

DataTale AIR 2-Bay RAID System

for 2.5" SATA HDD



User's Manual

USB 2.0
eSATA
FireWire 800



Table of Contents

GENERAL INFORMATION.....	4
COPYRIGHT.....	4
NOTICES AND CLASSIFICATIONS.....	4
FCC-B Radio Frequency Interference Statement	4
CONTACT US.....	4
Data Watch Technologies Co., Ltd.....	4
PRECAUTIONS FOR THE RAID UNIT	5
GENERAL PRECAUTIONS.....	5
RAID UNIT PRECAUTIONS.....	5
INTRODUCTION.....	6
FEATURES.....	6
SYSTEM REQUIREMENT.....	7
PC.....	7
MAC.....	7
SYSTEM UNIT VIEWS.....	8
FRONT VIEW.....	8
INSIDE VIEW.....	8
BOTTOM VIEW.....	9
PACKAGE CONTENTS.....	9
INSERTING HARD DRIVES IN THE RAID UNIT.....	10
FASTEN THE HDD PLACEMENT HOLDER ONTO THE HDDS.....	11
RAID MASTER.....	16
INSTALLATION	16
RAID MASTER MENU.....	17
RAID MASTER: OPERATION.....	18
CREATE A RAID.....	18
CHANGING THE MOST RECENT ASSIGNED RAID MODE.....	20
DELETING AN ASSIGNED RAID MODE.....	22
REBUILD.....	24
MIXED RAID STATUS.....	28
DEVICE INFORMATION.....	30
NUMBER OF DISKS SUPPORTING EACH RAID MODE.....	31
LED INDICATORS.....	31
POWER LED.....	31
DISK LEDS.....	31
DISK VOLUME OVER 2TB.....	32
SAFE REMOVAL OF THE RAID UNIT.....	32
RAID MODES.....	33
RAID 0 (STRIPING).....	33

RAID 1 (MIRRORING).....	34
SPAN (LARGE).....	34
JBOD (NON RAID).....	35
Q&As	36
GENERAL.....	36
DAISY CHAIN.....	36
OLD HDDs.....	36
HDD SIZE.....	36
HDD CAPACITY.....	37
DISCREPANCY IN REPORTED & ACTUAL SIZE CAPACITY.....	37
REBUILD.....	37
RAID MASTER: CONNECTION RESTRICTION.....	37
OVER 2TB	38
LINUX.....	39
APPENDIX.....	40

GENERAL INFORMATION

COPYRIGHT

Copyright © 2010 Data Watch Technologies Co., Ltd. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written consent of Data Watch Technologies Co., Ltd.



The product information provided in this manual is subject to change without prior notice and does not represent a commitment on behalf of the vendor. The vendor assumes no liability or responsibility for any errors that may appear in this manual.

NOTICES AND CLASSIFICATIONS

FCC-B Radio Frequency Interference Statement

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.



This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

CONTACT US

We are committed to offer economical, high-quality connectivity and storage enclosure solutions to the market. Your questions, inquiries or comments are welcomed. For the latest version of User Manual & Technical Support, please go to our website at www.datawatchtech.com.

Data Watch Technologies Co., Ltd.

3F, No. 60, Lane 321, Yang Guang St.,

Nei Hu, Taipei 114 Taiwan

Tel: +886-2-8797-8868

Fax: +886-2-8797-4801

Email: info@datawatchtech.com

PRECAUTIONS FOR THE RAID UNIT

GENERAL PRECAUTIONS

- The main circuit board of the RAID Unit is susceptible to static electricity. Proper grounding is required to prevent electrical damage to the RAID Unit or other connected devices, including the host computer. **Always** place the RAID Unit on a smooth surface and avoid all dramatic movement, vibration and percussion.
- Do **NOT** allow water to enter the RAID Unit.
- Do **NOT** place the RAID Unit close to magnetic devices (such as a mobile phone), high-voltage devices (such as a hair dryer), or near a heat source (such as on the dashboard of a car or any place where it will be exposed to direct sunlight).
- **Use only** the power supply cable provided with the RAID Unit.
- **Can use both** 9.5mm or 12.5mm high 2.5" SATA HDDs inside the RAID Unit.
- Do **NOT** attempt to service this RAID Unit yourself. Please contact Technical Support regarding any parts other than ones mentioned in the "Installation" section of this User's Manual.
- Do **NOT** block the ventilation. Proper airflow is required to ensure reliable operation and to prevent overheating.
- Do **unplug** the RAID Unit from the electrical outlet when not in use to provide an ecological friendly environment.

RAID UNIT PRECAUTIONS

- Installation of RAID MASTER software in the host computer is required for proper operation.
- **Any loss, corruption, or destruction of data is the sole responsibility of the user of the RAID Unit. Under no circumstances will the manufacturer be held liable for the recovery or restoration of any data.**

INTRODUCTION

Thank you for purchasing the DataTale AIR (RS-S2TJ, 2.5-inch 2-HDD RAID System). The DataTale AIR with RAID MASTER (Graphic User Interface) provides considerable storage capacity with general high-tech RAID configuration options in a desktop storage device. The RAID MASTER allows easy configuration of RAID Modes: JBOD (Non RAID), RAID 0 (Striping), RAID 1 (Mirroring), and Span (Large).



Please read thoroughly and follow the instructions provided in this manual. Failure to do so may result in damage to the RAID Unit, and any or all of the connected devices.

FEATURES

- Supports current 2.5-inch (9.5mm or 12.5mm thick) SATA II compliant HDDs, fully backward compatible with SATA 1.0 and SATA 1.0a compliant HDDs
- Supports over 2TB storage capacity
- Connects flexibly via Hi-Speed USB (USB2.0 connection), IEEE 1394b (FireWire 800 connection), or eSata (eSATA connection)
- Combines RAID Unit and 1394 repeater functionality
- Provides JBOD (Non RAID), RAID 0 (Striping), RAID 1 (Mirroring), and SPAN (Large) for effective storage management
- Supports Rebuild under Raid 1 mode
- Configures RAID modes easily using RAID MASTER, no IT expertise required
- Monitors RAID Unit status via LED indicators or RAID MASTER
- Powers RAID Unit via FireWire 800 bus power, or AC/DC Power Adapter
- Includes a black pouch, easy for travel with plenty of protection

SYSTEM REQUIREMENT

PC

- 266MHz or faster CPU (Windows Vista requires a minimum 800MHz CPU)
- 64MB of RAM (Windows Vista requires 512MB of RAM)
- Microsoft Windows 2000, XP, 2003, Vista, 2008, 7, or higher
- One available USB 2.0, eSATA, or IEEE 1394b port

MAC

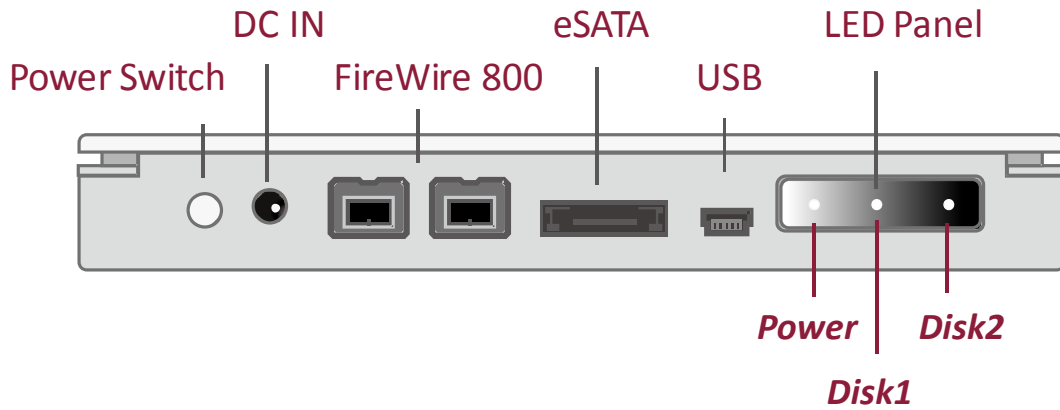
- Macintosh PowerPC or Intel processors
- 64MB of RAM (Mac OS X 10.4 requires 256MB of RAM)
- Mac OS X 10.4 (Intel) or higher
- One available USB 2.0, eSATA, or IEEE 1394b port
- Time Machine Compatible




2.5-inch SATA compatible hard drive is required for the RAID Unit. Once the HDD(s) is/are formatted, the actual available storage capacity can vary depending on the selected operating environment (normally 5-10 % less).

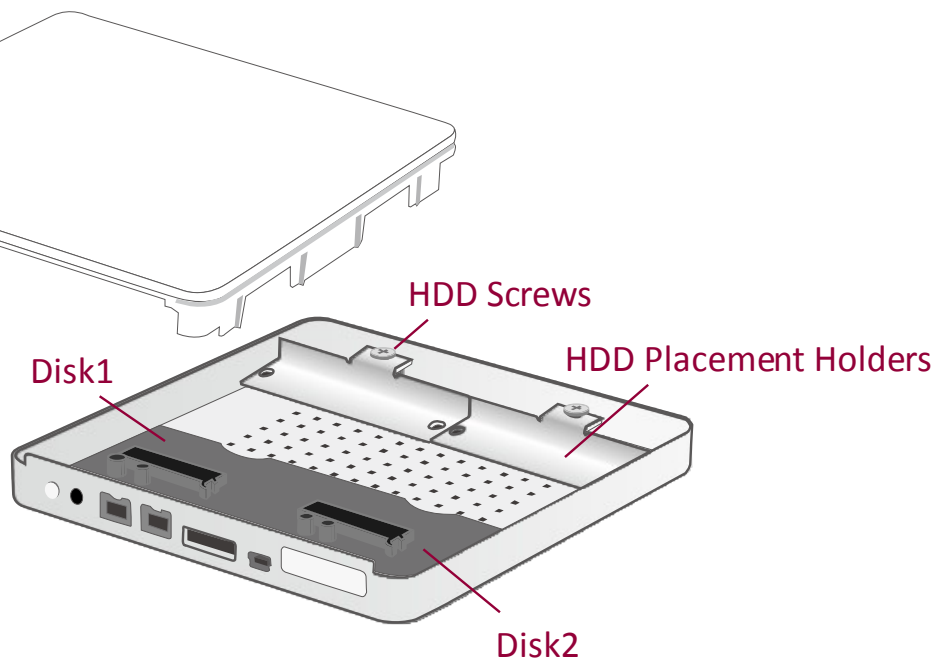
SYSTEM UNIT VIEWS

FRONT VIEW

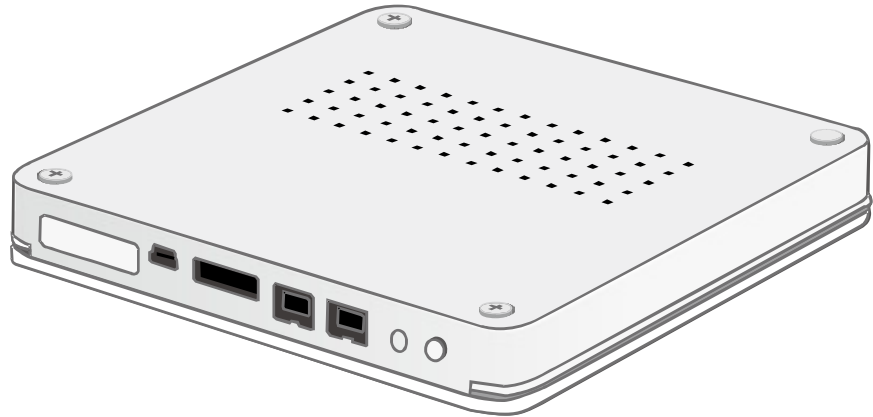


 The status indication of each LED indicator is listed under the LED INDICATORS section.

INSIDE VIEW



BOTTOM VIEW



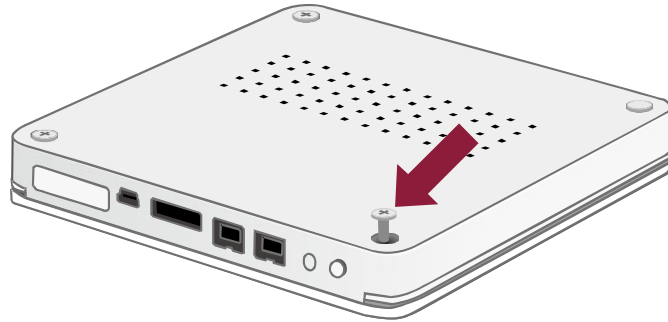
PACKAGE CONTENTS

- RS-S2TJ 2.5-inch RAID Unit
- Power Adapter
- FireWire cable
- eSATA cable
- USB cable
- 4 HDD Mounting Screws
- Carrying Case
- User Guide

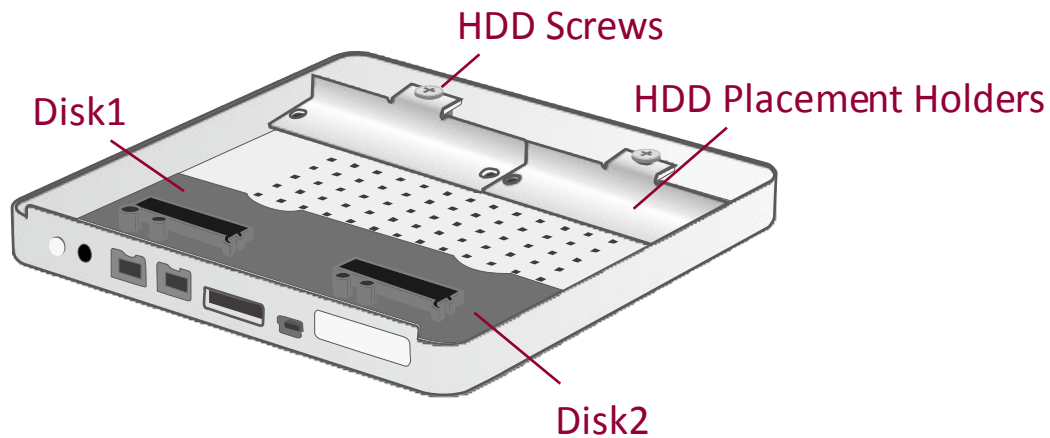
INSERTING HARD DRIVES IN THE RAID UNIT

To assemble the RAID Unit, please follow the steps listed in the instructions below:

1. Place the RAID Unit with its Bottom View facing you. Unfasten all four (4) Casing Screws with a Phillips screwdriver. Afterwards, turn the RAID Unit to its Cover side.

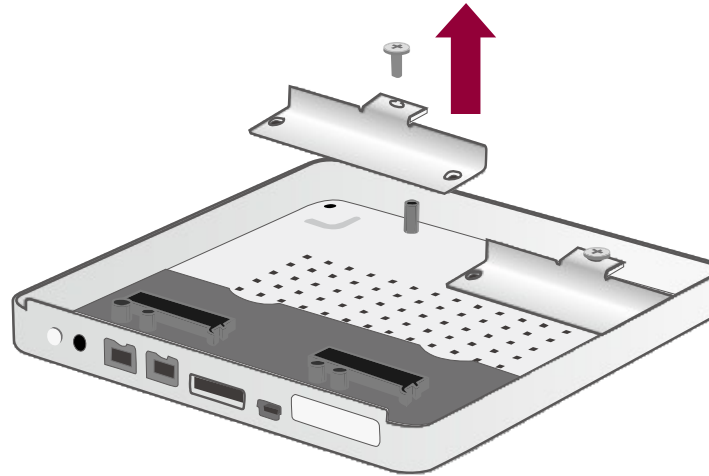


2. Lift the Cover upward to remove it. When opened, the PCBA boards (Printed Circuit Board) should be securely in place inside the RAID Unit.

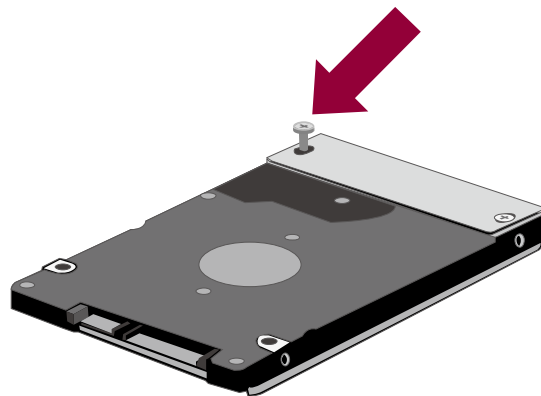


FASTEN THE HDD PLACEMENT HOLDER ONTO THE HDDS

3. Unfasten the HDD Screw from the HDD Placement Holder(s) to remove from the Bottom casing.

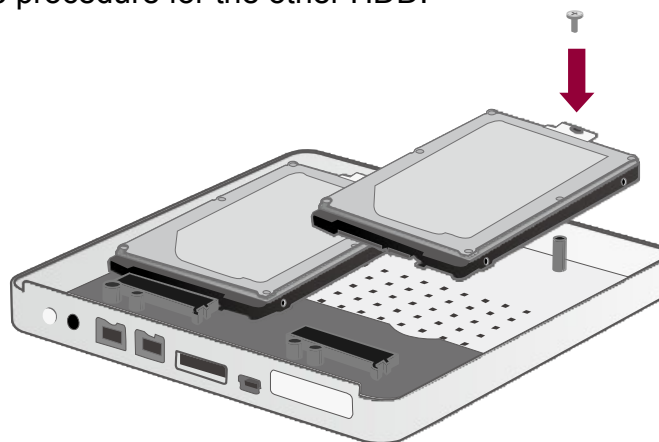


4. Position the HDD Placement Holder onto the HDD end, facing away from the interface connectors and aligned with the screw hole openings. Fasten the HDD Placement Holder onto the HDD by inserting and tightening two (2) HDD Screws on both ends of the HDD Placement Holder.

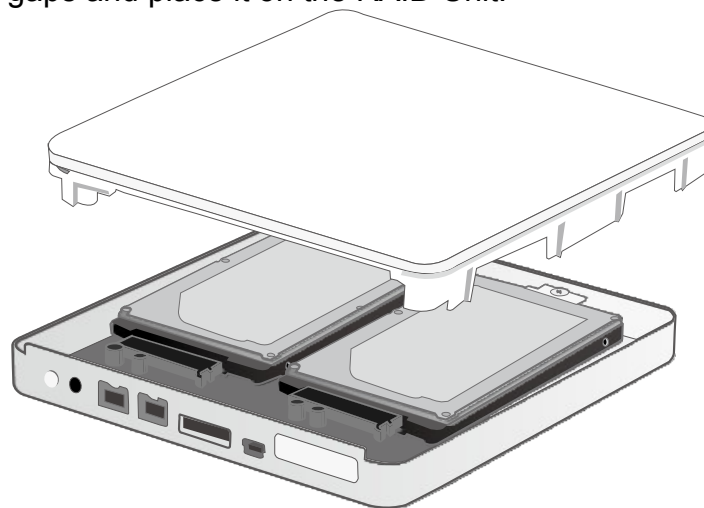


Repeat Steps 3 and 4 for the other HDD.

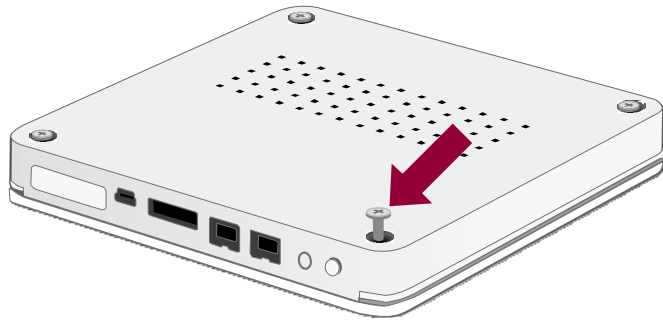
- Carefully insert the SATA connector of the HDD into the slot on the PCBA board until it's firmly connected, ensuring that the hard drive and HDD Placement Holder's alignment are properly situated. Then, re-fasten and tighten the HDD Screw previously removed from the HDD Placement Holder and the casing. Repeat the same procedure for the other HDD.



- Place the RAID Unit facing you. Align the Cover according to the appropriate interface opening gaps and place it on the RAID Unit.



7. Once the Cover is placed on the RAID Unit, use both hands to firmly hold and turn the RAID Unit to its Bottom View. Find the four (4) Casing Screws previously taken out before and re-fasten them in the appropriate screw holes.




CONNECTING THE RAID UNIT TO A COMPUTER

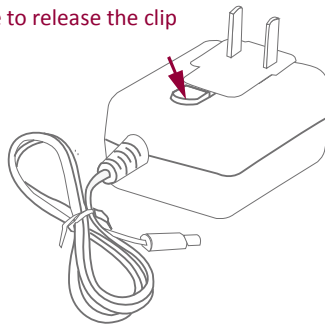
To connect the RAID Unit, please complete the following steps:

1. Connect the AC/DC Power Adapter to the RAID Unit.

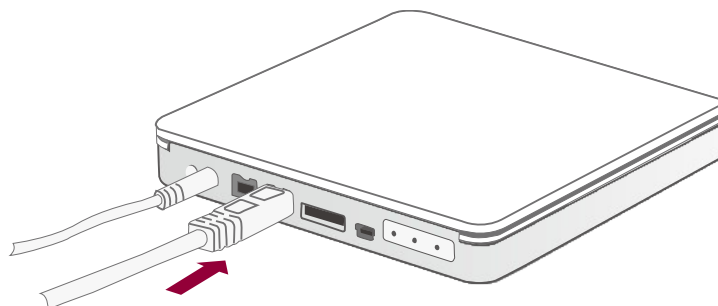



 If need to change the Adapter Head, press the click release to slide off the existing Adapter Head from the AC/DC Adapter. Then, replace it with a different Adapter Head in the same manner.

Press here to release the clip

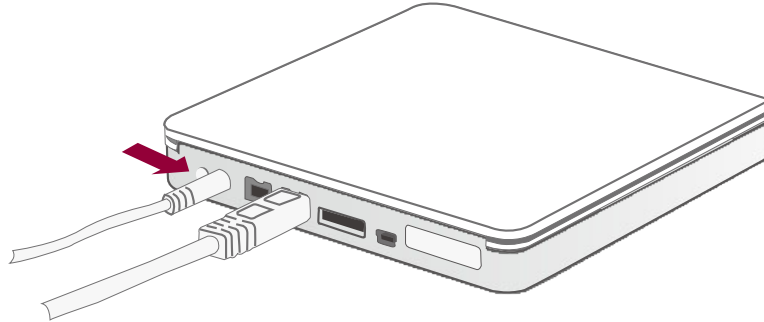



2. Insert both ends of the USB 2.0, eSATA, or FireWire 800 cable(s) into the corresponding port of the RAID Unit and the host.




 The RAID Unit should only be connected to a host computer via one interface. Connection of the RAID Unit to a computer via two or more interfaces simultaneously is highly not recommended, especially for data transfers.

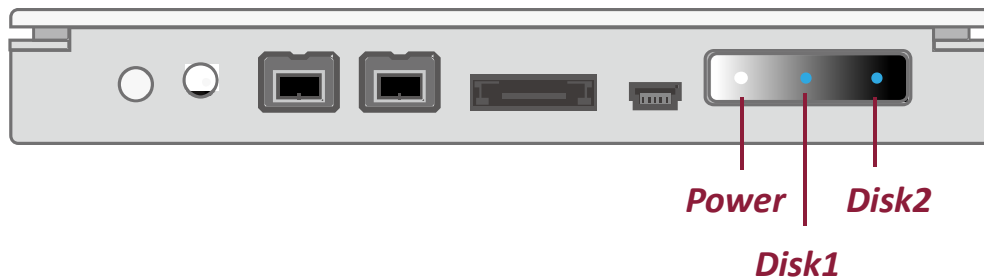
3. Press the Power Switch to “turn on” the RAID Unit.




 The RAID Unit can also be powered by using only the FireWire 800 cable, without the AC/DC Adapter.


 Press the Power Switch for at least 3 seconds when shutting down the RAID Unit.


4. When connected, the Power LED light will become steadily white, and the Disk LED lights will become blue and flash until the HDDs are detected.



 There's no need for any concerns if the Disk LEDs blink or flash in red for a very short period of time during power on. When the HDDs are detected, the Disk LEDs will become and remain in blue.

5. You are now ready to begin using your RAID Unit!

 Due to compatibility issues, if you use the eSATA interface to do the data transfer, the Silicon Image eSATA host controller is highly recommended.

 When using FireWire 800, you can “Daisy Chain” and connect other computer hardware or digital devices to your RAID Unit (such as digital video camera, another HDD, DVD writer, and much more). Please see “Daisy Chain” under “Q&As” Section for more information.

RAID MASTER

The RAID MASTER is a newly-designed GUI Software specifically for our DataTale AIR. The RAID MASTER gives a more convenient yet modern way to manage your RAID Unit.

INSTALLATION

To install the RAID Master, please download software at the following link:

Windows Users: http://oyendigital.com/tech/RAID_MASTER_WIN.zip

1. Upon completion of the download, double-click on the file to unzip it.
2. Drag the folder to the desktop or any preferred location.
3. Open the folder and double-click on RAID MASTER and the menu should appear. You are now ready to configure your RAID.

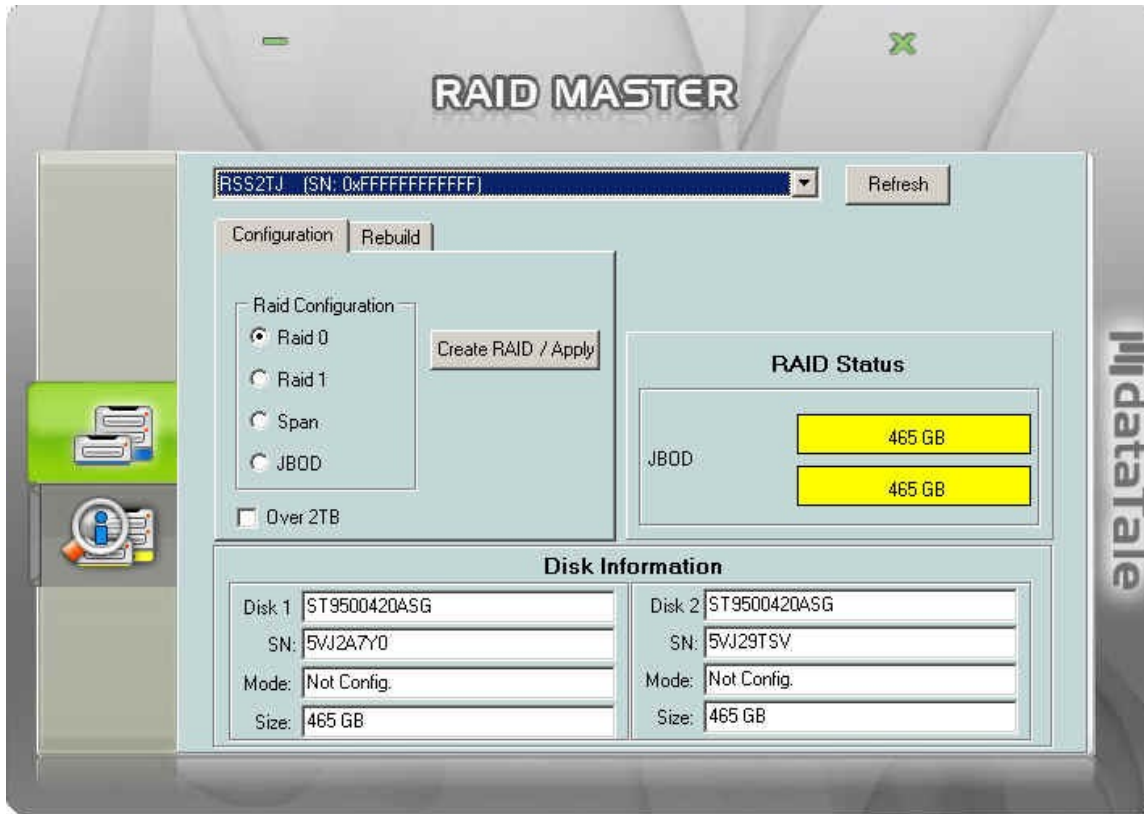
Mac Users: http://oyendigital.com/tech/RAID_MASTER_MAC.zip


1. Upon completion of the download, open the file to begin the installation.
2. The RAID Master GUI will be available in the Applications folder.
3. Click on the file RAID_Master_Mac to start the GUI. You are now ready to configure your RAID.




The RAID MASTER can **only** configure the RAID when connected via USB 2.0 or FireWire 800. If you choose to use eSATA for data transferring, please set up the RAID configuration via USB or FireWire first.

RAID MASTER MENU




-  **CONFIGURATION & REBUILD:**
 - Shows a single connected RAID unit, or multiple connected RAID Units.
 - Supports RAID configurations under Configuration and Rebuild options
 - Provides HDD(s)' current RAID status
 - Indicates individual HDD(s)' current disk information

-  **DEVICE INFORMATION:**
 - Provides the basic information of the RAID Unit itself, once the RAID Unit is connected to the host: the Device's information, and serial number for each inserted HDDs.

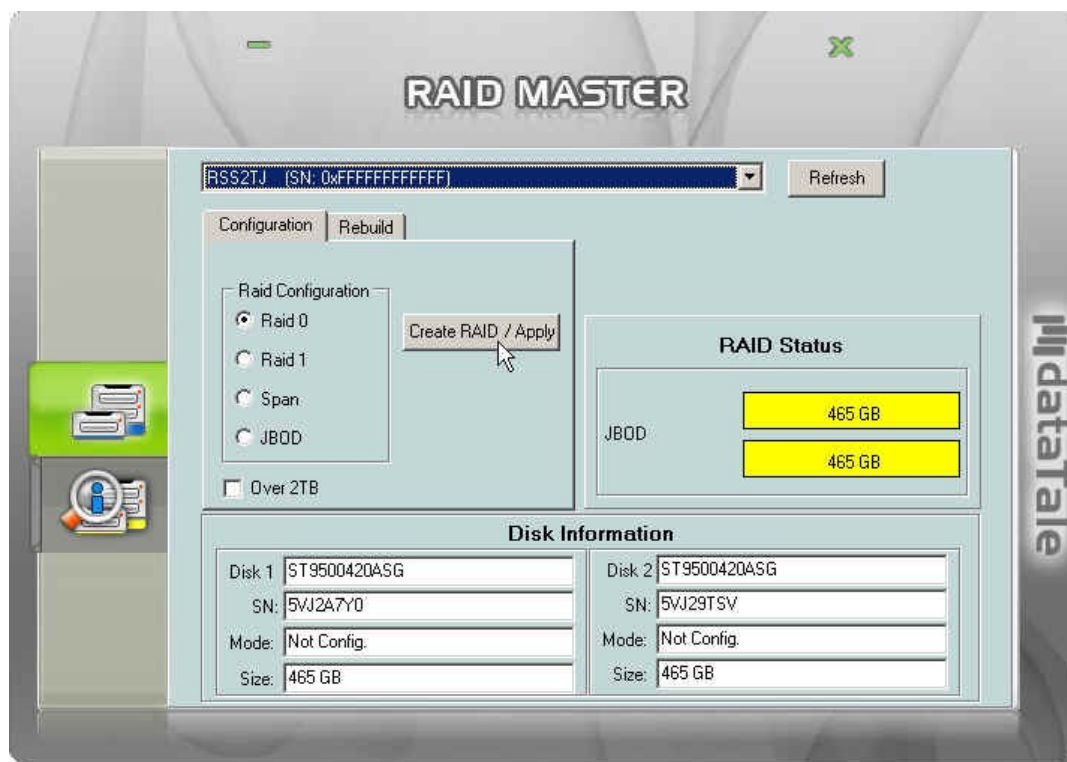
RAID MASTER: OPERATION


CREATE A RAID


To setup RAID functions for the RAID Unit, please complete the following steps:


 Creating a new RAID mode will delete all data stored on the HDD(s). If you have important saved data in the hard drives, backup all data before formatting the RAID Mode.

1. Under the “Configuration” option tab, select the RAID mode preferred and click the “Create RAID/Apply” icon.



 If cannot see what is/are connected as part of the RAID Unit, press the “Refresh” button on top of the first sub-menu (top). The information should appear afterwards.

 Please review the RAID mode options under “RAID MODES” to choose the best suitable RAID mode for your needs and desire. If the number of inserted HDDs does not qualify the quantity needed for a particular RAID mode, the RAID MASTER’S “Create RAID/Apply” icon will not be available to click (faint image).

 If the OS of the host can support more than 2TB HDD(s) storage capacities and

the HDD(s) is/are over 2TB, remember to *check* the “Over 2TB” option under the “Configuration” option tab. Please see “Over 2TB” section under Q&As for more information. Please review the “DISK VOLUME OVER 2TB” section of the User’s Manual for OS support information.

2. Once selected, the RAID MASTER will give an alert popup window stating “all data on disk will be lost. Proceed?”. Click on “Yes” icon to confirm.



3. Once confirmed, the RAID MASTER will begin processing the chosen RAID Mode onto the chosen HDD(s). Once the process is completed, the “RAID Status” and “Disk Information” should reflect the newly assigned RAID mode. The RAID Unit is now ready to be used under the preferred RAID Mode!



CHANGING THE MOST RECENT ASSIGNED RAID MODE

To change the most recent assigned RAID Mode for the inserted HDD(s) of the RAID Unit, please complete the following steps:



Changing the RAID Mode will delete all data stored on the HDD(s). If you have important saved data in the hard drives, backup all data before changing the RAID Mode.

1. Under the “Configuration” option tab, select the RAID mode prefer changing to and click the “Create RAID/Apply” icon.



If the host can support more than 2TB HDD(s) storage capacities and the HDD(s) is/are over 2TB, remember to *check* the “Over 2TB” option under the “Configuration” option tab. Please see “Over 2TB” section under Q&As for more information. Please review the “DISK VOLUME OVER 2TB” section of the User’s Manual for OS support information

2. Once selected, the RAID MASTER will give an alert popup window stating, “all data on disk will be lost. Proceed?” Click on “Yes” icon to confirm.



3. Once confirmed, the RAID MASTER will begin processing the chosen RAID Mode onto the chosen HDD(s). Once the process is completed, the “RAID Status” and “Disk Information” should reflect the newly assigned RAID mode. The chosen HDD(s) RAID is/are now ready to be used under the new preferred RAID Mode!



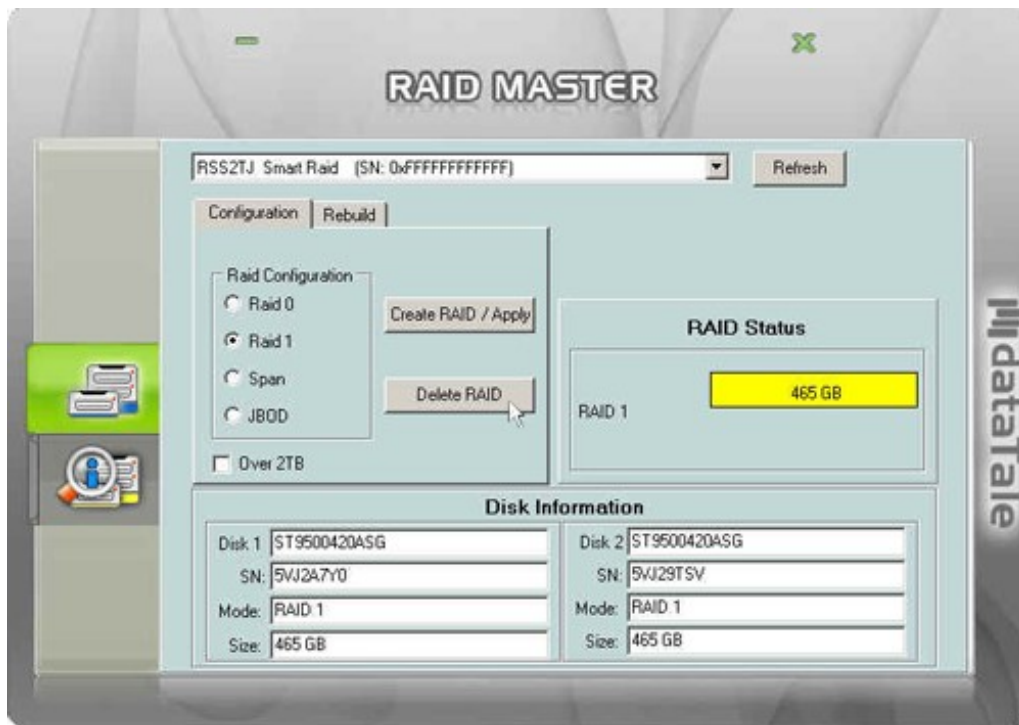
DELETING AN ASSIGNED RAID MODE

To delete an assigned RAID Mode for the inserted HDD(s) of the RAID Unit, please complete the following steps:



Deleting a RAID Mode will delete all data stored on the HDD(s). If you have important saved data in the hard drives, backup all data before deleting the RAID Mode.

1. Under the “Configuration” option tab, click the “Delete RAID” icon to change the HDD(s) into JBOD (Non RAID) disks.



2. Once selected, the RAID MASTER will give an alert popup window stating, “all data on disk will be lost. Proceed?” Click on “Yes” icon to confirm.



3. Once confirmed, the RAID MASTER will begin erasing the old RAID Mode for the chosen HDD(s). Once the process is completed, the “RAID Status” and “Disk Information” should reflect the chosen HDD(s) as JBOD (Non RAID). The chosen HDD(s) RAID is/are now ready to be used under the new preferred RAID Mode!



REBUILD

If one of the HDDs fails, the Disk LED will become red, and the rebuild function can be set up under RAID 1 mode. To setup Rebuild under RAID 1 mode, please complete the following steps:



The use of identical HDDs from the same manufacturer, with the same capacity and RPM is highly recommended.

1. When the failed HDD is removed, a popup window stating “Attention! Hot Swap” will appear. Click on “Ok” icon to continue.




2. Another popup window will appear stating, “Attention! RAID 1 Degrad Mode”. Click on “Ok” to continue.



When one of the HDD has failed, the Disk LED will become red. However, no warnings will appear on RAID MASTER to notify the user. Please pay attention to the Disk LEDs at all times.

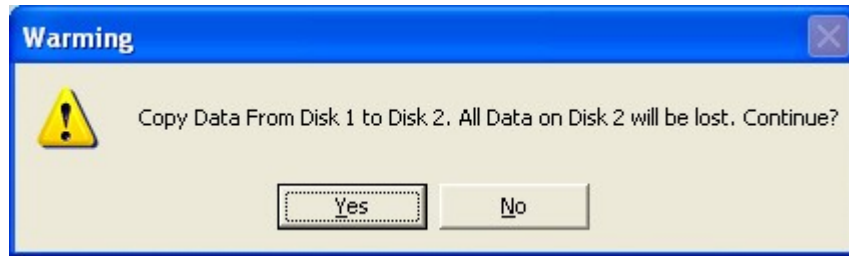
- Then, the “Rebuild” option should appear. Continue by replacing the failed HDD with a functional HDD or inserting a *New* HDD in place of the one removed. The *New* HDD will show up as red “New” and “Not Config”. To rebuild the *New* HDD (the new functional HDD) with the data from the *Old* HDD (the remaining functional HDD) sector by sector, click on the “Rebuild ==>” icon.




-  The *New* HDD may be inserted into either Disk 1 or Disk 2, because the Rebuild feature can be performed in either direction.

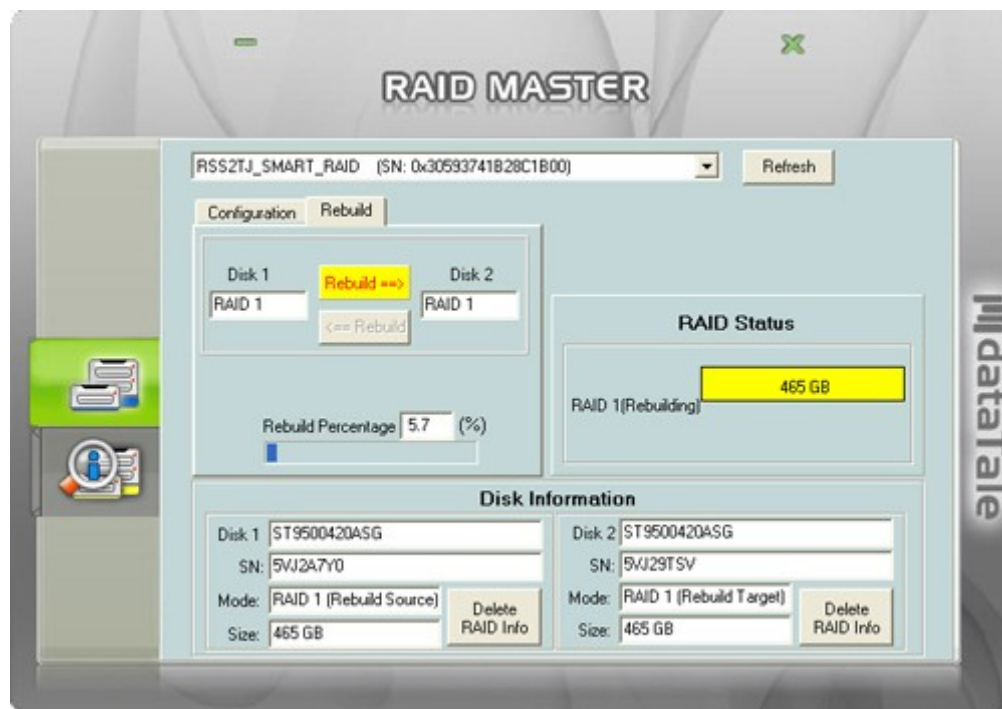



- A popup window stating, “Copy Data From Disk 1 to Disk 2. All data in Disk 2 will be lost. Continue?” Click on the “Yes” icon to confirm.



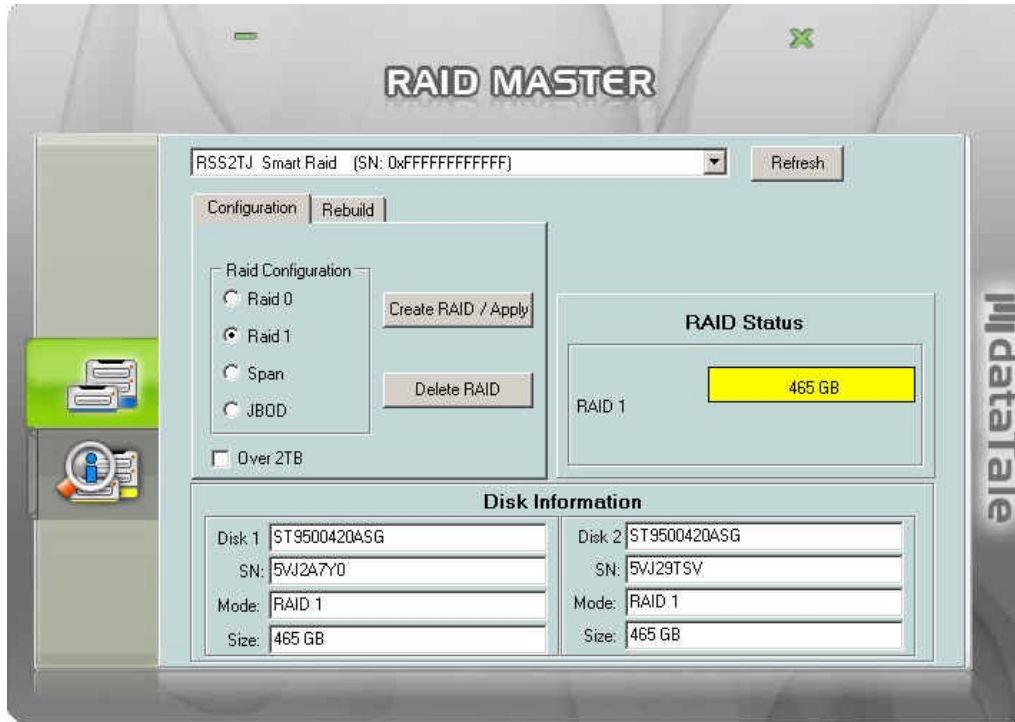
5. During the rebuild, a “Rebuild Percentage” status window will appear and the information under “RAID Status” and “Disk Information” sections should reflect the same.


 If data is accessed while the chipset is processing the Rebuild task, the speed of data access may vary or decrease. Hence, data access of the HDD(s) during Rebuild is highly not recommended.



 Even if the RAID Unit loses connection to the host, the Rebuild will continue. If the RAID Unit is powered off, the RAID Unit will retain the Rebuild status in its memory. When the RAID Unit is powered “on” again, the Rebuild process will resume from the previous status.

6. After the rebuild is completed, data from *Old* HDD will be copied onto the *New* HDD under RAID 1 mode.

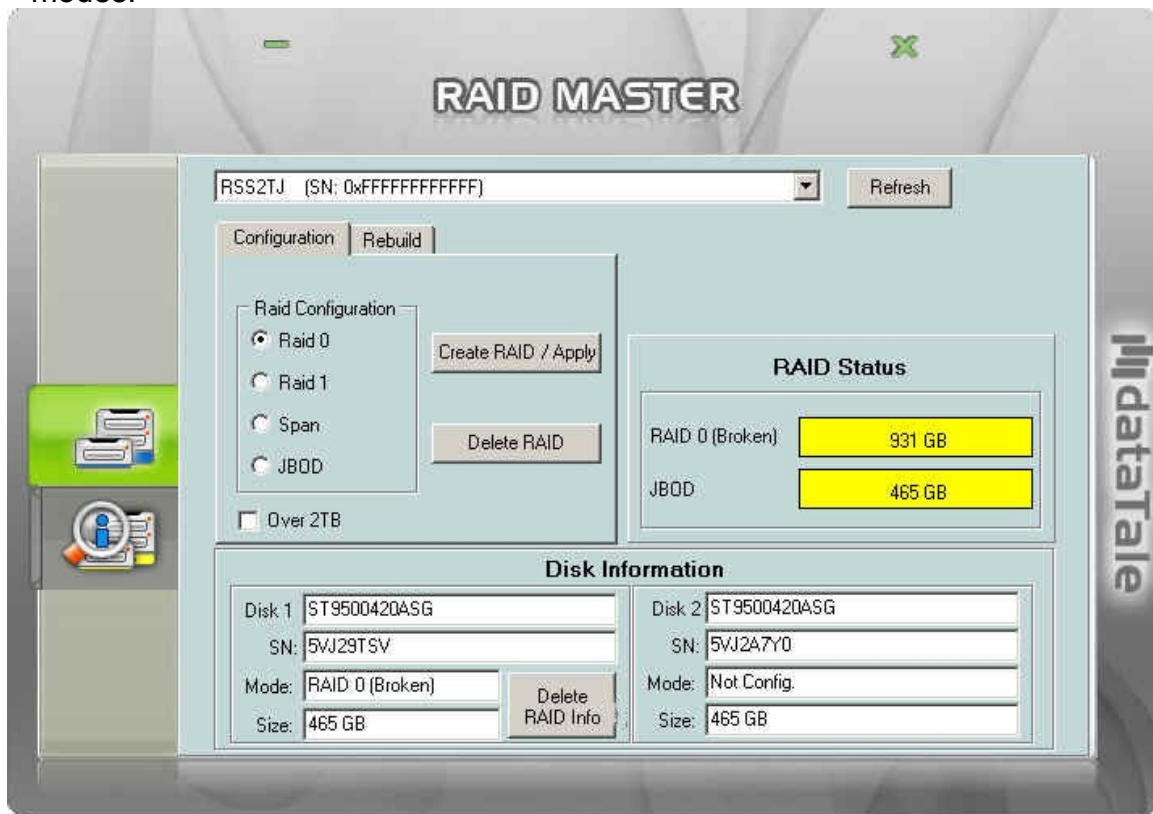


 The Rebuild feature is only available under RAID 1 mode. If the “Rebuild” option tab is selected under any other RAID mode, a popup window will appear stating, “Attention! There should be two disks with at least one RAID 1 disk for Rebuild Mode.”


MIXED RAID STATUS

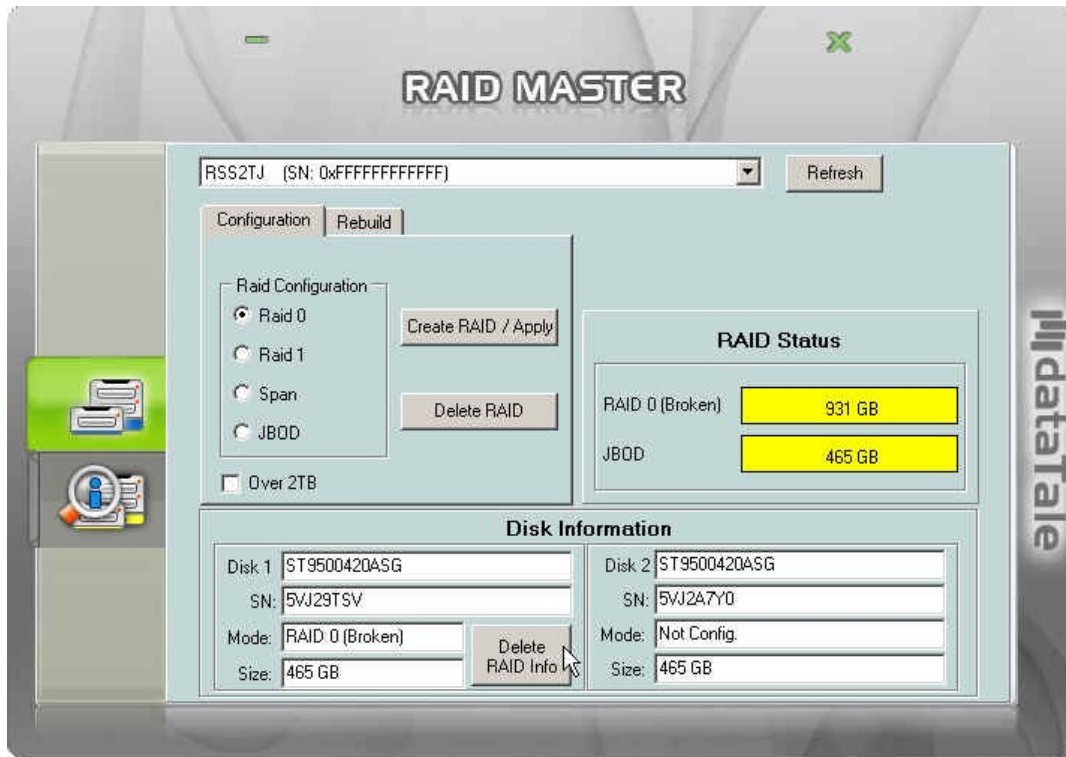
When a *New* HDD has been formatted with a certain RAID mode in another RAID Unit (specifically DataTale AIR) and is placed into the current RAID Unit along with an *existing* HDD, a “Mixed RAID” status will result. Under this circumstance, the *New* HDD can be re-formatted as JBOD (Non RAID) mode. To do so, please complete the following steps:

1. The *New* HDD will appear as “RAID 0 (Broken)”, or other variations depending on the situation for other RAID modes. The *existing* HDD will appear as “JBOD” for individual HDD, or other variations depending on the situation for other RAID modes.



2. To erase the previous formatting in the *New* HDD, click the “Delete RAID Info” icon under “Disk Information”.

 “Delete RAID Info” will erase all data stored on the *New* HDD. If you have important saved data in the *New* HDD, backup all data before selecting “delete RAID Info”.

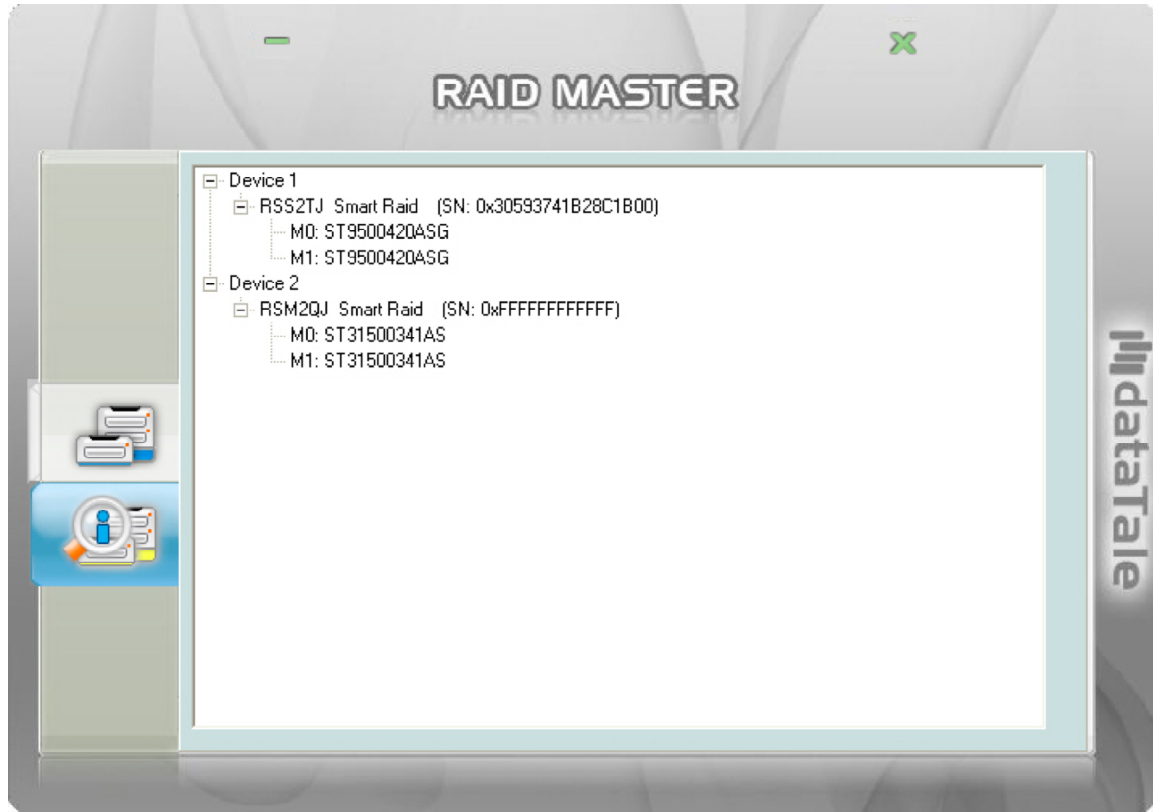


- Once completed, the *New* HDD is ready to be used as JBOD or combined with the *existing* HDD under a chosen RAID mode.





DEVICE INFORMATION

To retrieve Device Information for the inserted HDD(s) of the RAID Unit(s), please connect the RAID Unit(s) to the host and open the RAID MASTER. Once connected, click on the second sub-menu icon (bottom) to see the information:



The connected RAID Unit(s) information with Device model of the RAID Unit(s), and serial numbers of each inserted HDDs.

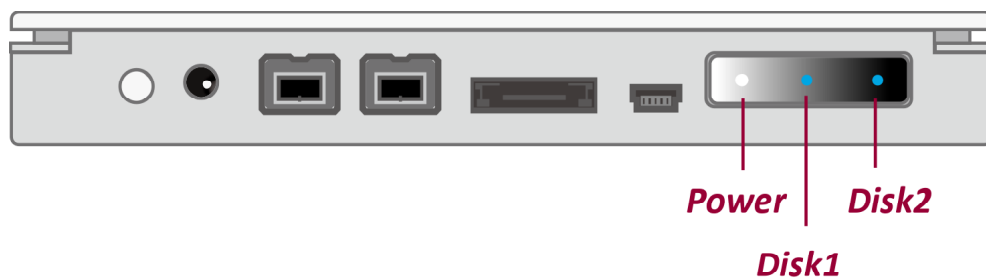
 Because the RAID MASTER can manage “more than one unit of the RAID Unit”, each RAID Unit connected to the host computer will reflect as “Device __” and in numbering order “Device 1, Device 2, ...” respectively.


 Due to chipset configuration, the Device List will reflect the HDDs as “M0 and M1” for “Disk 1 and 2”, respectively.

NUMBER OF DISKS SUPPORTING EACH RAID MODE

RAID Modes	Number of Disk in RAID
RAID 0 (Striping)	2
RAID 1 (Mirroring)	2
Span (Large)	2
JBOD (None RAID)	1 to 2

LED INDICATORS



 The LED Panel has a thin plastic film for protection. It may be removed if prefer having a clearer view.

POWER LED

Indicators	Color
Power on	White
Power off	None

DISK LEDS

Indicators		Color
Disk Degrade or Broken		Red
Disk Detected		Blue
Data Access		Flash Blue
Disk Rebuild	Source Disk	Flash Blue
	Target Disk	Flash Blue / Blink Red

DISK VOLUME OVER 2TB

Windows 2000, XP & MAC OS 10.2 (& older) do not support partitions larger than 2TB+ or higher. In order to support 2TB+ partitions, you must use Windows Vista, 7, or Mac OS 10.3 or higher. Please note that Windows XP 64-bit and Windows 2003 support 2TB+ when using USB & eSATA, but are limited to 2TB when using FireWire.

	OS	USB	FireWire	eSATA
Windows	Windows 2000, XP, or older	No	No	No
	Windows XP 64-bit, Windows 2003 32-bit/64-bit (SP1 and SP2)	Yes	No	Yes
	Windows Vista, Windows 2008 32-bit/64-bit, Windows 7	Yes	Yes	Yes
Mac	Mac OS 10.4/10.5/10.6	Yes	Yes	Yes



If the OS does not support over 2TB, you can still use the RAID Unit by NOT checking the “Over 2TB” option under the “Configuration” option tab. The RAID MASTER should automatically re-adjust the available HDD(s) storage capacity and format the chosen RAID mode under 2TB. Please see “Over 2TB” section under Q&As for more information.

SAFE REMOVAL OF THE RAID UNIT

Safe removal of the RAID Unit from the host controller is highly recommended, especially when switching interfaces. In order to safely remove your RAID Unit from the host controller, you would need to eject the device on your host controller system.

RAID MODES

A Redundant Array of Independent (or Inexpensive) Disks (RAID) is a system that utilizes multiple hard drives to share or replicate data among the disks. The benefit, depending on the selected RAID Mode (combinations of disks), is one or more of increased data integrity, fault-tolerance, throughput or capacity when compared to single drives.



Deleting the current partition prior to changing RAID modes is highly recommended.

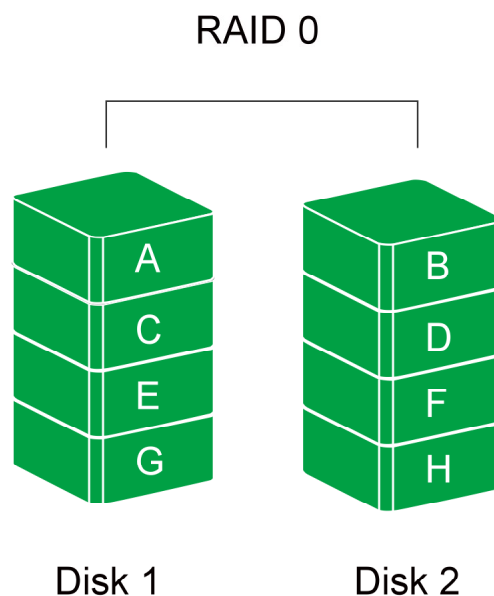


Using identical HDDs with the same capacity and RPM, and from the same manufacturer are highly recommended for best capacity utilization.

RAID 0 (STRIPING)

RAID 0 (Striping) is a performance-oriented, non-redundant data mapping technique. It combines multiple hard drives into a single logical unit. Instead of seeing several different hard drives, the operating system sees only one large drive. Striping splits data evenly across two or more disks simultaneously, dramatically increasing performance.

Striping can be implemented in disks of differing sizes, but the storage space added to the array by each disk is limited to the size of the smallest disk. Although Striping is an easily implemented, simple configuration, Striping should never be used for mission critical applications. The speed of operation is excellent in comparison to other RAID modes.

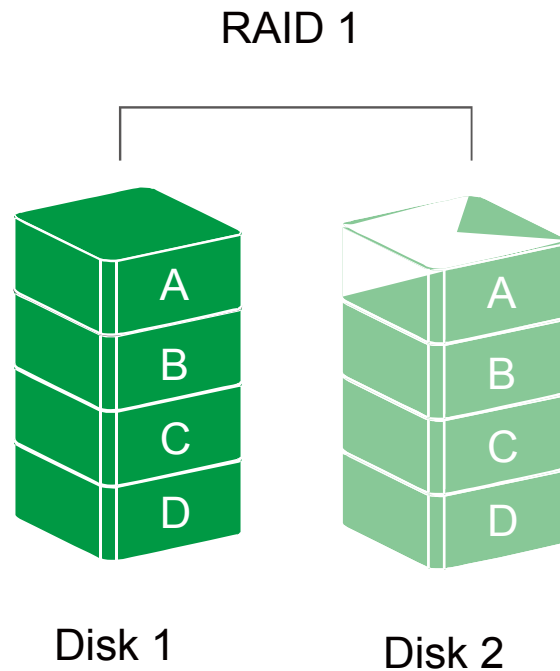




In Striping mode, if one disk in the RAID Unit fails, **all data** in installed disks will be lost.

RAID 1 (MIRRORING)

RAID 1 (Mirroring) consists of at least two drives storing duplicate copies of the same data. In this mode, the data is simultaneously written to two disks. Thus, the storage capacity of a two-disk array is combined into a single disk and the capacity is limited to the size of the smallest disk.

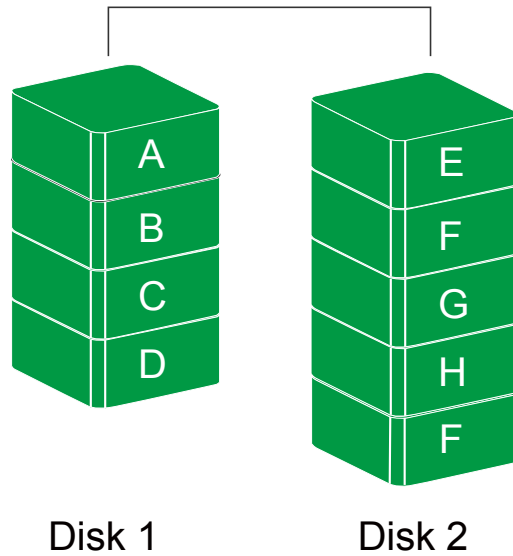


In Mirroring mode, if one of the disks fails, either source or backup, the data is still available. However, if the Old disk fails during the Rebuild process, the data in both disks will be lost.

SPAN (LARGE)

Spanning provides another maximum capacity solution, which some call it as “Large”. Spanning combines multiple hard drives into a single logical unit. Unlike Striping, Spanning writes data to the first physical drive until it reaches full capacity. When the first disk reaches full capacity, data is written to the second physical disk. Spanning provides the maximum possible storage capacity, but does not increase performance.

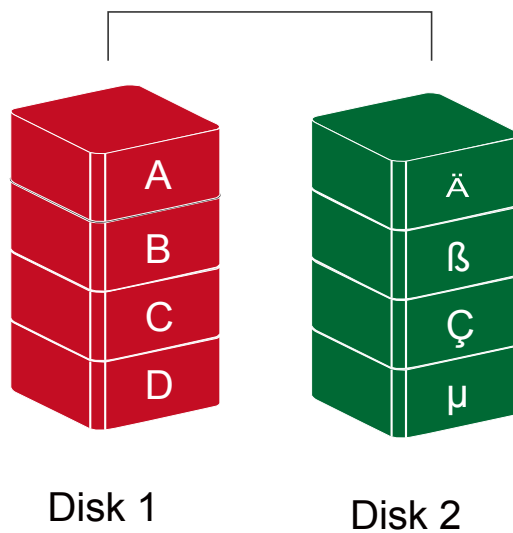
SPAN



JBOD (NON RAID)

Just a Bunch of Disks (JBOD) refers to a group of hard drives. In JBOD, the number of logical drives is equal to the number of physical drives. This mode allows the RAID Unit to operate as a multi-disk storage enclosure, but provides no data redundancy.

JBOD



Q&As

GENERAL

Q: How do I choose the proper RAID mode for my RAID Unit based on the tasks I need to perform?

A: Since the RAID Unit is a “Mass Storage” device, which means its size capacity is sufficient for data management, the different RAID mode settings can help you administer the enormous data storage from the HDDs combination. It is highly recommended to choose the RAID mode based on what is the essential factor to complete your task. The most common three factors are size capacity, speed, and data protection. For example, if using the RAID Unit to simply watch films for enjoyment or for storage, the JBOD and SPAN modes are perfect because they can maintain decent speed and still have a large storage capacity. If the work requires instant and continuous backup of data such as for a writer or editor, then RAID 1 would be the best choice. However, if immediate data access is required such as business professionals, RAID 0 would be more appropriate.

DAISY CHAIN

Q: Because there are two (2) FireWire ports on the RAID Unit, I connected them to my other two (2) external devices. Why can't I see these additional external devices on my host? I'm using the USB connection from the RAID Unit to my host.

A: In order for the “Daisy Chain” feature to work properly on the RAID Unit, one of the FireWire ports need to be connected to the host, and the other one can be connected to an external device. The computer will not recognize different interfaces if they are all used at the same time.

OLD HDDs

Q: My old hard disk(s) have data inside. Will the stored data still be recognizable if I just install them into the RAID Unit?

A: Please backup all existing data from the old hard disk(s) before installing them into the RAID Unit. Once the old hard disk(s) are inserted and setup for a chosen RAID mode, the RAID MASTER will automatically re-format the disks and all the old data will be lost.

HDD SIZE

Q: Can I use one 2.5” 9.5mm thick SATA HDD, and one 2.5”12.5mm thick SATA HDD inside the same RAID Unit? Will the RAID Unit be able to recognize them?

A: Yes, the RAID Unit can support both 9.5mm and 12.5mm thick 2.5” HDDs.

HDD CAPACITY

Q: I would like to format my hard drives with the FAT (a.k.a. File Allocation Table) format, which can be read and written by both Mac and PC. Is there any limitation on its capacity?

A: Yes, please check the table below for reference.

File System	NTFS	FAT32	FAT (Format by Win2000 / WinXP)	FAT16
Capacity Limitation	Vista: 16384TB XP: 2TB	Windows: 32GB Mac: 2TB	4GB	2GB

DISCREPANCY IN REPORTED & ACTUAL SIZE CAPACITY

Q: If I have a 750GB HDD, why does the RAID Unit only recognized the HDD available space as to be less than 750GB?

A: In the hard drive industry the partitioned size will be less than the printed capacity on the label. This is consistent whether it is Western Digital, Seagate, Samsung, etc. For example, a 1TB hard drive will have a formatted capacity of approximately 932GB. This is due to the fact that computers calculate capacity based on 1024 bytes/kilobyte, while the hard drive calculation is based on 1000 instead of 1024. Hard drive manufacturers define a megabyte as 1,000,000 bytes and a gigabyte as 1,000,000,000 bytes, which is a decimal (base 10) measurement. Computers define a megabyte as 1,048,576 bytes and a gigabyte as 1,073,741,824 bytes. These are binary (base 2) measurements. This is why the two different industries will report different capacities for the same drive. The number of bytes is the same, but a different number of bytes is used to make a megabyte and a gigabyte.

REBUILD

Q: Does the RAID Unit have to be connected to the host computer when it is in rebuild mode?

A: No, it does not have to be. The RAID Unit can support offline rebuild, which means it can perform the rebuild function without being connected to a host computer.

RAID MASTER: CONNECTION RESTRICTION

Q: Is there any connection restrictions for the RAID MASTER?


A: Yes, the RAID MASTER can only be operated via USB 2.0 or FireWire 800. If you choose to use eSATA for data transferring, please set up the RAID configuration via USB or FireWire first.

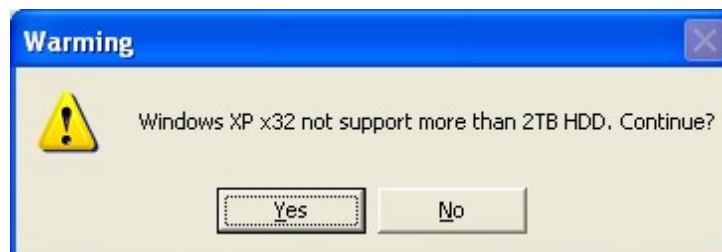
OVER 2TB

Q: What is the “Over 2TB” option for under PC’s version of RAID MASTER?

A: The HDD(s)’ storage capacity can affect RAID Unit’s operation depending on your host’s PC OS. Some older PC OS can only function the RAID Unit under a particular size limitation (please see “DISK VOLUME OVER 2TB” for more information). If the host can support more than 2TB HDD(s) storage capacities and the HDD(s) is/are over 2TB, *check* the “Over 2TB” option under the “Configuration” option tab. Because the Unit requires OS 10.4 and above for MAC, which automatically supports over 2TB, the “Over 2TB” option would not appear under the RAID MASTER for MAC.



 This popup window may appear if the host’s OS cannot support over 2TB of HDD storage capacity, similar to the picture shown below. Click on the “Yes” icon to continue.



LINUX

Q: Can I use this RAID system under Linux OS?

A: Yes, but the RAID System must first be set up under Windows or MAC OS via USB 2.0 or FireWire connection before using it under Linux OS.

Regarding Over 2TB support, please see the table below:

OS	1394	USB	SATA
Linux Fedora Core 8 32-bit	No	No	Yes
Linux Fedora Core 8 64-bit	No	No	Yes
Linux Fedora Core 10 64-bit	No	Yes	Yes
Linux Fedora Core 11 32-bit	No	Yes	Yes
Linux Fedora Core 12 64-bit	Yes	Yes	Yes
Linux Fedora Core 13 32-bit	Yes	Yes	Yes

Q: Can I use external bootup under Linux OS?

A: Yes, but only via eSATA connection.

APPENDIX

Model Name	RS-S2TJ
Interface	USB 2.0 / eSATA / FireWire 800
Connector	eSATA x 1, USB 2.0 x 1, 1394b x 2
HDD Support	2.5" SATA HDD* *Identical HDD recommended – same manufacturer, capacity and RPM (9.5mm or 12.5mm)
Data Transfer Speed	eSATA: up to 3Gbit/sec 1394b: up to 800Mbit/sec USB 2.0: up to 480Mbit/sec
RAID Level	JBOD (Non RAID), RAID 0 (Striping), RAID 1 (Mirroring), Span (Large)
LED Indicators	Power / Connection / Health / Access / Rebuild
System Material	Aluminum case with plastic parts
Power Supply	Input: AC 100~240V Output: DC +5V/2A Or bus power from host via FireWire 800 (1394b) cable
Dimension	155 (L) x 155 (W) x 22.5 (H) mm
Weight (without HDD)	260 grams
Certification	CE, FCC