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# ***EIDE Ultima PRO<sup>®</sup>***

*Universal EIDE Adapter with High  
Speed Serial and Parallel Ports  
and TurboBoost<sup>®</sup> BIOS*



**DTC Data Technology**

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DTC Data Technology Corporation  
1515 Centre Pointe Drive  
Milpitas, CA. 95035

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## FCC Notice

This product has been tested and certified compliant with FCC Class B limits, part 15. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

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## **Introduction**

Thank you for choosing the DTC EIDE Ultima PRO<sup>®</sup>. The EIDE Ultima PRO is a high performance 16-bit ISA EIDE adapter with high-speed serial and parallel ports for the PC with enhanced BIOS support. Designed to work as either a primary or secondary controller, the EIDE Ultima PRO supports two (2) EIDE drives, ATAPI CD-ROM, tape drive, or any EIDE device. Its flexible design makes it a perfect solution for adding new and faster peripherals to your system and enhance the performance of existing hard disk drives.

The EIDE Ultima PRO supports up to 8.4GB storage capacity per hard drive. The *TurboBoost*<sup>®</sup> BIOS supports LBA (logical block addressing) for IDE drives with capacities greater than 528MB. *TurboBoost*<sup>®</sup> automatically recognizes and reconfigures disk drives, and enhances the performance of existing IDE drives without complicated setup procedures and mistakes associated with drive parameters setup and configuration. Advanced features such as 32-bit disk data transfer or multi-sector transfer to achieve throughput at 3.2MB/sec. makes the EIDE Ultima PRO the fastest EIDE controller in the market today.

Your EIDE Ultima PRO features two (2) high speed serial ports and an enhanced parallel port. Two high speed serial ports with 16C550 UARTs support an effective data rate of up to 115.2Kbps. This is equivalent to ISDN transfer rates and will significantly increase throughput between your serial device and the CPU.

The parallel port with enhanced capability (EPP and ECP) meets the IEEE 1284 specification and allows attachment of high speed external devices such as disk drives, Zip<sup>™</sup> drives, tape drives, tape backup systems, high performance printers and CD-ROM drives. ECP (Enhanced Capabilities Port) mode uses the DMA to increase performance and reduce system overhead. Selectable high IRQ's and address settings allow you to add and configure more peripherals in your system and prevents device conflicts. All devices are jumper selectable and can be enabled and disabled separately.

## Introduction

# Features

### **Host Bus:**

- 16-bit ISA Universal EIDE adapter

### **Enhanced EIDE interface:**

- Supports any two (2) IDE/ATA devices
- IDE, EIDE or FAST ATA Hard Disk Drives
- IDE Tape drives
- IDE CD-ROM drives (ATAPI Compatible)
- Primary, Secondary, Third or Fourth IDE settings (IRQ 11, 12, 14 or 15)
- Selectable BIOS address (DC000, D8000, CC000, C8000)

### **TurboBoost 0 BIOS:**

- Auto-configures drive parameters
- Supports LBA mode for drives > 528MB
- 32-bit data transfers of up to 3.2MB/sec
- Multi sector transfers or block mode transfers
- Supports up to four high capacity drives

### **Enhanced Floppy drive interface:**

- Two 360K or 720K or 1.2MB or 1.44MB or 2.88\* MB drives
- Supports high-speed floppy tapes at 1Mbit/sec\*.

### **High Speed Serial Ports:**

- Two high speed RS232C serial ports with 16C550 UARTs
- 16 bytes FIFO buffer on each port
- Speed up to 57.6 Kbaud rate
- Standard IRQ's 3,4, and 5
- Additional IRQ's 9, 10, 11, 12 and 15

### **High Performance Parallel Port:**

- Bi-Directional, ECP/EPP/IEEE1284 support
- Supports devices such as high speed printers, external tapes drives and scanners
- DMA data transfer in ECP mode
- Parallel port address: LPT1 (278), LPT2 (378)
- IRQ 5 and 7

### **Game Port:**

- One Game port for joystick control

\*Requires device driver from the equipment manufacturer

## **Contents**

Before installing your EIDE Ultima PRO, verify that your package contains the following items:

- EIDE Ultima PRO ISA Controller Card
- Cables and External Brackets
- Installation Guide (this guide)
- 32-bit Enhanced Driver Diskette
- Warranty Registration Card

Inspect the EIDE Ultima PRO for physical damage that may have occurred during shipment. To prevent damage to the card from static electric discharge, leave the card in its antistatic cover until installation. Be sure to record the EIDE Ultima PRO's serial number on the enclosed registration card.

## **Minimum System Requirements**

Your computer must meet the following minimum requirements:

- 386DX, 486 or Pentium system
- 16-bit ISA slot
- 3 1/2" diskette drive
- MSDOS 5.x or higher or Microsoft Windows 95

## **About This Guide**

This guide will familiarize you with the features, installation and use of your EIDE Ultima PRO.

### **Chapter 1: Quick Installation**

Help on configuring the EIDE Ultima PRO for the best possible results.

### **Chapter 2: Hardware Installation and Configuration**

How to properly install and configure the EIDE Ultima PRO for the best possible results.

### **Chapter 3: Utility Software**

How to install the EIDE Ultima PRO software.

### **Appendix A: Technical Information**

Help to ensure that EIDE Ultima PRO operates properly with different operating systems and other devices.

## **Terminology**

The following terms are referred to throughout this guide.

<b>BIOS</b>	Basic Input Output System
<b>DMA</b>	Direct Memory Access
<b>ECP</b>	Enhanced Capabilities Port
<b>EIDE</b>	Enhanced Integrated Drive Electronics
<b>ISA</b>	Industry Standard Architecture
<b>LBA</b>	Logical Block Addressing

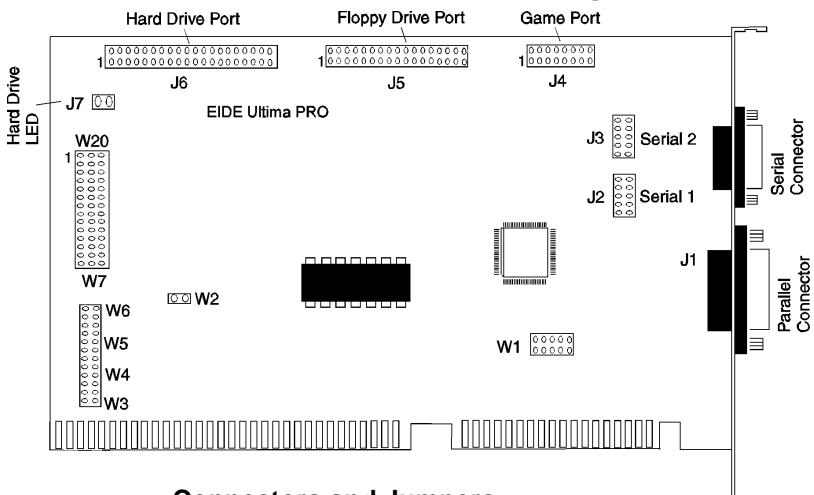


# 1

## Quick Installation

If you are an experienced user, this chapter provides a summary of the jumper settings to help you prepare your EIDE Ultima PRO for quick installation. For detailed installation and configuration information, refer to Chapter 2.

**EIDE Ultima PRO Diagram**






























### Connectors and Jumpers

- J1 Parallel Port
- J2 Serial 1 (serial device cable connection).
- J3 Serial 2 (serial device cable connection)  
Additional brackets for serial ports are included.
- J4 Game Port
- J5 Supports up to two (2) floppy drives
- J6 Supports up to two EIDE/IDE drives or two ATAPI CD-ROM drives configured as either primary or secondary.
- J7 Disk Activity LED

## Chapter 1: Quick Installation


























### Summary of Default Jumper Settings

Function	Location	Setting			
Game Port	W7			Enabled*	Disabled
IDE Port Settings	W16			Enabled*	Disabled
IDE Port Address	W20			Primary (1F0H)*	Secondary (170H)
IDE IRQ	W6				
		IRQ14*	IRQ15	IRQ12	IRQ11
BIOS Setup	W2			Enabled*	Disabled
BIOS Address	W3				
		C800*	CC00	D800	DC00
Serial Port 1 Setup	W17			Enabled*	Disabled
Serial Port 1 Address	W19			COM1(3F8H)*	COM3 (3E8H)
IRQ Setting	W10				IRQ4*    IRQ5    No connection
Addl. IRQ Settings	W5				
		IRQ9	IRQ10	IRQ11	IRQ12

\*Default settings

NOTE: No jumper on W10 when using Serial Port 1 for IRQ's 9,10,11,12

## Chapter 1: Quick Installation

Serial Port 2 Setup	W12				
		Enabled*	Disabled		
Serial Port 2 Address	W14				
		COM2 (2F8H)*	COM4 (2E8H)		
IRQ Setting	W8				
		IRQ3*	IRQ5	No connection	
Addl. IRQ Settings	W4				
		IRQ9	IRQ10	IRQ11	IRQ12
Parallel Port Address	W13				
		LPT1 (378)*	LPT2 (278)		
Parallel Port IRQ	W9				
		IRQ5	IRQ7*		
Disable	W11 & W18				
EPP	W11 & W18				
ECP/Bi-directional*	W11 & W18				
Uni-directional					
		W11	W18		
DMA Channel	W1				
		Channel 1	Channel 3		

\*Default settings

NOTE: No jumper on W8 when using Serial Port 2 for IRQ's 9,10,11,12

## **Chapter 1: Quick Installation**

### **Installing the EIDE Ultima PRO**

1. Turn off the power to your computer, disconnect the power cord and remove the computer cover. *Be sure you use an antistatic wrist grounding strap. If you do not have one ground yourself by touching something metal, such as the frame of the computer or a table leg before you install the EIDE Ultima PRO.*
2. Disable or remove any existing IDE controller.
3. Install the EIDE Ultima PRO into an available ISA slot.
4. Install IDE drives as recommended by the drive manufacturer.
5. Connect the cables to the EIDE Ultima PRO and devices. Make sure the colored or marked edge on the cable(s) is aligned with Pin 1 of the connectors.



**STOP! BACK UP YOUR DATA NOW!**

### **CMOS Setting**

For installed drives set up the CMOS as Type 1 for "C" or "D" (if present). For those systems where Type 1 is not selectable, choose User, Auto or None. Save and reboot the system. The EIDE Ultima PRO's TurboBoost<sup>®</sup> BIOS will automatically detect the drive parameters and enable LBA drive translation support and override the motherboard BIOS parameters.

This BIOS will support the slave drive in the Primary port and two drives in the Secondary port automatically. Do not modify the system CMOS drive type for hard disks attached to the secondary port.

## **Hard Drive Installation**



*MAKE A BACK UP COPY NOW OR  
ALL YOUR DATA WILL BE ERASED!*

### **New Drive Installation**

Partition and format your new IDE hard disk with DOS FDISK, then perform DOS FORMAT. Refer to your DOS manual for specific instructions on the use of these utilities.

### **Existing Drive**

If your existing large capacity drive (greater than 528MB) has been DOS installed prior to installation of the EIDE Ultima PRO, remove any disk utility software such as On Track or EZ Drive. Set up CMOS as Type 1 for "C:" or "D:" (if present). Backup all your data and repartition with FDISK/MBR, then perform DOS FORMAT. If this does not clean up the disk, use the *dtcdelpt.exe* file (available from the DTC BBS or website) to clean up the drive. Refer to Appendix A for more details on disk drive configuration and setup.

### **CD-ROM or Tape Drive Installation**

Configure the CD-ROM as a slave drive attached to the Primary IDE port. Disable the BIOS on the EIDE Ultima PRO to connect a CD-ROM or tape drive to the EIDE Ultima PRO's Secondary (170H) IDE port.

**Chapter 1: Quick Installation**

# 2

## Hardware Configuration

Before installing your EIDE Ultima PRO card, note the hardware settings of any other peripherals installed in your computer. It is important that the EIDE Ultima PRO's settings do not conflict with the settings used by other devices installed in your system, such as a mouse, internal modem, sound, SCSI or network card. The interrupt and port address used by each device must be unique.

The addresses and interrupts used in your system are automatically determined by Windows 95 or by running the Microsoft Diagnostics (MSD.EXE) program in DOS, Windows 3.x or Windows 3.xx.

### **View Device Settings in Windows 95**

To check for device settings in Windows 95, follow the steps below:

1. Click on **Start**, select **Settings**, then click on **Control Panel**.
2. Double-click on **System**.
3. From **System Properties** menu, select **Device Manager**.
4. Click on the **Properties** button, then click on **View Resources**.
5. Check the interrupt(s) by selecting the **Interrupt Request (IRQ)** button.
6. Check the address by selecting the **Input/Output (I/O)** button.

## **Chapter 2: Configuration and Installation**

### **Jumper Settings**

The following factory default settings are suitable for most computer applications and typically do not need to be changed.

<b>Feature</b>	<b>Setting(s)</b>	<b>Function(s)</b>
Serial Port 1:	COM 1	3F8H IRQ 4
Serial Port 2:	COM 2	2F8H IRQ 3
Parallel Port:	LPT 1 SPP	378H IRQ 7
Floppy Port:	Enabled	
Primary IDE Port:	Enabled	1F0H IRQ14
BIOS Address:	Enabled	C800H
Game Port:	Enabled	

If you need to change the jumper settings, refer to "Summary of Jumper Settings" in Chapter 1. Before you install the EIDE Ultima PRO you should check the following:

#### **1. Port Address and IRQ Setting**

The port address and IRQ setting of any other peripheral installed in your computer must be unique to avoid device conflicts. It is important that the EIDE Ultima PRO's settings do not conflict with other devices already installed in your system. You **must** remove or disable any other IDE controller in your system to avoid conflicts. Software utility tools such as Check-It, Norton Diagnostics and QA Plus are useful tools that can help determine your existing system resources.



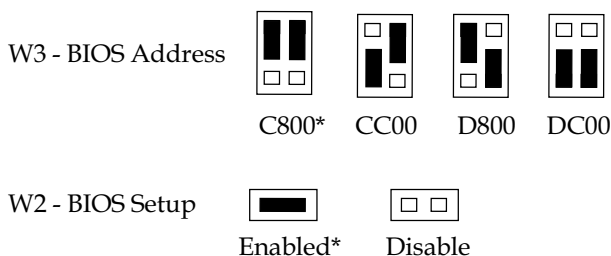
## **Chapter 2: Configuration and Installation**

### **2. Jumper Settings**

In most cases the default factory settings are suitable for most computer applications and typically do not need to be changed. Refer to "Summary of Jumper Settings" in Chapter 1 for the correct port and jumper configuration.

#### **TurboBoost™ BIOS Address Setting**

The EIDE Ultima PRO BIOS factory default address setting is *Enabled* and set to address *C800H*. The EIDE Ultima PRO BIOS supports LBA (logical block addressing) for IDE drives greater than 528MB. TurboBoost will automatically recognize, reconfigure and enhance the performance of existing disk drives, without complicated setup procedures and mistakes associated with drive parameters setup and configuration.





If you encounter a conflict with other devices in your computer, either change the address of the other device or select another BIOS address setting for your EIDE Ultima PRO.

#### **IDE Disk Drive Controller (J6)**



The factory default setting is *Enabled* and set to *Primary (1F0H, IRQ 14)* IDE port address. It is recommended that you use the EIDE Ultima PRO as your primary EIDE controller and remove or disable any other EIDE drive controller in your System. The Primary IDE port supports up to two EIDE/IDE master/slave drive configurations. If you would

## **Chapter 2: Configuration and Installation**

like to use the EIDE Ultima PRO as your secondary IDE controller change the W20 jumper setting to 170H address.



W20 - IDE Port Address    
Primary (1F0H)\*    Secondary (170H)

W16 - IDE Port Settings    
Enabled\*    Disabled

W6 - IDE IRQ      
IRQ14\*    IRQ15    IRQ12    IRQ11

### **Floppy Drive Controller (J5) W15**

The factory default setting is *Enabled*. The EIDE Ultima PRO enhanced floppy disk drives supports 360K, 720K, 1.2MB, 1.44MB or 2.88\*MB drives. It includes support for high speed tape drives\* of up to 1Mbit/sec. You must remove or disable any other floppy controller function in your system.

W15 Floppy Enable/ Disable    
Enabled\*    Disabled

*\*Requires third party software driver or system board BIOS support.*

### **Serial Port 1 (J2)**

The factory default settings for Serial Port 1 (COM1) are address *3F8H* and *IRQ 4*. It is a standard DB-9 (9-pin) connector mounted on the board. Address and IRQ settings can be changed to avoid device conflicts. The possible configuration settings are:



Jumpers on W10 and W8 Must be removed and used on W5 and W4 respectively for high IRQ settings

## Chapter 2: Configuration and Installation

W17 - Serial Port 1 Setup	
	Enabled*      Disabled
W19 - Serial Port 1 Address	
	COM1(3F8H)      *COM3(3E8H)
W10 - IRQ Setting	
	IRQ4*      IRQ5      No connection
W5 - Addl. IRQ Settings	
	IRQ9      IRQ10      IRQ11      IRQ12

### Serial Port 2 (J3)

In order to use the second serial port on the EIDE Ultima PRO, you must install the extra bracket included with your board. It includes a standard DB-9 cable. The factory default settings are COM2 with address 2F8H and IRQ3. Address and IRQ settings can be changed to avoid device conflicts. The possible configuration settings are:

W12 - Serial Port 2 Setup	
	Enabled*      Disabled
W14 - Serial Port 2 Address	
	COM2(2F8H)*      COM4(2E8H)
W8 - IRQ Setting	
	IRQ3*      IRQ5      No connection
W4 - Addl. IRQ Settings	
	IRQ9      IRQ10      IRQ11      IRQ12

## **Chapter 2: Configuration and Installation**



**WARNING:** Use only the cables supplied by DTC to ensure compatibility with your DTC controller.

### **Parallel Port (J1)**

The parallel port is a standard DB-25 (25-pin) mounted on the board. The factory default settings for the physical parallel (printer) port are 378 and IRQ 7.

W13 - Parallel Port Address	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>
	LPT1 (378)*	LPT2 (278)
W9 - Parallel Port IRQ	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>
	IRQ5	IRQ7*

### **Parallel Port Mode (ECP/EPP/Bi-directional)**

Jumpers *W11* and *W18* select the parallel port mode. The default is standard bi-directional printer mode. It is recommended that the other two modes not be selected unless you have attached a hardware device to the port that requires one of the other modes.

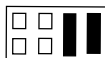
	W11	W18
Disable	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>
EPP	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>
ECP/Bi-directional*	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>
Uni-directional	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>

## **Chapter 2: Configuration and Installation**

### **DMA Channel**

Selection of a DMA Channel is required when using Extended Capabilities Mode (ECP). In most cases *channel 3* is selected since most sound cards use Channel 1.

W1 - DMA Channel



Channel 1



Channel 3

### **Game Port**

If you have a sound card with a game port installed in your system you should disable this feature.

W7 - Game Port



Enabled\*



Disabled

## Hardware Installation

Before installing your EIDE Ultima PRO card, make sure you have checked for possible conflicts with other devices in your computer (refer to Chapter 1: Configuring the EIDE Ultima PRO). *If you have an existing IDE controller card in your computer, it is recommended that you remove it or disable it before installing your EIDE Ultima PRO card. You have the option of disabling either the Primary or Secondary IDE channels on your EIDE Ultima PRO.*

### Installing the EIDE Ultima PRO

*IMPORTANT: Before handling the EIDE Ultima PRO, be properly grounded by touching the power supply housing or using a wrist strap.*

1. Turn off the power to your computer and remove the computer cover.
2. Set the jumpers on your EIDE Ultima PRO card.
3. Select an available 16-bit ISA slot for your EIDE Ultima PRO card.

Most computers accommodate both ISA and PCI slots. The ISA slots are usually the longer slots (see the example). Please refer to your computer's reference guide for more information.

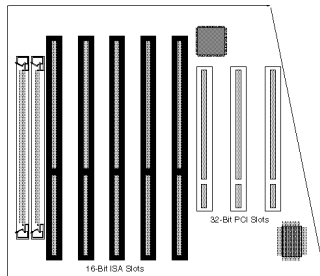


Figure 2.1

4. Remove the rear slot cover bracket if it is present and save the screw.
5. Remove the EIDE Ultima PRO from its antistatic packaging.
6. Carefully hold the EIDE Ultima PRO by the top edges and lower it into the ISA expansion slot. Ensure that EIDE Ultima PRO seats firmly into the slot.

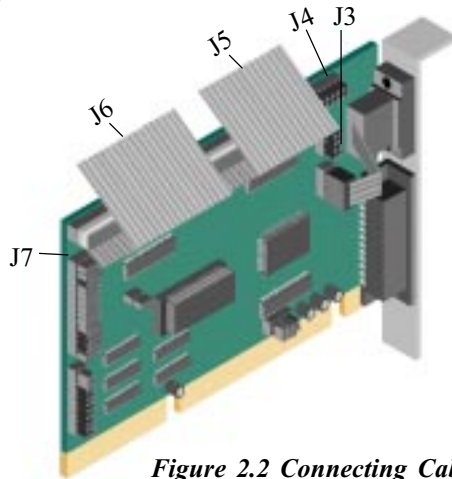
## **Chapter 2: Configuration and Installation**

7. Install the Serial Port 2 and Game Port bracket in an adjacent blank bracket location.

Connect the Serial Port 2 connector ribbon cable to J3. Connect the Game Port connector ribbon cable to J4. *NOTE: When connecting a ribbon cable connector, always align the colored (blue or red) side of the cable to Pin 1.*

8. Connect the 34-pin floppy drive cable to J5. Connect the other end of the cable to the floppy drive(s). The twisted end of the cable is for drive A; and the middle connector is for drive B. If drive B is installed, remove the terminating resistors from it.

*NOTE: If you have another IDE controller you must disable or remove it to guarantee operation. If you have a two drive configuration, the middle connector attaches to the second drive.*



**Figure 2.2 Connecting Cables**

9. Connect the IDE drive(s). Attach one end of a 40-pin IDE ribbon cable connector to J6. Connect the other end of the cable to the IDE/ATA drive(s). Note that J6 Pin 1 is oriented towards the bottom of the EIDE Ultima PRO (refer to Figure 2.2).
10. Attach the hard drive activity LED connector to J7.

## **Chapter 2: Configuration and Installation**

11. Secure the EIDE Ultima PRO and the extra port bracket (if installed) in place by fastening its metal brackets to the computer frame.
12. Replace the computer cover and screws. Connect all the external ports and power cord to the computer.

The EIDE Ultima PRO hardware installation is complete. Check for the disk drive type installed by running the system CMOS Setup program. Verify your I/O ports and address settings. Reboot your system.

## **Hard Drive Installation**



*WARNING: Backup your data! We strongly recommend you backup all your data before attempting to upgrade or install your hard drive. Large capacity drives previously partitioned need to be repartitioned and reformatted after installing the EIDE Ultima PRO and selecting an EDPT drive type.*

### **Check for Compatibility**

#### **A. BIOS**

The EIDE Ultima PRO is compatible with the AMI, Award and Phoenix BIOS with LBA capability and incompatible with M.R. BIOS.

If your hard drive was formatted with M.R. BIOS' LBA, you will need to repartition and reformat your drive(s) under DOS. We recommend you backup all the data on your existing drive under M.R. BIOS before proceeding with the LBA installation.



### **B. Disk Translation Software**

Disk translation software such as *On Track*, *EZ Drive*, and *MaxBlast* extends the 1024 partition limit under DOS, which conflicts with the EIDE Ultima PRO's BIOS LBA capability. We recommend you backup your data, remove the disk translation software from your drive's master boot record, and proceed with repartitioning and reformatting your hard disk under DOS.

### **Installing or Upgrading a Hard Drive**

The following information will assist you in your hard drive installation:

If you will install or upgrade to a bigger drive (greater than 528MB), please be aware that some drives greater than 528MB include a 32-bit access driver embedded in its master boot record. *Note: This 32-bit access driver or what is commonly referred to as disk translation software, such as On Track Disk Manager, EZ drive or MaxBlast, are shipped by the disk manufacturer with your hard disk drive to partition and format your large capacity drives.*

This embedded driver also supports a secondary port that will conflict with the EIDE Ultima PRO. If your drive was formatted and partitioned with the above mentioned disk translation software you may need to do one of the following:

1. Disable the BIOS on the EIDE Ultima PRO and keep the current CMOS setting.

**OR**

2. Remove the disk translation software from the master boot record with DOS FDISK/MBR. After removing the embedded driver or the disk translation software, you must change your CMOS setup prior to loading the device drivers to avoid any BIOS address and options conflicts. The following instructions will help you achieve a successful install:

## **Chapter 2: Configuration and Installation**

### **Set CMOS Setup features to:**

Set drive C:           Type 1  
Set drive D:           Type 1 ( if installed)  
LBA/Large Mode:   Disable  
Block Mode:         Disable  
32-bit disk access:  Disable

### **NOTE:**

- 1. LBA mode in the system CMOS setup can be disabled. Set drive "C" or "D" to either Auto-Detect, User Defined or Not Installed.*
- 2. The CMOS type settings are for the IDE drive attached to the Primary port only. Do not modify the system CMOS type setting for disk drives attached to the Secondary port. The TurboBoost BIOS will handle the slave drive attached to the Primary port and the two drives attached to the Secondary port automatically.*

Repartition your disk with FDISK and FORMAT with DOS. If this does not clean up the disk drive, use the *dtcdelpt.exe* file (available from the DTC BBS or website) or contact the disk drive manufacturer to obtain the mid-level or low-level format utility to clean up the drive. Setup the CMOS for drives C and D ( if installed) to "Type 1." Repartition with FDISK and FORMAT with DOS.

### **NOTE:**

*If you do not see the DTC EDPT BIOS message appear during boot up, change the BIOS address from C800H to CC00H.*

# 3

## **Software and Driver Installation**

*Please read this chapter carefully to ensure installation of driver(s) and BIOS to achieve maximum performance for your IDE drive. The EIDE Ultima PRO includes software utility and drivers to use with popular operating systems including DOS, Windows, Windows 3.x, 3.xx, Windows 95, IBM OS/2, UNIX and NOVELL. The software drivers are located on the floppy disk that comes with each card.*

The following table shows you which DTC software driver is appropriate for each situation.

DOSEIDE.SYS	DOS Device Driver
WINEIDE.SYS	Windows 3.1x Device Driver
DTCEIDE.MPD	Windows 95 Miniport Driver
DTCEIDE.INF	Windows 95 INF File
DTCIDE.ADD	IBM OS/2 v2.x Device Driver
ATAPI.SYS	Windows NT 3.5x ATAPI Device Driver
DTCIDE3.DSK	Novell 386 v3.1x Device Driver
DTCIDE4.DSK	Novell 486 v1.x Device Driver
DTCIDE4.DDI	Novell 486 Information File
DTCSPEED.EXE	DTC Speed Testing Program
SCSI1HLP.DTC	SCSI1HLP.VXD File for Windows 95
EZIDE.EXE	IDE Install Utility for DOS/Windows 3.x

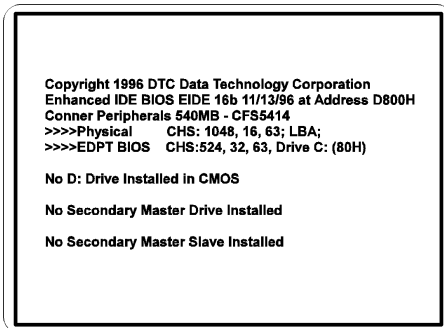
Before you install the software, be sure to make a copy of the disk. Use the copy for the installation and keep the original in a safe place.

## **Chapter 3: Software Setup**

### **TurboBoostä - Smart BIOS**

Your EIDE Ultima PRO TurboBoost BIOS automatically configures your drives and the EIDE Ultima PRO controller card to support 32-bit mode and enable multi-sector transfers for maximum performance. The TurboBoost feature mode is enabled during system bootup. TurboBoost reads, enables and translates the system board BIOS if properly configured.

For drives greater than 528MB in DOS, Windows and Windows 95, the LBA drive translation must be enabled in order for the DOS partition FDISK utility to access the full capacity of the drive. Enable the TurboBoost feature and the following screen appears:



### **EZIDE Installation Utility**

*Do not use this utility for Windows 95 installation.* This utility requires that the IDE drive be partitioned and formatted with DOS FORMAT and FDISK.

The EZIDE utility automatically installs the DOS and Windows 3.x device drivers only. This utility will copy all the necessary files and update your CONFIG.SYS and SYSTEM.INI files.

To install EZIDE, insert the DTC Enhanced Driver diskette in your floppy drive and type:

```
A:\EZIDE <Enter>
```

Follow the instructions on the screen. The instructions will guide you through the installation.

### **Installing Enhanced Device Drivers**

#### **DOS Installation - New IDE Drive**

1. Insert the MS-DOS disk in your floppy drive.
2. Reboot the system.
3. Partition the IDE drive with DOS FDISK and then perform DOS FORMAT.
4. Install DOS.

Follow the DOS Operating System manual for more details. Refer to Appendix A for troubleshooting assistance.

#### **DOS Installation - Existing IDE Drive**

If you are attaching an existing IDE hard disk drive previously partitioned and formatted check for the following:

- Drive capacities with less than 528MB do not require any further action.
- Large capacity drives greater than 528MB partitioned and formatted with software translation package such as *OnTrack*, *MaxBlast* or *EZ Drive* will require further action. Refer to Chapter 2 and Appendix A for more details.



**WARNING: MAKE A BACKUP COPY NOW!  
ALL DATA WILL BE ERASED!**

- Drives greater than 528MB partitioned and formatted on a system that supported LBA mode do not require DOS Format or partition. Refer to Appendix A for more details.

## **Chapter 3: Software Setup**

### **Windows 3.1x/Windows for Work Groups 3.11**

All 32-bit DTC IDE controllers support 32-Bit Disk Access and 32-Bit file access under Windows 3.11. The DTC Windows driver, WINEIDE.386, is a Virtual Mode Driver (VxD) that can be used in place of WDCTRL.

*NOTE: It is recommended to first verify that your system and hard drive is compatible with the 32-bit disk access functions under Windows using the built-in WDCTRL driver. If you have been successful using the WDCTRL driver, proceed with the installation of the DTC Windows driver - WINEIDE.386.*

The WINEIDE.386 driver provides the same functions and includes 32-bit PIO transfers to the EIDE Ultima PRO card, supports multi-sector transfers, and programs the EIDE Ultima PRO card and each IDE device for optimal performance.

To install the driver automatically, run A:\EZIDE from the driver diskette. To install manually, follow the steps below:

1. Copy the WINEIDE.386 file from the DTC Driver diskette into the C:\WINDOWS\SYSTEM directory.
2. Edit the file SYSTEM.INI located in the C:\WINDOWS directory.
3. Go to the [386Enh] section. If "32BitDiskAccess" is already enabled (=on), you must disable the WDCTRL driver by placing a semicolon (;) at the beginning of the line. Then add the WINEIDE.386 driver line as follows:

```
32BitDiskAccess=on  
  
device=*int13  
;device=*wdctrl  
device=wineide.386
```

### ***Chapter 3: Software Setup***

4. If "32BitDiskAccess" is not enabled (=off), then add the following lines to the beginning of the [386Enh] section:

```
32BitDiskAccess=on
device=*int13
device=wineide.386
```

#### **Windows 95**

In the Windows 95 environment, you can replace the built-in driver, STANDARD IDE/ESDI with the DTCEIDE.MPD. To install the driver:

1. Copy the DTCEIDE.MPD Miniport driver and the DTCEIDE.INF driver information database file into a diskette or a directory on your hard drive. The installation program "EZIDE.EXE" will copy these file as well. If you have installed the Windows 3.1x driver "WINEIDE.386" through "EZIDE," you must uninstall the driver.

The "WINEIDE.386" driver can be removed by deleting the statement in SYSTEM.INI or by running the "Unload DTC 32 Bits EIDE Driver" option in "EZIDE." Note that the "Unload..." will not delete the directory "C:\DTCSCSI" and the files in it.

To copy the files manually, run the following commands in the boot drive:

```
md \DTCEIDE
copy DTCEIDE.MPD c:\DTCEIDE
copy DTCEIDE.INF c:\DTCEIDE
copy SCSI1HLP.DTC c:\DTCEIDE
```

NOTE: Save a copy of the SCSI1HLP.VXD file in the driver's directory of the system. If Windows 95 is installed in the C:\Windows\system directory, then

### **Chapter 3: Software Setup**

the drivers are in C:\Windows\System\Iosubsys directory. Replace SCSI1HLP.VXD by SCSI1HLP.DTC as follows:

```
cd C:\WINDOWS\SYSTEM\IOSUBSYS
ren SCSI1HLP.VXD SCSI1HLP.ORG
copy C:\DTCEIDE\SCSI1HLP.DTC SCSI1HLP.VXD
```

2. Remove any built-in Windows 95 driver that is installed in your system. It is essential that any built-in Hard Disk Controller driver is removed in the Device Manager prior to the installation of the DTC Windows 95 driver(s).
  - a. From the **Control Panel**, click on the **System** icon.
  - b. Click on the **Device Manager** tab.
  - c. Make sure that the **View Devices by Type** button is selected.
  - d. Double-click on **Hard Disk Controller** to display all hard drive controller drivers currently loaded. If the list does NOT contain hard disk controllers, continue with the following step.
  - e. Depending on the status of the second port, 1 or 2 built-in driver(s) called Standard IDE/ESDI Hard Disk could be loaded. In other words, if the second port of the DTC card is enabled, then 2 built-in drivers named Standard IDE/ESDI Hard Disk might be loaded.
  - f. Highlight the built-in driver, then click on **Remove**. Click on **OK**. Repeat this step with the other built-in driver, if loaded.
  - g. Windows 95 will now prompt you to reboot. Click on **No** to reboot.



3. Install the DTC Windows 95 Driver(s)
  - a. From the **Control Panel**, click on the **Add New Hardware** icon. Click on **Next**.
  - b. Windows 95 will now prompt you whether you want the Wizard to search for new hardware. Select **No**, then click **Next**.
  - c. The Hardware Types window will now be displayed. Select **Hard Disk Controller** and then click **Next**.
  - d. The next window displays a list of Hard disk controllers. Click on the **Have Disk** button.
  - e. The Install From Disk window will now appear. Enter the location of the DTC driver - DTCEIDE.MPD - as described in Step 2 above, then click OK.
  - f. The next window displays the description of the DTC driver - DTCEIDE.MPD. Click on **Next** to continue.
  - g. If a window indicating a possible conflict exists, make note of this conflict and continue with the installation of the drivers. See the Troubleshooting appendix for help on troubleshooting this conflict.
  - h. If a window indicates that a file could not be found or copied, make sure that the source path is correct and click the OK button.
  - i. Click on Finish to complete the installation.
  - j. Windows 95 will prompt you to Restart System after changes have been made. Click on No.
  - k. From the **Control Panel**, double-Click on System.

### **Chapter 3: Software Setup**

- l. Click on **Device Manager**, then Click on **Hard Disk Controllers**.
- m. Click on **DTC Enhanced IDE Miniport Driver** DTCEIDE.MPD.
- n. Click on **Properties**. If the box of "Original Configuration" is blank, click and change it to "V". Click on **Resources**. The message(s) shown on the screen are:

Checking the Basic Configuration....

Loading the First DTC Miniport Driver...BASIC CONFIGURATION 0 (must be selected for proper installation).

I/O Port Address = 01F0 and Interrupt Request = 14

*NOTE: Please make sure this is correct before continuing.*

- o. Windows 95 will prompt you to Restart System after changes have been made. Click on No.
- p. Repeat process again if your are loading the driver for the Secondary Port. Follow #2 for loading the second driver. The message(s) shown on the screen are:

Loading the Second DTC Miniport Driver.....

Basic Configuration 1 (must be selected for proper installation)

I/O Port Address = 0170 and Interrupt Request = 15

*NOTE: Please make sure this is correct before continuing.*

- q. After completing and making the correct changes, click on OK. Click on Start, then click on Shutdown. Click on Restart Computer.

## **IBM OS/2 V2.x & V3.x (Warp)**

If you have an EIDE BIOS (creates an Enhanced Drive Parameter Table) in your system, there are no OS/2 limitations on the partition size. Skip to the next section.

FOR IDE HARD DRIVES WITH > 1024 CYLINDERS  
There are two restrictions associated with OS/2 and drives with Cylinders counts > 1024.

1. The primary bootable OS/2 partition must be less than 504 MBytes. This applies to both FAT and HPFS file systems.
2. Any Additional OS/2 FAT partitions can NOT extend beyond the 504MB boundary.

## **OS/2 Previously Installed**

1. Boot up your system.
2. Copy the DTCIDE.ADD file from the DTC Driver diskette to the /OS2 directory on the bootable hard disk.
3. Edit the CONFIG.SYS file in the root directory. Remark out the current driver as follows:

```
REM BASEDEV=IBM1S506.ADD
```

Add the DTC Enhanced IDE device driver statement.

```
BASEDEV=DTCIDE.ADD [Software  
Switches]
```

4. Reboot your system.

## **Chapter 3: Software Setup**

### **New Installation**

1. Create a DTC Installation Diskette DTC D1 as follows:
  - a. Backup original OS/2 Diskette 1 to new diskette DTC D1.
  - b. Edit the CONFIG.SYS file on the DTC D1 diskette.

```
REM BASEDEV=IBM1S506.ADD  
BASEDEV=DTCIDE.ADD [Software  
Switches]
```

2. Delete the IBM1S506.ADD file from DTC D1.
3. Copy the DTCIDE.ADD file from the DTC Driver diskette to the DTC D1 diskette.
4. Install OS/2 according to the OS/2 installation guide. When Diskette 1 is prompted, insert the DTC D1 diskette.

*NOTE: Any software switches entered must be the same as the DOS software switches in a dual boot configuration. Please refer to the README.1ST file for a list of the software switches. Generally, the software switch "/V" is often used in OS/2.*

### **Netware 386 V3.1, V3.11 & V3.12**

1. Copy the file DTCIDE3.DSK from the DTC driver diskette to the directory where the Novell "server" is installed.
2. At the NetWare console prompt (: ) type:

```
LOAD DTCIDE3 [Software Switches]
```

NOTES:

1. For a Dual Port configuration, load the DTCIDE3 driver twice. Once for each port, or add a "/2" Software Switch to the load line.
2. Any software switches entered must be the same as the DOS software switches.

### **Netware 486 V4.x**

1. Copy the files DTCIDE4.DSK and DTCIDE4.DDI from the DTC driver diskette to the directory where the Novell "server" is installed.
2. At the NetWare console prompt (: ) type:  
LOAD DTCIDE4 [Software Switches]

NOTES:

1. For a Dual Port configuration, load the DTCIDE4 driver twice, once for each port.
2. Any software switches entered must be the same as the DOS Software switches.

### **Windows NT - ATAPI.SYS**

If installing WINNT without a CD-ROM drive hooked up, WINNT will automatically load the built-in ATDISK.SYS driver instead of the built-in ATAPI.SYS driver. After installation is completed, you have the option to replace the built-in ATDISK.SYS driver with DTC's ATAPI.SYS driver. Refer to the Notes section below for DTC's ATAPI.SYS features.

If installing WINNT with a CD-ROM drive, WINNT will automatically load the built-in ATAPI.SYS driver and NOT the built-in ATDISK.SYS driver. Note that only one driver can be enabled.

### **Chapter 3: Software Setup**

1. Follow the instructions provided for WINNT installation using the built-in drivers.
2. If installing with a CD-ROM, it is necessary that the CD-ROM drive be situated as a slave on the primary port since the built-in ATAPI.SYS will not recognize the second port.
3. Once installation is complete, save a copy of the built-in ATAPI.SYS driver and copy DTC's ATAPI.SYS driver to the directory below:

- a. Go to the Command Prompt. In the WINNT35\SYSTEM32\DRIVERS directory, rename the built-in ATAPI.SYS driver to ATAPI.ORG.

```
C:\WINNT35\SYSTEM32\DRIVERS> REN  
ATAPI.SYS ATAPI.ORG
```

- b. Copy DTC's ATAPI.SYS driver (downloaded from the BBS or included with the card) to the same directory.

```
C:\>COPYA:\ATAPI.SYS  
C:\WINNT35\SYSTEM32\DRIVERS
```

4. If WINNT was installed without a CD-ROM drive, replace the built-in ATDISK.SYS driver with DTC's ATAPI.SYS.
  - a. From the Control Panel, choose the Devices icon.
  - b. Highlight ATDISK.
  - c. Choose the Startup button, then choose Disable.
  - d. Highlight ATAPI.
  - e. Choose the Startup button, then choose Boot.
5. Reboot your system.

### **Chapter 3: Software Setup**

6. For cards with DUAL PORTS: At this point, the CD-ROM (if any) can be reconfigured to the second port if you so desire.

#### NOTES:

##### ATDISK.SYS

- WINNT built-in driver that is automatically loaded by the operating system if NO ATAPI device is present.

##### ATAPI.SYS

- WINNT built-in driver that is automatically loaded by the operating system if an ATAPI device is present.

- WINNT's ATAPI device driver support.

##### DTC's ATAPI.SYS

- modified version of the built-in ATAPI.SYS driver that replaces either of the above drivers with or without an ATAPI device.

- also supports PIO transfers, LBA, 32 bit data, multi-sector and secondary port.

*If the CD-ROM drive fails to respond properly, please contact the CD-ROM drive manufacturer and verify that the CDROM is ATAPI 1.2 compliant.*

## **Chapter 3: Software Setup**



# A Troubleshooting

This appendix provides information on issues you may encounter during installation and configuration of your EIDE Ultima PRO. Additional information is included in a README.1ST file on the EIDE Ultima PRO utility disk and on DTC's website. The troubleshooting information is presented in both a task and problem and solution format.

For most of the drive installation process you will need a DOS bootable diskette.

## To make a DOS bootable diskette:

- A. Insert a blank diskette in drive A or B.
- B. At the prompt type:

Format A: /S (/S to finish loading the system so you can boot from the Floppy diskette)

C:>\path\COPY FDISK.EXE A:

C:>\path\COPY FORMAT A:



**WARNING: ALWAYS BACKUP YOUR DATA!**

## INSTALLING A NEW DRIVE

This section outlines the commonly used hard disk drive subsystem configuration setup with the EIDE Ultima PRO.

*Installing, adding or upgrading IDE hard disk drives with less than 528MB.* IDE hard drives with capacities less than 528MB do not need LBA translation nor is it required to DOS format or partition such drives. If you are installing or adding one to your system please follow these simple steps:

1. Install the EIDE Ultima PRO by following the instructions outlined in this manual.
2. Run the CMOS setting and select the appropriate drive type.

## **Appendix A: Troubleshooting**

3. Save, exit and reboot. The system should automatically recognize the new device(s) attached to the controller.

*Installing, adding or upgrading (a single or dual drive configuration) new drives larger than 528MB capacity under DOS.*

1. Install the EIDE Ultima PRO by following the instructions outlined in this manual.
2. Run the CMOS setting. Set drive C and D (if present) to "Type 1."
3. Insert the bootable DOS diskette in either Drive A or B.
4. Boot the system.
5. Run FDISK and FORMAT on the disk.
6. Install the operating system and other software application programs.

### **Upgrading an Existing IDE Drive**

*An existing one or two drive configuration with greater than 528MB formatted under DOS at 500MB because of the DOS operating system limitation.*

1. Backup data from your hard drive.
2. Install the EIDE Ultima PRO following the instructions outlined in Chapter 2 of this manual.
3. Turn the system on and go to CMOS Setup.
4. Set CMOS Setup:

Set drive C:	Type 1
Set drive D:	Type 1 ( if installed)
LBA/Large Mode:	Disable (if Applicable)
Block Mode:	Disable (if Applicable)
32-bit disk access:	Disable (if Applicable)
5. Insert the bootable DOS diskette in Drive A or B.
6. Boot the system.

## **Appendix A: Troubleshooting**



**STOP! BACK UP YOUR DRIVE NOW!  
FDISK WILL DELETE ALL YOUR DATA!**

7. At the DOS prompt type:  
  
    A:> FDISK (FDISK will delete the old partition and repartition your drive).
8. Run FDISK again to repartition your drive.
9. Press the ESC key twice to restart the system.
10. Type: FORMAT C: (or D): /S to format your drive.
11. Install your operating system. In DOS, verify the total capacity of your drive by typing CHKDSK. In Windows 95 check your drive configuration in system resources.  
  
    NOTE: You should have one contiguous drive space if you have formatted your drive correctly.
12. Restore your data to the hard disk from your backup device or install your operating system and other application programs.

*Drives greater than 528MB previously partitioned and formatted with disk translation software such as ON-Track, EZ Drive or MaxBlast.*



**STOP! BACK UP YOUR DRIVE NOW! THE  
NEXT STEP WILL DELETE ALL YOUR DATA!**

There are two options to choose from:

**Option 1:** Remove the disk translation software with DOS FDISK/MBR and repartition and format the drives with DOS.

1. Remove the disk translation software and clean up the master boot record with DOS by typing:  
  
    A:>FDISK/MBR

## **Appendix A: Troubleshooting**

*NOTE: In most cases the former should clean up your master boot record. If this fails use **dtcdelpt.exe** utility. The instructions are on the next page after this section.*

2. Install the EIDE Ultima PRO following the instructions outlined in Chapter 2 of this manual.
3. Turn the system on and go to the CMOS Setup.
4. Set CMOS Setup:

Set drive C:	Type 1
Set drive D:	Type 1 ( if installed)
LBA/Large Mode:	Disable
Block Mode:	Disable
32-bit disk access:	Disable
5. Insert the bootable DOS diskette in Drive A or B.
6. Boot the system.
7. At the DOS prompt type: A:> FDISK (FDISK will delete the old partition and repartition your drive).
8. Run FDISK again to repartition your drive.
9. Press the ESC key twice to restart the system.
10. Type: FORMAT C (or D): /S to format your drive.
11. Install your operating system. In DOS, verify the total capacity of your drive by typing CHKDSK. In Windows 95 check your drive configuration in system resources.

*NOTE: You should have one contiguous drive space if you have formatted your drive correctly.*

12. Restore your data to the hard disk from your backup device.

**Option 2:** Disable the BIOS on the EIDE Ultima PRO and do not install the software. Keep the current CMOS settings.

### DTCDELPT.EXE UTILITY

*Removing any disk translation software such as ON Track, MaxBlast and EZ-Drive with DTC's partition utility software DTCDELPT.EXE.*



**WARNING:** DTCDELPT.EXE utility software will completely erase data on your drive including the master boot record. **BACKUP YOUR DATA NOW!**

1. Choose a drive (A: or C: or D:) and create a directory for the DTCDELPT file by typing:

```
C:>MD DTCDEL
```

2. Download DTCDEL.EXE from either the DTC Website ([www.datatechnology.com](http://www.datatechnology.com)) or the BBS. The BBS setting is in the Technical Support section of this manual. *NOTE: DTCDEL.EXE will not auto execute after the download.*
3. Save the file in C:\DTCDEL or in the unique directory you have created.

4. Change to the directory containing the DTCDELPT software by typing:

```
CD \DTCDEL <Enter>
```

5. Run DTCDEL by typing:

```
DTCDEL <ENTER>
```

Read and follow the instructions on the screen carefully. It is a good idea to **BACKUP YOUR DATA**, just in case you accidentally invoke the delete process and did not want to.

6. Delete the DTCDELPT.EXE from your directory after repartitioning your drive by typing:

```
CD \DTCDEL <ENTER>
```

```
C:>DEL DTCDEL.EXE
```

## **Appendix A: Troubleshooting**

### **Windows 95**

1. Windows 95 embedded drivers support the EIDE Ultima PRO. Make sure the WINEIDE.386 is NOT installed in the SYSTEM.INI. If it loads please run EZIDE to unload it or edit the SYSTEM.INI as follows:

```
rem device=wineide.386  
rem wineideswitch= /v /2
```

2. Load the DTC MiniPort driver by following the directions in the README.1ST file, or use the built-in Standard IDE/ESDI drivers. Configuration settings for Device Manager/Properties/Resources are:

```
IRQ15 I/O Port Address 0170  
    or  
IRQ12 I/O Port Address 01E8*  
    or  
IRQ11 I/O Port Address* (EIDE Ultima PRO  
setting)
```

\*If you are installing on the 3rd or 4th address, you must set the jumpers on the controller with the alternate IRQ settings 11 or 12. Install the CD-ROM to the EIDE Ultima PRO, then install the card. From the Control Panel click on the System icon, then click on Add New Hardware. Select Standard IDE/ESDI and choose the settings that match the EIDE Ultima PRO card.

NOTE: Please remove installed DOS/Windows drivers for proper operation.

### **DOS**

If the system locks up after installing CD-ROM drivers, contact the CD-ROM manufacturer and get an updated driver set, or use the CD-ROM driver only without the DTC software loaded. Some CD-ROM drivers will conflict with the DTC Software.

### **CD-ROM Setup**

A CD-ROM or tape drive attached to the primary IDE port must be configured as a slave device. If you are attaching a CD-ROM or tape drive to the Secondary IDE port, you must disable the BIOS on the EIDE Ultima PRO. Load all CD-ROM device drivers using the manufacturer's installation disk.

### **IRQ Device Conflicts**

Some system boards have IRQ15 reserved. In this case the Secondary port will not be accessible since the Secondary port requires IRQ15. Please contact the system manufacturer or refer to the system board's documentation to verify availability of IRQ 15.

The Green PC (EPA Energy Star Power Saving) feature must be disabled or rerouted to another IRQ other than IRQ15. Most system boards use IRQ15 for their Green PC function. Please check your CMOS setting.

### **Sound Cards (w/ Secondary IDE Port Enabled)**

The Sound Blaster sound card has a built-in secondary IDE port that will cause a conflict with the EIDE Ultima PRO with the same setting. Both cards occupy the same I/O port address and IRQ. You may have to use the Secondary port option on the EIDE Ultima PRO to run the IDE CD-ROM.

Please contact the sound card manufacturer to disable their IDE CD-ROM port either by jumper or software to resolve this issue. Once you attach the CD-ROM device to the EIDE Ultima PRO's secondary port, the Sound Blaster's port should automatically disable. Please check with your sound card manufacturer's documentation.

## **Appendix A: Troubleshooting**

### **Network Adapter Cards**

Some network adapter cards default is IRQ15. If the EIDE UltimaPRO is set as a secondary port you will need to reconfigure your network adapter cards to another IRQ#.

### **ISDN Adapters**

Some ISDN cards use IRQ15 as default. Please check for possible IRQ configuration conflicts.

### **"Cannot find COMMAND.COM" when the DTC Enhanced IDE driver is loading. The DTC IDE card hangs or fails when accessing the hard drive.**

1. Verify that the CMOS settings are correct for the drives attached.
2. Check that the drive has been partitioned (FDISK) and DOS formatted.
3. If you are using a PCI/IDE card, verify that you have properly redirected the Primary Port interrupt to IRQ14 and the Secondary Port interrupt to IRQ15.
4. The information obtained from the drive about its operational capability may be incorrect. Use the software switches to put the drive in a standard operation mode.

Step 1: Determine if the drive transfer rate is the problem by setting drive to standard PIO Mode 0 /dx:p0.

Step 2: Determine if the Multi-Sector transfer is the problem by disabling Multi-Sector transfer /dx:m0.



5. All third party software packages that allow access to drives greater than 528 MBytes are not compatible with the DTC Enhanced IDE drivers.
6. If your system board has a built-in IDE port, make sure that you have disabled the built-in IDE port and its features. You can disable the port through the system CMOS Setup utility.

### **"Unable to run Windows 95, Windows 3.1 or Windows for Workgroups 3.11 in the Enhanced Mode.**

NOTE: The DTC IDE card supports Windows for Workgroups 3.11 and Windows 3.1 in Enhanced Mode. Verify the following:

1. Verify that you have installed the latest DTC Windows driver, WINEIDE.386 in the SYSTEM.INI file correctly. See the DTC Windows driver installation instructions.
2. When running in the Enhanced Mode, ATAPI Devices must be attached to the Secondary Port.
3. If you get a message indicating a validation failure, write down the two numbers indicated and contact Microsoft or the drive's manufacturer. This failure indicates that the drive/system is not compatible with Windows Enhanced Mode. The most common failure is caused by setting the Cylinder # in the System CMOS to greater than 1024. Verify this by reducing the CMOS cylinder number to 1024 and then run Windows.
4. Verify that the Windows supplied VxD hard disk driver WDCTRL.386 functions without problems. If WDCTRL.386 does not work properly, neither will WINEIDE.386. This indicates that either the drive or the system has an incompatibility with Windows.

## **Appendix A: Troubleshooting**

### **Receive an error when exiting Windows 95, Windows 3.1 or Windows for Workgroups 3.11 in Enhanced Mode.**

1. Verify that you have installed the latest DTC Windows driver, WINEIDE.386 in the SYSTEM.INI file correctly. See the DTC Windows driver installation instructions.

### **Cannot access Secondary Port drives.**

1. Check that the /2 switch is included on the driver line.
2. If you are using a PCI/IDE card, verify that you have properly redirected the Secondary Port interrupt to IRQ15.
3. Check that the drives have been partitioned (FDISK) and DOS formatted.

### **The data transfer rate appears slow.**

1. Use an IDE hard drive that supports multi-sector transfers and has a fast data transfer rate. New drives that support the ATA-2 specification produce the best results.
2. Some benchmark programs do not properly measure data transfer rates and therefore show no improvements. Use the DTCSPEED.EXE file included on this disk or Coretest, which is available on the DTC BBS.
3. Rerun the benchmark using a new CONFIG.SYS file with a minimum configuration and compare results.

**What are the differences between IDE, EIDE and FAST ATA hard disk drives?**

1. DTC has generated a White Paper "Explanation of Enhanced IDE and FAST ATA." This paper can be obtained by calling the DTC FaxBack at (408) 942-4005 and request document # 529.

**Can the DTC Enhanced IDE driver "DOSEIDE.SYS" be loaded into high memory?**

1. Yes, follow the instructions in your DOS manual for loading device drivers into high memory.

**Contacting DTC for Support**

## **Appendix A: Troubleshooting**

If you cannot resolve your problem using the suggestions in this appendix, contact DTC Data Technology.

### **Technical Support**

Monday through Friday - (408) 262-7700  
8:00 A.M. to 5:00 P.S.T

### **World Wide Web**

<http://www.datatechnology.com>  
For the latest driver updates and information about DTC.

### **E-Mail**

[support@datatechnology.com](mailto:support@datatechnology.com)

Leave private mail for DTC Technical Support

### **24-Hour Automated Fax Response System**

(408) 942-4005

Using a touchtone phone, access the FaxBack System to request Application Notes, Installation Guides and Technical Bulletins. Requested documents will be faxed directly to you.

### **24-Hour Bulletin Board System (BBS)**

(408) 942-4010

Current driver updates are always posted on the DTC BBS. The modem settings are: Baud Rate - Up to 14.4Kbps, Parity - None, Data Bits - 8, Stop Bit - 1.

# **B** Warranty

## **Limited Hardware Warranty**

DTC Data Technology Corporation warrants the EIDE Ultima PRO against defects in materials and workmanship for a period of one (5) year from the date of original retail purchase. DTC Data Technology Corporation will repair or replace the defective product if returned, with a copy of the bill of sale, shipping prepaid, during the warranty period.

DTC Data Technology Corporation will not be liable for special, incidental, or consequential damages arising out of the use of this product and in no event shall the liability of DTC Data Technology exceed the actual amount paid by purchaser for this product.



# **DTC Data Technology**

**YOUR I/O SOLUTIONS SOURCE**

1515 Centre Pointe Dr.

Milpitas, CA 95035-8010

Telephone: (408) 942-4000

Facsimile: (408) 942-4027

BBS: (408) 942-4010

Faxback: (408) 942-4005

Website: [www.datatechnology.com](http://www.datatechnology.com)