SY-ENC25042

2.5" 2-BAY RAID Storage Enclosure

User Manual

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
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:2 x 2.5" SATA I/II/III HDD
Supports Plug-play and Hot-plug
Power Supply: DC5V supplied by the Computer

Material: Aluminum

OS Compatibility: Windows 2000/XP/Vista/7/8, Linux and MAC OS 10.6 or above

Dimension: 152*85*28.5 mm (L x W xH)

1.3 System Requirements

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

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

Supported Hard Drives
- One or two 2.5" SATA I/II/III hard drives
- capacity up to 2TB X2
- 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
- 2-bay raid storage enclosure
- Power supply
- USB3.0 cable
- DC power cable
- 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:
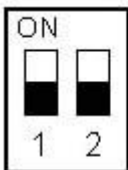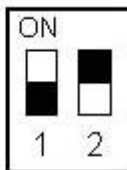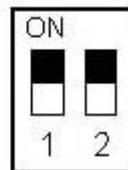

Normal Mode [OFF/OFF]   BIG Mode [OFF/ON]   RAID0 Mode [ON/OFF]   RAID1 Mode [ON/ON]

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 drivers.Make sure to backup all existing data first!

※ **Normal Mode (Non-Raid):**

Normal mode is the default setting of HDD enclosure, and will not use any RAID mode. In Normal mode, both of the two hard disks inside the enclosure are in an independent operation state, and also will be identified as two separate drives in the system explorer. Users can choose any hard drive for storing files. If one hard drive is damaged, the other hard drives data will not be affected.

※ **JBOD Mode (Spanning):**

In JBOD mode two hard drives will be merged into one. Performance and literacy speed will be the same as a single hard drive. The total capacity of the portable hard drive is equal to the sum of the two hard drives combined. When writing data to the JBOD array, the system will write date to the first disk. When the storage space of the first disk is full the data will start be stored on the second disk. If the data in the first disk is damaged, then all data in the array will be lost.
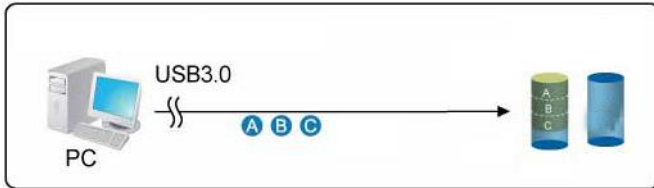
※ RAID0 (Striping):

A RAID0 array divides data into two parts respectively in the two hard drives. The theoretical storage speed of the array is twice that of a single drive, and actual capacity equals twice the size of the smallest capacity hard drive(between the two hard drives). The deficit of a RAID0 array is that if any hard drive fails the entire RAID array will not be restored, and the data will be lost.
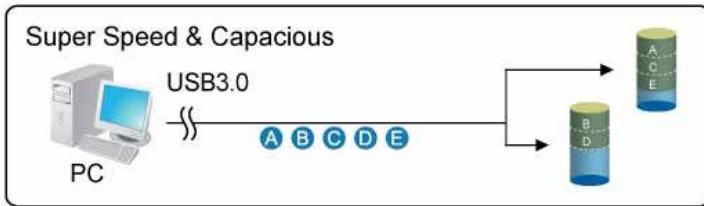
※ RAID1 (Mirroring):

A RAID1 array mirrors data written to the two hard drives equally. The capacity of the array is equal to the smallest capacity drive in the array. Storage speed is same as a single drive. The advantage of RAID1 is that if any hard drive fails the other drive will still carry all data written to the drives. Its deficit is that the maximum capacity of the array is equal to the smallest drive in the array..

Note: For very important material, such as databases or personal data, this is an absolutely safe storage solution.
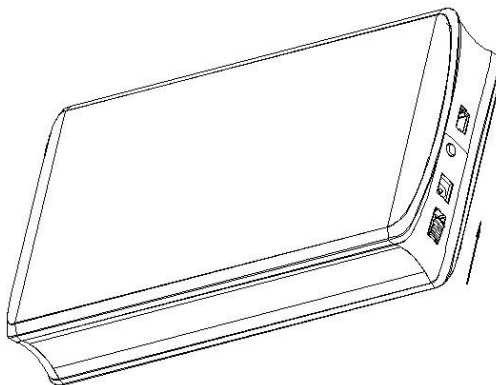
2TB   1.5TB   1.5TB

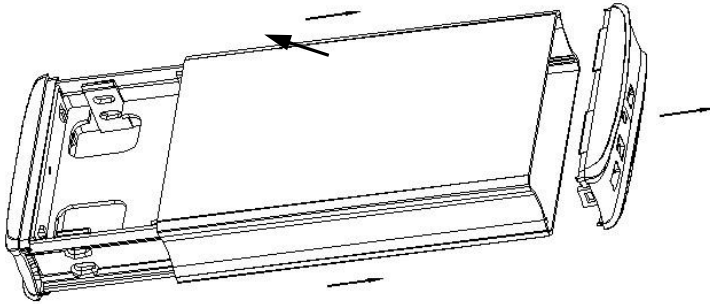Against Disk Failure

USB 3.0

PC   Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
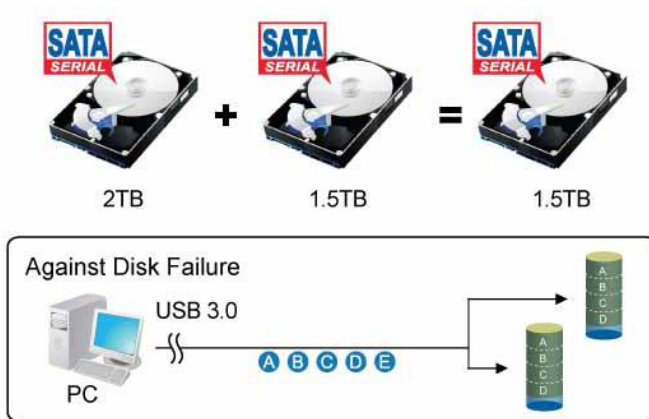
3 System Setup

3.1 Hard Drive Assembly

The drives can be installed at any position, there is no specific order required.
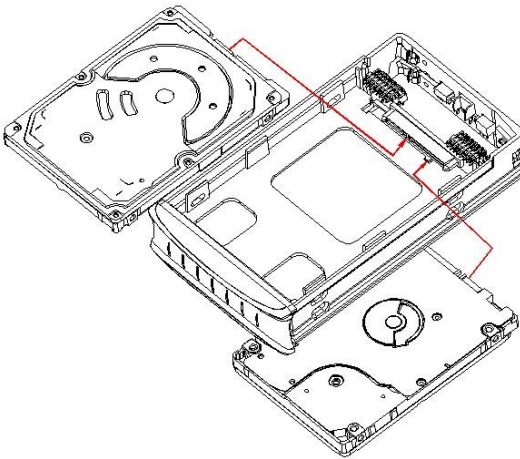
Step 1: Unlock the switch at the rear cover and open it.

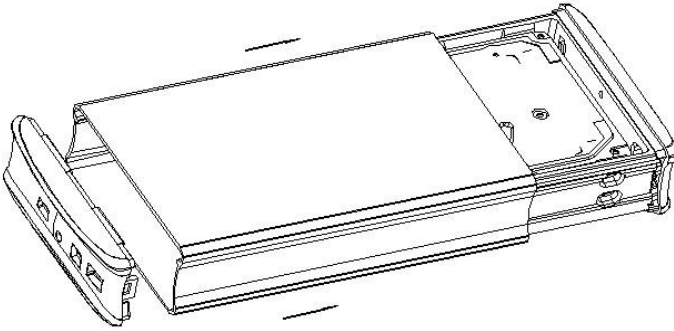Step 2: Pull out the plastic frame from the aluminum-shell

Step 3: Insert the HDDs to the 7+15P SATA connectors on the PCBA. Attach the two HDDs with the included screws
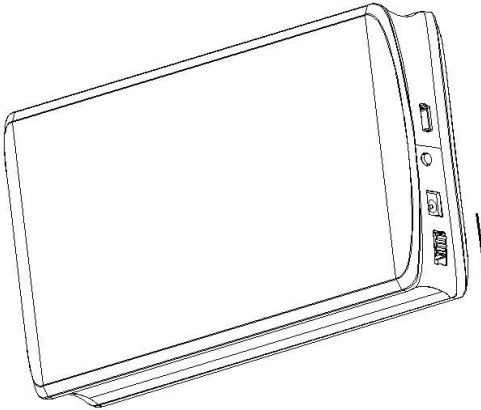

Step 4: Inset the plastic frame into the aluminum housing

Step 5: Close the rear cover, HDD Installation completed

3.2 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

Use the included DC power cable to provide 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.
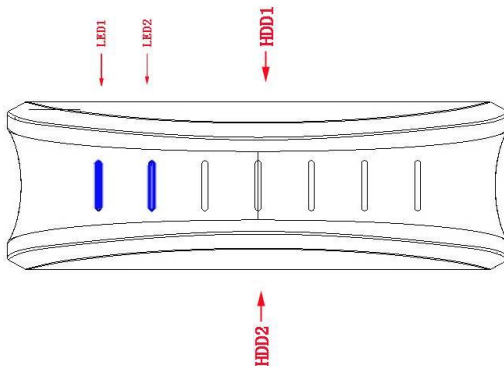
3.3 Files Backup Application

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:

If HDD1 Fails: LED1 off

If HDD2 Fails: LED2 off

If one drive fails and the RAID mode is set to RAID0 or JBOD,the data will be lost and the system can not be accessed again until the drive have been replace.

1. Check the HDD LED state and replace the faulty drive.The power must turn off when replacing the driver.
2. 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 the RAID is rebuilding properly, the HDD LED will be stable. If the capacity of the new drive is less than the previous drive, the HDD LED will display as above, and the rebuild process can not be completed.
3. For RAID 0 and JBOD, restart the system and then format the drives again.
4. 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.

FAQs:

Q: Can I use external USB hub?
A: Yes, USB hub works in the same way as the computer USB ports
Q: My computer doesn't have USB 3.0 port, Can I use USB 3.0 host adaptor?
A: USB 3.0 host adapter works in the same way as the built-in USB ports.
Q: What file system should I choose to format my drive?
A: This will depend on how you want to use the drive but in general,we recommend:

Windows XP/VISTA/7/8 → NTFS
Mac OS X → HFS+ (Mac OS Extended)
To use it on both PC and Mac → FAT32 (single file size is limited to 4GB)

Q: How many drives can fail before I loose my data?
A: For RAID 0 and JBOD, any drive failure will result in the data being lost. For RAID 1, more than one drive failure at the same time will mean the data can not be recovered anymore. For Non-RAID, only the data on the defective drive will be lost.