricité et NFPA 75.
- Lorsque l'installation/le montage ou la désinstallation/le retrait du périphérique est requis:
  - Mettez l'appareil hors tension et débranchez tous les cordons/câbles d'alimentation
  - Réinstallez tous les couvercles de châssis avant de rétablir l'alimentation
- Pour éviter les chocs électriques et/ou d'endommager l'appareil:
  - Tenez l'appareil à l'écart de toute source d'eau ou de liquide
  - Tenez l'appareil à l'écart d'une forte chaleur ou d'une humidité élevée
  - Maintenez l'appareil correctement ventilé (n'obstruer ou ne couvrez pas les ouvertures de ventilation)
  - Utilisez toujours les réglages de tension et de source d'alimentation recommandés
  - Installez et utilisez toujours l'appareil près d'une prise de courant facilement accessible
  - Fixez le cordon d'alimentation (ne placez aucun objet sur le cordon d'alimentation)

- ▷ Installez/fixez et utilisez l'appareil uniquement sur des surfaces stables et/ou sur les fixations recommandées
- ▷ L'ordinateur Smart Touch est alimenté par un adaptateur ou une source CC. Veuillez vous assurer que l'adaptateur ou la source CC doit conserver la connexion à la terre s'il est doté d'une protection.

- ▶ Si l'appareil ne doit pas être utilisé pendant de longues périodes, éteignez-le et débranchez-le de sa source d'alimentation
- ▶ N'essayez jamais de réparer l'appareil, qui ne doit être réparé que par un personnel technique qualifié à l'aide d'outils appropriés
- ▶ Une batterie de type Lithium peut être fournie pour une alimentation de secours ininterrompue ou d'urgence.
- ▶ L'appareil doit être entretenu par des techniciens agrees lorsque:
  - ▷ Le cordon d'alimentation ou la prise est endommagé(e)
  - ▷ Un liquide a pénétré à l'intérieur de l'appareil
  - ▷ L'appareil a été exposé à une forte humidité et/ou de la buée
  - ▷ L'appareil ne fonctionne pas ou ne fonctionne pas selon le manuel de l'utilisateur
  - ▷ L'appareil est tombé et/ou a été endommagé et/ou présente des signes évidents de dommage
- ▶ Débranchez le cordon d'alimentation avant de desserrer les vis à oreilles et serrez toujours les vis à oreilles avec un tournevis avant de mettre le système en marche
- ▶ Il est recommandé d'installer l'appareil uniquement dans une salle de serveurs ou une salle informatique où l'accès est:
  - ▷ Réservé au personnel de service qualifié ou aux utilisateurs familiarisés avec les restrictions appliquées à l'emplacement, aux raisons de ces restrictions et toutes les précautions requises
  - ▷ Uniquement autorisé par l'utilisation d'un outil, d'une serrure et d'une clé, ou d'un autre moyen de sécurité, et contrôlé par l'autorité responsable de l'emplacement

Getting Service

Ask an Expert: http://askanexpert.adlinktech.com

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