ULTRA*33*™
**Ultra DMA/ATA Bus Master
IDE Accelerator**

User's Manual

**PROMISE
TECHNOLOGY, INC.**
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of Performance*

Thank you for choosing ULTRA33 from Promise Technology. ULTRA33 supports synchronous Ultra DMA/33 protocol developed for demanding applications such as real-time video, multimedia, and next generation operating systems.

Your ULTRA33 encompasses many valuable features. Its drive interface can achieve transfer rates to up to 33MB/s and implement CRC checking with Ultra DMA/33 drives. For the host interface, the ULTRA33 features a dual channel PCI IDE Bus Master controller for up to 133MB/s burst transfer rates across the PCI bus. Installation is simplified through PCI Plug-n-play (PnP) which allows for coexistance with IDE / ATAPI controllers such as those built into the mainboard. The controller's LBA translation BIOS provides new Extended Int13 support for drives that exceed 8.4GB.

| 2 | ———————— **Getting Started** ———————— | 2 |

2-1 Minimum System Requirements

Before you begin make sure that your system meets these minimum requirements:

- IBM PC compatible system
- Available PCI Bus Master slot
- PCI Plug-n-play system BIOS

2-2 Unpacking your ULTRA33

The package should contain the following items:

- √ ULTRA33 controller
- √ This installation guide
- √ Driver and Utility diskette including UltraTune**™**
- √ 40 pin IDE cable (Length: 18 in / 45.5 cm)

If any of these items are missing or appear damaged, please contact your dealer, retailer or distributor immediately.

2-3 The Latest Information

"Readme.txt" files on the bundled floppy contain the latest information including updates to the manual. Please take a moment to review this file with a text editor.
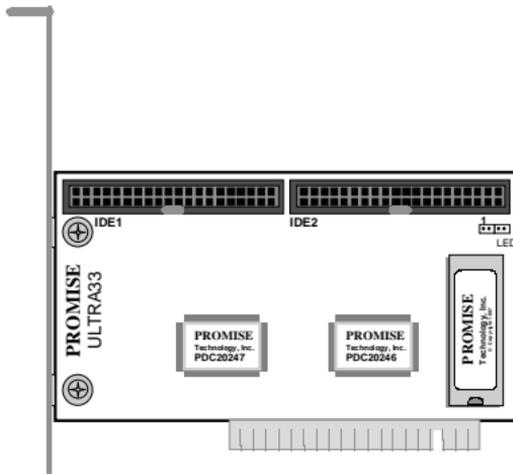
2-4 Operating system support

Your ULTRA33 supports a variety of operating systems: DOS 5.x and above, Windows 3.1x , Windows95, Windows NT 3.5x, 4.0 are supported. See the "Readme.txt" on the floppy for latest information.

Your ULTRA33 uses PCI PnP resources which are assigned by the Mainboard BIOS PCI setup. This allows for coexistence with other IDE controllers.

3-1 Get to Know Your ULTRA33
To familiarize yourself with the layout, place the controller in front of you to match the diagram below.

3-2 ULTRA33 Settings
The ULTRA33 is fully PCI Plug-n-play compliant and can coexist with other IDE controllers. Settings are automatically assigned by the Mainboard PCI PnP BIOS.

3-3 Physical Installation
- Turn OFF the power to your computer system and to attached devices. Refer to your PC's documentation for instructions.
- Remove the system cover to expose the expansion slots.
- Locate an unused PCI slot, remove the corresponding slot cover and save the screws for later use.
- Holding the board by the corners, align the ULTRA33 along the PCI bus and insert it into the empty slot, without forcing it. It should fit firmly and easily as you apply pressure.
- Attach the case LED 2-pin or 4-pin cable to the 4-pin connector labeled LED. Be sure to align pin 1 of the LED cable to pin 1 of the connector.
- Then, using the screw you removed from the slot cover earlier, fasten the board in the expansion slot.

Do NOT replace the system cover or reconnect power yet.

If necessary to change the controller IRQ, enter the Mainboard BIOS PCI setup. Locate the setting corresponding to the ULTRA33 PCI slot and modify the settings. On some Mainboards, the "First Available IRQ" setting may be used instead.

The ULTRA33 onboard BIOS is automatically assigned by the Mainboard BIOS and is not configurable. If the BIOS order needs to be resolved between another PCI PnP card, swap the cards' slots.

5 ─────── **Drive Installation** ─────── **5**

The ULTRA33 has two IDE connectors that each support a master/ slave combination of hard disk drives. The controllers are backward compatible with IDE drives including IDE, EIDE, and Fast ATA-2 standards. Drives of different standards maybe be cabled together without losing performance due to the independent programmable timing registers in the controller's design.

Jumper and install the hard drives with proper master/slave jumper settings recommended by the drive manufacturer. Connect cables* to the ULTRA33 and devices. The colored cable edge indicates Pin 1.

Drive Setup	Connector
Connect first two IDE drives 0 - Master; 1 - Slave	IDE1
Connect second two IDE drives 2 - Master; 3 - Slave	IDE2

* IDE cables must be no longer than 18 inches for Ultra ATA drives.

Mainboard CMOS Setup
Enter the Mainboard Standard BIOS Setup (e.g. with <Del>) and set the drive types to "None" or "Not installed." The ULTRA33 onboard BIOS will be used to support the drives.

Onboard IDE Controllers
Drives installed onto other IDE controllers, such as PCI IDE controllers integrated onto Mainboards, will be bootable since they claim the C: drive letter.
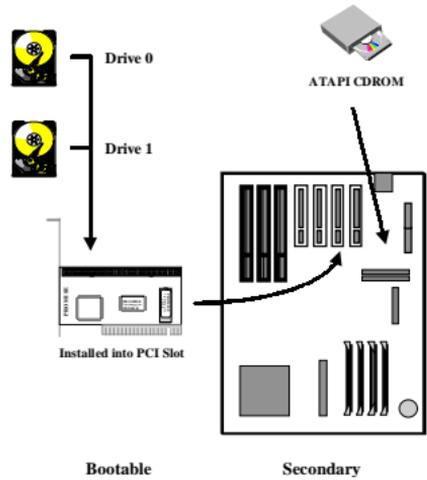
Bootable SCSI Adapters
The BIOS first initialized will be bootable. If the boot order needs to be changed, try swapping the SCSI and ULTRA33 cards' PCI slots to change the initialization order.

ATAPI CD-ROM Installation
ATAPI IDE CD-ROM drives are recommended to be installed on a separate IDE controller such as PCI IDE controllers integrated on the Mainboard.

Attach the ATAPI CD-ROM to the IDE controller. In the Mainboard Standard CMOS Setup, set the Drive Type to "Not Installed" or "None" for the drive. Follow the CD-ROM manufacturer instructions.

Drive 0

Drive 1

ATAPI CDROM

Installed into PCI Slot

Bootable   Secondary

This section gives installation notes on installing your ULTRA33 controller with DOS and Windows 3.1x operating systems.

Working with Existing OS Installations
Previous installations which consist of hard disks >504MB may have software that accompanies drives to access the full capacity. These software include Disk Manager and EZ Drive. They must be removed with their respective uninstall program since repartitioning will not erase all the driver information that reside in the drive boot sector. If this fails, from a floppy boot, TYPE "FDISK /MBR" at a prompt.

Installing DOS
For first time installation, follow the standard methods of installing the DOS operating system onto your hard disk:
Place "Disk 1" of your DOS installation diskettes into the A: drive and type "A:\SETUP" at the A: prompt. Follow the normal DOS installation procedures and refer to your DOS manual. **OR**

Place a DOS bootable diskette into the A: drive. At the A: prompt, run your DOS FDISK utility program. Create a Primary partition onto the hard disk - the entire drive capacity should be accessible (if the entire capacity does not appear, refer to Chapter 6: In Case of Trouble). The utility program will continue until it asks you to put a DOS bootable floppy into the system and press a key to restart the system. After rebooting to a DOS bootable floppy, run the DOS FORMAT command with the /S - type "FORMAT C: /S" from the A: prompt. Refer to the DOS Operating System manual for installation and partitioning/formatting additional hard disks.
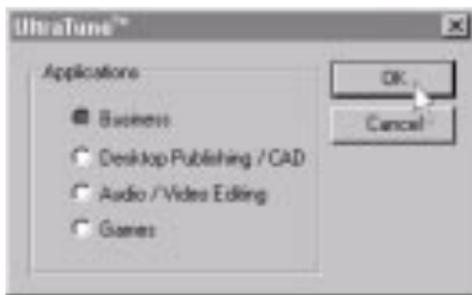
DOS, Windows 3.1x Systems
The ULTRA33 External BIOS supports DOS and Windows 3.1x without software drivers.

Installing Microsoft Windows95 Driver and Utility
From Windows95, insert the ULTRA33 diskette. Open the Start Button menu and click "Run". Type in "A:\WIN95\SETUP.EXE" and follow the onscreen directions. After the setup utility completes, the computer must be restarted for the PnP changes to take effect.

Using UltraTune™ Utility
The UltraTune utility is used to optimize the Promise Windows95 driver for specific applications. To launch UltraTune, open the Start Button menu, click on Programs, ULTRA33 Setup Utility, and then the ULTRA33 Setup icon. Choose an application and click OK.

Create NT Driver Diskette
Copy all files from the ULTRA33 Drive diskette \WIN_NT\ directory to a formatted diskette. Label the diskette ULTRA33 NT Driver Diskette.

Installing the Driver During Windows NT 3.5x / 4.0 Installation
Start the NT installation by booting from the Windows NT installation diskettes. Press <Enter> when the Welcome to Setup screen appears. From the Setup Method, press <Enter> to confirm "Express Setup". Press "S" to configure additional adapter. Select the "Other" button, insert the ULTRA33 NT Driver Diskette, specify "A:\", into the a: drive and press <Enter>. Follow the normal NT setup installation procedures.

Installing Drivers in Existing Windows NT Installation
Before using the ULTRA33, install the Promise PnP NT drivers onto the system drive using the exisitinng controller. Drives attached to the ULTRA33 cannot boot NT w/o driver support. Install and secure the ULTRA33 into the system w/o attaching drives at this time.

Configuring Windows NT 3.5x System
From "Program Manager," double-click on "Windows NT Setup" in "Main" group. In "Windows NT Setup", select "Options", next choose "Add/Remove SCSI Adapters..."

In "SCSI Adapter Setup", click on "Add..." In "Select SCSI Adapter Option", select "Other" in the "Adapter" box. Insert the NT Driver Diskette into Drive A: when the "Insert Diskette" box appears and press <Enter>. A "Select OEM Option" box will appear. Select "Promise Technology Inc. ULTRA33 controller" and click on "OK". A "Select SCSI Adapter Option" box will appear. Click on "Install".

After successful installation, the "SCSI Adapter Setup" box will show that "Promise Technology Inc. ULTRA33 Controller" driver has been installed. Perform a Shut down / Power off, and proceed to attach the drives.

Configuring Windows NT 4.0 System
In "Start" Button choose "Control Panel" in "Settings" group. In "Control Panel", select "SCSI Adapter", next choose "Drivers" label Choose "Add" button. In "Install Driver" dialog, push "Have Disk..." button. An "Install From Disk" box will appear. Insert the driver diskette into drive A: and choose "OK." When the "Install Driver" box appears, select "Promise Technology Inc. ULTRA33 Controller" and click on "OK". A "Select SCSI Adapter Option" box will appear. Click on "Install".

After successful installation, the "SCSI Adapter Setup" box will show that "Promise Technology Inc. ULTRA33 Controller" driver has been installed. Perform a Shut down / Power off, and proceed to attach the drives.

Promise Technical Support provides several support options for Promise users to access information and updates. We encourage using one of our electronic services which provide product information updates for the most efficient service and support.

If you decide to contact us, please have the following information available before calling a Promise Technical Support representative:

1. Product model, serial and revision number

2. Complete description of problem

3. System configuration

    ♦ Mainboard and CPU type
    ♦ IDE drives and model numbers
    ♦ Installed host adapters, controllers or other peripherals

These are the available Technical Support sources:

CompuServe   [GO PROMISE]

> Tech Support; TS Documents, Drivers, Utilities

Internet E-Mail   [support@promise.com]
> Recommended for Tech Support

PromiseOnline™ ftp Server   [ftp://ftp.promise.com]
> TS Documents, Drivers, Utilities

PromiseOnline™ www Server   [http://www.promise.com]
> TS Documents, Drivers, Utilities

Promise BBS   (408) 452-1267
> Modem Settings: N/8/1 @14.4K Baud

Telephone Support   (408) 452-1180
> 8:30-5:00p.m. M-F Pacific Standard Time

FAX Support   (408) 452-9163
> Attention to Technical Support

Promise 24 hr Fax On Demand   (408) 452-9160
> Call from fax phone handset or telephone connected to a fax modem

If you wish to write to us for support, address it to:

> Promise Technology, Inc.
> Attn: Technical Support
> 1460 Koll Circle
> San Jose, CA 95112   USA

Promise Technology, Inc. ("Promise") warrants that for two (2) years from the time of the delivery to the original end user of the product, (a) the product will conform to Promise's specifications, and (b) the product will be free from defects in material and workmanship under normal use and service.

This warranty:
   (a) applies only to products that are new and in their original cartons on the date of purchase;
   (b) is not transferable; and
   (c) is valid only when accompanied by a copy of the original purchase receipt.

This warranty shall not apply to defects resulting from the following causes:
   - improper or inadequate maintenance by the end user
   - unauthorized modification
   - operation outside the environmental specification for the product
   - abuse, result of an accident, misuse, negligence, misapplication, natural or personal disaster
   - maintenance other than by Promise or an authorized service center.

Disclaimer of Other Warranties

This Warranty covers only parts and labor and excludes any coverage on software items except as expressly set above.

Except as expressly set forth above, Promise DISCLAIMS any warranties, express or implied, by statute or otherwise, regarding the product including, without limitation, any warranties for fitness for any purpose, quality, merchantability, non-infringement, or otherwise. Promise makes no warranty or representation concerning the suitability of any product for use with any other item. You assume full responsibility for selecting products and for ensuring that the products selected are compatible and appropriate for use with other goods with which they will be used.

Promise DOES NOT WARRANT that any product is free from errors or that it will interface without any problems with your computer system. It is your responsibility to back up your computer or otherwise save important data before installing any product and to continue to backup your important data regularly.

Promise elects to (a) replace the product with a conforming unit of the same or a superior product or (b) repair the product. Promise shall not be liable for the cost of procuring substitute goods, or services, lost profits, unrealized savings, equipment damage, costs of recovering, reprogramming, or reproducing any programs or data stored in or used with the products, or for any other general, special, consequential, indirect, incidental, or punitive damages, whether in contract, tort, or otherwise, notwithstanding the failure of the essential purpose of the foregoing remedy and regardless of whether Promise has been advised of the possibility of such damages. Promise is not an insurer. If you desire insurance against such damage, you must obtain such insurance from another party.

Some states do not allow the exclusion or limitation of incidental or consequential damages for consumer product so the above limitation or exclusions may not apply to you.

This warranty gives specific legal rights, and you may also have other rights which vary from state to state. This limited warranty is governed by the laws of the state of California.

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