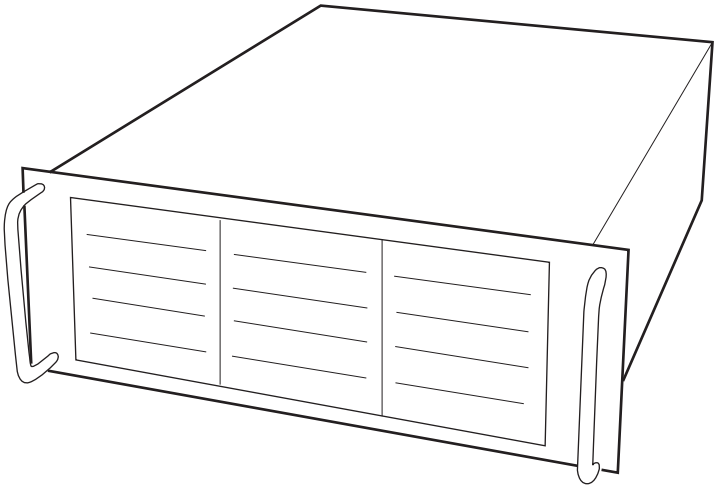
Addonics
TECHNOLOGIES



User Guide

RAID Rack

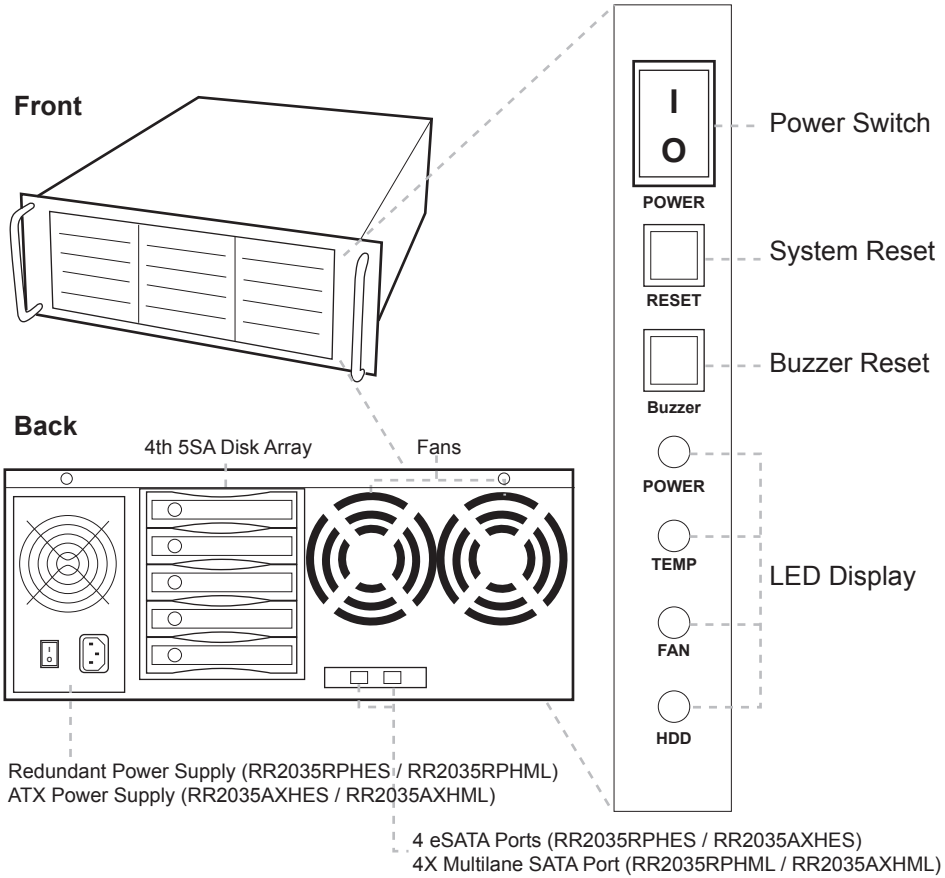
(RR2035RPHES / RR2035AXHES)
(RR2035RPHML / RR2035AXHML)

www.addonics.com

v5.1.11

Technical Support
If you need any assistance to get your unit functioning properly, please have your product information ready and contact Addonics Technical Support at:

Hours: 8:30 am - 6:00 pm PST
Phone: 408-453-6212
Email: http://www.addonics.com/support/query/



Power Switch: This is the switch to power on devices connected to the power supply. The power LED will light up to indicate power is supplied.
Note: The main power switch located at the back of the enclosure must be turned on first.

Reset Button: Not operational.

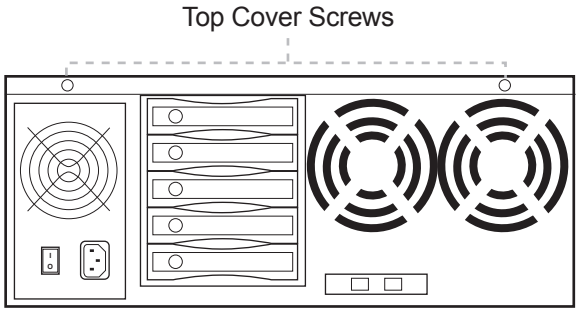
Buzzer Reset: Pressing the button stops the buzzer from making a sound. The buzzer will make a sound when temperature inside the storage rack exceeds the temperature setting on the Thermal Management card.

Power LED: Lights up when the power switch is turned on.

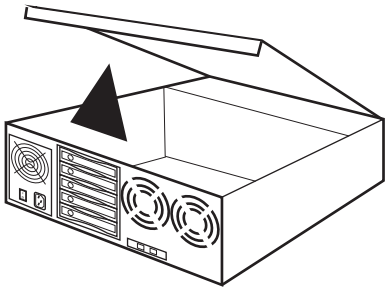
Temp LED: Lights up indicating thermo board is working properly.

Fan LED: Normally on when fan is operational. If an abnormal condition is detected, the LED flashes.

HDD LED: Not operational.

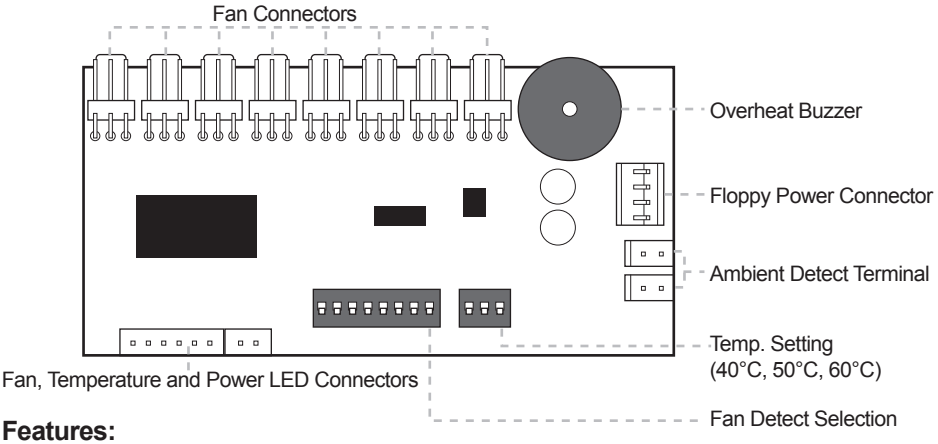


How to Remove the Top Cover:



1. Locate the 2 screws at the back of the storage rack
2. Turn screws counterclockwise to loosen.
3. Lift the top cover and pull towards the rear end of the rack.

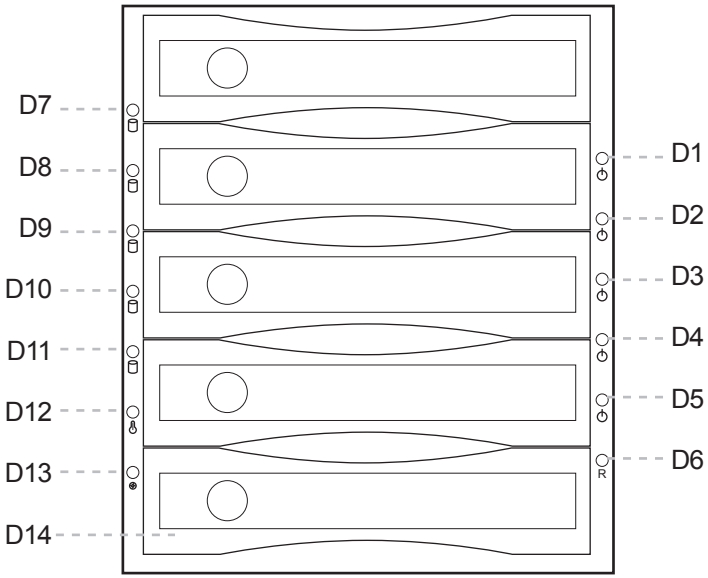
Thermal Management Card on the RAID Rack



Features:

Fan1 to Fan8 could be set either “ENABLE” or “DISABLE”. When all the fans are set on “DISABLE”, the Fan LED will have no light on.

When Ambient temperature (or temperature inside the storage rack) is over the set temperature, the LED will flash and the buzzer will sound.



5SA Disk Array mounted on the RAID Rack

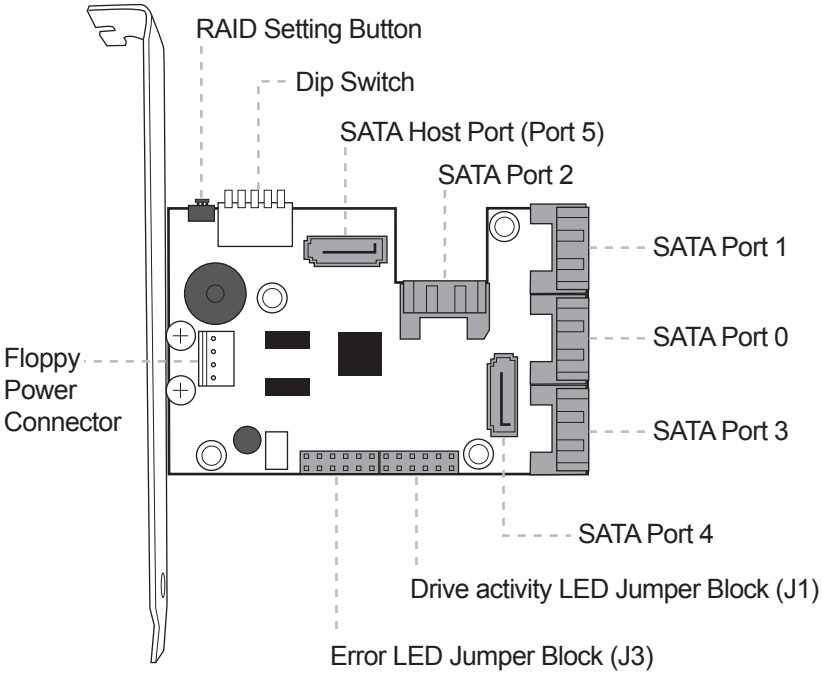
D1 – D5: HD1 – HD5 power switch
D6: Reset Switch for buzzer alarm and Overheating
Press the Reset Switch to stop the alarm, and Overheating LED goes off.
D7 – D11: Power and HDD access LED

LED light is GREEN when power is ON. LED light is blinking and its color is ORANGE indicating HDD access.

POWER SWITCH
Each individual hard drive on the disk array has its own power switch.

TURNING ON a Hard Drive
To turn on a hard drive, using a pointed object insert it on the circular slot (D1 – D5) located on top of the power logo and push it. The power and HDD access LED (D7 – D11) would light up (green color).

TURNING OFF a Hard Drive
To turn off a hard drive, using a pointed object insert it on the circular slot (D1 – D5) located on top of the power logo and push it. The power and HDD access LED (D7 – D11) goes off.

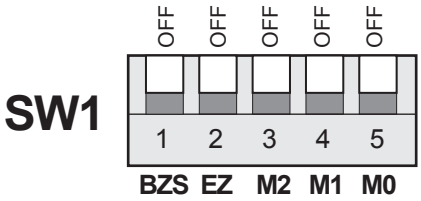


	Dip Switch Settings				
Raid Mode	**1**	**2**	**3**	**4**	**5**
Individual Drive (Factory Default)	OFF	OFF	OFF	OFF	OFF
0	OFF	OFF	**ON**	**ON**	**ON**
1 and 10	OFF	OFF	**ON**	**ON**	OFF
3	OFF	OFF	**ON**	OFF	OFF
5	OFF	OFF	OFF	**ON**	OFF
Clone	OFF	OFF	OFF	**ON**	**ON**
Large	OFF	OFF	**ON**	OFF	**ON**
	Enable ERR Buzzer Function	Auto-Rebuilding to Spare Drive	Port Multiplier Mode		

Default factory DIP Switch setting:

SW1 – RAID Setting DIP Switch

BZS – Error buzzer function
EZ – Automatic rebuilding to spare drive (one of the drives on the raid is set as a spare). If EZ is ENABLED anda drive failure occurs, the spare will automatically act as a drive replacement and rebuilding will automatically start.
M2 – RAID mode 2
M1 – RAID mode 1
M0 – RAID mode 0



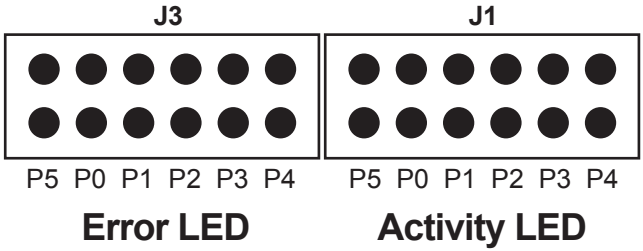
1. Error buzzer function is ENABLED (BZS) when dip switch is in OFF position

2. Auto-rebuilding to spare drive is DISABLED (EZ)

3. Individual drive mode is ENABLED (M0~M2)

Note: When the default factory RAID setting is used, independent drive configuration and optical drive are supported only when connecting to controllers with Silicon Image Sil3124, Sil3132 chip set or controllers that are Port Multiplier (PM) compatible. Simultaneous DVD writing was tested using the Nero Burning Rom.

LED Pin Header



J1 – Drive Activity LED

P5 – Activity LED for eSATA host port lights up when it is connected to a SATA controller card.

P0, P1, P2, P3 & P4 - Activity LEDs for port 0, 1, 2, 3, 4 & 5 light up when a drive is connected and blinks when there's drive activity.

J3 – Error LED

P5 – error LED for eSATA host port

P0, P1, P2, P3 & P4 - error LED for port 0, 1, 2, 3, 4 & 5

Cable Connections

1. Attach the SATA hard drives (up to 5) to the SATA ports on the Hardware Port Multiplier (HPM) using SATA cables. It is recommended to connect drives to the SATA ports 1 to 5 successively.

2. To provide power to the HPM, connect a 4-pin floppy power cable from the system power supply to the floppy power connector on the HPM.

3. Optional: Connect LEDs to the Activity & Error LED jumper block

Setting or Modifying the RAID Mode Using the JMicron HW RAID Manager Utility Program:

1. For Windows users, install the JMicron HW RAID Manager located on the SATA Controller CD. In the CD, go to Configuration Utilities > JMB393. This manager can be use to create and monitor the status of the RAID volume.

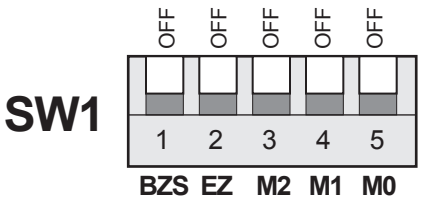
   It is recommended to use the default factory RAID DIP switch setting when using the JMicron HW RAID Manager.

2. Modify the RAID mode on the 5-port HPM-XA using DIP switch

   Recommended to be used on operating system without JMicron HW RAID Manager support like Linux, Mac & Solaris. Windows users can also use the procedure below.

Note: Steps A to D need to be performed each time the raid mode is modified.

a. Set the DIP switch as shown below.



b. Press the RAID setting button with a ball point pen.

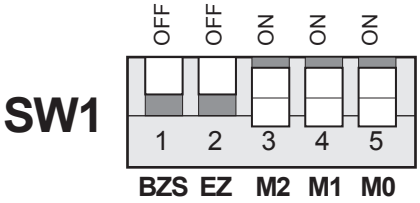
c. While pressing the RAID setting button turn on the system power where the HPM is connected. The buzzer will sound while holding the RAID setting button. Release it after at least 5 seconds for hardware initialization. A single beep will be heard to indicate initialization is completed. The above steps act as a reset.

d. Power off the system power.

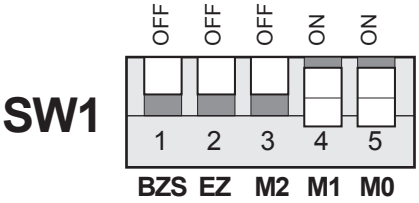
e. On the DIP switch, change (M0 to M2) setting to the desired RAID mode using the diagram below.

All settings on the diagram shows
- Error buzzer function is ENABLED
- EZ function is DISABLED.

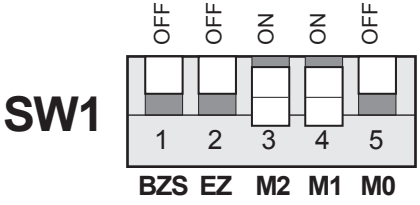
RAID 0 Mode



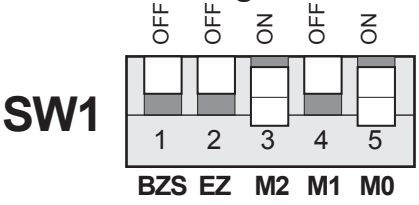
Clone Mode



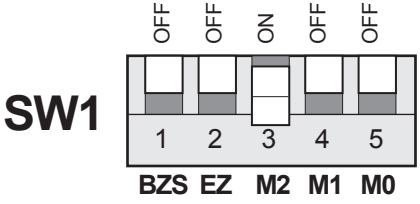
RAID 1& RAID 10 Mode



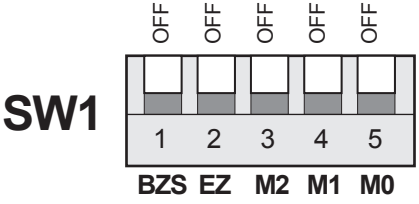
Large Mode



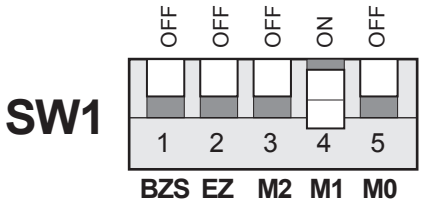
RAID 3 Mode



Individual Drives Mode



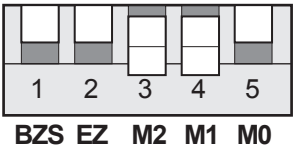
RAID 5 Mode



RAID Setting Notes:

RAID 1& RAID 10 Mode

SW1

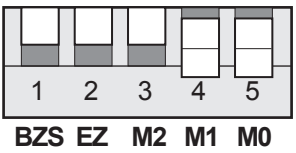


When 2 drives are connected to the HPM-XA, and DIP switch is set to this setting, the 2 drives will be configured as a 2-drive RAID1 array.

When 4 drives are connected to the HPM-XA, the 4 drives will be configured as a 4-drive RAID10 array.

Clone Mode

SW1



Clone's action is similar to RAID1. However, all of the hard drives will be mirrored. Clone mode is useful especially when users like to copy data from a source hard drive to the drives connected to the HPM-XA.

f. Press the RAID setting button with a ball point pen.

g. While pressing the RAID setting button turn on the system power where the HPM is connected. The buzzer will sound while holding the RAID setting button. Release it after at least 5 seconds for hardware initialization. A single beep will be heard to indicate initialization is completed.

h. Verify if the RAID array is detected by the system.

i. If the 5-port HPM-XA is connected to the motherboard onboard SATA, on the CMOS setup utility, the raid array will display as "Addonics H/W RAID5" if setup as a RAID5 array.

j. If the 5-port HPM-XA is connected to an eSATA host controller card, on the RAID BIOS, the raid array will display as "Addonics H/W RAID0" if setup as a RAID0 array.

k. If booted into Windows, in Disk Drives under Device Manager, the raid array will display as "Addonics H/W LARGE" if setup as a LARGE array.

l. Once raid array is verified, you can set the buzzer either ON or OFF.

Notes on Spare Drives using the Easy RAID Setting (EZ)

When EZ function is ENABLED, the auto-rebuilding to spare drive is automatic.

The degraded RAID group will start rebuilding automatically by using the existing spare drive.

* Spare drive can be either plugged before RAID building or a new drive can be plug as the spare drive when RAID rebuild is required.

A. Which port acts as a spare drive?

The last drive will automatically become the spare drive.

For a 3-drive RAID5 with spare:
Drives connected to SATA ports 1~3 belong to the active RAID5 array and drive connected to port 4 is the spare.

For a 4-drive RAID10 with spare:
Drives connected to SATA ports 1~4 belong to the active RAID10 array and drive connected to port 5 is the spare.

For a 2-drive RAID1 with spare:
Drives connected to SATA ports 1& 4 belong to the active RAID1 array and drive connected to port 5 is the spare.

B. When will rebuild action start?

- When the raid fails and EZ is enabled, the HPM-XA will automatically rebuild the RAID group using the spare.
- When the raid fails and EZ is disabled, the HPM-XA will NOT rebuild the raid group unless you install a good drive to replace the failed drive.