



2.5" / 3.5" USB 3.0 SSD/HDD RAID SATA enclosure



User Manual
DA-71116 / DA-71117

1 Introduction

1.1 Features

- Supports Big (JBOD), RAID0, RAID1, Normal mode
- Enhanced data protection and high-performances storage
- Automatic disk rebuild
- Support with USB3.0 high speed reach up to 5.0Gbps
- Supports plug and play
- Support mode select by RAID switch

1.2 Specifications

Inner Interface:	SATA I/II/III
Outer Interface:	USB3.0
Date Transfer rate:	Support USB 3.0 super-speed (5Gbps), Complies with USB 2.0 high speed (480Mbps), USB 1.1 Full speed (12Mbps)
Suitability:	DN-71116: 2 x 2.5" SATA I/II/III HDD DN-71117: 2 x 3.5" SATA I/II/III HDD Supports Plug-play and Hot-plug
Power Supply:	DN-71116: DC5V supplied by the Computer DN-71117: AC 100~240V, 50~60Hz; DC 12V, 2.5A
Material:	Aluminum
OS Compatibility:	Windows 2000/XP/Vista/7/8/10, Linux and MAC OS 10.6 or above
Dimension :	DN-71116: 152 x 85 x 28.5 mm (L x W x H) DN-71117: 220 x 120 x 68 mm (L x W x H)

1.3 System Requirements

PC Requirements

- Minimum Intel Processor Pentium II/50MHz, 64MB RAM
- Windows 2000 / XP / VISTA / 7 / 8 / 10
- Active USB port

MAC Requirements

- Minimum Apple G processor, 64MB RAM
- Mac OS 10.6 and above
- Active USB port

Supported Hard Drives

- **DN-71116:** One or two 2.5" SATA I/II/III hard drives
- **DN-71116:** Capacity up to 2TB X 2
- **DN-71117:** One or two 3.5" SATA I/II/III hard drives
- **DN-71116:** Capacity up to 4TB or more x 2
- Hard drives of identical capacities are recommended
- Supports large volumes in 2TB

Note: *In order for the computer to access volumes larger than 2TB. Both the hardware and OS need to have the capacity to support large volumes (e.g.: Windows 7/Vista or Mac OS 10.4 and above).*

1.4 Package Contents

- 1x 2-bay RAID storage enclosure
- 1x Power supply
- 1x USB3.0 cable
- 1x **DN-71116:** DC power cable
- 1x **DN-71117:** Power supply
- 1x Manual

2 RAID Function

What is RAID?

RAID (Redundant Array of Independent Disks) is a set of technology standards for teaming disk drives to improve fault tolerance and performance

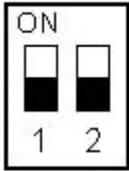
Why RAID?

Increased data protection. If in an unfortunate event where a drive fails, the same data is preserved on the mirrored drive. Intelligent array controllers can apply different types of RAID for different hard disk drives. Increased overall network system data capacity. Increased I/O read/write efficiency.

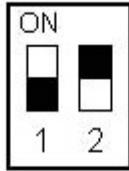
Setting the RAID Mode:

The RAID mode should be set before installing the drives and then first formatting the drives.

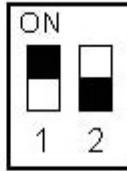
1. Open the rear cover and pull out the plastic frame from the aluminum-shell.
2. Set the RAID switch and select your preferred RAID mode. There have 2 mode switch in the inner of the product, it can form 4 kinds of different ways through these 2 switches, it can realize 4 kinds of different functions as below:



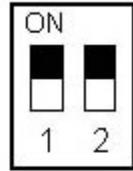
Normal Mode
[OFF/OFF]



BIG Mode
[OFF/ON]



RAID0 Mode
[ON/OFF]



RAID1 Mode
[ON/ON]

3. Install the hard drives and replace the rear cover.
4. Connect the product into the PC USB 3.0 port by USB3.0 cable, HDD LED should turn ON to indicate the SATA hard drives were detected.
5. Format the drives.
6. Done

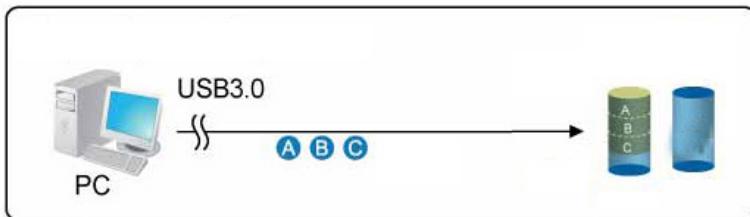
Note: Changing the RAID mode will require you to re-format the drives. Make sure to backup all existing data first!

※ Normal Mode (Non-Raid):

Normal mode, it's the default setting of HDD enclosure, and will not use any RAID mode. In Normal condition, both of the two hard disk mode inside the enclosure are in independent operation state, and also will be identified as the two separate hearts in the system, users can choose any hard drive for storing files. If one piece of hard disk is damaged, the other piece of hard disk data would not be influenced.

❖ **BIG Mode (JBOD or Spanning):**

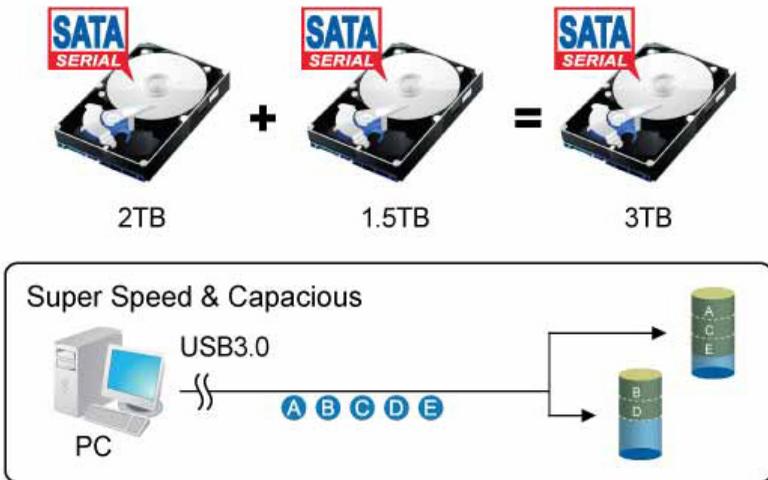
BIG model, in this mode, 2 hard disks will simply be bound for one, the merger hard drive performance and literacy speed will be same as single block of hard disk, the total capacity of the portable hard disk equal to the sum of 2 hard drives of capacities. Once writing data, the system specify date and start storage from the first disk, when the storage space of the first disk use up, the data will start be stored from the back disk in turns. If the data in the first disk appears damaged, all of the data in the two hard disks will be totally lost.



❖ **FAST Mode(Striping):**

FAST mode it's also our familiar RAID 0 mode. In RAID 0 state, data storage is divided into two parts, respectively in two hard

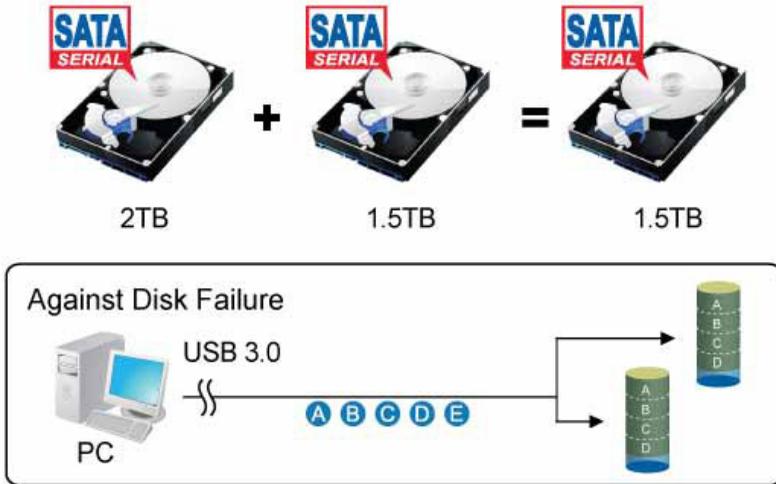
disk storage, then the theory storage speed of hard disk is twice the one of single block hard disk, the actual capacity equals to twice the smaller capacity of the one hard drive(between the two hard disk). The deficiency of RAID 0 is that any piece of hard disk is failure; the whole RAID on data will not be restored. Note: It's more suitable for copying HD movie



※ **SAFE Mode(Mirroring):**

Safe mode also is RAID 1 mode in this state, 2 hard drives are closely mirrored. The actual capacity of portable hard drive equals to the smaller capacity one, storage speed is same as a single block of hard disk. The advantage of RAID 1's lies that any piece of hard disk stored data losing, others can not lose, its weakness is the capacity loss of hard drive is bigger.

Note: For very important material, such as databases, personal data, this is an absolutely safe storage solution.



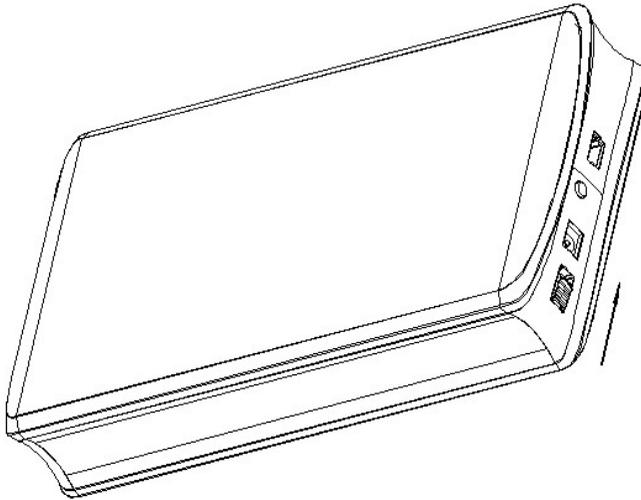
3 System Setup

3.1 Hard Drive Assembly

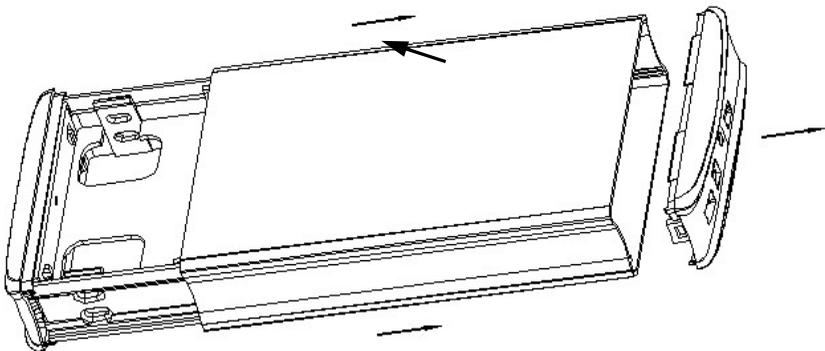
For DN-71116

The drives can be installed at any position, there is no specific order required.

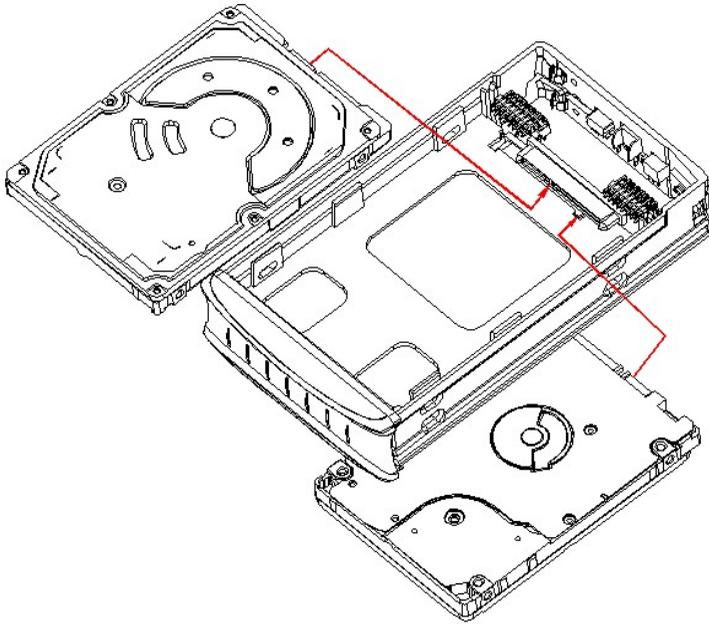
Step 1: Unlock the switch at the rear cover and open it.



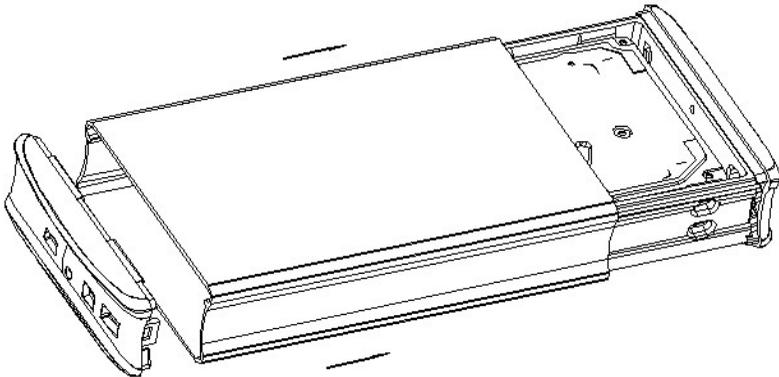
Step 2: Pull out the plastic frame from the aluminum-shell



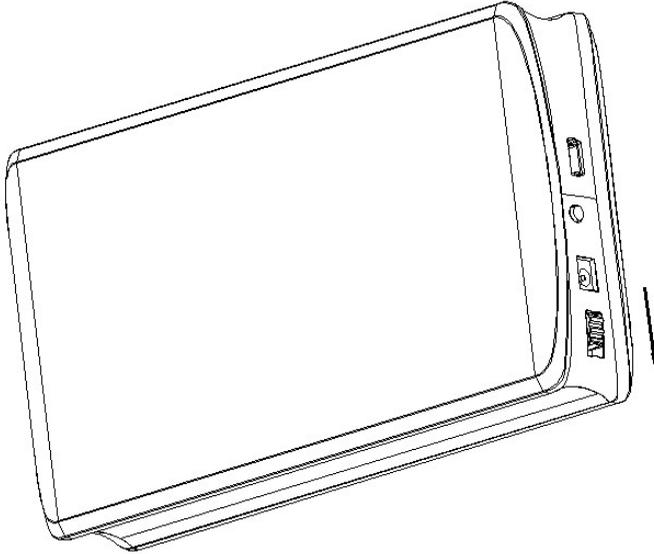
Step 3: Insert the HDDs to 7+15P SATA connectors on the PCBA Corresponding. Fix two HDDs by the screws



Step 4: Inset the plastic frame into the aluminum housing



Step 5: Close the rear cover, HDD Installation completed

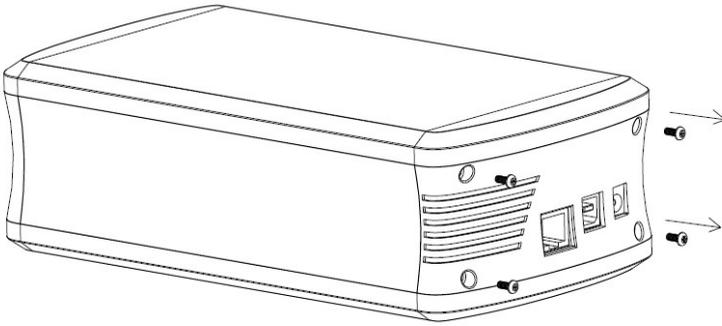


3.2 Hard Drive Assembly

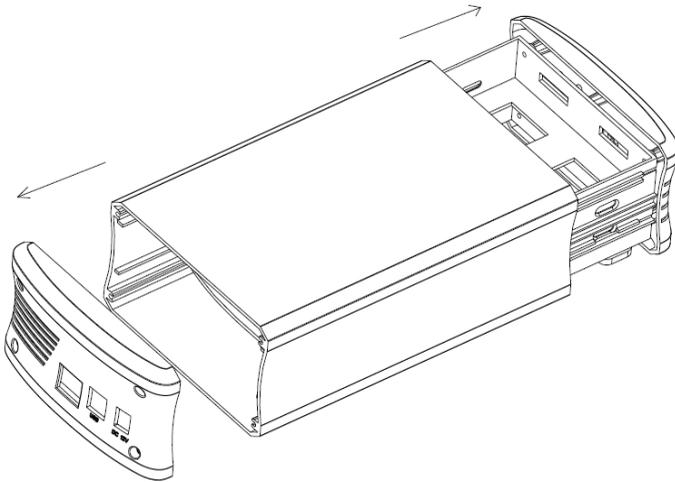
For DN-71117

The drives can be installed at any position, there is no specific order required.

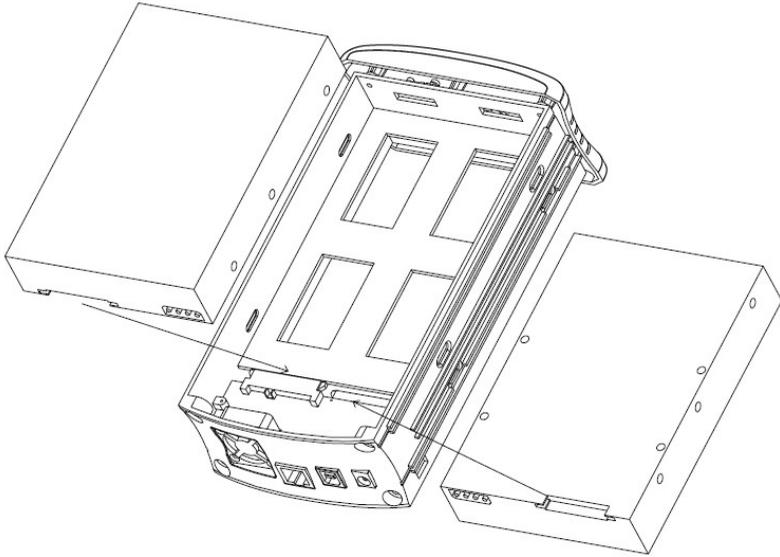
Step 1: Take out the four screws on the back



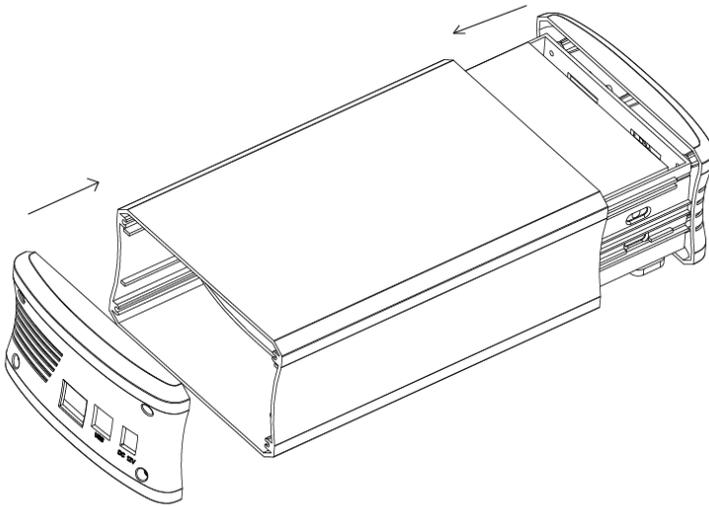
Step 2: Pull out the plastic frame from the aluminum-shell



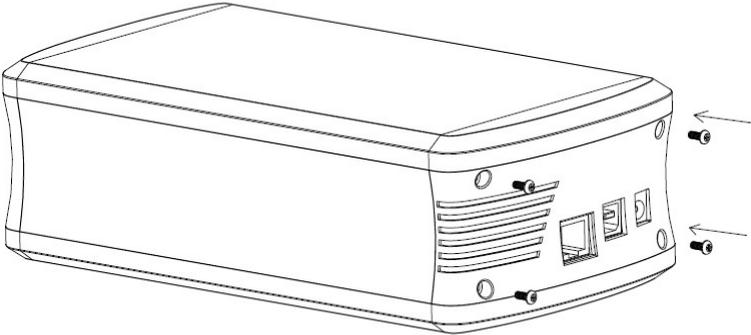
**Step 3: Insert the HDDs to 7+15P SATA connectors on the PCBA
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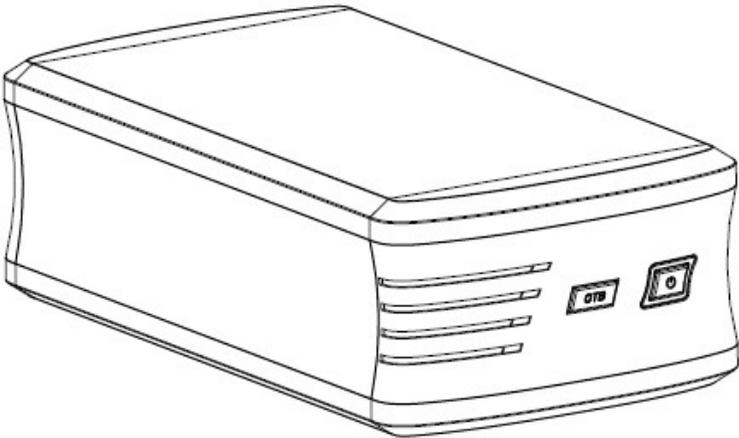
Step 4: Inset the plastic frame into the aluminum housing



Step 5: Fix the back panel by four screws



Step 6: HDD Installation completed



3.3 Connect to computer

1. Connect one end (type Mini) of the USB cable into the mini USB Port of your HDD enclosure.
2. Connect the other end of the USB cable (type A) into any active USB port of the computer.
3. Connect Power supply to the enclosure and power up the enclosure
4. Let OS search and install the driver automatically.
5. Use the disk management tool (PC) or disk utility (MAC) to create a new partition and format the drives
6. Open “My Computer” to see your external hard drive ready to use.

NOTE:

To enjoy USB 3.0 super speed up to 5Gbps, your computer must be equipped with built-in USB 3.0 ports, or a USB 3.0 host PCI-e card

Should use DC power cable to connect the computer for providing extra power.

It is not possible to add more drivers to an existing RAID array without re-formatting it. When adding additional drivers at a later point, they will only be detected after the device has been restarted and the drivers have been re-formatted.

3.3 Files Backup Application

Please consult the help of application software for the backup application installation and operation.

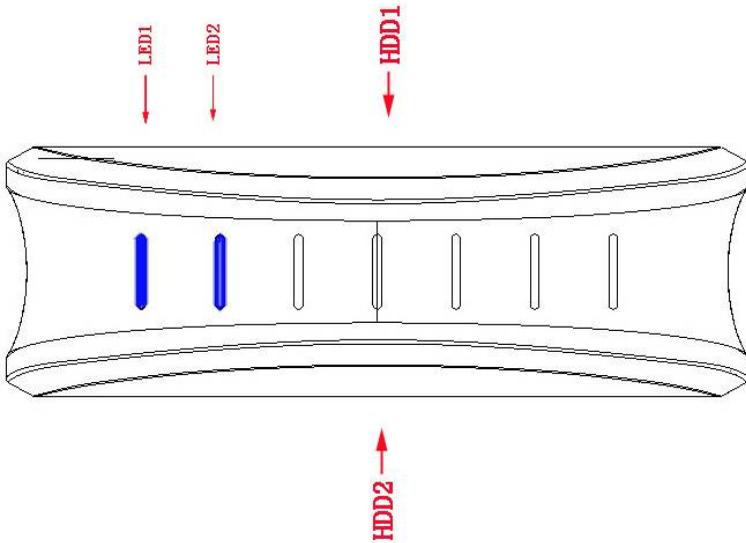
3.4 Replacing Hard Drives

When one drive fails, the HDD LED will display below state:

Model DN-71116:

If HDD1 Fails: LED1 off

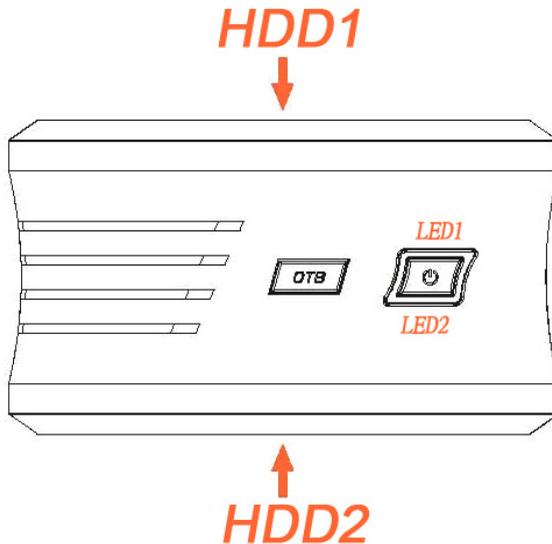
If HDD2 Fails: LED2 off



Model DN-71117:

If HDD1 Fails: LED1 off

If HDD2 Fails: LED2 off



If one drive fails and the RAID mode is set to RAID0 or BIG (JBOD), the data will be lost and the system can not be accessed again until the drive have been replace. Check the HDD LED state and replace the faulty drive. The power must turn off when replacing the driver.

1. For RAID 1, the RAID array will be rebuilt automatically. During this process, the HDD LED will flash (HDD R/W). Rebuilding the RAID array will take several

hours, depending on the drive capacity. If RAID rebuilding is OK, the HDD LED will keep light normally. If the capacity of the new drive is less than the previous drive, the HDD LED will display as above state. The rebuild process can not be completed.

2. For RAID 0 and JBOD, restart the system and then format the drives again.
3. For Non-RAID (Normal Mode), simply format the new drive.

Note: We recommend not turning off the power during the rebuild process but if the process is interrupted, it will continue rebuilding the data as soon as the power is turned back on.

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