Promise FastTrak 100-Lite RAID Controller

User's Manual

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PROMISE® TECHNOLOGY, INC.

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FastTrak100-Lite User Manual

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Introduction

What is the FastTrak 100-Lite (PDC20265R) controller?

Promise designed its FastTrak 100-Lite (PDC20265R) controller to provide a cost-effective, high performance RAID function that adds performance and/or re liability to PC desktops and/or servers using Ultra ATA/100, Ultra ATA/66, or EIDE drives. The FastTrak 100-Lite (PDC20265R) controller supports striping (RAID 0) with one or two drives, and mirroring (RAID 1) with 2 drives treated as one disk array for "Master" only.

With striping, identical drives can read and write data in parallel to increase performance. Mirroring increases read performance through load balancing and elevator sorting while creating a complete backup of your files.

Getting Started

This section is designed to get you started for installation of your FastTrak 100-Lite controller.

***WARNING**: Before installing the driver into an existing system, backup any necessary data. Failure to follow this accepted PC practice could result in data loss.*

Installing The Hard Drives

***WARNING**: If you wish to include your current bootable drive using the Windows NT 4.x or Windows 2000 operating system as part of a bootable Mirrored (RAID 1) array on the FastTrak 100-Lite (PDC20265R), do NOT connect the hard drive to the FastTrak 100-Lite (PDC20265R) controller yet. You MUST install the Windows NT4 or 2000 driver software first (see page 20) to this drive while it is still attached to your existing hard drive controller.*

Hard drives must be Ultra ATA/100, Ultra ATA/66, Ultra ATA/33, EIDE and/or Fast ATA-2 compatible to operate with the FastTrak 100-Lite (PDC20265R) RAID controller. For optimal performance, install all ***identical*** drives of the same model and capacity. The drives' ***matched performance*** allows the array to function better as a single drive.

1. Promise recommends using identical drive as part of a FastTrak 100-Lite (PDC20265R) array. If striping for performance, use two new drives. If mirroring for protection, you can use two new drives OR use an existing drive and a new drive (the new drive must be the same size or larger than the existing drive).
2. Configure the jumpers of the hard drive you're preparing to connect to the FastTrak 100-Lite (PDC20265R) using the correct "Master / Slave" settings in the positions described in the table below.

   ***NOTE**: Sometimes the Master drive with no slave attached is called "Single." The master / slave setting differentiates two drives chained on the same connector.*

Jumper Settings		
# of Drives	IDE Channel 1	IDE Channel 2
1	M	----
2	M	M
3	M & S	M
4	M & S	M & S

M = Master, S = Slave

***NOTE:** The Slave hard drive does not have RAID functionality; it will act as a common hard drive.*

3. Install the hard drives into the hard drive bays of your system, including the power cables.

Creating Your Disk Array

You will now use the FastBuild BIOS utility to create your array using the attached drives. There are three different scenarios in creating this array. You can create an array for performance, you can create a Security array using new hard drives (recommended), or you can create a Security array using an existing hard drive and a new hard drive.

***WARNING**: If creating a Security array using an existing hard drive, backup any necessary data. Failure to follow this accepted PC practice could result in data loss.*

1. Boot your system. If this is the first time you have booted with the FastTrak 100-Lite (PDC20265R) and drives installed, the Promise onboard BIOS will display the following screen.

```
FastTrak100-Lite (tm) BIOS Version 1.xx (Build xxxx)
(c) 1995-2000 Promise Technology, Inc. All Rights Reserved.

  No array defined . . .

Press <Ctrl-F> to enter FastBuild (tm) Utility
Or press <ESC> key to continue booting the system.
```

2. Press <Ctrl-F> keys to display the FastBuild (tm) Utility Main Menu
3. Press “1” to display the Auto Setup Menu below. This is the fastest and easiest method to creating your first array.

```
        FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.
                          [Auto Setup Options Menu]

      Optimize Array for:                Performance
      Typical Application usage:         A/V Editing

                          [ Auto Setup Configuration ]

      Mode ..........................................Stripe
      Drives used in Array.....................2
      Array Disk Capacity ..... 16126

                          [ Keys Available ]

      [↑] Up [↓] Down   [←, →, Space] Change Option   [ESC] Exit   [Ctrl-Y] Save
```

Creating an Array for Performance

NOTE: *The FastTrak 100-Lite (PDC20265R) allows users to create striped arrays with 1, 2 drives.*

To create an array for best performance, follow these steps:

1. Using the Spacebar, choose "Performance" under the **Optimize Array** section.
2. Select how you will use your PC most under the **Typical Application usage** section The choices are A/V Editing, Server, and Desktop (the default).
3. Press <Ctrl-Y> keys to Save and create the array.
4. Reboot your system.
5. Once the array has been created, you will need to FDISK and format the array as if it were a new single hard drive.
6. Proceed to Installing Drivers section of the manual (see page 20).

Creating a Security Mirror Array With New Drives

NOTE: *The FastTrak 100-Lite (PDC20265R) permits only two drives to be used for a single Mirrored array in the FastBuild utility.*

To create an array for data protection using new hard drives, follow these steps:

1. Using the Spacebar, choose "Security" under the **Optimize Array** section.
2. Press <Ctrl-Y> keys to Save your selection.
3. The window below will appear.

```
Do you want the disk image to be duplicated to another? (Yes/No)
Y - Create and Duplicate
N - Create Only
```

4. Press "N" for the Create Only option.
5. A window will appear almost immediately confirming that your Security array has been created. Press any key to reboot the system

```
Array has been created.
<Press Any Key to Reboot>
```

6. Proceed with normal FDISK and format procedures as if you had just installed a new hard drive.
7. Once the arrayed drives have been formatted, proceed to the **Installing Driver** chapter on page 20 to install your operating system and/or FastTrak 100-Lite (PDC20265R) driver.

Creating a Security Array With An Existing Data Drive

NOTE: *The FastTrak 100-Lite (PDC20265R) permits only two drives to be used for a single Mirrored security array in the FastBuild utility.*

You would use this method if you wish to use a drive that already contains data and/or is the bootable system drive in your system. You will need another drive of identical or larger storage capacity.

WARNING*: Backup any necessary data before proceeding. Failure to follow this accepted PC practice could result in data loss.*

WARNING*: If you wish to include your current bootable drive using the Windows NT 4.x or Windows 2000 operating system as part of a bootable Mirrored (RAID 1) array on the FastTrak 100-Lite (PDC20265R) controller, do NOT connect the hard drive to the FastTrak 100-Lite (PDC20265R) controller yet. You MUST install the Windows NT4 or 2000 driver software first (see page 20) to this drive while it is still attached to your existing hard drive controller (e.g. IDE1 / IDE2). For all other Operating Systems, proceed here with your hard drive(s) connected to IDE3 / IDE4.*

Follow these steps:

1. Using the Spacebar, choose “Security” under the **Optimize Array** section.
2. Press <Ctrl-Y> keys to Save your selection. The window below will appear.

```
Do you want the disk image to be duplicated to another? (Yes/No)
Y - Create and Duplicate
N - Create Only
```

3. Press “Y” for the Create and Duplicate option. The window below will appear asking you to select the Source drive to use. FastBuild will copy all data from the Source drive to the Target drive.

```
                    Source Disk
Channel:ID          Drive Model          Capacity (MB)

                    Target Disk
Channel:ID          Drive Model          Capacity (MB)

                [Please Select A Source Disk]
 Channel:ID         Drive Model              Capacity (MB)
 1 :Master      QUANTUMCR8.4A                  8063
 2 :Master      QUANTUMCR8.4A                  8063

              [↑] Up [↓]  [ESC] Exit  [Ctrl-Y] Save
```

4. Use the arrow keys to choose which drive contains the existing data to be copied.
5. Press [Ctrl-Y] keys to Save selection and start duplication. The following progress screen will appear.

```
Start to duplicate the image . . .
Do you want to continue? (Yes/No)
Y – Continue  N - Abort
```

6. Select “Y” to continue. If you choose “N” , you will be returned to step 1.
7. Once complete, the following screen will appear confirming that your Security array has been created. Press any key to reboot the system

```
Array has been created.
<Press Any Key to Reboot>
```

8. Proceed to the **Installing Driver** chapter on page 20 to install the FastTrak 100-Lite (PDC20265R) driver and/or operating system.

Using FastBuild™ Configuration Utility

The FastBuild™ Configuration Utility offers several menu choices to create and manage the drive array on the Promise FastTrak 100-Lite (PDC20265R) controller. For purposes of this manual, it is assumed you have already created an array in the previous chapter and now wish to make a change to the array or view other options.

Viewing FastTrak100-Lite BIOS Screen

When you boot your system with the FastTrak 100-Lite (PDC20265R) controller and drives connected to RAID IDE3 / IDE4, the Promise onboard BIOS will detect the drives attached and show the following screen.

```
FastTrak100-Lite (tm) BIOS Version 1.xx (Build xx)
(c) 1995-2000 Promise Technology, Inc. All Rights Reserved.

   Scanning IDE drives . . . . .
```

If an array exists already, the BIOS will display the following screen showing the BIOS version and status of the array.

```
FastTrak100-Lite (tm) BIOS Version 1.xx (Build xxxx)
(c) 1995-2000 Promise Technology, Inc. All Rights Reserved.

   ID      MODE   SIZE     TRACK-MAPPING          STATUS

   1 *     2+0 Stripe      16126M    611/128/32     Functional


   Press <Ctrl-F> to enter FastBuild (tm) Utility....
```

The array status consists of three possible conditions: *Functional, Critical, Offline.*

Functional - The array is operational.

Critical - A mirrored array contains a drive that has failed or disconnected. The remaining drive member in the array is functional. However, the array has temporarily lost its ability to provide fault tolerance. The user should identify the failed drive through the FastBuild™ Setup utility, and then replace the problem drive.

Offline - A striped array has 1 drive that has failed or been disconnected. When the array condition is “offline,” the user must replace the failed drive(s), then restore data from a backup source.

Navigating the FastBuild™ Setup Menu

When using the menus, these are some of the basic navigation tips: Arrow keys highlights through choices; [Space] bar key allows to cycle through options; [Enter] key selects an option; [ESC] key is used to abort or exit the current menu.

Using the Main Menu

This is the first option screen when entering the FastBuild™ Setup.

```
FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.
[ Main Menu ]

Auto Setup.....[ 1 ]
View Drive Assignments .....[ 2 ]
View Array.....[ 3 ]
Delete Array .....[ 4 ]
Rebuild Array.....[ 5 ]
Controller Configuration.....[ 6 ]

[ Keys Available ]
Press 1...6 to Select Option   [ESC] Exit
```

To create a new array automatically, follow the steps under "Creating Arrays Automatically" on page 10. Promise recommends this option for most users.

To view drives assigned to arrays, see "Viewing Drive Assignments" on page 12.

To delete an array (but not delete the data contained on the array), select "Deleting An Array" on page 16.

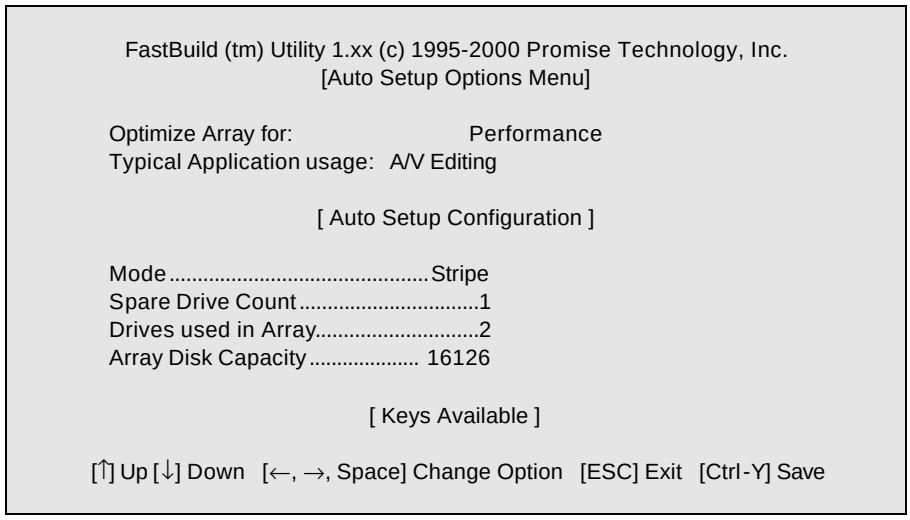
To rebuild a mirrored array, see "Rebuilding an Array" on page 17.

To view controller settings, see "Viewing Controller Configuration" on page 19.

***NOTE**: After configuring an array using FastBuild, you should FDISK and format the arrayed drive(s) if you are using new, blank drives. Depending on the type of array you are using.*

Creating Arrays Automatically

The Auto Setup <1> selection from the Main Menu can intuitively help create your disk array. It will assign all available drives appropriate for the disk array you are creating. After making all selections, use Ctrl-Y to Save selections. FastBuild will automatically build the array.



Optimize Array For

Select whether you want Performance (RAID 0), Security (RAID 1) under the "Optimize Array for" setting.

Performance (RAID 0 Striping)

Supports the maximum performance. The storage capacity equals the number of drives times the capacity of the smallest drive in the disk array.

NOTE: *The FastTrak 100-Lite (PDC20265R) controller permits striped arrays using 1, 2 drive attached in Auto Setup mode.*

Security (RAID 1 Mirroring)

Creates a mirrored (or fault tolerant) array for data security.

NOTE: *Under the Security setting, the PDC20265 controller permits two drives to be used for a single Mirrored array only.*

Defining Typical Application Usage

Allows the user to choose the type of PC usage that will be performed in order to optimize how the PDC20265 controller handles data blocks to enhance performance. Your choice will determine the block size used. You may choose from: A/V Editing (for audio/video applications, or any similar application that requires large file transfers), Server (for numerous small file transfers), or Desktop (a combination of large and small file sizes).

***NOTE**: If you wish to customize the settings of individual disk arrays (such as block size), you must manually create disk arrays with the Define Array <3> option from the Main Menu.*

Viewing Drive Assignments

The View Drive Assignments <2> option in the Main Menu displays whether drives are assigned to a disk arrays or are unassigned.

Under the "Assignment" column, drives are labeled with their assigned disk array or shown as "Free" if unassigned. Such "Free" drives can be used for a future array or used as a spare drive when a drive fails in a mirrored array. Unassigned drives are not accessible by the OS. The menu also displays the data transfer mode that relates to speed used by each drive (U5 refers to 100MB/sec transfers, U4 refers to 66MB/sec transfers, etc...)

FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.
[View Drive Assignments]

Channel:ID	Drive Model	Capacity(MB)	Assignment	Mode
1 : Master	QUANTUMCR8.4A	8063	Array 1	U5
1 : Slave	QUANTUMCR8.4A	8063	Free	U5
2 : Master	QUANTUMCR8.4A	8063	Array 1	U5

[Keys Available]

[⇑] Up [⇓] Down [ESC] Exit Mode (U=UDMA, P=PIO, D=DMA)

View an Array

The view array <3> option from the main menu allows users to view the defined elements and RAID status that have already been defined by the FastBuild utility.

FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.
[View Array Menu]

Array No	RAID Mode	Total Drv	Capacity(MB)	Status
Array 1	Stripe	2	16126	Functional
Array 2	——	——	——	——
Array 3	——	——	——	——
Array 4	——	——	——	——

[Keys Available]

Note: * — Bootable Array

[⇑] Up [⇓] Down [ESC] Exit [Enter] Select

Creating A Mirrored Array Using New Drives

If you selected a mirroring array and wish to use two new assigned drives, follow the directions here.

1. After assigning new drives to a Mirroring array and saving the information with <Ctrl-Y>, the window below will appear.

Do you want the disk image to be duplicated to another? (Yes/No) Y - Create and Duplicate N - Create Only

2. Press "N" for the Create Only option.
3. A window will appear almost immediately confirming that your Security array has been created. Press any key to reboot the system

Array has been created. <Press Any Key to Reboot>

Adding Fault Tolerance to an Existing Drive

The FastTrak 100-Lite (PDC20265R) controller will create a mirrored array using an existing system drive with data. You must assign the existing drive and another drive of same or larger capacity to the Mirroring array. The BIOS will send the existing data to the new blank drive.

***WARNING**: Backup any necessary data before proceeding. Failure to follow this accepted PC practice could result in data loss.*

***WARNING**: If you wish to include your current bootable drive using the Windows NT 4.x or Windows 2000 operating system as part of a bootable Mirrored (RAID 1) array on the FastTrak 100-Lite (PDC20265R) controller, do NOT connect the hard drive to the FastTrak 100-Lite (PDC20265R) controller yet. You MUST install the Windows NT4 or 2000 driver software first (see page 20) to this drive while it is still attached to your existing hard drive controller. For all other Operating Systems, proceed here.*

1. After assigning the drives to a Mirroring array, press <Ctrl-Y> keys to Save your selection. The window below will appear.

```
Do you want the disk image to be duplicated to another? (Yes/No)
Y - Create and Duplicate
N - Create Only
```

2. Press “Y” for the Create and Duplicate option. The window below will appear asking you to select the Source drive to use. FastBuild will copy all data from the Source drive to the Target drive.

```
                    Source Disk
Channel:ID          Drive Model          Capacity (MB)

                    Target Disk
Channel:ID          Drive Model          Capacity (MB)

                [Please Select A Source Disk]
 Channel:ID         Drive Model                 Capacity
(MB)
 1 :Master      QUANTUMCR8.4A                    8063
 2 :Master      QUANTUMCR8.4A                    8063

          [↑] Up [↓]  [ESC] Exit  [Ctrl-Y] Save
```

3. Use the arrow keys to choose which drive contains the existing data to be copied.

***WARNING**: All target drive data will be erased. Make sure you choose the correct drive.*

4. Press [Ctrl-Y] keys to Save selection and start duplication. The following confirmation screen will appear.

```
Start to duplicate the image . . .
Do you want to continue? (Yes/No)
Y – Continue  N - Abort
```

5. Select “Y” to continue. If you choose “N” , you will be returned to step 1.

6. Once “Y” is selected, the following progress screen will appear. The process will take a few minutes.

```
Please Wait While Duplicating The Image
                                        10%
Complete
```

7. Once mirroring is complete, the following screen will appear confirming that your Security array has been created. Press any key to reboot the system

```
Array has been created.
```

<Press Any Key to Reboot>

Deleting An Array

The Delete Array <4> Menu option allows for deletion of disk array assignments. This is not the same as deleting data from the drives themselves. If you delete an array by accident (and before it has been used again), the array can normally be recovered by defining the array identically as the deleted array.

***WARNING**: Deleting an existing disk array could result in its data loss. Make sure to record all array information including the array type, the disk members, and stripe block size in case you wish to undo a deletion.*

FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.
[Delete Array Menu]

Array No	RAID Mode	Total Drv	Capacity(MB)	Status
Array 1	Stripe	2	16126	Functional
Array 2	——	——	——	——
Array 3	——	——	——	——
Array 4	——	——	——	——

[Keys Available]

[↑] Up [↓] Down [ESC] Exit [Del] Delete

1. To delete an array, highlight the Array you wish to delete and press the [Del] key.
2. The View Array Definition menu will appear (see below) showing which drives are assigned to this array.

FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.
[Define Array Menu]

Array No	RAID Mode	Total Drv	Capacity(MB)	Status
Array 1	——	——	——	——

Stripe Block: 64 KB

[Drive Assignments]

Channel:ID	Drive Model	Capacity (MB)	Assignment
1 : Master	QUANTUMCR8.4A	8063	Y
2 : Master	QUANTUMCR8.4A	8063	Y

3. Confirm yes to the following warning message with the <Ctrl-Y> key to continue array deletion:

> Are you sure you want to delete this array?
> Press Ctrl-Y to Delete, others to Abort

4. After deleting the array, you should create a new array using Auto Setup or the Define Array menu from the FastBuild Main Menu.

Rebuilding A Mirrored Array

The Rebuild Array <5> Menu option is necessary to recover from an error in a mirrored disk array. You will receive an error message when booting your system from the FastTrak BIOS.

NOTE*: Drives MUST be replaced if they contain any physical errors.*

Follow these steps BEFORE using the Rebuild Array menu option:

1. On bootup, the FastTrak100-Lite Startup BIOS will display an error message identifying which drive has failed.
2. Press <Ctrl-F> keys to enter FastBuild Main Menu.
3. Select submenu Define Array <3>.
4. Select the failed array and identify the Channel and ID of the failed drive.
5. Power off and physically remove the failed drive.
6. Replace the drive with an identical model.
7. Reboot the system and enter the FastBuild Main Menu.
8. Select the <5> Rebuild Array option. The following screen will appear.

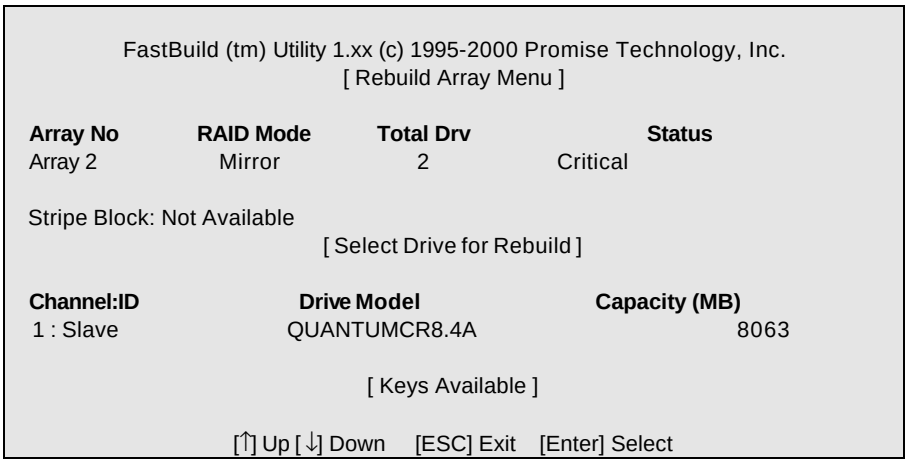
FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.
[Rebuild Array Menu]

Array No	RAID Mode	Total Drv	Capacity(MB)	Status
Array 1	Mirror	2	16126	Critical
Array 2	——	——	——	——
Array 3	——	——	——	——
Array 4	——	——	——	——

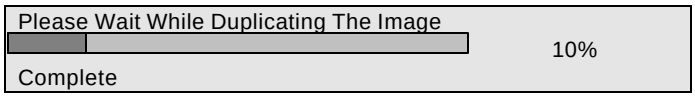
[Keys Available]

[↑] Up [↓] Down [ESC] Exit [Enter] Select

9. Highlight the array whose Status is “Critical”.
10. Press [Enter]. The following screen will then appear (see next page).



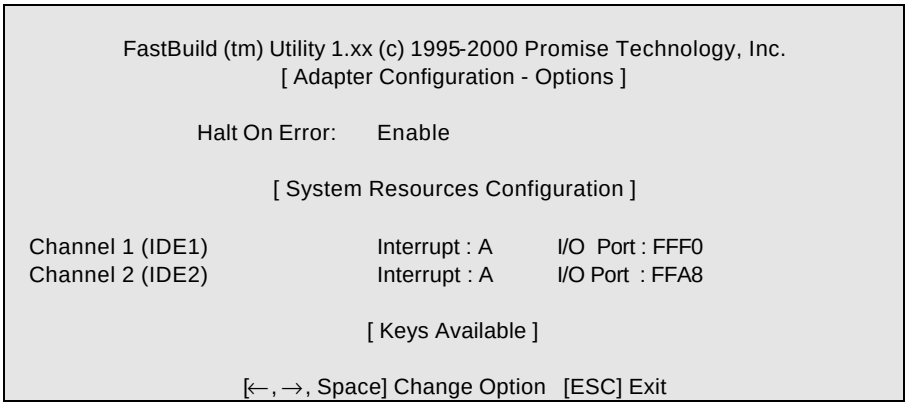
11. Under [Select Drive for Rebuild], highlight the replacement drive.
12. Press [Enter] and confirm that the data will be copied on to the selected drive. All data on the replacement drive will be written over with mirrored information from the array drive. A progress bar will appear as below.



13. Once the rebuild process is complete, the user will be asked to reboot the system.

Viewing Controller Settings

The Controller Configuration <6> menu selection allows you to enable or disable the FastTrak100-Lite BIOS from halting (the default) if it detects an error on boot up. You may also view the system resources (Interrupt and I/O port address) of FastTrak's data channels.



Halting FastTrak BIOS On Bootup Errors

The [Adapter Configuration– Options] section allows you to enable or disable the FastTrak 100-Lite (PDC20265R) controller to Halt operation at the BIOS startup screen should an error be detected. This is the only option that can be changed on this screen.

Viewing FastTrak System Resources

The [System Resources Configuration] section of this submenu displays the PCI slot interrupt and port address used by the FastTrak 100-Lite (PDC20265R) controller. The resources used are determined by the Mainboard PCI PnP BIOS for the PCI slot in which the FastTrak100-Lite resides.

In the rare case that there is a resource conflict, refer to the Mainboard BIOS documentation on changes on resources allocated to the FastTrak100-Lite PCI slot.

Installing Drivers

This section details the FastTrak 100-Lite (PDC20265R) driver installation when used with various operating systems. The software includes the driver necessary to identify the FastTrak 100-Lite controller to the operating system.

- For Windows 2000, see below.
- For Windows 95/98, see page 22.
- For Windows NT 4.x, see page 26.
- For Windows XP, see page 27.

Windows 2000

Installing Driver During New Windows 2000 Installation

1a. Floppy Install: Boot the computer with the Windows 2000 installation diskettes.

1b. Floppyless Install: Boot from floppy and type "WINNT". After files have been copied, the system will reboot. On the reboot, press <F6> after the message "Setup is inspecting your computer's hardware configuration..." appears.

1c. CD-ROM Install: Boot from the CD-ROM. Press <F6> after the message "Press F6 if you need to install third party SCSI or RAID driver" appears.

2. When the "Windows 2000 Setup" window is generated, press "S" to Specify an Additional Device(s)

3. Insert the Promise Technology® driver diskette into drive A: and press "Enter" key.

   NOTE*: Please restore the* Promise Technology® *driver diskette from* :\DRIVER\IDE Raid\Promise*Driver of Driver Utilities CD title.*

4. Choose "Win2000 Promise FastTrak 100-Lite Controller" from the list that appears on screen, then press the "Enter" key.

5. The Windows 2000 Setup screen will appear again saying "Setup will load support for the following mass storage devices:" The list will include "Win2000 Promise FastTrak 100-Lite controller".

   NOTE*: If you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, continue to step 6.*

6. From the Windows 2000 Setup screen, press the Enter key. Setup will now load all device files and then continue the Windows 2000 installation.

Installing Driver in Existing Windows 2000 System

***WARNING**: If you will be moving the boot drive containing the existing Windows 2000 operating system to a mirrored RAID 1 array on the FastTrak 100-Lite controller, e.g. IDE3 / IDE4, the FastTrak 100-Lite driver MUST be loaded to the hard drive while it is still attached to your existing hard drive controller. Do not attach this drive or any other hard drive to the FastTrak 100-Lite (PDC20265R) controller before completing this step.*

After installing the FastTrak 100-Lite (PDC20265R) controller and rebooting your system, Windows 2000 setup will show a "New Hardware Found" dialog box. Under Windows 2000, the "PCI RAID Controller" will be displayed.

1. In the dialog box, choose "Driver from disk provided by hardware manufacturer" button.
2. In the A: drive, insert the FastTrak100-Lite driver diskette.
3. Type "A:\WIN2000" in the text box. Press "Enter".
4. Choose "Win2000 Promise FastTrak 100-Lite Controller" from the list that appears on screen, then press the "Enter" key.
5. The Windows 2000 Setup screen will appear again saying "Setup will load support for the following mass storage devices – Win2000 Promise FastTrak 100-Lite controller". The FastTrak 100-Lite (PDC20265R) driver will now be copied on to the system and entered into the Windows 2000 driver database.
6. When the "System Settings Change" dialog box appears, remove the floppy diskette and click on "Yes" to restart the system. Windows 2000 will then restart for the driver installation to take effect.
7. Power off your system, then attach your hard drives to the FastTrak 100-Lite controller.

Confirming Windows 2000 Installation

1. From Windows 2000, open the Control Panel from "My Computer" followed by the System icon.
2. Choose the "Hardware" tab, then click the "Device Manager" tab.
3. Click the "+" in front of "SCSI & RAID Controllers hardware type." The driver "Win2000 Promise FastTrak 100-Lite Controller" should appear.

Windows 95/98

Installing Drivers During Windows 95/98 Installation

The following three sections detail the installation of the FastTrak 100-Lite drivers while installing Windows 95/98. If you're installing the FastTrak 100-Lite drivers on a system with Windows 95/98 already installed, see "Installing Drivers with Existing Windows 95/98" on page 24.

Windows 98

1. After installing the FastTrak100-Lite controller and configuring the hard drive(s), partition and format your hard drive(s), if necessary.
2. Install Windows 98 normally.
3. After installation, go the "Start" menu and choose "Settings."
4. From the "Settings" menu, choose "Control Panel."
5. In the "Control Panel" window, double-click on the "System" icon.
6. In the "System" window, choose the "Device Manager" tab.
7. In the hierarchical display under "Other Devices" is a listing for "PCI RAID Controller." Choose it and then press the "Properties" button.
8. Choose the "Driver" tab in the "Properties" window, choose "Update Driver," and then press "Next."
9. Choose "Search for a better driver than the one your device is using now (recommended)," then press "Next."
10. Choose "Specify Location," and then type "A:\WIN95-98" in the text box.
11. Insert the "FastTrak100-Lite Driver" diskette into the A: drive.
12. Press the "Next" button. A message informing you that Windows 98 has found "Win95-98 Promise FastTrak100-Lite (tm) Controller" should appear.
13. Press "Next," then "Finish," then "Yes" when asked if you want to restart your computer. Be sure to remove the diskette from drive A:.

Windows 95

1. After installing the FastTrak100-Lite controller and configuring the hard drives, partition and format your hard drive(s), if necessary.
2. Install Windows 95 normally.
3. After installation, go to the "Start" menu and choose "Settings."
4. From the "Settings" menu, choose "Control Panel."
5. In the "Control Panel" window, double-click on the "System" icon.
6. In the "System" window, choose the "Device Manager"tab.

7. In the hierarchical display under “Other Devices” is a listing for “PCI Mass Storage Controller.” Choose it and then press the “Properties” button.
8. Choose the “Driver” tab in the “Properties” window, and then press the “Update Driver” button.
9. When asked if you want Windows to search for the driver, choose “Yes (recommended).”
10. Insert the “FastTrak100-Lite Driver” diskette into the A: drive, then press “Next.”
11. When Windows informs you that it was unable to find the drivers, press “Other Locations …”
12. In the “Select Other Location” dialog box, type “A:\WIN95-98”.
13. Press the “Next” button. A message informing you that Windows 95 has found “Win95-98 Promise FastTrak100-Lite (tm) Controller” should appear.
14. Press “Finish.” (If Windows can’t find the “FastTrak100-Lite.MPD” file, type “A:\WIN95-98” in the “Copy files from:” text box).
15. Choose “Yes” when asked if you wish to restart the system, and remove the diskette.

Installing Drivers with Existing Windows 95/98

The following three sections detail the installation of FastTrak100-Lite drivers on a system that has Windows 95/98 already installed. If you're installing the FastTrak100-Lite drivers on a system during a Windows 95/98 installation, see "Installing Drivers During Windows 95/98 Installation" on page 22.

Windows 98

1. After installing the FastTrak100-Lite controller and configuring the hard drives, power up the system and boot Windows.
2. The "Add New Hardware Wizard" will appear, informing you that it has found a "PCI RAID Controller."
3. Check the "Search for the best driver for your device" box and click the Next button.
4. Check the "Specify a Location" box and click Next button.
5. Type "A:\WIN95-98" in the text box that appears.
6. Insert the "FastTrak100-Lite Driver" diskette in drive A:.
7. Click on "Next." The Add New Hardware wizard will say it has found "Win95-98 Promise FastTrak100-Lite controller".
8. Click on "Next," and then on "Finish."
9. Choose "Yes" when asked if you want to restart your computer. Be sure to eject the diskette from drive A:.

Windows 95

1. After installing the Ultra100 controller and configuring the hard drives, power up the system and boot Windows.
2. The "Update Device Drive Wizard" will appear, informing you that it has found a "PCI Mass Storage Controller."
3. Insert the "FastTrak100-Lite Driver" diskette in drive A:.
4. Type "A:\WIN95-98" in the text box, then click on "Next." Windows will inform you that it has found the "Win95-98 Promise FastTrak100-Lite controller".
5. Click on "Finish," and when prompted to insert the "FastTrak100-Lite Driver" diskette, click on "OK."
6. If a message informing you that the file "FastTrak100-Lite.MPD" cannot be found, go to the "Copy files from:" text box and type: "A:\WIN95-98".
7. Choose "Yes" when asked whether you want to start your computer. Be sure to remove the diskette from drive A

Confirming Driver Installation in Windows 98/95

To confirm that the driver has been properly loaded in Win 95/98, perform the following steps:

1. Choose "Settings" from the "Start" menu.

2. Choose “Control Panel,” and then double-click on the “System” icon.
3. Choose the “Device Manager” tab, and then click the “+” in front of “SCSI & RAID controllers.” “Win95-98 Promise FastTrak100-Lite controller” should appear

Windows NT4

Installing Drivers During Windows NT 4.0 Installation

1. Start the system installation by booting from the Windows NT disk:

   a) Floppy install: boot the system with the Windows NT installation diskettes.
   b) Floppyless install: boot from floppy and type "WINNT /B". After files have been copied, the system will reboot. On the reboot, press the "F6" key when the message "Setup is inspecting your computer's hardware configuration…" appears.
   c) CD-ROM disk install: boot from the CD-ROM disk and press the "F6" key when the message "Setup is inspecting your computer's hardware configuration…" appears.

2. When the "Windows NT Setup" window is generated, press "S" to Specify an Additional Device(s).
3. Press "O" to select "Other" and press the "Enter" key.
4. Insert the Promise Technology® FastTrak100-Lite driver diskette into drive A: and press the "Enter" key.

   NOTE*: Please restore the* Promise Technology® *driver diskette from* :\DRIVER\IDE Raid\Promise*Driver of Driver Utilities CD title.*

5. Choose "Win NT Promise FastTrak100-Lite (tm) Controller" from the list that appears on screen, then press the "Enter" key.
6. The Windows NT Setup screen will appear again saying "Setup will load support for the following mass storage devices:" The list will include "Win NT Promise FastTrak100-Lite (tm) controller".

   NOTE*: If you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, continue to step 7.*

7. From the Windows NT Setup screen, press the Enter key. Setup will now load all device files and then continue the Windows NT installation.

2. After a successful installation, the "SCSI Adapter Setup" box will show that the "Win NT Promise FastTrak100-Lite (tm) Controller" driver has been installed.

Installing Driver with Existing Windows NT 4.0

WARNING: *If you plan to move your boot drive to a mirrored RAID 1 FastTrak array, hard drives should NOT be connected to the FastTrak100-Lite controller before performing the following procedure. The FastTrak100-Lite drivers must be loaded on the system hard drive (running under the existing hard drive controller) before any hard drives are connected to the FastTrak100-Lite controller.*

1. Choose “Settings” from the “Start” menu.
2. Choose “Control Panel” from the “Settings” menu.
3. Double-click on the “SCSI Adapters” icon, which generates the “SCSI Adapters” dialog box.
4. Choose “Drivers,” and then press “Add.”
5. In the “Install Drivers” dialog box, press “Have Disk…”
6. When the “Install From Disk” appears, insert the “FastTrak100-Lite Driver” diskette in drive A:.
7. Type “A:\NT4” in the text box window, then choose “OK.”
8. When the “Install Driver” dialog box appears, select “Win NT Promise FastTrak100-Lite Controller” and then press “OK.”
9. When the “Select SCSI Adapter Option” dialog box appears, press “Install.”
10. After a successful installation, the “SCSI Adapter Setup” box will show that the “Win NT Promise FastTrak100-Lite Controller” has been installed.
11. Power off your system.
12. If moving the boot drive to the FastTrak100-Lite, now attach the hard drives otherwise reboot.

Removing the Driver from Windows NT 4.x

1. In “Start” Button choose “Control Panel” in “Setup” group.
2. In “Control Panel,” select “SCSI Adapter,” next choose “Drivers” label
3. Choose “Remove” button.
4. After successful removing, the “SCSI Adapter Setup” box will show that “Win NT FastTrak100-Lite RAID Controller” has been removed.

Windows XP

Installing Driver During New Windows XP Installation

1a. Floppy Install: Boot the computer with the Windows XP installation diskettes.

1b. Floppyless Install: Boot from floppy and type "WINNT". After files have been copied, the system will reboot. On the reboot, press <F6> after the message "Setup is inspecting your computer's hardware configuration..." appears.

1c. CD-ROM Install: Boot from the CD-ROM. Press <F6> after the message "Press F6 if you need to install third party SCSI or RAID driver" appears.

2. When the "Windows XP Setup" window is generated, press "S" to Specify an Additional Device(s)

3. Insert the Promise Technology® driver diskette into drive A: and press "Enter" key.

   NOTE*: Please restore the* Promise Technology® *driver diskette from* :\DRIVER\IDE Raid\Promise*Driver of Driver Utilities CD title.*

4. Choose "WinXP Promise FastTrak 100-Lite Controller" from the list that appears on screen, then press the "Enter" key.

5. The Windows XP Setup screen will appear again saying "Setup will load support for the following mass storage devices:" The list will include "WinXP Promise FastTrak 100-Lite controller".

   NOTE*: If you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, continue to step 6.*

6. From the Windows XP Setup screen, press the Enter key. Setup will now load all device files and then continue the Windows XP installation.

Installing Driver in Existing Windows XP System

***WARNING**: If you will be moving the boot drive containing the existing Windows XP operating system to a mirrored RAID 1 array on the FastTrak 100-Lite controller, e.g. IDE3 / IDE4, the FastTrak 100-Lite driver MUST be loaded to the hard drive while it is still attached to your existing hard drive controller. Do not attach this drive or any other hard drive to the* FastTrak 100-Lite *(PDC20265R) controller before completing this step.*

After installing the FastTrak 100-Lite (PDC20265R) controller and rebooting your system, Windows XP setup will show a "New Hardware Found" dialog box. Under Windows XP, the "PCI RAID Controller" will be displayed.

1. In the dialog box, choose "Driver from disk provided by hardware manufacturer" button.
2. In the A: drive, insert the FastTrak100-Lite driver diskette.
3. Type "A:\WINXP" in the text box. Press "Enter".
4. Choose "WinXP Promise FastTrak 100-Lite Controller" from the list that appears on screen, then press the "Enter" key.
5. The Windows XP Setup screen will appear again saying "Setup will load support for the following mass storage devices – WinXP Promise FastTrak 100-Lite controller". The FastTrak 100-Lite driver will now be copied on to the system and entered into the Windows XP driver database.
6. When the "System Settings Change" dialog box appears, remove the floppy diskette and click on "Yes" to restart the system. Windows XP will then restart for the driver installation to take effect.
7. Power off your system, then attach your hard drives to the FastTrak 100-Lite controller.

Confirming Windows XP Installation

1. From Windows XP, open the Control Panel from "My Computer" followed by the System icon.
2. Choose the "Hardware" tab, then click the "Device Manager" tab.
3. Click the "+" in front of "SCSI & RAID Controllers hardware type." The driver "WinXP Promise FastTrak 100-Lite Controller" should appear.