

Chapter 5 RAID & Driver Setup

ITE RAID Controller

ITE RAID Controller IT8212F is built in this mainboard to provide RAID configuration of Parallel IDE RAID 0, RAID 1, and RAID 0+1 modes. RAID Drivers are enclosed in a Driver CD as well as a Floppy diskette to support various RAID systems (Windows 98SE/Me/2000/XP) setup.

5-0 About Disk Array	81
5-0-1 Disk Array Interpretation.....	81
5-0-2 Disk Array Member	81
5-0-3 Disk Array Types	81
5-1 To Set up IT8212F with ITE RAID Interface	82
5-2 ITE RAID Setup	83
5-3 To Install ITE RAID Driver	85
5-3-1 Install RAID Driver on Windows 2000/XP	85
5-3-2 RAID Driver on Windows 98SE/Me	88

5-0 About DiskArray

5-0-1 Disk Array Interpretation

A “Disk Array” is formed from a group of 2 or more disk drives with the RAID (Redundent Array of Independent Disks) technology. The aim of a Disk Array is to provide better performance and/or data fault tolerance.

5-0-2 Disk Array Member

The individual disk drive in an array is called a “member”. Each member of a specific disk array is coded in their “reserved sector” with configuration information that identifies the drive as a member. All disk members in a formed disk aarray are recognized as a single physical drive to the system.

5-0-3 Disk Array Types

Different types or modes of Disk Array have different formation models and functions.

1. RAID 0 (or Striping mode):

RAID 0 is a group of 2 to 4 Disk Drives configured together with RAID technology to provide better data transfer performance than a single drive since the workload is balanced between the array members. Reads and Writes of RAID 0 data are interleaved between multiple drives. When any disk member fails, it affects the entire array. The disk array size is equal to the number of drive members times the smallest member capacity. For example, one 1GB drive and three 1.2GB drives will form a 4GB (4x1GB) disk array.

2. RAID 1 (or Mirroring mode):

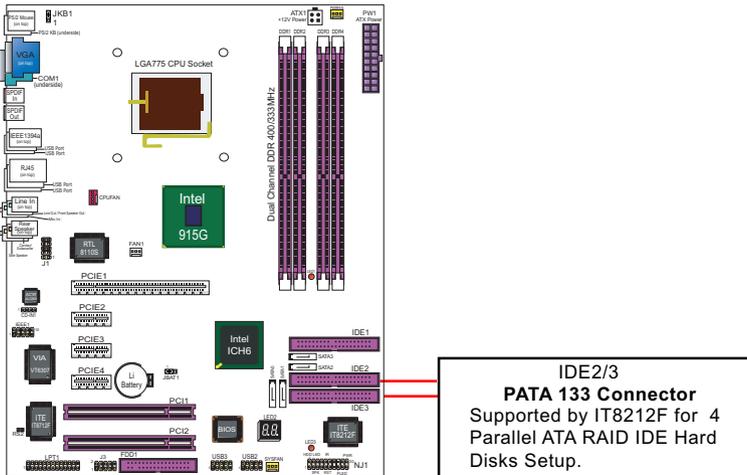
RAID 1 is a group of 2 Disk Drives configured together with RAID Technology to provide the fault tolerance function. Writes duplicate data on to RAID 1 while reads are performed in parallel. If one of the mirrored drives suffers a mechanical failure (e.g. spindle failure) or does not respond , the remaining drive will continue to function. This is called Fault Tolerance.

The drive capacity of RAID 1 is half the total drive capacity of two equal-size drive.

3. RAID 0+1 (Mirror/Stripe):

RAID 0+1 is formed by a RAID 0 member mirrored to another RAID member to establish a RAID 0+1 Array. RAID 0+1 requires at least 4 disk drive to set up the RAID 0+1 configuration.

5-1 Set up IDE RAID HDDs with IT8212F RAID Interface



To set up ITE Parallel RAID system, first set up IDE hard disks to IDE2 and IDE3 connectors and then boot the 915GPro-FGR system and watch for the following initial screen to appear:

```
IT8212 RAID BIOS V1.4.1.6 F/W Ver 02093030
Copyright 2003-2003 ITE, Inc. All Rights Reserved

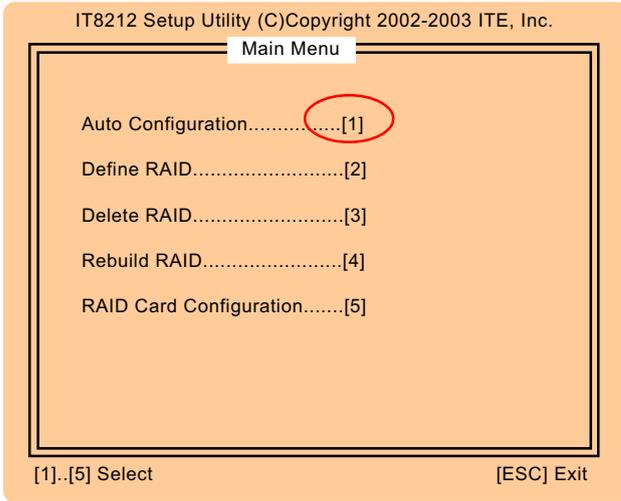
Press wait for IDE scan..
Drive 0:  ST3120026AS          114473MB
Drive 1:  ST3120026AS          114473MB
Drive 2:  Not Detected
Drive 3:  Not Detected

Press <Ctrl-F> or <Ctrl-E> to enter Setup Utility or
Press <ESC> or <S> to continue booting.....
```

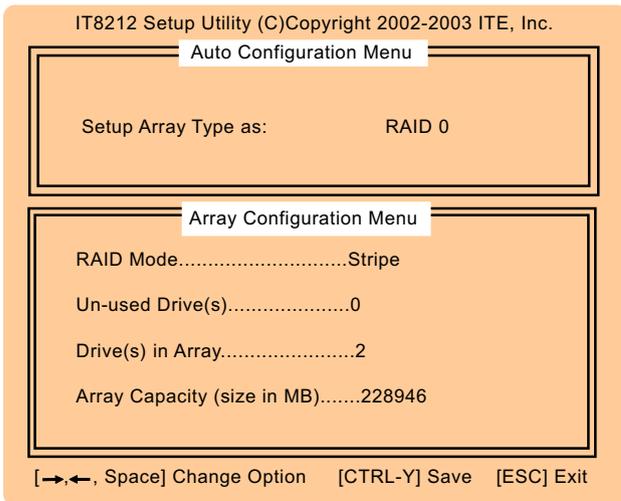
As soon as the above screen appears, press the <Ctrl-F> keys to set up ITE RAID Utility.

5-2 ITE RAID Setup

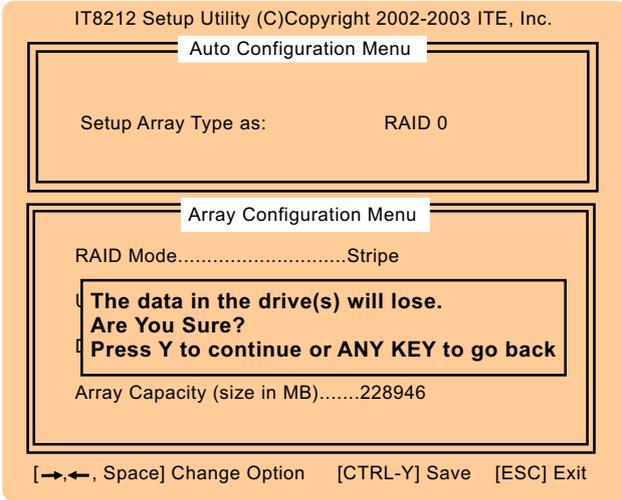
1. For quick installation of RAID, please select <1> to enter Auto configuration to set up RAID mode.



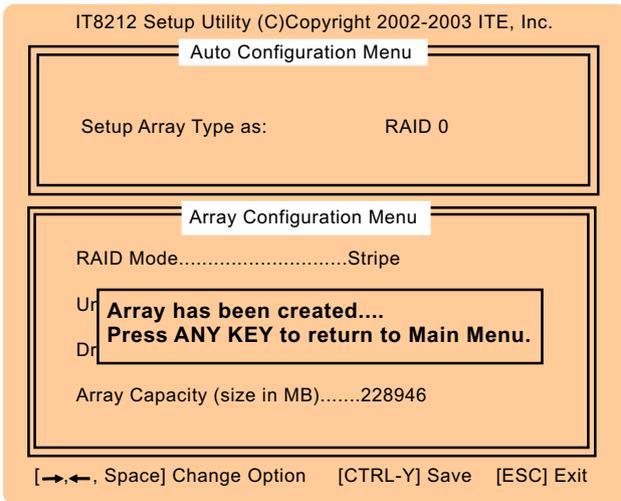
2. To choose RAID mode, press <space> key to change to whatever mode you are about to set up. Detailed information about Disk Arrays will show in “Array Configuration Menu” as illustrated below.



- When the RAID mode has been selected and RAID is to be created, a message appears as illustrated below. Press <Y> to continue or <ANY KEY> to go back.



- When the procedure is complete, press <ANY KEY> to return to Main Menu and press <Ctrl+Y> to save. To exit this screen, press <ESC>.



5-3 To Install ITE RAID Driver

ITE IT8212F RAID Driver is incorporated in Support CD/Floppy Diskette for user's installation. This driver is intended for Windows 98/Me/NT4/2000/XP/2003.

5-3-1 Install RAID Driver on Windows 2000/XP

- (1) Get ready the Floppy Diskette holding the RAID Driver.
(This Driver Diskette should have been enclosed in the mainboard Package.)
- (2) Check that Hard Disks are connected properly to the RAID connectors.
- (3) Start your PC system and use RAID BIOS Setup Utility to configure RAID 0 / 1/ 0+1 to the hard disks.
- (4) Restart System and apply the Windows 2000/XP CD to CD-ROM for operating system installation.
- (5) On the Windows 2000/XP Setup screen, press "F6" key for RAID driver setup.



(6) On next screen press “S” to confirm the mass storage device setup.



(7) On next screen appearing, insert the RAID Driver Diskette to Drive “A” and then press <Enter>.



- (8) On next screen appearing, choose the driver suitable for your operating system and press <Enter> to continue.



The Installation Program will then guide you through the rest of system setup. The RAID driver will then be installed into your system.

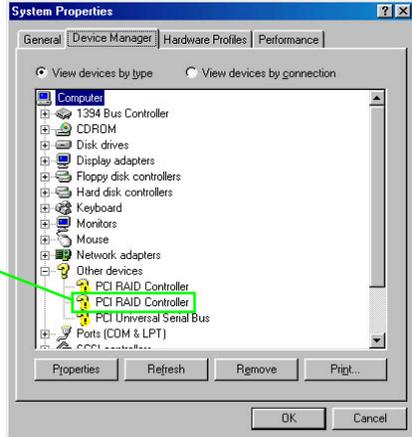
5-3-2 RAID Driver on Windows 98SE/Me

- (1) Get ready the Floppy Diskette holding the RAID Driver.
- (2) Check that IDE Hard Disks are connected properly to the PATA Connectors.
- (3) Start your system and use RAID BIOS Setup Utility to configure RAID 0 or RAID 1 or RAID 0+1 to the hard disks.
- (4) Restart System and format the bootable hard disks.
- (5) Now, apply the Windows 98SE/Me CD to CD-ROM for operating system installation.
- (6) Start the Windows 98SE/Me system.
- (7) On the “Start” screen of your system, please click to the following path:

\My Computer\properties\Device manager

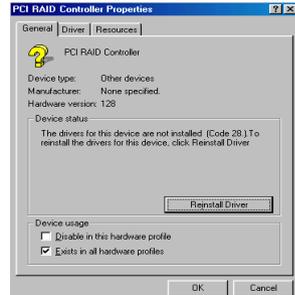
- (8) In the “Device manager” screen, you can see the item “ PCI RAID Controller” with a yellow question mark on its left side, which indicates that the RAID controller is already detected by system but the driver is not installed yet. Please point to this item with your mouse and double click on it (or click the “Properties” button).

The question mark here indicates that RAID Controller Driver is not installed yet.



- (9) Instantly, the “PCI RAID Controller Properties” screen shows up. Please click the “General” bar to continue.

- (10) In the “General” screen, click “Reinstall Driver” button to continue. Please note that the status of “Device Usage” should stay at “Exists in all hardware profiles”.



- (11) In the “Update device Driver Wizard” screen, click “Next” to continue until you see a dialog box asking you to “Specify a location” for the driver. You should **now** insert the RAID Driver CD/Diskette into CD-ROM/Drive A.
- (12) Check the “Specify a location” on next creen and click the “Browse” button to find out the correct path for the driver. As the RAID Driver is in Drive A, please type into the blank bar the correct path and click “Next” to continue.
- (13) The Update Device Driver Wizard will then go on installing the driver. In a few seconds, installation completes. Please click the “Finish” button on the screen to complete the installation.

