

NA333TB3

3U 16-bay Thunderbolt 3 Storage and PCIe Expansion



User Manual

Fourth edition, Nov. 2020

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1. Overview

Based on the latest Thunderbolt 3 technology and PCIe architecture, the creative, innovative design of the storage allows the NA333TB3 enclosure to be capacity expandable with RAID performance/protection and PCIe slot expandable to Thunderbolt-equipped computers through the lightning-fast 40Gbps Thunderbolt 3 interface. Furthermore, the Thunderbolt 3 NA333TB3 enclosure is compatible with both SAS and SATA HDDs/SSDs for applications in various fields.

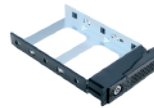
2. Package Checklist

Before installing the unit, verify the package contains the following items.

A Enclosure x 1



B HDD Tray x 16 (installed in chassis)



C Thunderbolt 3 cable (2 meters) x 1



D Internal data cable x 4



E Power cord x 2



F HDD mounting screw



G Key for HDD tray x 2



Notify your sales representative if any of the above items is missing or damaged.

3. Panel Layout

1. HDD Power LED

- White - Power On Indicator

2. HDD Status LED

- Flash Blue - HDD Accessing Indicator
- Red - HDD Failure Indicator

3. Mute Button

- Reset for buzzer beeping

4. Fan Status LED

- Normal – Green
- Failure – Red (too slow RPM or stop)

5. Temperature LED

- Normal – Green
- Over 50°C - RED



6. Power Switches

- "I" for enable, "O" for disable

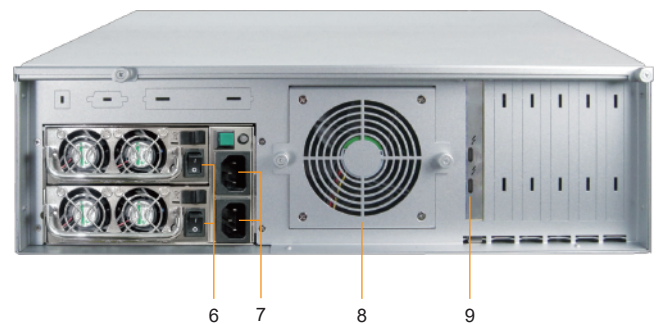
7. Power Cord Receptacles

8. Hot-swappable Cooling Fan

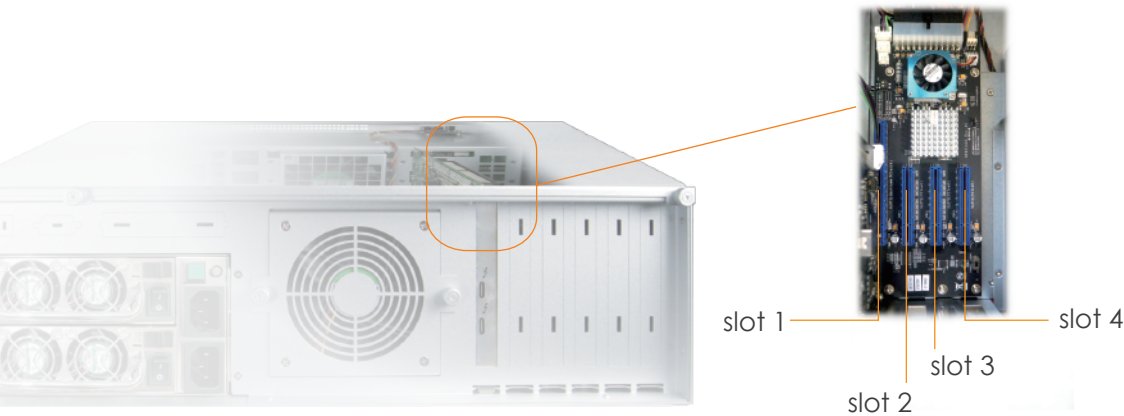
- 90 × 90 mm

9. Thunderbolt 3 Connectors

- Connecting Thunderbolt 3 cables to host and downstream device



4. Hardware Configuration



Slot 1 : Thunderbolt 3 target card (already fixed in the chassis)

Slot 2 : PCIe x8 slot (open-type; supports PCIe card x16/x8/x4/x1)
RAID card is recommended to be installed in this slot as it's closest to HDD backplane's connectors.

Slot 3 : PCIe x8 slot (closed-type; supports PCIe card x8/x4/x1)

Slot 4 : PCIe x8 slot (open-type; supports PCIe card x16/x8/x4/x1)

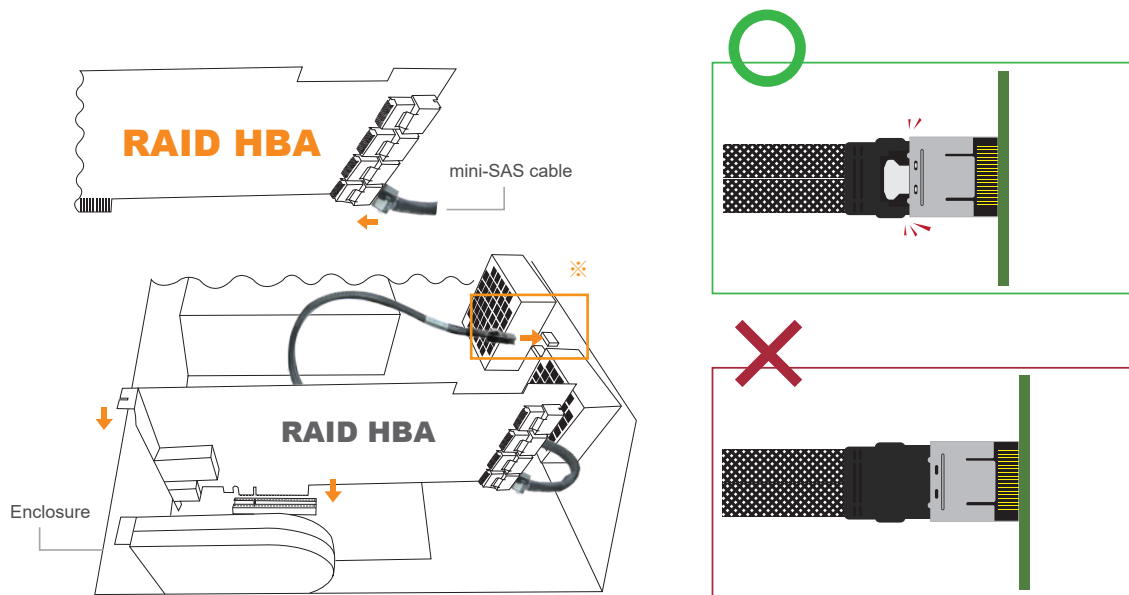
※ PCIe expansion slot board LEDs Status

5. Building Up Procedures

5.1 PCIe Card Installation

1. Place NA333TB3 chassis on a level surface of a stable table.
2. Open the chassis by removing the top cover.
3. Three PCIe slots on rear of NA333TB3 are covered by removable L-shape metal brackets. Unscrew the screw of the removable L-shape metal bracket to let the PCIe slots be ready for PCIe cards installation.

4. Install one SAS/SATA RAID card and other PCIe cards into proper PCIe slots of NA333TB3, and then tighten them with screws on the brackets of the PCIe cards.
5. Connect the cable between the topmost mini-SAS connector on backplane and the mini-SAS connector Channel 1~4 on RAID card, and then connect the rest cables subsequently to the bottommost one on backplane and Channel 13~16 on RAID card.



※ Note: when inserting the mini-SAS cable to the SFF-8087 port on drive backplane, the metal hook on the SFF-8087 connector on data cable must be facing upward.

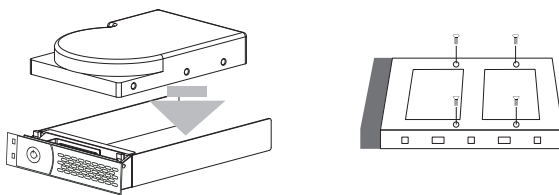
6. Restore the top cover of NA333TB3.

5.2 Hard Drive Installation

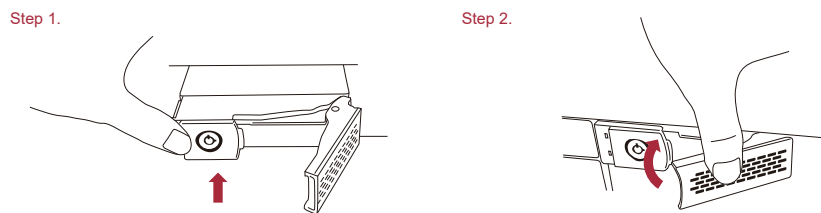
1. Take out the drive trays.



2. Place the HDDs/SSDs in the trays and fix them with drive mounting screws. If 3.5-inch HDD, use the screws in the packet labeled with 3.5"; if 2.5-inch HDD/SSD, use the screws in the packet labeled with 2.5".



3. Insert the drive trays with HDDs/SSDs back to NA381TB3.



5.3 Connecting to Host Computer

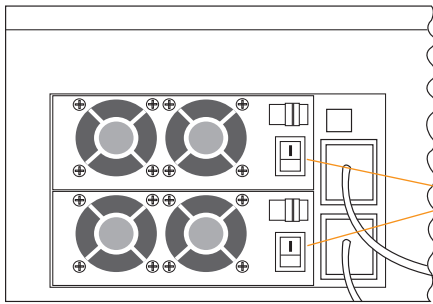
1. Connect NA333TB3 to Thunderbolt 3 Mac directly by Thunderbolt 3 cable.
2. Immobilize the chassis on a server rack or proper place.
3. Connect NA333TB3 with power source.

6. Operation and Verification

6.1 Verification steps for Mac

1. When NA333TB3 is connected to the power source, turn on the two power switches of storage's PSU.

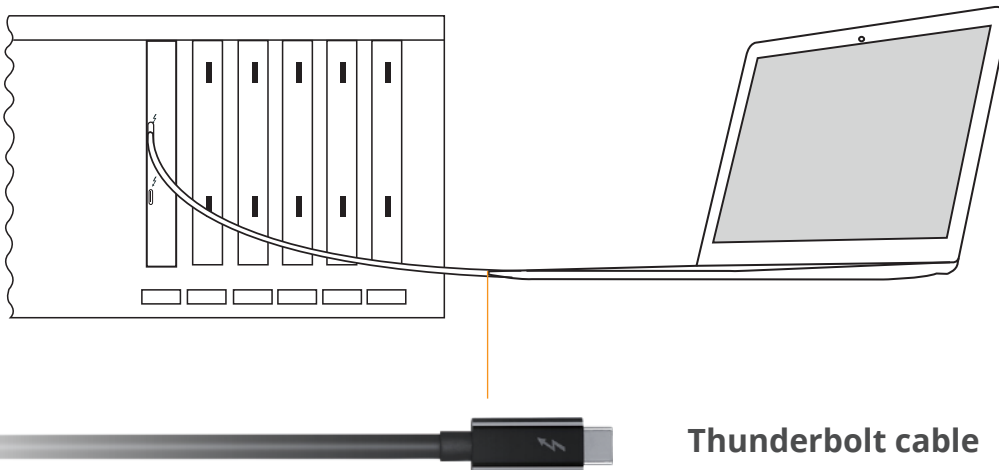
(turn the two switches to "I" position to enable the power supply unit)



turn the switches to position "I"

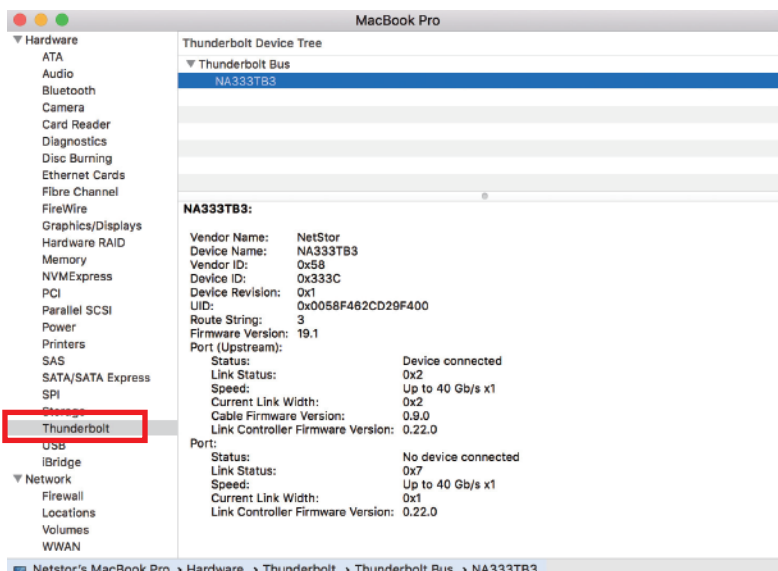
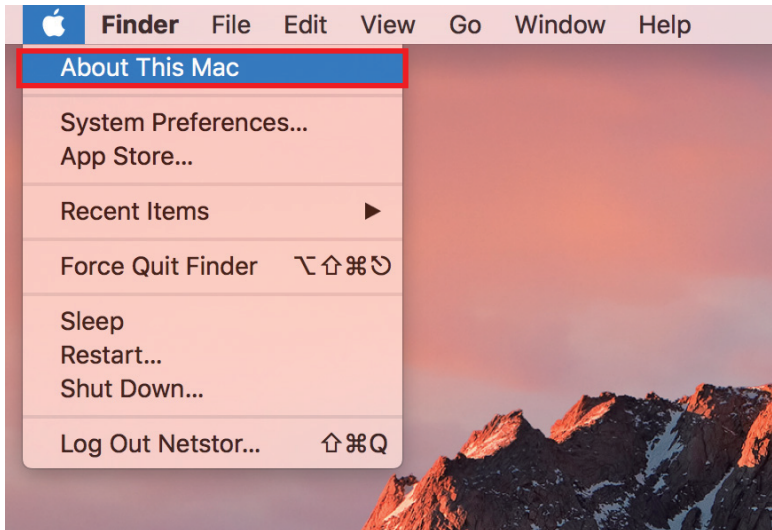
2. The NA333TB3 is designed to be powered on/off simultaneously with Thunderbolt Mac when storage is connected to Mac by Thunderbolt cable. Therefore, power on Mac first, and then NA333TB3 will be powered on automatically.

(NA333TB3 also supports hot-plug and hot-unplug for powering on and off)



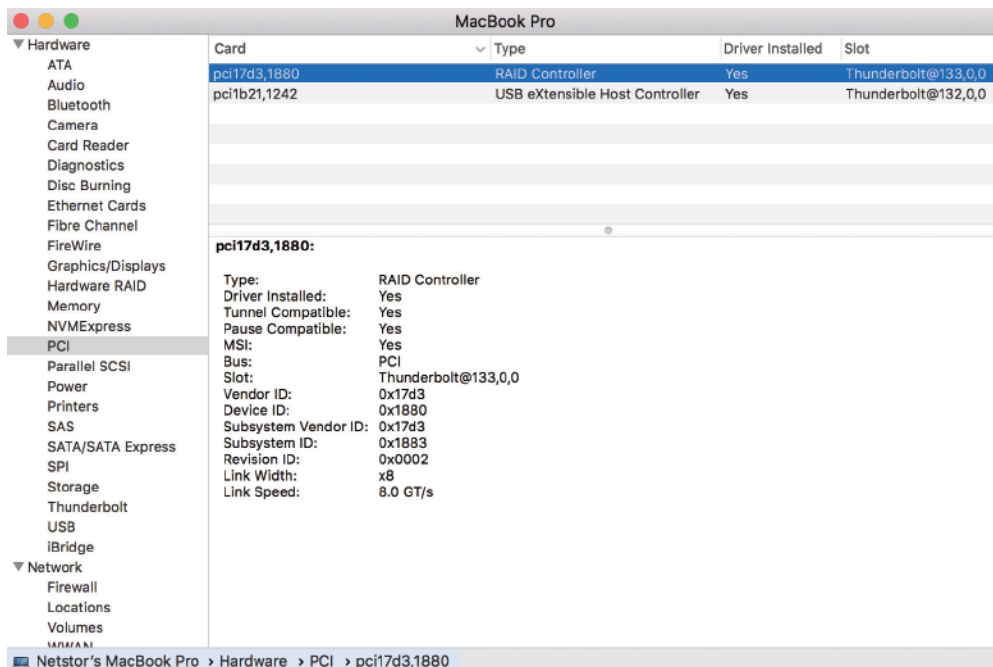
Thunderbolt cable

3. Verify Netstor Thunderbolt 3 target card is recognized by Mac. Click the Apple icon on top left of the screen, select **About This Mac**, and click **System Report**, and then System Information pane will pop up. Select **Thunderbolt** at the left side of the pane; if NA333TB3 can be selected to see its information, the Netstor Thunderbolt 3 target card is recognized correctly by Mac.



4. Verify the PCIe cards installed in NA333TB3. After the verification of Netstor Thunderbolt 3 target card, click PCI at the left side of the pane, and all the PCIe cards installed in NA333TB3 will be shown in the information area within the pane.
(For RAID card, since starting up, it will take more time for its info to be shown)

5. Verify the drivers of RAID card and PCIe cards are installed on macOS. When seeing all the PCIe cards are listed at the last step, there will be a section **Driver Installed** indicating the status of PCIe cards' drivers. If it shows "No" for the status, find and install the Thunderbolt-aware driver for the PCIe card, and then the status will become "Yes" to mean the driver of the PCIe card is installed properly.

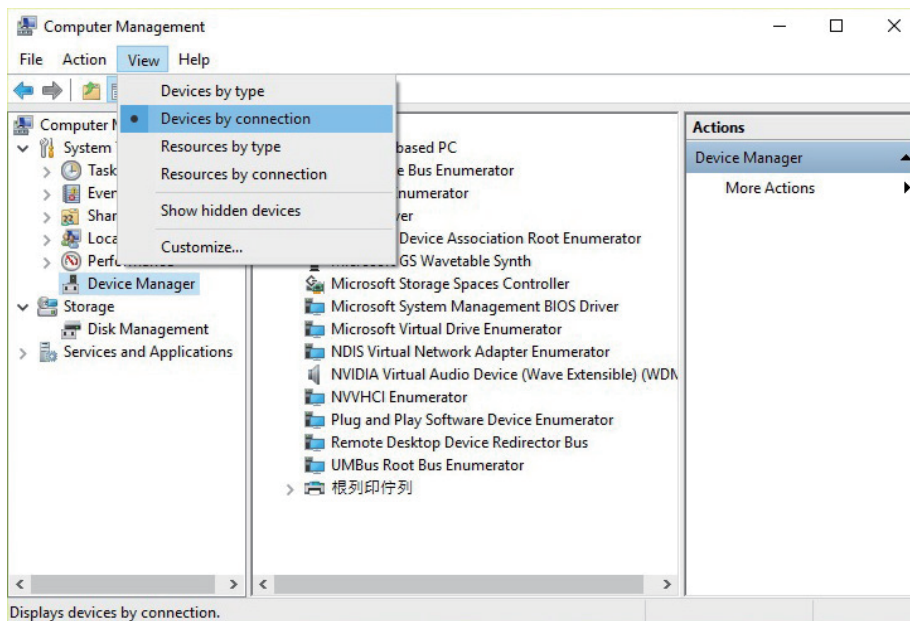


6. After verifying RAID card's driver is installed, follow the operation procedure instructed by RAID card's manufacturer to set up the RAID volume.

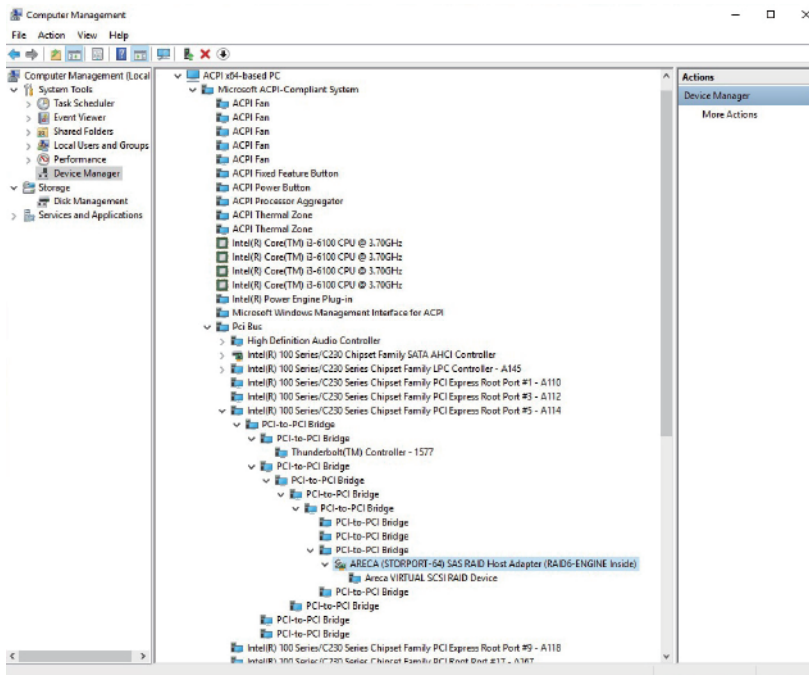
7. While NA333TB3 is connected to Mac by Thunderbolt cable, when shutting down Mac, the NA333TB3 will be shut down simultaneously as well.

6.2 Verification steps for Windows

1. Verify NA333TB3 is recognized by host. Right-click Computer, and select **Manage**. When window of Computer Management pops up, select **Device Manager** at the left, and click **View** on top, and then select **Devices by connection**.

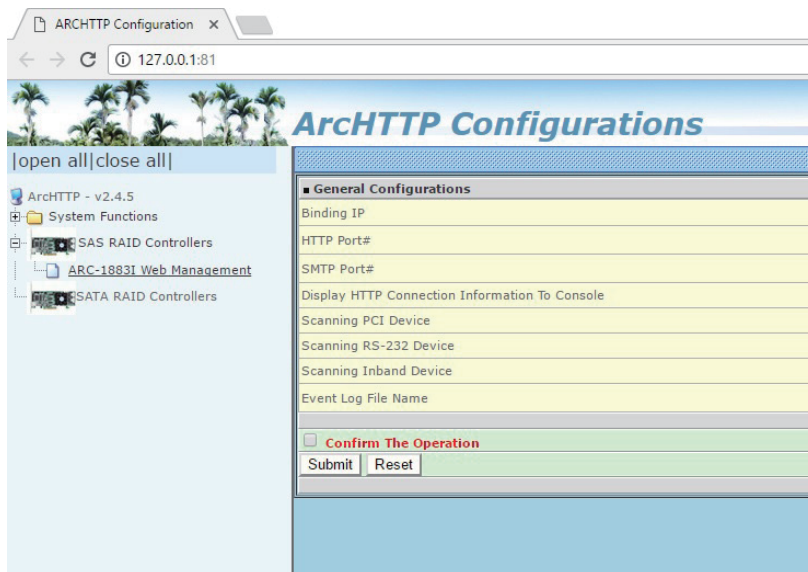


2. Click **ACPI x64-based PC**, select **Microsoft ACPI-Compliant System**, and click **PCI bus/PCI Express Root Complex**. Then items **Intel 7 Series Chipset Family PCI Express Root Port X** will be shown. Find one of the items that shows PCI standard PCI-to-PCI bridge, open the PCI standard PCI-to-PCI bridge to the innermost tier, and the RAID card within NA333TB3 will be shown, meaning the storage is recognized by host.

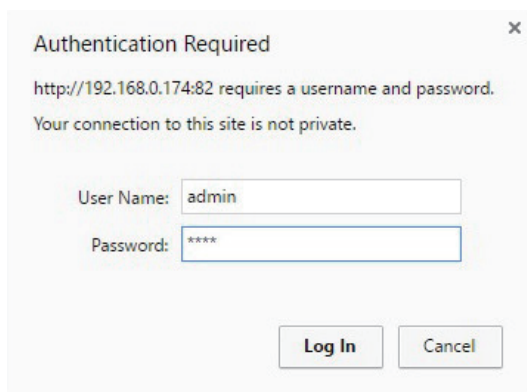


3. Depending on RAID card's requirement (take Areca's for instance), firstly install NA333TB3 RAID card's Windows Thunderbolt-aware driver and the Windows GUI program.

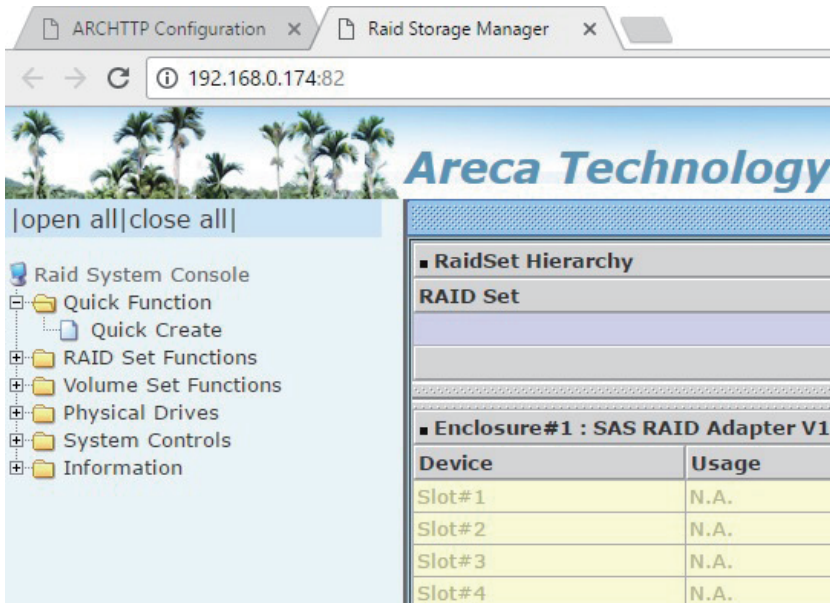
4. After installing the driver and the GUI program, launch the GUI program by selecting **ArcHttpSrvGUI** in All Programs in Windows Start to execute the application.



5. After executing **ArcHttpSrvGUI** application, the web GUI will pop up. Select **SAS RAID Controllers**, and then select **ARC-188X Web Management** to enter the GUI interface.
6. Key in **admin** for name and **0000** for password to enter.



7. After logging in, for quick setup of RAID volume, select **Quick Function** at the left side of GUI, and then select **Quick Create**.



8. After creating RAID volume, right-click Computer, and select **Manage**. When window of Computer Management pops up, select **Disk Management** at the left, and then a window will pop up. Select **GPT (GUID Partition Table)**, and click OK.

9. After selecting GPT (GUID Partition Table), the RAID volume will appear in the center bottom part of the window. Right-click the portion of the RAID volume, and select **New Simple Volume** to format the RAID volume.

10. After formatting, the RAID volume will be shown in Computer, and will be ready for use.

Note: To eject the RAID volume on Windows, click the Safely Remove Hardware icon on the bottom right of the screen, and select Eject Areca ARC-188X SCSI Disk Device.

11. While NA333TB3 storage is connected to host by Thunderbolt cable, when shutting down host, NA333TB3 will be shut down simultaneously as well.

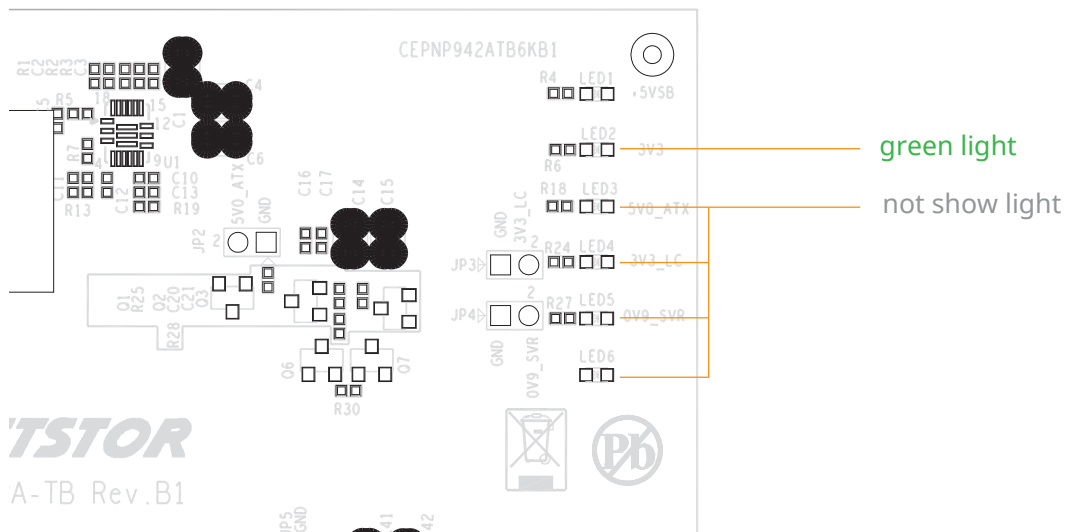
Note: The NA333TB3 chassis supports SGPIO. When any HDD fails, the red LED indicator on the tray will light. The SGPIO function will be effective when the SAS/SATA RAID card supports SGPIO function. (for example, Areca's RAID card)

6.3 Thunderbolt 3 Card LEDs Status

On the Thunderbolt 3 card within the NA333TB3 storage, there are totally five LEDs. From top to bottom, they are: LED 2 (for 3V3), LED 3 (for 5V0_ATX), LED 4 (for 3V3_LC), LED 5 (for 0V9_SVR), and LED 6 (for 0V9_USB). The following information describes what the LEDs lighting status will be before NA333TB3 is powered on and after the Netstor unit is powered on.

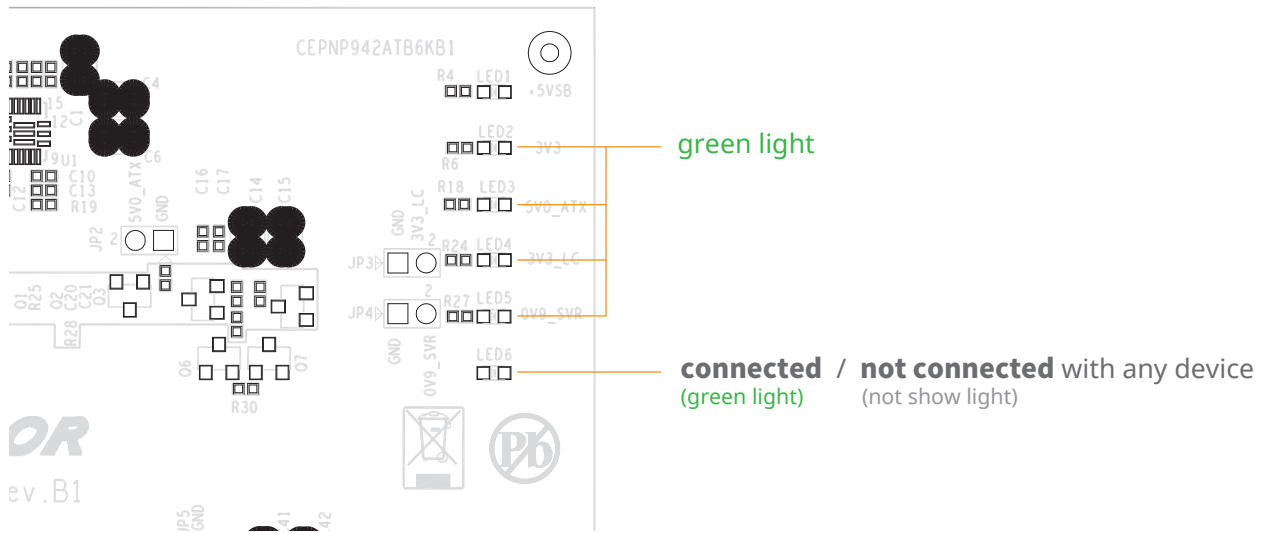
Power-off:

Before NA333TB3 is powered on, only LED 2 will show green light, and the rest LED 3 through LED 6 will not show light.



Power-on:

After NA333TB3 is powered on, LED 2 through LED 5 will show green light. At this time, if a USB device or a monitor is daisy chained to the second Thunderbolt 3 port on the Netstor Thunderbolt 3 card, then LED 6 will show green light. On the other hand, provided the second Thunderbolt 3 port is not connected with any device/monitor, LED 6 will not show light.



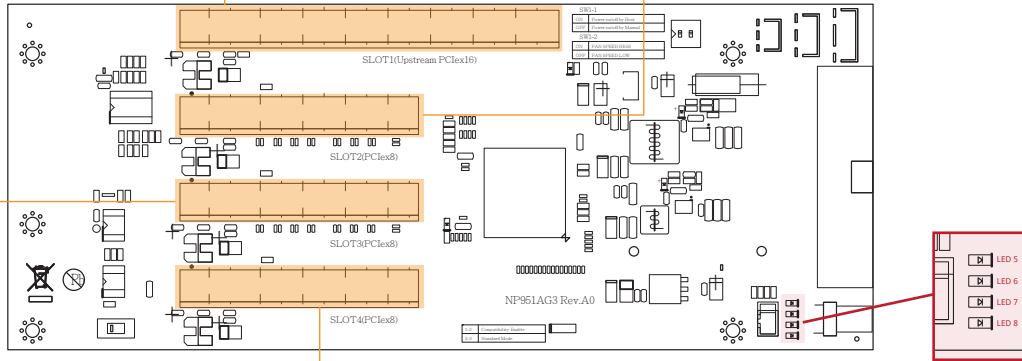
6.4 PCIe expansion slot board LEDs Status

Slot 1: Target card

- (already fixed in the chassis)

Slot 2: PCIe ×8 slot

- (open-type; supports PCIe card ×16/×8/×4/×1)
- RAID card is recommended to be installed in this slot as it's closest to backplane's connectors.



Slot 3: PCIe ×8 slot

- (closed-type; supports PCIe card ×8/×4/×1)

Slot 4: PCIe ×8 slot

- (open-type; supports PCIe card ×16/×8/×4/×1)

LED5 for SLOT1

As LED5 illuminates solid blue light, it indicates Thunderbolt target card in SLOT#1 is in Gen3 mode. As LED5 blinking blue light, Thunderbolt target card in SLOT#1 is in Gen2 mode.

LED6 for SLOT2

As LED6 illuminates solid blue light, it indicates the PCIe card in SLOT#2 is in Gen3 mode. As LED6 blinking blue light, PCIe card in SLOT#2 is in Gen2 mode.

LED7 for SLOT3

As LED7 illuminates solid blue light, it indicates the PCIe card in SLOT#3 is in Gen3 mode. As LED7 blinking blue light, PCIe card in SLOT#3 is in Gen2 mode.

LED8 for SLOT4

As LED8 illuminates solid blue light, it indicates the PCIe card in SLOT#4 is in Gen3 mode. As LED8 blinking blue light, PCIe card in SLOT#4 is in Gen2 mode.

If you have any questions, please contact your regional distributor,
or Netstor Technology, Taiwan.



Netstor Technology Co. Ltd.

🏠 6F, No. 1, Alley 16, Lane 235, Baoqiao Rd., Xindian District,
New Taipei City 231-45, Taiwan, R.O.C.

🌐 www.netstor.com.tw

✉ sales@netstor.com.tw

☎ +886 2 2917 1500