Appendix
ATi SATA RAID

ATi south bridge SB600 integrate SATA host controller that supports four SATAII ports and RAID function for performance and reliability.
SATA RAID provides support for RAID 0 (Striping), RAID 1 (Mirroring) and RAID 0+1 (Striping & Mirroring). RAID 0 greatly improves hard disk I/O performance by concurrently striping data across multiple drives. RAID 1 makes sure data is not lost if a drive fails as data is simultaneously written to two drives. Drives configured for RAID Striping are said to form a RAID 0 set, while drives configured for RAID Mirroring are said to form a RAID 1 set. RAID 0+1 is implemented as a mirrored array whose segments are RAID 0 arrays. RAID 0+1 has same fault tolerance as mirroring and reduces overhead by striping. It needs at least four drives to form a RAID 0+1.

MSI
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RAID Configuration

System Requirement

Operating System Support

ATIRAID supports the following operating systems:

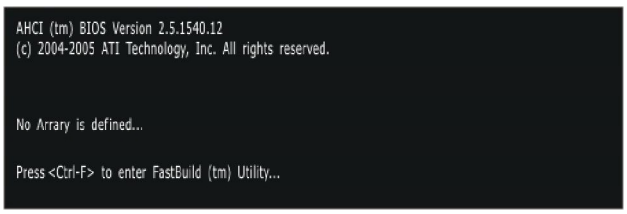
Windows XP
Windows 2000

FastBuild Utility

Creating and deleting RAID set and performing other RAID setting up operations are done in the Fast Build Utility. There are two methods to enter it.

Method 1:

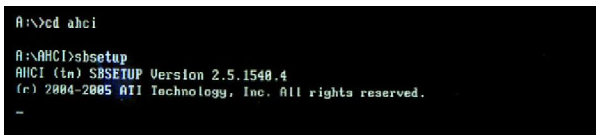
During bootup, a screen similar to the one below will appear for about few seconds. Press <Ctrl-F> to enter the FastBuild utility. This method lets you to use the basic FastBuild utility such as create/ delete RAID.



Method 2:

This method lets you to perform more RAID setting up operations. Please follow the instructions below to enter the FastBuild Utility.

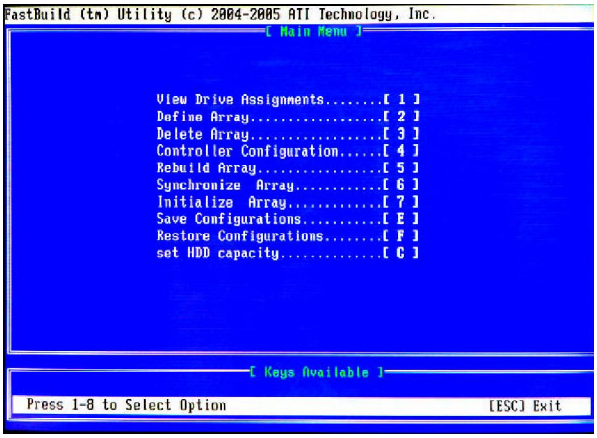
1.Please visit the MSI website (www.msi.com.tw) to download the ATI RAID Tool.
2.Copy the AHCI folder from **ATI RAID Tool** to a boot disk.
3.Use the boot disk to boot in DOS mode. Key in " cd ahci " and press Enter.
4.Execute the sbsetup.exe (key in "sbsetup" and press Enter) to enter FastBuild Utility.



Important

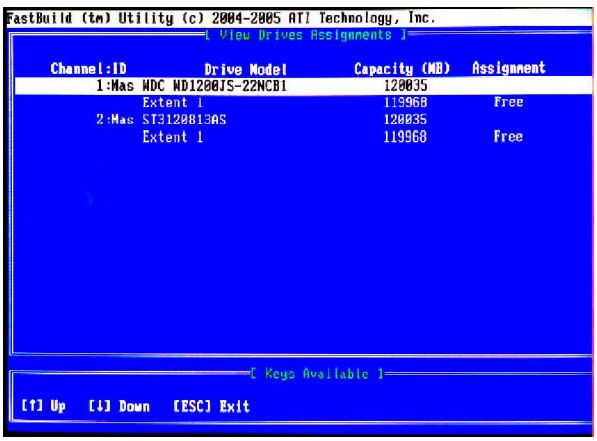
Be sure to set the SATA Devices to "RAID" in BIOS before configuting the FastBuild Utility.

The Fast Build Utility menu screen will appear. The Main Menu is used to choose the operation to be performed. The operations 5/6/7/E/F/G are for method 2 only.



u View Drives Assignments

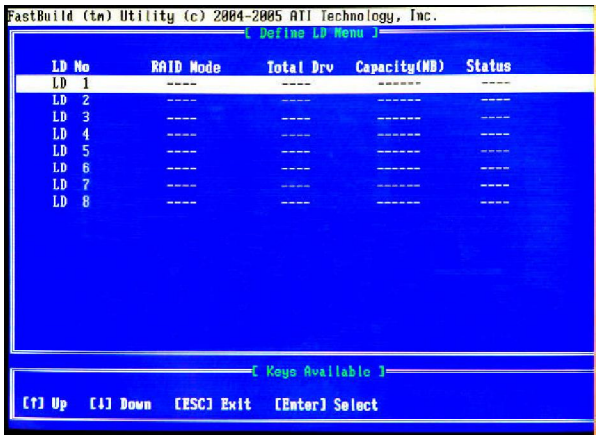
This window displays the model number, capacities and assignment of the drives physically attached to the SATA host adapter.



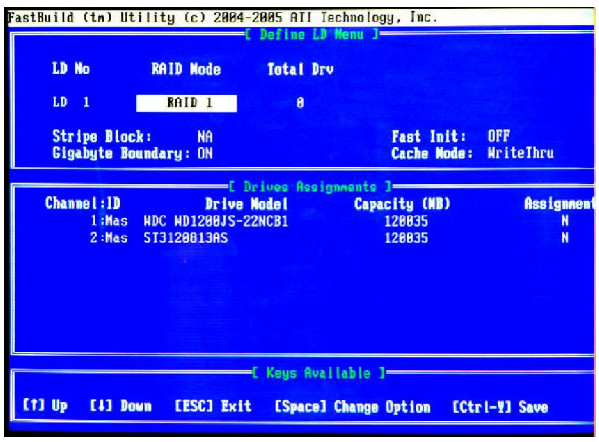
u Define LD (Creating RAID)

The selection of the RAID configuration should be based upon factors including performance, data security, and the number of drives available. It is best to carefully consider the long-term role of the system and plan the data storage strategy. RAID sets can be created either automatically, or to allow the greatest flexibility, manually.

1. Press **2** on the Main Menu screen to enter the Define LD Menu.
2. Press the arrow keys to highlight an logical drive number you want to define and press Enter to select it.

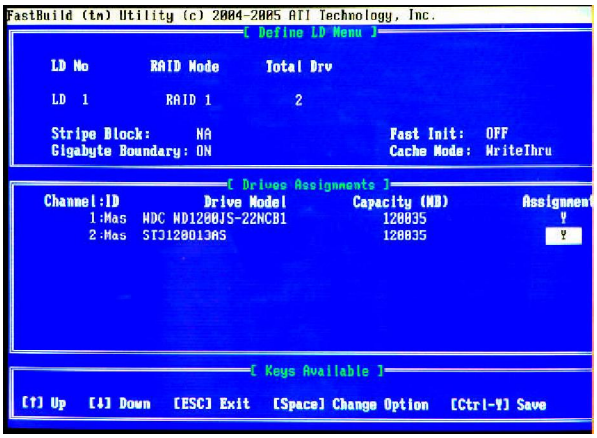


3. On the next screen, use the space key to choose a RAID mode (RAID 0/ 1/ 0+1 or JBOD) and use the arrow key to move to the *Drives Assignments* window.



- Stripe Block Size - the default 64KB is best for most applications. RAID 0 or 10 only.
- Fast Initialization - erases the reserve and master boot sectors of the physi -cal drives being added to the logical drive.
- Gigabyte Boundary - rounds the size of the logical drive down to the nearest whole gigabyte. It allows you to install a slightly smaller (within 1GB) replacement drive, should the need arise. RAID 0 or RAID 1 only.
- Cache Mode, WriteThru or WriteBack.

4. On the *Drives Assignments* window, use the arrow key to choose the hard drives which you want to make part of the LD, use the space key to change the assignment to "Y". Then press [Ctrl+Y] to save the configuration.



5. A message will pop-up, press any key to finish the configuration or press [Ctrl-Y] to allocate the RAID capacity manually.

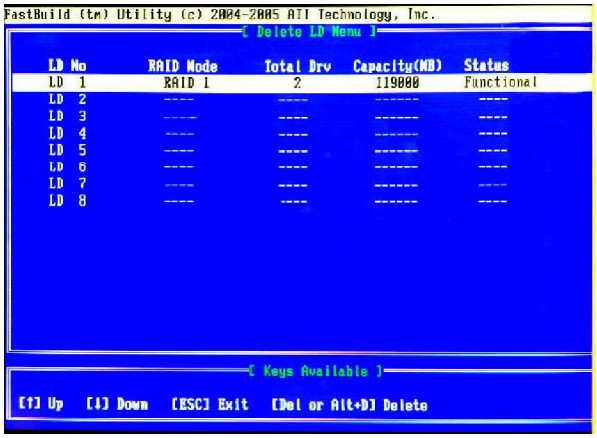


Important

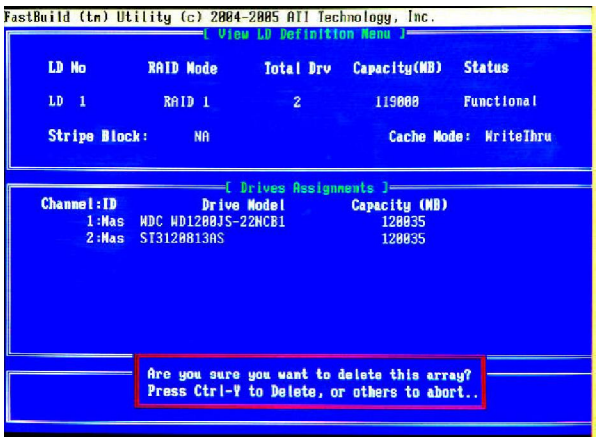
1. The default capacity is the full capacity of the selected hard drives.
2. If you allocate the first LD capacity manually, you can create second LD with remaining capacity of the selected hard drives.

u Delete LD (Deleting RAID)

1. Select “Delete LD” on the main screen.
2. Choose a LD No you want to delete and press “Del” or “Alt+D” delete the RAID set.



3. On the next screen, a message will display to inform you, press “Ctrl+Y” to delete the RAID set or other key to abort it. Press “Ctrl+Y” to complete the deletion.

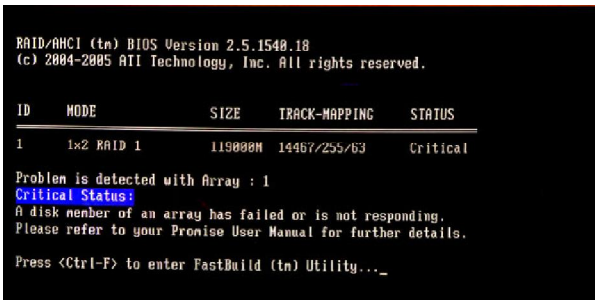


u Controller Configuration

This item will show you the information of the device,include addresses, IRQ number and memory size.

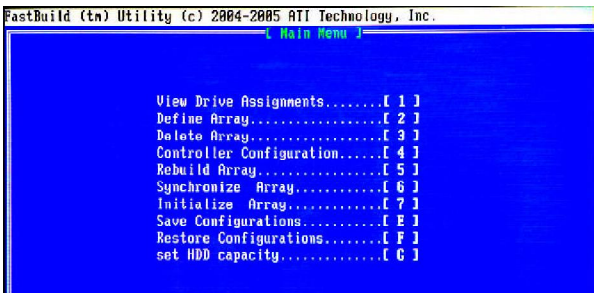
u Rebuild Array (for RAID 1/ RAID 0+1)

The Rebuild Array can be used to recover from an error in a mirrored disk array. When booting up the system, BIOS will detect if any member disk drives of RAID has failed or is absent. If BIOS detects any disk drive failures or missing disk drives, the status of the array will be marked as critical.

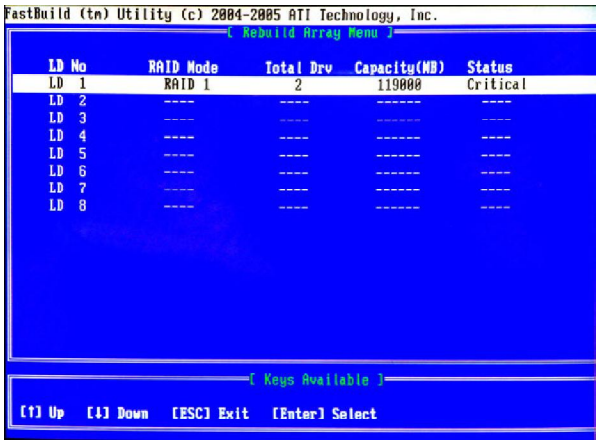


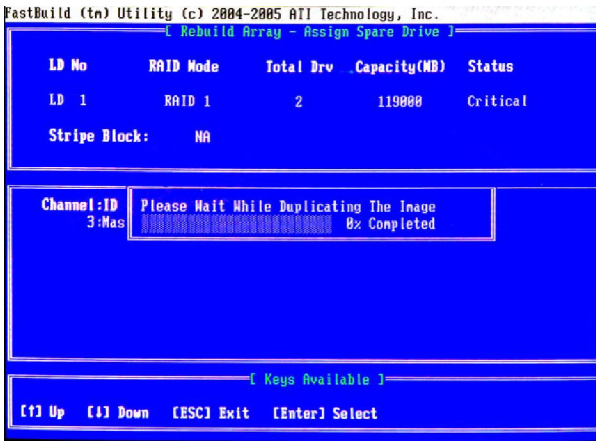
After seeing the critcal status message, you have to reboot the system as method 2 to enter the FastBuild Utility. Follow these steps below to use the Rebuild Array:

1. Turn off the system and unplug the power cord. Replace the failed hard drive with a new one that is of equal or greater capacity.
2. Plug the power cord and boot up the system as mothed 2 to enter the FastBuild Utility.
3. Press [5] on the Main Menu screen to enter the Rebuild Array Menu.



4. Use the arrow key to choose the critical array and press [Enter] to start rebuilding operation





u Synchronize Array

This item is to set the data in the disk of the array synchronized.Usually,if some data of the array was wrong ,we use it.

u Initialize Array

This item is to write zero to the disks of the array.

u Save Configurations

This item is save the information of the array defined.

u Restore Configurations

This item is to restore the definition for the array accordiing to the file you saved.

u Set HDD Capacity

This item is set the capacity for the disk, if you want to set the default value for it, press the “ALT+F1”, rebooting the system is necessary if you want to set the capacity after having set it once.



Important

There is also a Web-Based Promise Array Management (WebPAM) software offers local and remote management and monitoring of all SATA logical drives that exist anywhere on a network. The WebPAM also provides creating/ deleting RAID and performing other RAID setting up operations, for more information about WebPAM, please refer to the ATI_WebPAM user manual. You can download this manual in MSI website.