



# User Manual

**EzRAID™ Bay Mount**



**EzRAID™ Bay Mount+**



**EzRAID™ Dual Swap+**



**EzRAID™ FlexMount**



**EzRAID™ MicroRaid**



**EzRAID™ eSATA**



**EzRAID™ EzCopy**



**EzRAID™ EzCopy Light**



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## Chapter 1: Introduction

Disaster recovery is now easier than ever. EzRAID™ is *the* data protection solution that makes your data highly available while providing you a completely mirrored image of your entire system that is kept up to date and in real time.

Leveraging Data Protection Solution's proven **DupliDisk™ 4** technology; you can maintain a mirror image of your hard drive that includes all data, program, and system files without even lifting a finger. EzRAID™ provides you with a bootable backup drive that is 100% consistent with your main or primary drive - 100% of the time. All of the functions, features, and settings of the EzRAID™ system are controlled with the friendly EzRAID™ software for Windows™.

Installation is simple. The only tool required is a Philips screwdriver for removing the computer case cover and installation of the hardware.

### Are You a First Time User?

We recommend reading through this entire manual once, starting with the Introduction

## Minimum System Requirements

- Windows 2000™ or later, Linux kernel version 2.4.27 or later, or any 2.6.xx kernel
- Two available 5.25" drive bay(s) (For EzRAID™ Dual Swap+)
- One available hard drive bay, 5.25", 5.25"+ or 3.5" (For EzRAID™ Bay Mount models)
- One Serial ATA (SATA) port on the motherboard
- One available power supply connector internal to the computer (For all models)
- One available SATA power supply connector or SATA power adapter (For MicroRaid, Bay Mount, and Bay Mount+)
- One additional SATA hard drive that is equal to or greater than the capacity of the original drive.

## Chapter 2: EzRAID™ Bay Mount / Bay Mount+

**Useful Tip:** Throughout the reading of this manual, you will need to follow links to various locations in this document. Use **Alt** plus left cursor key for "Go back to last view".

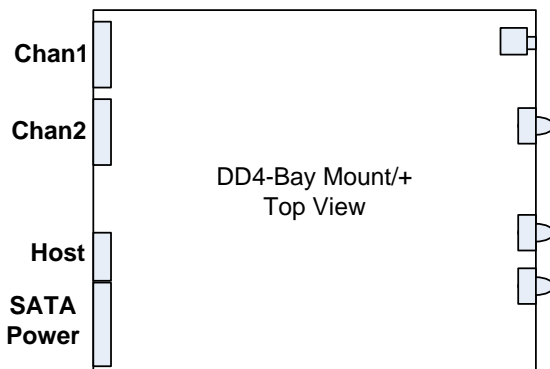
### Box Contents

- 1 EzRAID™ Bay Mount/ Bay Mount+ unit
- 1 DupliDisk™ Application CD
- 1 X 20", Host Serial ATA Cable
- 1 X 20", Channel 1 Serial ATA Cable
- 1X 20", Channel 2 Serial ATA Cable
- 1 Function Switch Key (for Bay Mount+ only)

### Hardware Installation

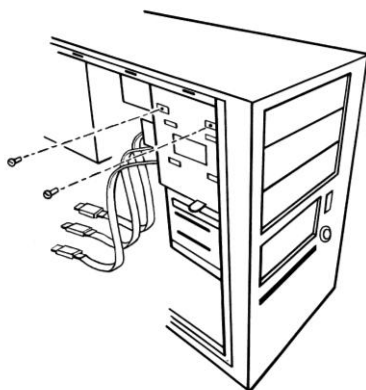
#### Computer

1. Close all applications and shut down the computer.
2. Unplug the computer.
3. Remove the case cover from the computer.
4. Remove one plastic insert from an unused drive bay (3.5" or 5.25").
5. Inside the computer, locate where the original hard drive's SATA cable connects to the motherboard. Remove this cable from both the motherboard **and** the hard drive.
6. Retrieve all three SATA cables from the packaging and observe that each of the cables is uniquely labeled – **Host**, **Channel 1**, and **Channel 2**.
7. Refer to the diagram below and insert one end of the **Channel 1**, **Channel 2**, and **Host** SATA cables into their respective sockets on the **EzRAID™ Bay Mount / Bay Mount+** unit.



8. While holding the **EzRAID™ Bay Mount/ Bay Mount+** unit in one hand and the SATA cables in the other hand, guide the cables through the bay opening from the front of the computer. Refer to the illustration below.
9. Continue to follow through by firmly inserting the unit into its seated position in the bay.
10. Secure the **EzRAID™ Bay Mount/ Bay Mount+** unit to the computer's drive bay as shown in the illustration below.

**Note:** If the drive bay opening on the front of your computer is too small, it may not be possible to slide the EzRAID™ hardware into place from the outside. In this case, it may be necessary to install the EzRAID™ from the inside (sliding the EzRAID™ into place from the inside to the outside.)





## EzRAID™ Bay Mount / Bay Mount+ Unit

11. Locate the SATA cable labeled **Host** coming from the **EzRAID™ Bay Mount/ Bay Mount+** unit. Insert the connector of the **Host** cable into the **SATA** socket on the motherboard where the hard drive was originally plugged in.
12. Locate the SATA cable labeled **Channel 1** coming from the **EzRAID™ Bay Mount/ Bay Mount+** unit. Insert the connector of the **Channel 1** cable into the SATA socket on the back of your **original** hard drive.
13. Locate the SATA cable labeled **Channel 2** coming from the **EzRAID™ Bay Mount/ Bay Mount+** unit. Insert the connector of the **Channel 2** cable into the SATA socket on the back of your **mirror** hard drive.
14. Locate an unused SATA power supply cable from inside the computer and connect it to the power socket on the back of the **EzRAID™ Bay Mount / Bay Mount+** unit.

**Note:** The SATA cable connectors are keyed and will only insert one way. Take extra care not to force the connector in place.

15. Ensure power cable is connected to **Channel 1** and **Channel 2** hard drives.
16. Ensure all cables are neatly out of the way of any fans or moving parts, and not obstructing airflow in any way. In addition, please ensure that there are no pinched cables.
17. At this time, turn your computer on and boot your system to insure proper operation.
18. For **EzRAID™ Bay Mount / Bay Mount+** installed on **Windows** O/S computer, proceed to "Software Installation" section [\[follow this link\]](#).
19. For **EzRAID™ Bay Mount / Bay Mount+** installed on **Non-Windows** O/S computer, proceed to Chapter 13 and follow the **EzRAID™ Bay Mount / Bay Mount+** serial port connections [\[follow this link\]](#).
20. For a detailed table describing the Front Panel LED indication, [\[follow this link\]](#).

**NOTE:** For **EzRAID™ Bay Mount + LCD** operation, please refer to "Operating and Configuring Using the LCD" [\[follow this link\]](#).

## Chapter 3: EzRAID™ Dual Swap+

**Useful Tip:** Throughout the reading of this manual, you will need to follow links to various locations in this document. Use **Alt** plus left cursor key for “Go back to last view”.

### Box Contents

- 1 **EzRAID™ Dual Swap+** unit
- 1 **DupliDisk™** Application CD
- 1 Function Switch Key
- 1 Set of 2 drawer keys

### Hardware Installation

#### Computer

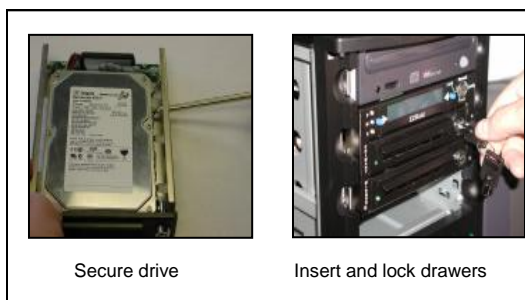
1. Close all applications and shut down the computer.
2. Unplug the computer.
3. Remove the case cover from the computer.
4. Remove plastic insert from two contiguous unused 5.25" drive bays.
5. Inside the computer, locate where the original hard drive's SATA cable connects to the motherboard. Remove this cable from both the motherboard **and** the hard drive.

#### EzRAID™ Dual Swap+ Unit

1. Place the **EzRAID™ Dual Swap+** product into the two contiguous 5.25" drive bays.
2. Insert one end of a SATA cable to the Motherboard and insert the other side into the back of **EzRAID™ Dual Swap+** unit.
3. Locate an unused power supply cable from inside the computer and insert it to the back of the **EzRAID™ Dual Swap+** unit and secure with screws.
4. Reassemble the computer.

#### Installing the Drives

5. If necessary, unlock the drive caddies using the keys provided, and then pull on the caddy handles to remove the two caddies from the **EzRAID™ Dual Swap+** unit.
6. Insert a drive to each caddy, and secure the hard drives with the provided screws.



7. If installing in an existing operating environment, place the drawer with the **original drive in the Channel 1** slot and lock the drawer using the supplied key.
8. If your system booted properly, place the drawer with the drive you have chosen as your Channel 2 into the Channel 2 slot and lock the drawer.
9. At this time, turn your computer on and boot your system to insure proper operation.
10. For **EzRAID™ Dual Swap+** installed on **Windows** O/S computer, proceed to "Software Installation" section [\[follow this link\]](#).
11. Or if you prefer to operate the **EzRAID™ Dual Swap+** using it's built in LCD, proceed to the "Operation and Configuring Using the LCD" [\[follow this link\]](#).
12. For **EzRAID™ Dual Swap+** installed on **Non-Windows** O/S computer, proceed to the "Operation and Configuring Using the LCD" [\[follow this link\]](#). For **Firmware Upgrade** process, please follow the instructions on Chapter 13 and follow the **EzRAID™ Dual Swap+** serial port connections [\[follow this link\]](#).
13. For a detailed table describing the Front Panel LED indication, [\[follow this link\]](#).

## Operating and Configuring Using the LCD

**EzRAID™ Dual Swap+** can be operated from the front panel using the buttons adjacent to the LCD display or by using the Windows software application. The recommended mode for running is through the Windows application software.

### EzRAID™ Dual Swap+ Operating Modes

#### Lock

When in the lock position, system operation is locked and will not cold boot. Combined with the drawer locks, this provides a level of physical and electronic security that prevents unauthorized system activation or Hard Drive removal.

## Normal

System operates in a normal fashion.

## Config

Enables the configuration of various parameters including:

- Startup Options
- Buzzer Setting
- Raid Unit Setting
- Host Unit Setting
- View Firmware Rev.
- View FPGA Rev.
- Restore Defaults

## Copy

This initiates the copy (rebuild). This can be accomplished in either a "Full" or "Used Block" mode depending on the "Copy Type" setting selected under Configuration -> Startup Settings -> Copy Type.

# Configuring the EzRAID™ Dual Swap+

## Before You Begin

*During the configuration use either of the **blue** buttons adjacent to the LCD to select the options displayed on the LCD. Any configurations saved via the LCD, will be reflected in the Windows application.*

**Config:** The **DD4 EzRAID™ Dual Swap+** ships with default parameters. The parameters can be customized to suit user's needs.

1. Turn the Mode switch to the "**Config**" position.
2. Selecting "**Start**" at the "**Configuration**" prompt will prompt you to "**Startup Settings**". Press "**Select**" to start scrolling throughout the following options:
  - a. **S. Port Baud Rate** allows you to specify the speed of the RS232 serial port when used to control the **EzRAID™ Dual Swap+** unit remotely. The available options are:
    - 9600.
    - 19200
    - 38400 (Default)
  - b. **Copy Type** allows the user to choose the method of copying the drives. The options available are as follows:
    - **Full** - Allows the user to copy the **entire** hard drive, independent of the quantity of useful data found on the drive (*Default*)
    - **Used Block** – Allows the user to copy only the part of the drive that contains useful data. This method typically results in a much faster copy.  
**NOTE: Used Block Copy is only for windows machines.**
  - c. **Lazy Drive Delay** allows the user to specify a period during which **EzRAID™ Dual Swap+** will wait for a response in the case of an unresponsive hard drive. Available options are as follows:

- 0 sec (No Delay)
    - 1, 3, 4, 5, 6, 7, 8, 9 and 10 seconds.
    - 2 sec (Default)
  - d. **Log Information** allows the user to **Enable** or **Disable** writing information to log files generated by the **DD4 EzRAID™ Dual Swap+**. The log files are saved to the **DD4 EzRAID™**'s internal flash memory and are useful for troubleshooting purposes. The log file includes:
    - Copy/Compare
  - e. **Exit Startup Menu** - Answer Yes/No. At this time you can turn the Mode switch to the Normal position or proceed to the next configuration setting.
3. After exiting the "Startup" menu the "**Buzzer Setting**" prompt appears. Press "**Next**" to start scrolling throughout the following options:
- a. **Buzzer Mode Control** allows the user to specify the way the buzzer sounds. The options available are as follows:
    - Beep Continuous (Default)
    - Beep On/Off
    - Disable
  - b. **Beep On Time** allows the user to specify the length of time the buzzer will sound when beeping. This setting is effective only when Beep On/Off option is chosen as the Buzzer Mode Control. Available The options are as follows:
    - 1 sec (Default)
    - 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 seconds.
  - c. **Beep off Time** allows the user to specify the length of time the buzzer will be off when beeping. This setting is effective only when Beep On/Off option is chosen as the Buzzer Mode Control. The options available are as follows:
    - 1 sec (Default)
    - 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 seconds.
  - d. **Beep Off** allows the user to **Enable** or **Disable** the buzzer sound upon system startup if an error condition exists. If enabled, the buzzer will sound for 1 min after startup.
  - e. **Beep at Failure** allows you to **Enable** or **Disable** the buzzer from sounding at startup should a drive failure condition exist.
  - f. **Beep at Single** allows you to **Enable** or **Disable** the buzzer from sounding at startup if **DD4 EzRAID™ Dual Swap+** detects that it is operating with only one drive, or if both drives are installed but not initialized (Mirrored) yet.
  - g. **Exit Buzzer Setting Menu** - Answer Yes/No.  
At this time you can turn the Mode switch to the Normal position or proceed to the next configuration setting.
4. After exiting the "Buzzer Setting" menu the "**Raid Unit Setting**" prompt appears. Press "**Select**" to start scrolling throughout the following options:
- a. **Set Copy Percent** allows the user to change the percent of the active drive to be copied to the non active drive. **We recommend always performing 100% copy. 100% is the default setting. Choosing percent other than 100% will take**



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## Copy

1. Turn the Mode Switch to the “**copy**” position.
2. Selecting “**Start**” to start a background Copy/Rebuild.
3. After Copy/Rebuild is completed, you will be prompted to turn the mode switch key to **Normal** option.

## Chapter 4: EzRAID™ FlexMount

**Useful Tip:** Throughout the reading of this manual, you will need to follow links to various locations in this document. Use **Alt** plus left cursor key for “Go back to last view”.

### Box Contents

- 1 EzRAID™ FlexMount unit
- 1 DupliDisk™ Application CD
- 1 X 20", Host Serial ATA Cable
- 1 X 20", Channel 1 Serial ATA Cable
- 1 X 20", Channel 2 Serial ATA Cable
- 1 Status LED panel cable
- 1 Velcro
- 1 Power connector adapter
- Rear Status LED Panel bracket and cable

### Hardware Installation

#### Computer

1. Close all applications and shut down the computer and unplug the computer.
2. Remove the case cover from the computer.
3. Inside the computer, locate where the original hard drive's SATA cable connects to the motherboard. Remove this cable from both the motherboard **and** the hard drive.

#### EzRAID™ FlexMount Unit


1. Retrieve all three SATA cables from the packaging and observe that each of the cables is uniquely labeled – **Host**, **Channel 1**, and **Channel 2**. Please insert each according to the diagram below.
2. Insert one side of the provided Status LED panel cable to the “Status LED Panel Connection” connector on the **EzRAID™ FlexMount** as shown below.





3. Insert the other side of the provided Status LED panel cable to the provided Rear Status LED Panel bracket.
4. Ensure the other side of the SATA **Channel 1**, and **Channel 2** cables are connected to both hard drives.
5. Locate two SATA power cables and insert them to the back of the two SATA hard drives.
6. Remove a slot cover from the rear of the computer. Fit the bracket into the free opening and secure with a screw.
7. Locate an unused power supply cable from inside the computer and insert it to the power cable (supplied).
8. Attached one piece of the provided Velcro to the back of the **EzRAID™ FlexMount** and the other to a preferred location inside your computer (as far as the Status LED panel cable permits).
9. At this time, turn your computer on and boot your system to insure proper operation.
10. For **EzRAID™ FlexMount** installed on **Windows** O/S computer, proceed to "Software Installation" section [\[follow this link\]](#).
11. For **EzRAID™ FlexMount** installed on **Non-Windows** O/S computer, proceed to Chapter 13 and follow the **EzRAID™ FlexMount** serial port connections [\[follow this link\]](#).
12. For a detailed table describing the Front Panel LED indication, [\[follow this link\]](#).

## Chapter 5: EzRAID™ MicroRaid

**Useful Tip:** Throughout the reading of this manual, you will need to follow links to various locations in this document. Use  plus left cursor key for "Go back to last view".

### Box Contents

- 1 EzRAID™ MicroRaid unit
- 1 DupliDisk™ application CD
- 8 Hard drive mounting screws
- 4 Bay bracket mounting screws

### Hardware Installation

#### Computer


1. Close all applications and shut down the computer.
2. Unplug the computer.
3. Remove the case cover from the computer.
4. Remove one plastic insert from an unused 3.5" drive bay.
5. Inside the computer, locate where the original hard drive's SATA cable connects to the motherboard. Remove this cable from both the motherboard **and** the hard drive.

#### Installing the Drives

6. Remove the **EzRAID™ MicroRaid** from its package. Remove the four screws holding the green board to the housing bracket and flip the board upside down.
7. Insert the mirror drive into the CHAN 2 location, making sure the drive is firmly attached to the black connector on the board. Secure the drive to the guide rails with four of the provided drive screws.
8. Return board to upright position; reattach the board to the housing bracket using the four screws you have previously removed.
9. Insert the primary (original) drive between the guiderails, making sure the drive is firmly attached to the black connector on the board. Secure the drive to the guiderails with four of the provided drive screws.
10. Install the **EzRAID™ MicroRaid** in the appropriate 3.5" empty bay.
11. Before securing the **EzRAID™ MicroRaid** unit with the provided screws, please, insert a SATA cable to the motherboard (where the hard drive was originally plugged in) and insert the other side to the **EzRAID™ MicroRaid** unit Host connector.
12. Insert the other side to the

13. Ensure that you have access to a SATA power connector from your computer and connect the unit to both.
14. **NOTE:** If the drive bay opening on the front of your computer is too small, it may not be possible to slide the **EzRAID™ MicroRaid** hardware into place from the outside. In this case, it may be necessary to install the **EzRAID™ MicroRaid** from the inside (sliding the **EzRAID™ MicroRaid** into place from the inside to the outside.)
15. At this time, turn your computer on and boot your system to insure proper operation.
16. For **EzRAID™ MicroRaid** installed on **Windows** O/S computer, proceed to "Software Installation" section [\[follow this link\]](#).
17. For **EzRAID™ MicroRaid** installed on **Non-Windows** O/S computer, proceed to Chapter 13 and follow the **EzRAID™ MicroRaid** serial port connections [\[follow this link\]](#).
18. For a detailed table describing the Front Panel LED indication, [\[follow this link\]](#).

## Chapter 6: EzRAID™ eSATA

**Useful Tip:** Throughout the reading of this manual, you will need to follow links to various locations in this document. Use  plus left cursor key for "Go back to last view".

### Box Contents

- **EzRAID™ eSATA** unit
- **DupliDisk™** Application CD
- 1 Single Data Port eSATA Add-A-Port Slot Mounting Bracket
- 1 eSATA Shielded External 7pin Black Data Cable
- 1 Null-Modem Cable
- 1 Set of 2 drawer keys
- 1 set of Mode Switch keys
- 6 Hard drive mounting screws

### Hardware Installation

#### Computer

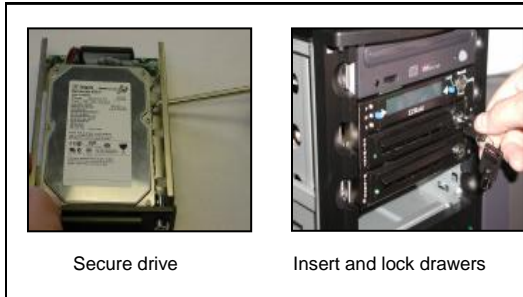
1. Close all applications and shut down the computer.
2. Unplug the computer.
3. If your computer has an eSATA port, connect one site of the provided eSATA cable to the eSATA port of your computer.
4. If your computer does not have an eSATA port, you will need to install the provided "Single Data Port eSATA Add-A-Port Slot Mounting Bracket". Remove a slot cover from the rear of the computer. Install the eSATA bracket to the back of your computer and secure with a screw. Connect the SATA cable to the SATA port on the motherboard and connect one side of the provided eSATA to the eSATA bracket.
5. Reassemble the computer.

#### EzRAID™ eSATA Unit

1. Place the **EzRAID™ eSATA** on a leveled surface.
2. If necessary, unlock the drive caddies using the keys provided, and then pull on the caddy handles to remove the two caddies from the **EzRAID™ eSATA** unit.


## Installing the Drives

1. If necessary, unlock the drive caddies using the keys provided, and then pull on the caddy handles to remove the two caddies from the **EzRAID™ eSATA** unit.



2. If installing in an existing operating environment, place the drawer with the **original drive in the Channel 1** slot and lock the drawer using the supplied key.
3. Install your chosen "Mirror" drive into the CHAN 2 slot. Lock the drawers.
4. Connect the other side of the provided eSATA cable to the back of the **EzRAID™ eSATA** unit.
5. Attach the AC power cord to the **EzRAID™ eSATA** unit and plug it into an available outlet.  
**IMPORTANT: Turn the EzRAID™ eSATA ON before turning the computer ON.**
6. Turn your computer and boot from the **EzRAID™ eSATA**.
7. For **EzRAID™ eSATA** with **Windows** O/S computer, proceed to "Software Installation" section [\[follow this link\]](#).
8. Or if you prefer to operate the **EzRAID™ eSATA** using it's built in LCD, proceed to the "Operation and Configuring Using the LCD" [\[follow this link\]](#).
9. For **EzRAID™ eSATA** installed with **Non-Windows** O/S computer, proceed to the "Operation and Configuring Using the LCD" [\[follow this link\]](#). For **Firmware Upgrade** process, please follow the instructions on Chapter 13 and follow the **EzRAID™ eSATA** serial port connections [\[follow this link\]](#).
10. For a detailed table describing the Front Panel LED indication, [\[follow this link\]](#).

## Chapter 7: EzRAID™ EzCopy

**Useful Tip:** Throughout the reading of this manual, you will need to follow links to various locations in this document. Use  plus left cursor key for “Go back to last view”.

### Box Contents

- **EzRAID™ EzCopy** unit
- 1 **DupliDisk™** Application CD
- 1 Null-Modem cable
- 1 Extension power cable
- 1 Set of 2 drawer keys
- 6 Mounting Screws

### EzRAID™ EzCopy Unit

1. Place the **EzRAID™ EzCopy** on a leveled surface.
2. If necessary, unlock the drive caddies using the keys provided, then pull on the caddy handles to remove the two caddies from the **EzRAID™ EzCopy**.
3. Be sure to install the “Source” or Master drive into the “Source” slot on the **EzRAID™ EzCopy** unit.
4. Install your “Target” or Destination drive into the other drawer and insert it into the “Target” slot. **Make sure the additional SATA hard drive is equal to or greater than the capacity of the original drive.** Lock the drawers.
5. Attach the AC power cord to the **EzRAID™ EzCopy** unit and plug it into an available outlet and power the unit ON.

### Configuring the EzRAID™ EzCopy Unit Before You Begin

During the configuration use either of the Blue buttons adjacent to the LCD to select the options displayed on the LCD.

The **EzRAID™ EzCopy** ships with default parameters. The parameters can be customized to suit user's needs. The options are as follows:

## Setting Percent to Copy

Selecting “*Next*” at the “*Copy Drive*” prompt will prompt you to “*Set Copy Percent*”. Press “*Select*” to set copy percent:

**Set Copy Percent** allows the user to change the percent of the **Source** drive to be copied to the **Target** drive. **We recommend always performing 100% copy. 100% is the default setting.** Press “select” at the prompt. Two options will appear on the screen: “*Inc*” and “*Save*”. Use the “*Inc*” option to change the percent. Once the percent desired is reached, press “*Save*”.

## Setting Copy Type

Selecting “*Next*” at the “*Set Copy Percent*” prompt will prompt you to “*Copy Type*”. Press “*Select*” to set copy type:

**Copy Type** allows the user to choose the method of copying the drives. The options available are as follows:

**Full** - Allows the user to copy the **entire** hard drive, independent of the quantity of useful data found on the drive - default

**Used Block (For Windows only)** - Allows the user to copy only the part of the drive that contains useful data. This method typically results in a much faster copy.

## Setting Source Drive

Selecting “*Next*” at the “*Copy Type*” prompt will prompt you to “*Source Drive*”. The only option available is Serial.

## Setting Target Drive

Selecting “*Next*” will prompt you to “*Target Drive*”. The only option available is Serial.

## Setting Transfer Mode

Selecting “*Next*” at the “*Target Drive*” prompt will prompt you to “*Transfer Mode*”.

**Setting Transfer Mode** allows the user to change the data transfer rate between the drives. The options available are as follows:

**UDMA** - (default) in this mode, 256 sectors are transferred at a time.

**PIO** - Some drives will not tolerate UDMA transfer rate. In this case change the transfer mode to this mode.

Selecting “*Next*” at the “*Transfer Mode*” prompt will prompt you to “*Firmware View*”.

Selecting "Next" at the "View Firmware Rev." prompt will prompt you to "View FPGA Rev." prompt. Selecting "Next" at the "View FPGA Rev." prompt will prompt you to "BIOS Upgrade" prompt. Selecting "Next" at the "BIOS Upgrade" prompt will prompt you to "Copy Drive".

### Copying Drives

1. The LCD will prompt you to "Copy Drive". Before you proceed, make sure **copy percent is set to 100%**. Then choose "Select" to start the COPY process.
2. Make sure the LCD reads "Copy In Progress", the copy percentage is progressing and the size of the source drive is correct.

**NOTE:** You can interrupt **ONLY** the **FULL** copy process at any time by pressing the "Stop" button. **We recommend always performing 100% copy.**

## Firmware Upgrade Process

### Before Upgrade

Follow the instructions on Chapter 13 and follow the **EzRAID™ EzCopy** serial port connections [\[follow this link\]](#).

**IMPORTANT NOTE:** Before running the application, use the Blue buttons adjacent to the LCD to scroll to "Bios Upgrade" prompt. Selecting "Select" at the "BIOS Upgrade" prompt will prompt you to "Turn EzCopy OFF/ON when Upgrade is done".

### Upgrading the Firmware

Run the application. On menu items go to Edit and choose Preferences. Check the box next to "Search My Serial Port". Press next and exit the program. Rerun the application again.

There are two ways to upgrade the firmware on your **DupliDisk™** application:

1. If the PC (where the **DupliDisk™** application is installed) does not have a web connection, visit our web site (from a different computer) at: <http://www.arcoide.com/content.aspx?PagelId=295> and download the latest firmware upgrade and copy the file to the PC (where the **DupliDisk™** application is installed) and then follow these instructions:
  - A. Right click on the EzCopy image and select Upgrade Firmware.
  - B. Choose **Local Disk**.
  - C. Browse to the location where the firmware upgrade was copied.
  - D. You will be prompted to click "OK" to upgrade the firmware:

**IMPORTANT NOTE:** If you stop the upgrade before completion, the process will be cancelled and your firmware will revert back to the base code or your last upgrade version.

- E. Once you have clicked "OK" then the application will proceed with the firmware upgrade. The firmware upgrade will then proceed through several stages, as indicated on the screen.




- F. You will then get a message saying "Firmware Upgrade Completed Successfully" and you will be prompted to choose to shut down the system. Please select "NO".
  - G. In order for the upgrade to take effect, you will need to power down your EzCopy unit and start it up again.
  - H. You can now resume to normal operation.
2. If you have a web connection available, you can perform an upgrade directly from the **DupliDisk™** application as follows:
- A. Right click on the EzCopy image and select Upgrade Firmware.
  - B. Choose **DPS website** and EzRAID™ will connect directly to the website and get the latest firmware.
  - C. You will be prompted to click "**OK**" to upgrade the firmware:

**IMPORTANT NOTE: If you stop the upgrade before completion, the process will be cancelled and your firmware will revert back to the base code or your last upgrade version.**

- D. Once you have clicked "OK" then the application will proceed with the firmware upgrade. The firmware upgrade will then proceed through several stages, as indicated on the screen.
- E. You will then get a message saying "Firmware Upgrade Completed Successfully" and you will be prompted to choose to shut down the system. Please select "No".
- F. In order for the upgrade to take effect, you will need to power down your EzCopy unit and start it up again.
- G. You can now resume to normal operation.

## Chapter 8: EzRAID™ EzCopy Light

**Useful Tip:** Throughout the reading of this manual, you will need to follow links to various locations in this document. Use  plus left cursor key for “Go back to last view”.

### Box Contents

- **EzRAID™ EzCopy** Light unit
- 1 **DupliDisk™** Application CD
- 1 X 20", Channel 1 Serial ATA Cable
- 1 X 20", Channel 2 Serial ATA Cable
- 1 Null-Modem cable
- IDC 10-pin to DB9F Cable
- 1 set of Mode Switch keys
- 6 Mounting Screws

### EzRAID™ EzCopy Light Unit

1. The **EzRAID™ Ezopy Light** can be operated either from an external power, using SATA power cables. Or via a computer's power, in which you need to remove the case cover from the computer.
2. Place the **EzRAID™ Ezopy Light** on a leveled surface.
3. Retrieve all three SATA cables from the packaging and observe that each of the cables is uniquely labeled – **Channel 1**, and **Channel 2**.
4. Connect one end of the **Channel 1** SATA cable to the connector marked as **Channel 1** on the **EzRAID™ Ezopy Light** controller.
5. Connect one end of the **Channel 2** SATA cable to the connector marked as **Channel 2** on the **EzRAID™ Ezopy Light** controller.
6. Connect the “Source” or Master drive into the other side of the **Channel 1** SATA cable.
7. Connect your “Target” or Destination drive into the other side of the **Channel 2** SATA cable. **Make sure the additional SATA hard drive is equal to or greater than the capacity of the original drive.**
8. Connect SATA Power cables into the Power sockets on the **EzRAID™ Ezopy Light**.
9. Connect SATA Power to both “Source” and “Destination” drives.
10. Turn the power ON.

11. For a detailed table describing the Front Panel LED indication, [\[follow this link\]](#).

## Configuring the EzRaid™ EzCopy™ Light Unit

For complete instructions, follow the "Configuring the EzRAID™ EzCopy Unit", [\[follow this link\]](#).

### Firmware Upgrade

To perform a firmware upgrade, you will need to install our application on a different PC with Windows® O/S and refer to the "Connecting the serial port cables to your EzRAID™ unit", and follow the **EzRAID™ Ezcopy Light** serial port connection [\[follow this link\]](#). Once the application is running follow the "Upgrading firmware", [\[follow this link\]](#).

## Chapter 9: Software Installation

**Useful Tip:** Throughout the reading of this manual, you will need to follow links to various locations in this document. Use **Alt** plus left cursor key for "Go back to last view".

After the first initial Rebuild, all EzRAID™ devices all work independently of the installed operating system. However, the EzRAID™ mirroring software currently operates only under the Windows® operating systems.

**IMPORTANT NOTE:** For EzRAID™ unit that is installed on a non Windows operating system, please refer to Chapter 13 [\[follow this link\]](#).

**NOTE: This software runs only on Windows 2000/2003/XP/Vista/Win7**

1. Close any programs that may be running on the computer. Any previous versions of the EzRAID™ software must be uninstalled before the software installation can take place. If there are no previously installed versions, skip to step 4.
2. If a previous copy exists, it first must be closed. Do this by **right clicking** on the **EzRAID™** icon in the system tray at the bottom right-hand corner of your screen. Select **Exit** from the pop-up menu that appears. **EzRAID™** is now fully closed.
3. Continue the uninstall process by going to Control Panel → Add or Remove Programs. Once in Add or Remove Programs, locate **EzRAID™** and select **Remove**.
4. Insert the included EzRAID™ utility CD into the CDROM drive. The install screen should appear. If it does not appear, use Windows Explorer™ to navigate to your CDROM drive (typically D or E). Open the **Windows** folder and double-click on the file **EzRAIDInstall.exe**.
5. Click the **Install Now** logo to start the installation.
6. Step through the installation screens and make the appropriate selections based on your preferences.
7. Restart your system.
8. The software installation is now complete.



## Chapter 10: Software Interface

**Useful Tip:** Throughout the reading of this manual, you will need to follow links to various locations in this document. Use **Alt** plus left cursor key for “Go back to last view”.

### Getting to Know the Screens

This chapter is to familiarize you with the various functions and options found within the software interface.

### Menu Items

#### File

- **Close** – This will close the program window. An icon will appear on the system tray indicating the program is running in the background.
- **Exit** – This will exit the program completely

#### Edit

- **Preferences** – Customize your settings such as loading application when your computer starts up and search for a serial port.
- **Email Notifications** – EzRAID™ can be set to send a confirmation email when a drive fails or if you are running in single mode. To do this, you need to activate the E-MAIL NOTIFICATION option. (**Learn more about E-mail notifications, [follow this link](#)**).

#### Help

- **Help Topics**
- **About EzRAID™** – Application and EzImage.dll Versions. Contact Information.
- **Register with DPS** – Select this option to register your EzRAID™ unit online. It is important that you register your EzRAID™ unit so that we may provide you with technical support.
- **Technical support** - Will redirect you to DPS technical Support web page [http://www.arcoide.com/support\\_contact.php](http://www.arcoide.com/support_contact.php)
- **Sending Logs to Support** – Send a support form with necessary information from your computer for debugging purposes.
- **DPS Home Page** – Visit [www.arcoide.com](http://www.arcoide.com) homepage for product and technical chat or support information.
- **Logs**
  - **View**
    - **Application** - Opens the application log file in a text editor for viewing.
  - **Clear**
    - **Application** - Erases all previous entries in the log and leaves an entry of the cleared date and time

**Note: The Log Files list the latest entries on the top line. The Logs are limited to 1000 lines. When this limit is exceeded, the oldest entries are deleted**

## Tools

- **Logs**
  - **View** - Opens the rebuild log file in a text editor for viewing.
  - **Clear** - Erases all previous entries in the log and leaves an entry of the cleared date and time
  - **Retrieve** - Gather information and append it to your log
- **Rebuild Drive** – Sends you directly to rebuild your drive
- **Upgrade Firmware**- Upgrade Firmware dialog
- **Restore Factory Settings**- Restore all factory settings of your **DupliDisk™**

## Main Buttons

Home Screen

**Home Screen Tab** - consists of icons that allow you to perform specific functions and navigate throughout the application. They are listed below.

Configuration

**Configuration Tab** - consists of options that allow you to change your EzRAID™ unit settings.

Rebuild

**Rebuild Tab** – Used to initiate from an Active drive indicated by (R/W) to the non active drive indicated by (W/O). Also known as Mirror Copy.



**Cancel** – Used to halt a process that is being run.



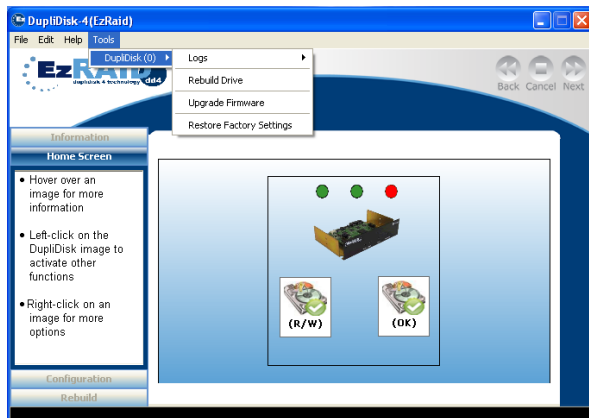
**Save** – Used to save any configuration settings that have been changed.



**Restore** – Used to restore factory defaults to the tab you have selected.

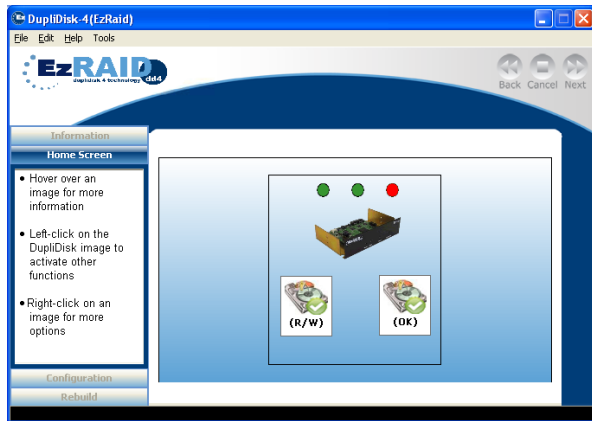
## Interacting with the EzRAID™ unit

- Hover over the EzRAID™ Unit image **OR** go to *Tools* for more information
- Left-click on the **DupliDisk™** image to activate other functions
- Right-click on an image for more options



## DupliDisk™ Status Window (Home Screen)

DupliDisk™ gives you a method by which you can monitor the status of your EzRAID™ unit(s) and your hard drives. The DupliDisk™ LED's status window duplicates the front panel exactly, and is very convenient when the DupliDisk™ is out of view.



A hard drive picture like this with a check mark:  
It is a **good** healthy hard drive.



A hard drive picture like this with an X:  
It is a **failed** or **disconnected** hard drive.





# ToolUsfuel Tips and Menus

## ToolUsfuel Tip for EzRAID™ unit

Array Status – Checks is the array is “Ok”  
 Data Identical – Checks if the data on your hard drives are alike  
 Host Connection – By which you are connected to your motherboard



## Right-click on EzRAID™ unit image

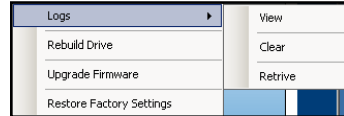
Logs

- View – Display your log
- Clear – Clear your log
- Retrieve – Gather information and append it to your log

Rebuild Drive – Sends you directly to rebuild your drive

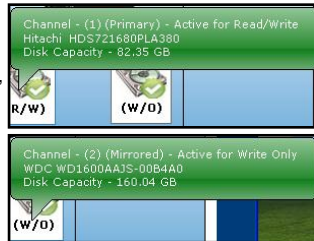
Upgrade firmware – Upgrade Firmware dialog

Restore Factory Settings – Restore all factory settings of your **DupliDisk™**



## ToolUsfuel Tip for drives

Each drive toolUsfuel Tip displays the Channel, whether it is primary or mirrored, the drive make and model and the capacity.

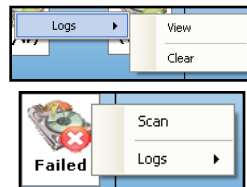


## Right-click on drives

Logs

- View – Display Channel 1 or 2 information
- Clear – Clear your log

When a drive fails, you may right-click and select Scan to search for the drive if possible.



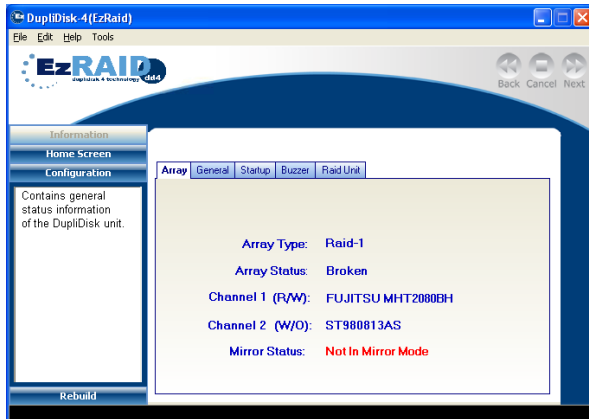
## Configuration Tabs

The Configuration Tabs are a series of tabs that contain the EzRAID™ options. They make up the **Main** screens of the DupliDisk™ application. They are used to customize the application to best suit your needs. This chapter has broken the tabs down into sections and defined each of the settings within the tabs.

### Array Tab

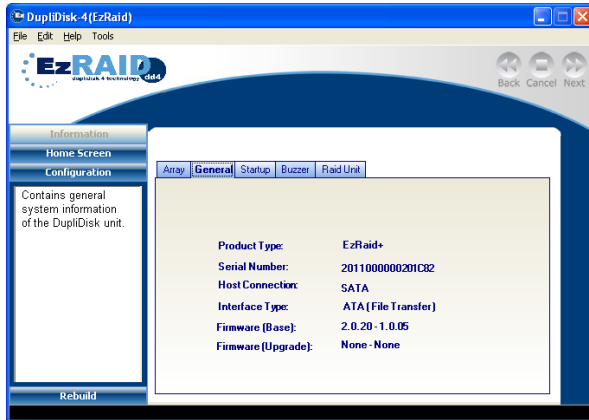
The Array Tab provides general status information of the EzRAID™ system or “Array”. This includes model information of hard drives used and mirrored status. No configuration changes are made here.

The key field found in this tab is **Mirror Status**. This field should be used in conjunction with the LED’s found on the front panel of the EzRAID™ unit. The Status field indicates whether or not the drives are identical and is color coordinated.



## General Tab

The General Tab provides general system information for the EzRAID™ unit including Product type, Serial Number, Firmware and FPGA revisions. No configuration changes are made here.



## Startup Tab

The Startup Tab contains settings fundamental to the configuration of the EzRAID™ unit upon system startup



- **Serial Port Baud Rate** – Allows you to specify the speed of the RS232 serial port when used to control the EzRAID™ unit remotely. The default is 38400.
  - 9600
  - 19200
  - 38400 – Default
- **Image Copy Type** – Allows you to select the copy process type you prefer.
  - **Full** – Allows you to copy the **entire** hard drive, independent of the quantity of useful data found on the drive. – Default
  - **Block** – Allows you to copy only the part of the drive that contains useful data. This method typically results in a much faster copy.  
**NOTE: Block Copy is only for windows machines.**
- **Lazy Drive Extra Delay** – Allows you to specify a period by which the EzRAID™ unit will wait for a response in the case of an unresponsive hard drive. The setting range is from No Delay to 10 seconds, in 1 second increments.
- **Log Information** – Allows you to enable or disable writing information to log files generated by the EzRAID™. The log files are saved to the EzRAID™'s internal flash memory and they are useful for troubleshooting purposes. The log file includes: Copy/Compare. The available choices are:
  - **Enabled** – Allows information to be recorded to log files.
  - **Disabled** – Does not allow information to be recorded to log files.

## Buzzer Tab

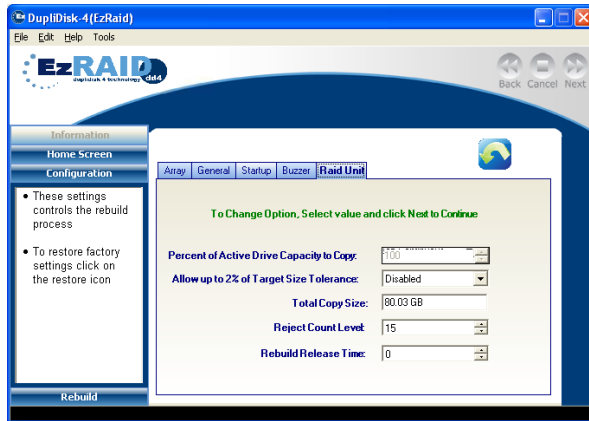
EzRAID™ contains an audible alarm or buzzer that alerts you of faults within the EzRAID™ system. The Buzzer Tab contains various settings that allow you to control how the audible alarm behaves.



- **Buzzer Mode Control** – Allows you to specify the way the buzzer sounds. The choices consist of one long continuous tone, an interrupted beeping tone or disable.
- **Beep On Time** – Allows you specify the length of time the buzzer will sound when beeping. This setting is effective only when Beep On/Off option is chosen as the Buzzer Mode Control. This setting gives the following choices: 1 second (default) to 12 seconds in 1 second increments.
- **Beep Off Time** – Allows you specify the length of time the buzzer will be off when beeping. This setting is effective only when Beep On/Off option is chosen as the Buzzer Mode Control. This setting gives the following choices: 1 second (default) to 12 seconds in 1 second increments.
- **Buzzer Off After 1 Minute At Start** – Allows the user to **Enable** or **Disable** the buzzer sound upon system startup if an error condition exists.
- **Beep at Start if Drive Fails** – Allows you to **Enable** or **Disable** the buzzer from sounding at startup should a drive failure condition exist.
- **Beep at Start if Single Mode** – Allows you to **Enable** or **Disable** the buzzer from sounding at startup if EzRAID™ detects that it is operating with only one drive, or if both drives are installed but not initialized (Mirrored) yet.

## Raid Unit Tab

Contains advanced settings that allow you to control some specialized functions of the EzRAID™ system such as: Reject Count Level and Rebuild Release Time.



- **Total Copy Size** – This field is for information only. It calculates the disk size in GB's that the application will copy based on the **Percent of Drive Capacity to Copy**.
- **Reject Count Level** – This setting allows you to specify how many times the system will tolerate a failure of the **same drive** in either chan1 or chan2 drive on the system before it chooses to disregard it altogether. This number applies to each channel separately. The setting range from 1 to 15 (default).
- **Rebuild Release Time** – This setting permits adjustment of rebuild speed in order to conserve system resources during a rebuild ("Sync") operation. It introduces a small delay before starting a rebuild burst, to give more time for the Operating System. This allows applications that heavily use disk resources to run faster. Release time value can be adjusted from a minimum of 0 (default) to a maximum of 255 (milliseconds).

## Chapter 11: General Operation

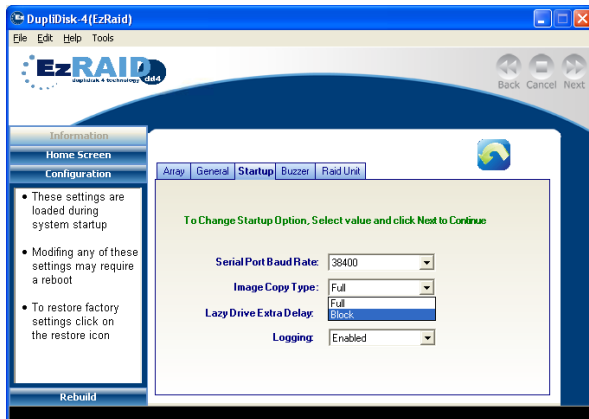
### Rebuild (Mirror Copy)

A rebuild is a complete copy of an Active drive indicated by (R/W) to the non active drive indicated by (W/O). To invoke a Mirror Copy, right-click on the EzRAID™ unit image and select Rebuild Drives or click on the **Rebuild** tab (when active) found in the main navigation left bar.

Once a rebuild has been performed, all future information saved to the hard drive will be sent to both the Channel 1 and Channel 2 drives simultaneously, always ensuring a solid and reliable mirror.

There are two ways you can mirror your drive. You can do a **Block Copy** or a **Full Copy**.

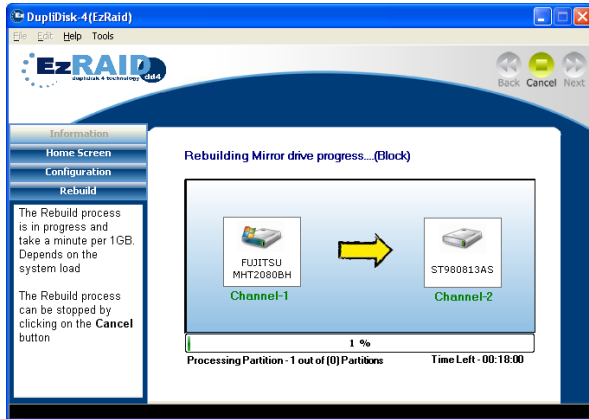
To choose which type of rebuild you wish to use; click on the **Startup** tab and change your selections under the **Image Copy Type** drop down menu.



## Block Copy

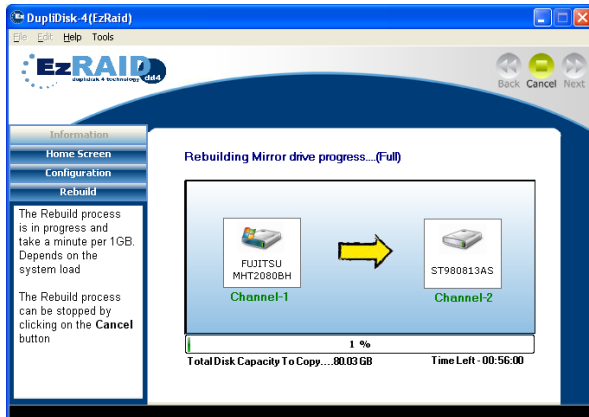
A block copy is a block-by-block copy of valid data on the disk. This copy process will copy approximately 1.5GB of data per minute.

**NOTE: Block Copy is only for windows machines.**



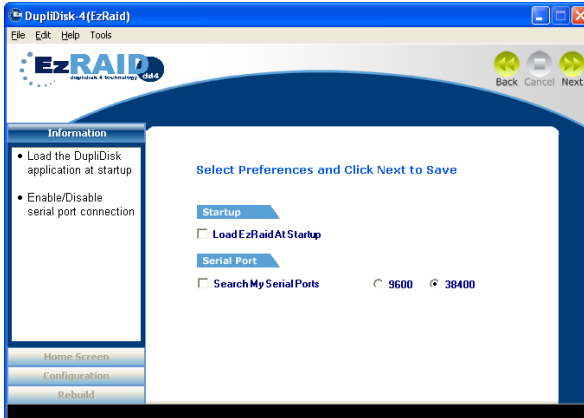
## Full Copy

A full copy is a copy the entire disk bit by bit. This copy process will copy approximately 1GB per minute.





## Preferences



- Startup – Loads the **DupliDisk™** at Startup
- Serial Port – Search for an EzRAID™ unit via Serial Port on **DupliDisk™** application startup

## Email Features

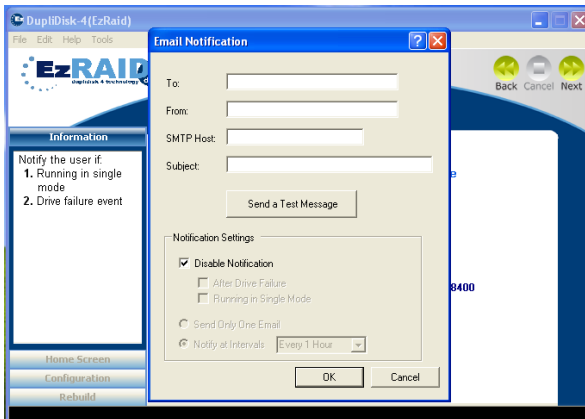
DupliDisk™ application can be set to send a confirmation email when a drive fails or if you are running in single mode. This can be extremely convenient, especially with today's wireless technology that allows you to receive email on your cell phone or pager.

Select the **Preferences** option from the **Edit** Menu on the main toolbar. On the **E-mail Notification** option, fill in all the required information such as the e-mail address you want notifications to be sent to, the e-mail address to be used as the sender, the mail service (SMTP) host address, and the subject line.

If this is your first time setting up the E-Mail Notification, click on **SEND A TEST MESSAGE** to ensure that all the information has been entered correctly. Check your e-mail and make sure that you have received the test message and the notification feature is working properly.

Fill in the fields accordingly.

- **E-Mail Address to** – Insert the email address where you would like all email alerts to be sent.
- **E-Mail Address from** – Insert the email address from where you would like email alerts to appear to be coming from.
- **SMTP Host** – Insert the SMTP outgoing email server information that has been provided you from your email service provider. TCP/IP addresses are allowed also.
- **E-Mail Subject** – Insert the content you wish to be displayed in the email alert.



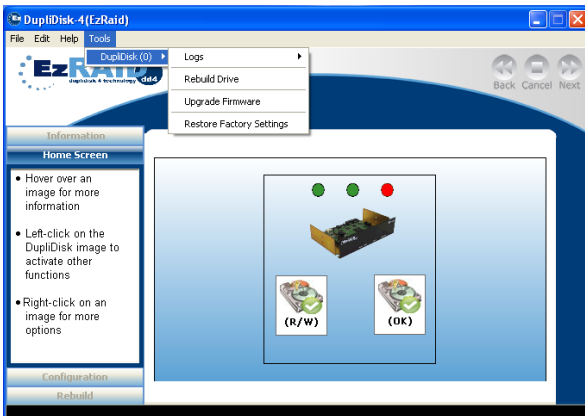
## Notification Setting

- **Disable Notification** – Check this box if you do not wish to receive email notifications.
  - **After Drive Failure** - This option causes an email to be sent out after a drive has failed at the selected intervals until the system is rebooted.
  - **Running in Single Mode** – This option causes an email to be sent out at the selected intervals until the drives have been restored.
- **Send Only One Email** – EzRAID™ will send only one email after drive failure or when *DupliDisk™* is running in single mode as oppose to sending emails at assigned intervals.
- **Notify at Intervals** – Selecting this option activates the corresponding selection boxes. The emailing frequency can be set to send an email as often as every hour, 2 hours, 4 hours, 6 hours, 12 hours, or Daily. When **Daily** is selected, another selection box becomes active where you can specify the time at which the Daily email will be sent out.

## Firmware Upgrade

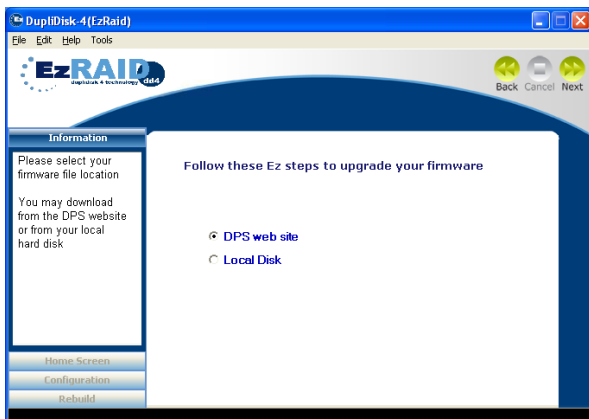
**IMPORTANT NOTE:** If the PC using the EzRAID™ unit does not have a web connection, visit <http://www.arcoide.com/content.aspx?PageId=289> and download the appropriate latest firmware upgrade (DD4 Firmware Upgrades), and save the file on a known location.

To access the firmware upgrade menu, right click on the **DupliDisk™** Image **OR** go to *Tools* and select Upgrade Firmware.



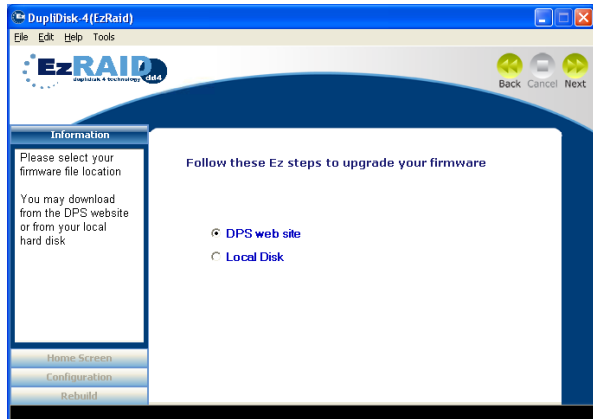
- Choose how you want the firmware upgrade to be performed.

- Choose **DPS website** if you are connected to the internet and EzRAID™ will connect directly to the website and get the latest download. **(to learn more, [follow this link](#))**
- Choose **Local Disk** if you have the firmware download from the DPS website as a file on your computer. **(learn more [follow this link](#))**

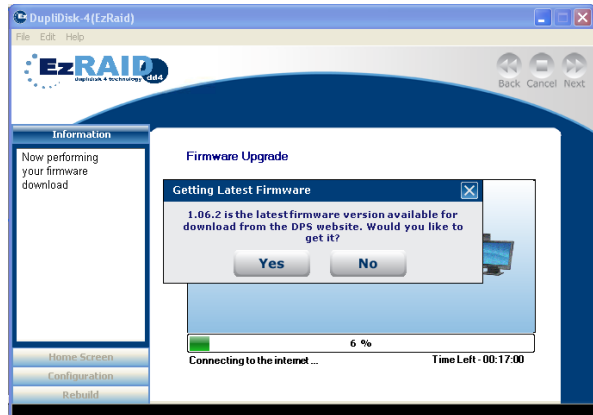


## DPS Website

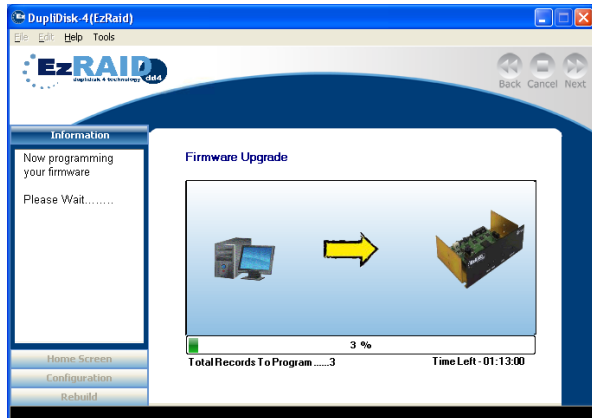
- If you choose to download the firmware upgrade from DPS website, click on the radio button next to **DPS website**, click next to continue.



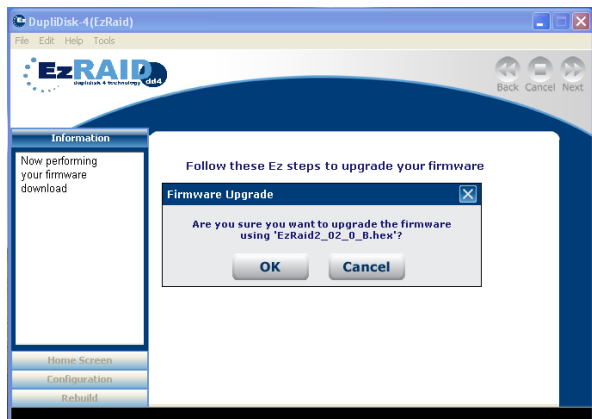
- You will be prompted if it's okay to make sure you want to upgrade the firmware.



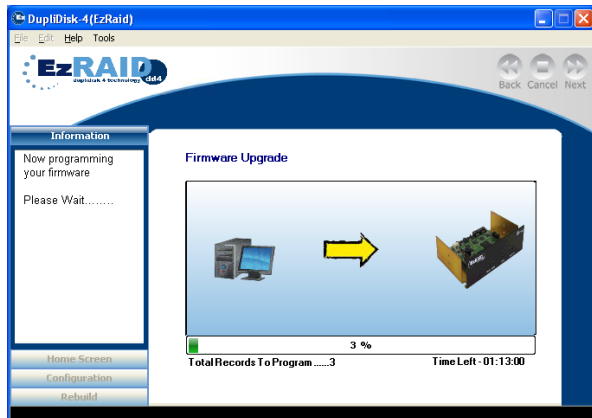
- Once you have clicked “Yes” then the application will download the firmware. The firmware upgrade will then proceed through several stages, as indicated on the screen.



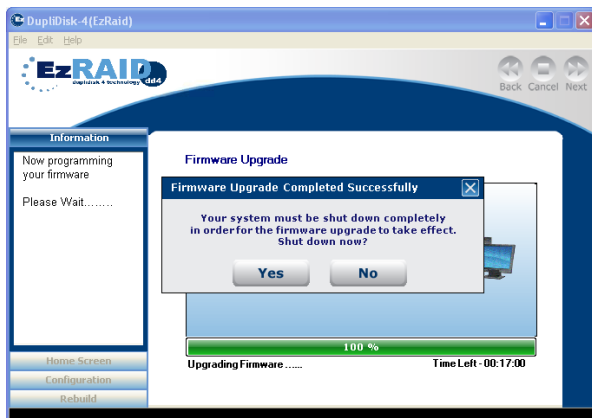
- You will be prompted to click “OK” to upgrade the firmware:  
**If you stop the upgrade before completion, the process will be cancelled and your firmware will revert back to the base code or your last upgrade version.**



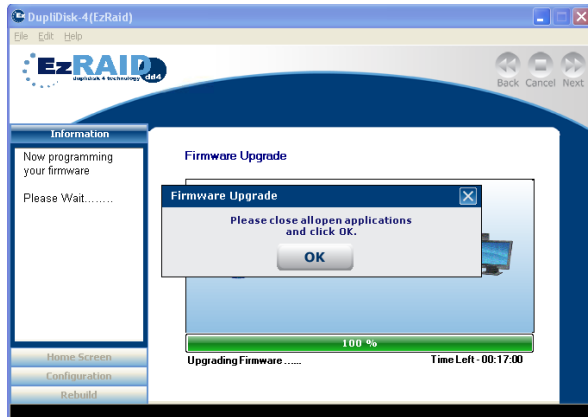
- Once you have clicked “OK” then the application will proceed with the firmware upgrade. The firmware upgrade will then proceed through several stages, as indicated on the screen.



- You will then get a message saying “Firmware Upgrade Completed Successfully”.

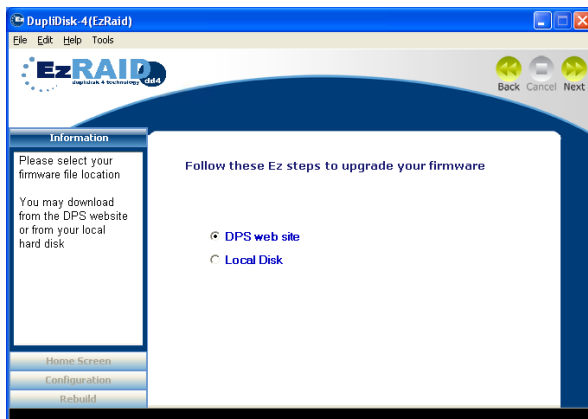


- In order for the upgrade to take effect, you will need to power down your system and start up again.



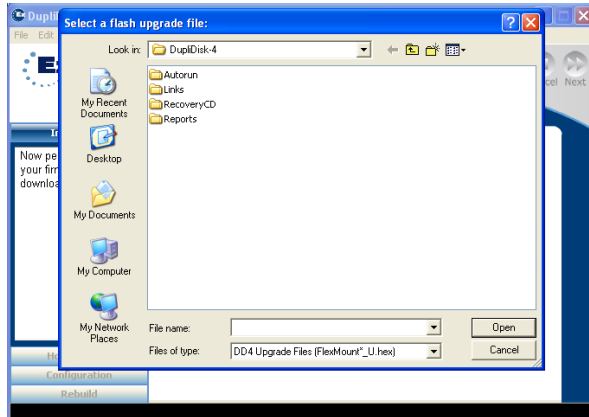
## Local Disk

- If you choose to access the firmware download from your Local Disk, click on the radio button next to "Local Disk" and click next.

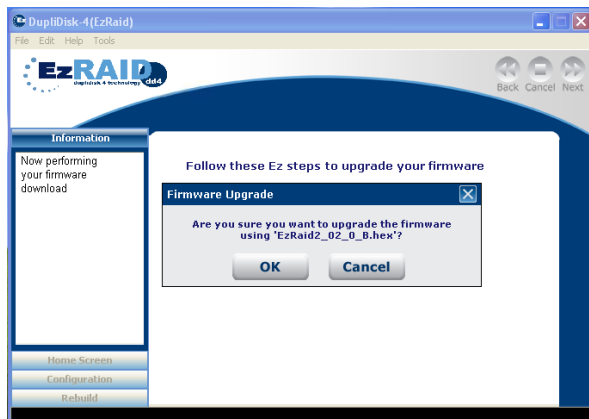




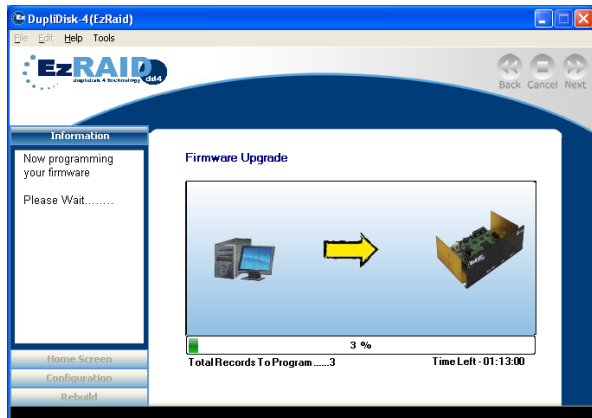
- Select where the firmware upgrade is located.



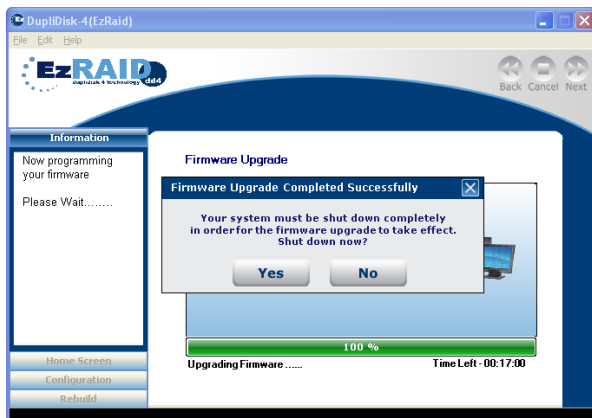
- You will be prompted to click "OK" to upgrade the firmware:  
**If you stop the upgrade before completion, the process will be cancelled and your firmware will revert back to the base code or your last upgrade version.**



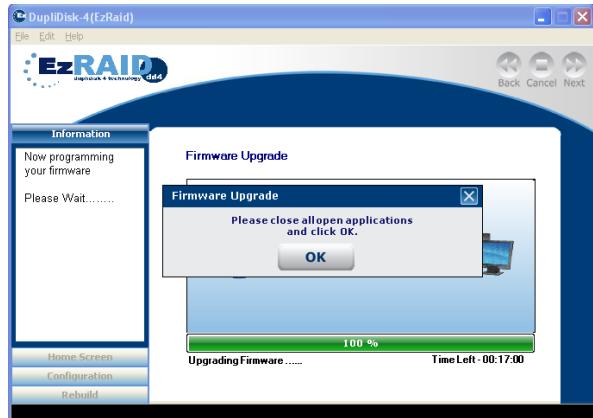
- Once you have clicked “OK” then the application will proceed with the firmware upgrade. The firmware upgrade will then proceed through several stages, as indicated on the screen.



- You will then get a message saying “Firmware Upgrade Completed Successfully”.



- In order for the upgrade to take effect, you will need to power down your system and start up again.



# Chapter 12: Troubleshooting

This chapter provides solutions to common problems that may arise during or after installation or through normal operation of the system. If you find that the solutions presented here do not solve the problem you have, please contact Data Protection Solutions for Technical Support at (954) 925-7347.

## Front Panel LED Indication

On the front panel of the EzRAID™ unit there are three LED's that indicate various conditions or states of operation, and a recessed Buzzer Off button.

The various LED conditions are as follows:

Channel 1	Channel 2	Status	Meaning
Green	Green	Green	Drives OK, Mirror Mode, Identical
Amber	Amber	Green	Drives in use
Amber	Amber	Flashing Red	Rebuild in progress
Green	Green	Red	Drives OK, Not in Mirror Mode
Green	Green	Flashing Green	Drives OK, Not identical
Flashing Amber	Flashing Amber	Flashing Amber	Self test
Green	Flashing Red	Red	Channel 2 drive failure
Flashing Red	Green	Red	Channel 1 drive failure

## Common Issues

1. The computer freezes during the boot up process, may display HDD Error and no lights are lit on the EzRAID™ front panel.
  - Ensure the power supply cable is firmly secured to the power connector on the back of the **EzRAID™** device.
2. The computer freezes or continuously cycles during the boot up process, may display HDD Error or Boot Error and the Channel 1 light on the EzRAID™ front panel is flashing red.
  - Ensure the power supply cable is firmly secured to the power connector socket on the back of the **Channel 1** hard drive.
  - Ensure the **Channel 1** SATA cable connector is securely seated in the SATA socket on the back of the **Channel 1** hard drive.
  - Ensure the **Channel 1** SATA cable connector is securely seated in the **Channel 1** SATA socket on the **EzRAID™** device.
3. The Channel 2 light on the EzRAID™ front panel is flashing red.
  - Ensure the power supply cable is firmly secured to the power connector socket on the back of the **Channel 2** hard drive.
  - Ensure the **Channel 2** SATA cable connector is securely seated in the SATA socket on the back of the **Channel 2** hard drive.
  - Ensure the **Channel 2** SATA cable connector is securely seated in the **Channel 2** SATA socket on the **EzRAID™** device.
4. The computer freezes during the boot up process, may display HDD Error and the Channel 1 and Channel 2 lights are green on the EzRAID™ front panel.
  - Ensure the **Host** SATA cable connector is securely seated in the **Host** SATA socket on the **EzRAID™** device.
  - Ensure the **Host** SATA cable connector is firmly seated in the **SATA Socket** on the **Motherboard** of the computer.
5. The EzRAID™ unit keeps turning off.
  - Make sure your computer is not in sleep mode.

## Recovering from a drive failure

**IMPORTANT NOTE:** Please don't swap the drives in the case of a drive failure.

When the alarm on the EzRAID™ goes off, please check the LED status to determine the failed drive.

### EzRAID™ Dual Swap+/ eSATA:

1. Unlock the caddy that corresponds to the failed drive.
2. Pull the caddy out.
3. Remove the mounting screws.
4. Replace the drive with the **same size drive or larger**.
5. Secure the new drive with the previously removed screws.
6. Push the caddy in and lock the caddy.
7. Run the DupliDisk application.
8. Right-click on the EzRAID™ unit image and select Rebuild Drives or click on the **Rebuild** tab (when active) found in the main navigation left bar.

### EzRAID™ Bay Mount and EzRAID™ FlexMount:

1. Close all running applications and turn your computer off.
2. Locate the failed drive in your computer.
3. Replace the failed drive with the **same size drive or larger**.
4. Connect the power and the data cables and secure the new drive.
5. Turn the computer on.
6. Run the DupliDisk application.
6. Right-click on the EzRAID™ unit image and select Rebuild Drives or click on the **Rebuild** tab (when active) found in the main navigation left bar.

### EzRAID™ MicroRAID:

1. Close all running applications and turn your computer off.
2. Un-mount the EzRAID™ MicroRaid unit from the 3.5" drive bay.
3. If the failed drive is CHAN1, remove the four mounting screws from the two guide rails.
  - a) Replace the drive with the **same size drive or larger**.
  - b) Insert the drive between the guiderails, making sure the drive is firmly attached to the black connector on the board.
  - c) Secure the drive to the guide rails with four of the drive screws.
4. If the failed drive is CHAN2, remove the four screws holding the green board to the housing bracket and flip the board upside down.
  - a) Remove the four mounting screws from the two guide rails.
  - b) Replace the drive with the **same size drive or larger**.
  - c) Insert the drive between the guiderails, making sure the drive is firmly attached to the black connector on the board.
  - d) Secure the drive to the guide rails with four of the drive screws.
  - e) Return board to upright position; reattach the board to the housing bracket using the four screws you have previously removed.
5. Re-Install the EzRAID™ DD4 MicroRAID in the appropriate 3.5" empty bay, guiding the cable through the bay opening from the front of the computer. Secure the unit with the screws previously removed.

- 
6. Before securing the EzRAID™ unit with the previously removed screws, ensure that you have access to the SATA data cable and SATA power (adapter) connector found on the back of the unit and connect the unit to both.
  7. Turn the computer on.
  8. Run the DupliDisk application.
  9. Right-click on the EzRAID™ unit image and select Rebuild Drives or click on the **Rebuild** tab (when active) found in the main navigation left bar.

## Chapter 13: Serial Port and USB Connections

**Useful Tip:** Throughout the reading of this manual, you will need to follow links to various locations in this document. Use **Alt** plus left cursor key for “Go back to last view”.

For EzRAID™ that is not installed on Windows O/S, the unit can be accessed for settings, RAID management and Firmware Upgrade via Serial port or USB connection.

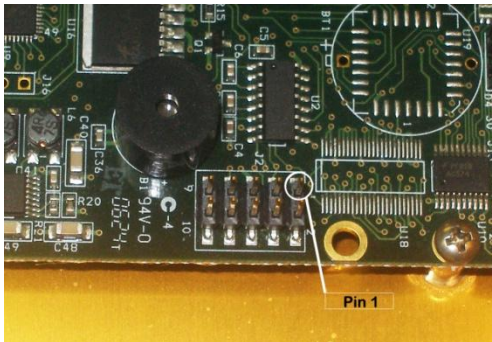
Install the **DupliDisk™** Application on a different PC which operates under Windows® and connect this computer via serial port as mentioned in “Connecting the serial port cables to your EzRAID™ unit” below.

**NOTE:** For **EzRAID™ Bay Mount+** supporting USB connection, refer to “Connecting the USB port to your EzRAID™ Bay Mount+ unit” below.

### Connecting the serial port cables to your EzRAID™ unit

In order to communicate with the EzRAID™ unit via a serial port (RS-232) you must follow the corresponding product serial port connections:

EzRAID™ Bay Mount, Bay Mount+ (Serial Port), and EzRAID™ EzCopy Light:

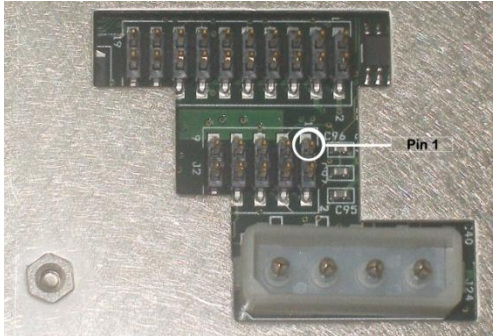


For **EzRAID™** that don't shipped with “IDC 10-pin to DB9F” or Null-Modem cables, follow this link for cable description found in [Appendix A](#).

- Connect the “IDC 10-pin” connector on the “IDC 10-pin to DB9F” cable to a 10-pin header (J2) on the EzRAID™ unit. **Note:** Make sure the red pin connects to pin #1 of J2.
- Connect the DB9F connector on the “IDC 10-pin to DB9F” cable to DB9M on the Null-Modem cable.
- Connect the DB9F to one of your PC's COM ports.



## EzRAID™ Dual Swap+:



For **EzRAID™** that don't shipped with "IDC 10-pin to DB9F" or Null-Modem cables, follow this link for cable description fount in [Appendix A](#).

- Connect the "IDC 10-pin" connector on the "IDC 10-pin to DB9F" cable to a 10-pin header (J2) on the EzRAID™ unit. **NOTE:** Make sure the red pin connects to pin #1 of J2.
- Connect the DB9F connector on the "IDC 10-pin to DB9F" cable to DB9M on the Null-Modem cable.
- Connect the DB9F to one of your PC's COM ports.

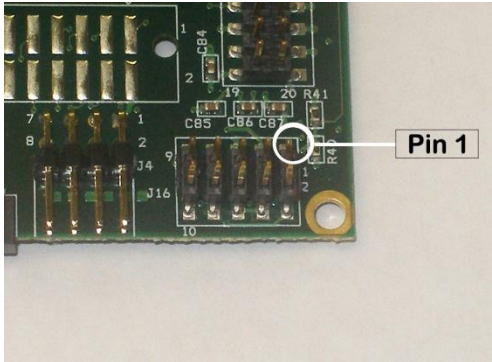
## EzRAID™ FlexMount:



For **EzRAID™** that don't shipped with "IDC 10-pin to DB9F" or Null-Modem cables, follow this link for cable description fount in [Appendix A](#).

- Connect **male** side of a Null-Modem Cable to the DB9F connector on the Rear Status LED Bracket (DB9F).
- Connect the **female** side of a Null-Modem Cable t your PC's COM ports.

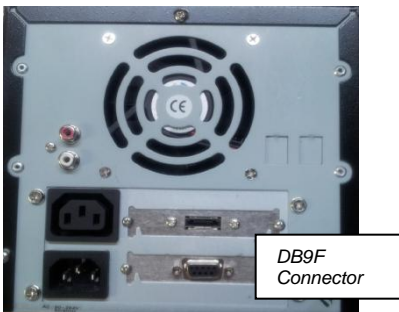
## EzRAID™ MicroRaid:



For **EzRAID™** that don't shipped with "IDC 10-pin to DB9F" or Null-Modem cables, follow this link for cable description found in [Appendix A](#).

- Connect the "IDC 10-pin" connector on an "IDC 10-pin to DB9F" cable to a 10-pin header (J16) on the EzRAID™ unit. **NOTE:** Make sure the red pin connects to pin #1 of J16.
- Connect the DB9F connector on the "IDC 10-pin to DB9F" cable to DB9M on the Null-Modem cable.
- Connect the DB9F to one of your PC's COM ports.

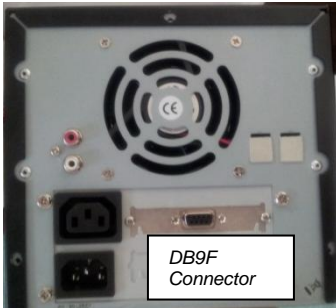
## EzRAID™ eSATA:



For **EzRAID™** that don't shipped with "IDC 10-pin to DB9F" or Null-Modem cables, follow this link for cable description found in [Appendix A](#).

- Connect **male** side of a Null-Modem Cable to the DB9F connector the on the DB9F connector on the back of the **EzRAID™ eSATA** unit.
- Connect the **female** side of a Null-Modem Cable t your PC's COM ports

## EzRAID™ EzCopy:



For **EzRAID™** that don't shipped with "IDC 10-pin to DB9F" or Null-Modem cables, follow this link for cable description found in [Appendix A](#).

- Connect **male** side of a Null-Modem Cable to the DB9F connector the on the DB9F connector on the back of the **EzRAID™ EzCopy** unit.
- Connect the **female** side of a Null-Modem Cable t your PC's COM ports
- 

## Connecting the USB port cables to your EzRAID™ Bay Mount+ unit

1. Using a Mini USB cable (not included), connect the mini side to the **EzRAID™ BayMount+** and the other side to a USB connector to a Windows computer where the **DupliDisk™** Application is installed.
2. Once you connected the USB cable, Windows will detect a new hardware.
3. Follow Windows new hardware installation and choose the USB drivers from the Duplidisk-4 directory i.e. where the application was installed. The drivers are located under C:\Program Files\DupliDisk-4\Exar Serial\_USB directory. Choose the appropriate drivers according to your Windows machine. Choose the x86\_1.2 directory for 32Bit machine, or x64\_1.2 for 64Bit machine.

## Running the **DupliDisk™** Application

4. Run the **DupliDisk™** Application (**NOTE:** A "No EzRAID™ devices were found" message will appear.
5. Go to Edit -> Preferences
6. Locate "Search My Serial Ports" and check the checkbox to enable your serial port connection then select the Next button to save your settings.
7. Go to File -> Exit to exit your **DupliDisk™** Application.
8. Run your **DupliDisk™** Application.
9. Refer to Chapter 10 for your **DupliDisk™** Application interface.

# Appendix A

## Serial Port Pin Layout

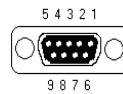
### IDC 10-pin to DB9F Cable

**NOTE:** Use 9 pin ribbon cable

IDC 10-Contact Socket Female connector	9 Pin Female
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9



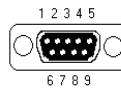
IDC 10-Contact Socket  
Female connector (Red wire  
indicates pin-1)



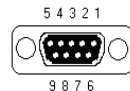
9 Pin DB9F (Female)

### Null-Modem Cable

Signal Name	9 Pin Male	9 Pin Female
FG (Frame Ground)	-	-
TD (Transmit Data)	3	2
RD (Receive Data)	2	3
RTS (Request To Send)	7	8
CTS (Clear To Send)	8	7
SG (Signal Ground)	5	5
DSR (Data Set Ready)	6	4
DTR (Data Terminal Ready)	4	6



9 Pin DB9M (Male)



9 Pin DB9F (Female)

## One-Year Limited Warranty

This warranty gives you specific legal rights. You may also have other rights that vary from one jurisdiction to another. THE WARRANTIES GIVEN HEREIN, TOGETHER WITH ANY IMPLIED WARRANTIES COVERING THE HARDWARE, INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE YEAR FROM THE DATE OF DELIVERY TO PURCHASER.

Data Protection Solutions by ARCO ("DPS") warrants to the Purchaser that DPS' hardware is free from defects in workmanship or material under normal use and service. This warranty commences on the date of delivery of the hardware to the Purchaser. Any claim under the warranty must include a dated proof of purchase or invoice. In any event, DPS' liability for defective hardware is limited to repairing or replacing the hardware.

During the warranty period, DPS agrees to repair or replace, at its sole option, without charge to Purchaser, any defective component part of the hardware. To obtain service, Purchaser must contact Technical Support to obtain a Return Merchandise Authorization (RMA) number. Return the hardware to DPS or an authorized DPS distributor in an adequate container for shipping. The postage, shipping and insurance charges incurred in shipping to DPS will be paid by Purchaser and all risk for the hardware shall remain with Purchaser until such time as DPS takes receipt of the hardware. Upon receipt, DPS will promptly repair or replace the defective unit and then return said unit to Purchaser, postage, shipping, and insurance prepaid. DPS may use reconditioned or like new parts or units, at its sole option, when repairing any hardware. Repaired products shall carry the remaining warranty period pertaining to original purchase. This warranty is contingent upon proper use of the hardware by Purchaser and does not cover: hardware or software incompatibility (covered under DPS' 30 Days Money Back Guarantee Policy), damage due to accident, unusual physical, electrical, or electromechanical stress, neglect, misuse, failure of electric power, air conditioning, humidity control, transportation, operation with media not approved by DPS, or tampering with or altering of the hardware.

### **DPS' 30 Days Money Back Guarantee Policy**

DPS GUARANTEES MONEY BACK WITHIN THE 30 DAYS AFTER PURCHASE, FOR THE FOLLOWING REASONS: NOT SATISFIED WITH THE PRODUCT OR ANY HARDWARE AND SOFTWARE INCOMPATIBILITY.

DPS SHALL NOT BE LIABLE TO YOU FOR LOSS OF DATA, LOSS OF PROFITS, LOST SAVINGS, SPECIAL INCIDENTAL, CONSEQUENTIAL, INDIRECT OR OTHER SIMILAR DAMAGES ARISING FROM BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, OR OTHER LEGAL ACTION EVEN IF DPS OR ITS AGENT HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR FOR ANY CLAIM BROUGHT AGAINST YOU BY ANOTHER PARTY.

This warranty allocates risks of product failure between Purchaser and DPS. DPS' hardware pricing reflects this allocation of risk and limitations of liability contained in this warranty. The warranty set forth above is in lieu of all other expressed warranties, whether oral or written. The agents, employees, distributors, and dealers of DPS are not authorized to make modifications to this warranty, or additional warranties binding on DPS. Accordingly, additional statements such as dealer advertising or presentations, whether oral or written, do not constitute warranties by DPS and should not be relied upon.

Returning the product to Data Protection Solutions by ARCO requires contacting DPS' Technical Support to obtain a Return Merchandise Authorization (RMA) number. You must have an RMA number before returning the product to us. Ship the product back in the original container with the RMA number, name, and address on the shipping label. Purchaser should address all matters concerning this warranty to:

### **Data Protection Solutions by Arco**

3100 North 29th Court  
Hollywood, Florida 33020 U.S.A.  
E-mail: [info@arcoide.com](mailto:info@arcoide.com)  
Web Site: <http://www.arcoide.com>

Telephone: 954-925-2688  
Facsimile: 954-925-2889  
Tech Support: 954-925-7347

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