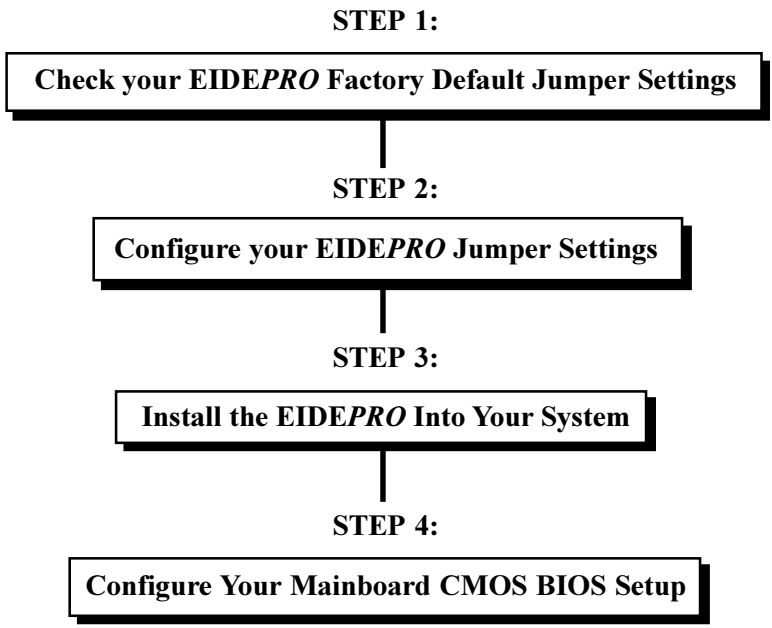
Configuration and Installation

Overview of EIDE*PRO* Installation Steps

These are the steps for installing your EIDE*PRO*:



STEP 1: Check your EIDE*PRO* Factory Default Jumper Settings

Prior to starting installation, examine your system to see whether you have an existing device setting that conflicts with the EIDE*PRO* default settings. Conflicts occur when more than one device uses the same IRQ or address. The EIDE*PRO* should be left at its default jumper settings for the majority of installations. Since the EIDE*PRO* is pre-set to conform with standard IDE I/O card settings, it is a simple installation or upgrade replacement.

It is required to remove or disable any IDE controller in your system to avoid conflicts. The table below shows EIDE*PRO* settings and comments on possible system conflicts.

After STEP 1, proceed to STEP 2: Configure your EIDE*PRO* Jumper Settings which will guide you through steps for jumper configuration. If there are no jumper changes to be made, skip to STEP 3: Install the EIDE*PRO* Into Your System.

EIDEPRO BIOS and IDE Default Settings

	IRQ	*PORT ADDR*	*Memory Address*	*DESCRIPTION*
EIDEPRO BIOS	—	—	C8000H	**Possible Conflicts:** ***SCSI card BIOS, Software Drive Translation.*** Avoid BIOS conflict w/ SCSI and network cards.Remove drive translation software (e.g. Ontrack DM **- see Ch. 6)**.
PRI IDE (J1)	14	1F0H	—	**Possible Conflicts:** ***Other IDE controllers.*** Disable/remove other IDE controllers.
SEC IDE (J2)	15	170H	—	**Possible Conflicts:** ***Other IDE controllers and Sound Cards with IRQ 15, port 170H.***

EIDEPRO Floppy and Multi-I/O Default Settings

	IRQ	*PORT ADDR*	*DMA CH.*	*DESCRIPTION*
FLOPPY	6	3F0H	2	**Possible Conflicts:*****Another FD controller.*** Supports 2 Floppy disk drives up to 2.88MB (w/Mainboard BIOS support);Tape data transfer rates up to 1Mbit/s tape rate.
COM A *(COM 1)*	4	3F8H	—	**Possible Conflicts:** ***Network cards, Int. Modem, I/O cards.*** Change Network and Internal Modem card COM/IRQ/Port to avoid conflict.
COM B *(COM 2)*	3	2F8H	—	Same as above.
LPT	7	378H	3 *ECP* Mode	**Possible Conflicts:** ***Sound & I/O cards.*** ECP Default Mode. Check for DMA channel conflict w/ Sound Cards.
GAME	—	201H	—	**Possible Conflicts:** ***Another Game port.*** Disable if Sound card has Game port.

NOTE: Users should remove or disable their existing IDE disk controller before installing EIDE*PRO*. You may optionally disable either the Primary or Secondary IDE channels on EIDE*PRO*.

STEP 2: Configure your EIDE*PRO* Jumper Settings

Using Factory Default Jumper Settings

The EIDE*PRO* should be left at its default jumper settings for the majority of installations. Since the EIDE*PRO* is pre-set to conform with standard IDE I/O card settings, it is a simple installation or upgrade replacement.

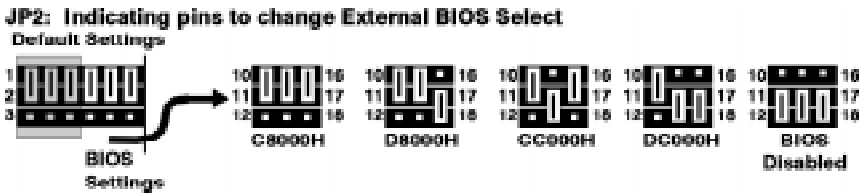
If in STEP 1 you discovered no potential conflicts, skip to STEP 3: Installing the EIDE*PRO* Into Your System.

Setting EIDE*PRO* BIOS ROM Address

The EIDE*PRO* has an onboard BIOS ROM at the default address of C8000H which occupies 16K of host memory. This EIDE*PRO* BIOS is essential for LBA drive translation to support >504MB DOS capacity IDE drives. Also the EIDE*PRO* BIOS supports hard drives on the J2 Secondary IDE connector.

Normally, the EIDE*PRO* BIOS ROM address should not be changed. However, other adapter cards may already use this particular ROM address. In this case, you may change the address of the existing adapter card (refer to adapter manufacturer's manual), or select one of the four ROM addresses for the EIDE*PRO*.

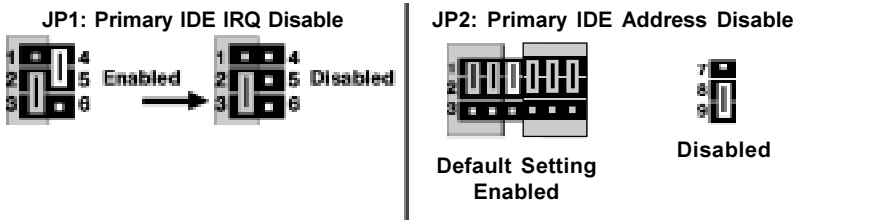
On Jumper Block JP2, columns 4&5&6 (pins 10 through 18), configure the BIOS to a different address:



Enable/Disable Primary IDE Controller (J1 Connector)

The default EIDE*PRO* setting of the Primary (J1) IDE disk drive controller (IRQ 14, Address 1F0H) is Enabled. The primary IDE controller is for your first two hard disks including the system's bootable hard disk drive (the hard disk that is formatted as a system disk).

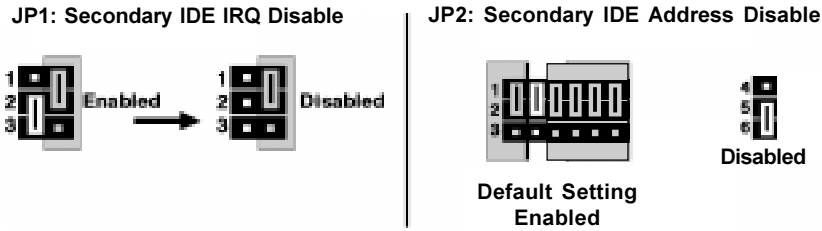
If you must use a different Primary IDE controller, you may disable the EIDE*PRO* Primary (J1) IDE controller by removing the jumper on JP1, column 2. and covering the lower two pins of JP2 column 3, as shown below:



Enable/Disable Secondary IDE Controller (J2 Connector)

The default EIDE*PRO* setting of the Secondary (J2) IDE disk drive controller (IRQ 15, Address 170H) is Enabled. The secondary IDE controller is for your non-bootable devices. Promise recommends to attach ATAPI devices (e.g. CD-ROM) to this Secondary IDE connector for best drive performance.

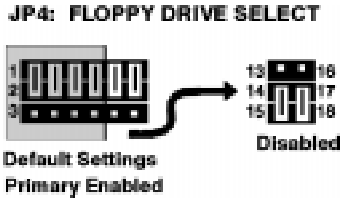
If you already have another controller occupying IRQ 15 and Address 170H, you may either change its setting or disable the EIDE*PRO* Secondary (J2) IDE controller by removing the jumper on JP2, column 1, and covering the lower two pins of JP2 columns 2, as shown below:



Enable/Disable Floppy Controller

The default of your EIDE*PRO* J3 enhanced floppy drive controller will support up to two 31/2 or 5 1/4 floppy drives of up to 2.88MB capacity and accelerate floppy tape drives to a 1000Kbit/s data transfer rate. In most systems, the EIDE*PRO* floppy controller setting should not be changed.

If you want to disable the EIDE*PRO* floppy controller, cover the lower two pins of JP4, columns 5&6, as shown below:



NOTE: For 2.88MB floppy drives you need support from the mainboard BIOS or software device drivers from a third party manufacturer. Most newer tape drives including QIC-80, QIC Wide, and Travan can take advantage of the tape accelerator feature.

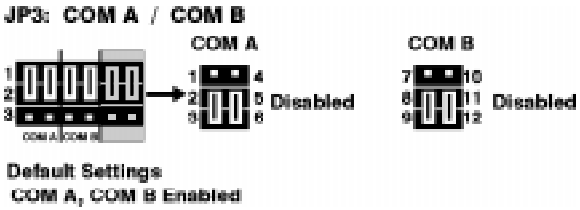
Configuring the COM Ports

The defaults of your EIDE*PRO* COM ports are Enabled: COM_A (J6 Connector) is set for COM 1 IRQ4, address 3F8H; COM_B (J5 Connector) is set for COM 2 IRQ3, address 2F8H. The built in 16550AFN high speed UART FIFOs will speed serial communication of external modems and other serial peripherals. The EIDE*PRO* COM ports have configurable address/COM settings while having fixed IRQ settings.

If there is an IRQ or COM port conflict, disable the specific EIDE*PRO* COM port(s) or configure the other card for a different COM port and/or IRQ.

Change internal Modem settings to avoid an IRQ conflict with your EIDE*PRO* COM ports. If the internal modem IRQ cannot be relocated, you may disable the EIDE*PRO* COM port (e.g. mouse installed on COM_A, disable COM_B, install modem at COM2 settings).

To Disable an EIDE*PRO* COM port(s) in the event of conflict, configure Jumper Block JP3: place jumpers to cover pins 2-3 and 5-6 to disable COM_A (COM1) and/or place jumpers to cover pins 8-9 and 11-12 to disable COM_B (COM2) as shown below:



Refer to Chapter 2 EIDE*PRO* Jumper Settings for more configurations.

Configuring LPT Port

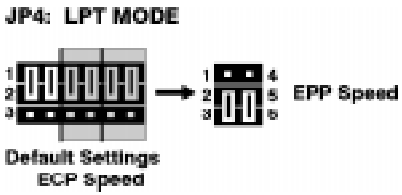
The default of your EIDE*PRO* LPT Printer port is set to IRQ 7, port address 378H. This setting is recognized by most operating systems as the LPT1 printer port and normally should not be changed.

If the printer port address or IRQ needs to be changed/disabled, refer to Chapter 2 Configuring your EIDE*PRO* Jumpers Settings for all possible configurations.

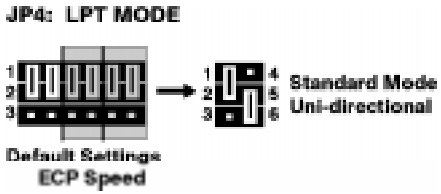
Configuring LPT Modes

Both ECP and EPP Printer Modes are bi-directional handshaking to increase transfer efficiency. The EIDE*PRO* default is ECP (Enhanced Capabilities Port) Mode which offers high speed transfer rates and can be configurable by LPT device software applications.

EPP (Enhanced Printer Port) also increases LPT transfer speed and can be selected for LPT devices that do not support ECP configuration. To configure for EPP printer mode set JP4 columns 1&2 to 2-3, 5-6 as shown below:



If there is a compatibility issue such as distorted printing, choose standard printer mode as shown below:

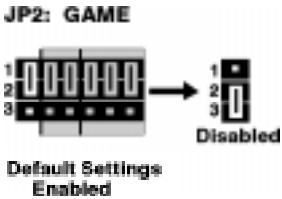


Selecting ECP DMA Channel

The Default ECP Mode DMA channel is 3. Avoid configuring DMA Channel 3 for other controllers. Do not set the ECP DMA Channel to 1 since it is used by most sound cards. Note that this setting applies only when ECP LPT Mode is selected.

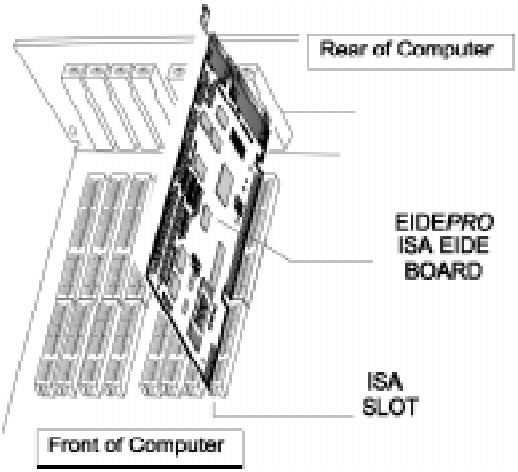
Configuring Game Port

If another adapter such as a sound card can provide game port support, disable this feature on the EIDE*PRO* by covering the lower two pins of JP2, column 1:



STEP 3: Install the EIDEPRO Into Your System

Inserting the EIDEPRO



IDE Devices Setup Considerations

Refer to your IDE device manufacturer documentation for proper settings. This section covers special IDE setup considerations which may apply to your system.

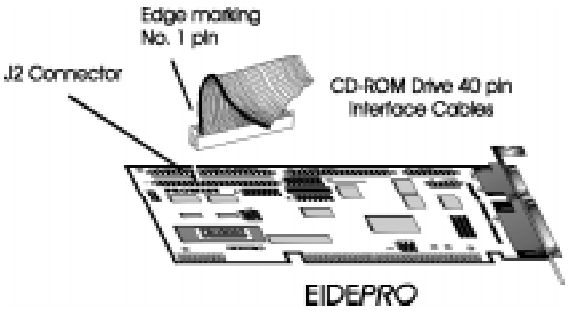
Multiple IDE Devices

Promise recommends to use the Primary (J1) IDE connector for the first two attached hard disk drives and the Secondary (J2) IDE connector should be used for the 3rd and 4th hard disk drive(s). However, there are scenarios as described below where it is beneficial to have one drive per connector when dealing with non-hard disk ATAPI devices.

Most System BIOS reference only two drives (C: and D:) in the System BIOS. They both refer to hard disk drives connected to the J1 Primary controller ONLY, not hard disk drives on the J2 Secondary which are supported by the EIDE*PRO* BIOS. Do not specify drives attached to the J2 connector in the Mainboard Standard CMOS Setup.

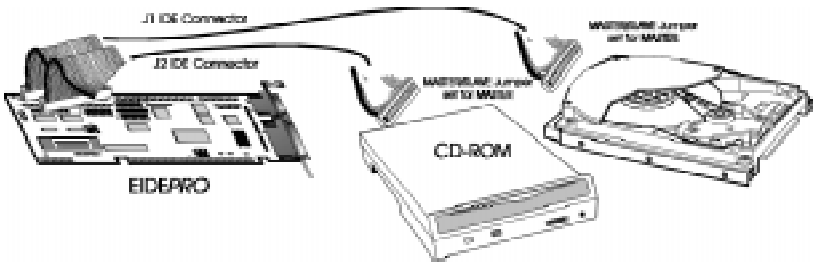
ATAPI IDE Devices

Devices such as IDE CD-ROM and IDE TAPE drives should be installed on the Secondary IDE controller. Separating slower ATAPI devices on the Secondary channel will give better performance for the main hard disk drive(s) on the Primary.



Master/Slave Jumper Settings

The general rule is that there should only be one master per cable connector. Connect the IDE drive cables to your EIDE*PRO* at J1 and J2 connectors. Remember to set master/slave setting for each pair of drives connected. Drives that are by themselves on an IDE connector should be configured as Master (single w/ no slave drive attached). If there is one hard disk on J1 and one device on J2, both should be configured as Master(single).



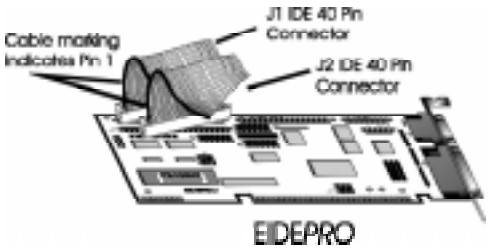
Note: If using an IDE CD-ROM and IDE disk drive together on the J2 IDE channel, remember to set the IDE disk drive as Master and the IDE CD-ROM as Slave (see manufacturer's manual).

Connecting IDE Devices

The first two IDE Hard Disks should be connected to the Primary (J1) IDE connector before installing drives on the Secondary (J2) IDE connector.

Attaching Hard Disk Drives to the Primary (J1) and Secondary (J2) IDE Connectors

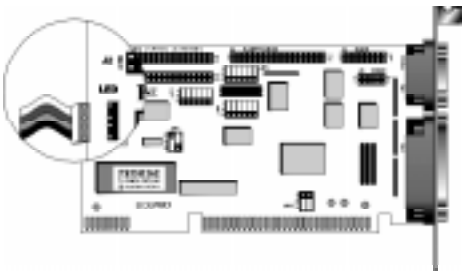
Use the proper cabling connections between your IDE drives and EIDE*PRO* (see illustrations below).



NOTE: If connecting IDE drives to the EIDE*PRO*, make sure the colored or marked edge of IDE cable is aligned with Pin 1 of the 40-pin EIDE*PRO* IDE connectors as well as Pin 1 on the IDE drives.

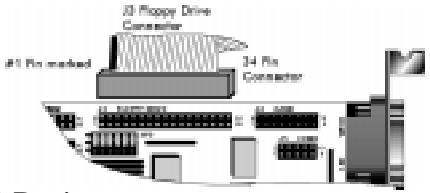
Connecting Disk Activity LED

Connect the disk activity LED cable to jumper block LED1 which consists of 4 pins - Pin 1&4 PWR, Pin 2&3 GND. If the Mainboard case LED cable has a 2-pin cap, connect the RED power lead to Pin 1 and the BLACK ground lead to Pin 2.



Connecting Floppy Drives

If connecting floppy drives to the EIDE*PRO*, make sure the colored or marked edge of the floppy cable is aligned with the EIDE*PRO* Pin 1 of the 34-pin (J3) floppy connector as well as Pin 1 on the drive's connector.

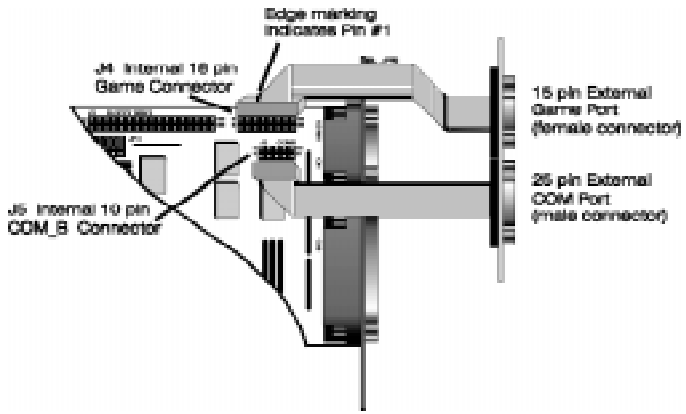


Connecting I/O Devices

Install the supplied External Port Extender in the closest available expansion slot to the EIDE*PRO*. Securely attach the faceplate to the chassis with the mounting screw. Attach the Port Extender cables to the COM_B (J5) connector and the GAME (J4) connector on the EIDE*PRO*.

Caution: Do not use anything other than the supplied External Port Extender. Other cables may not be pin compatible and will cause devices not to work properly.

You can now connect your I/O devices to the EIDE*PRO*.



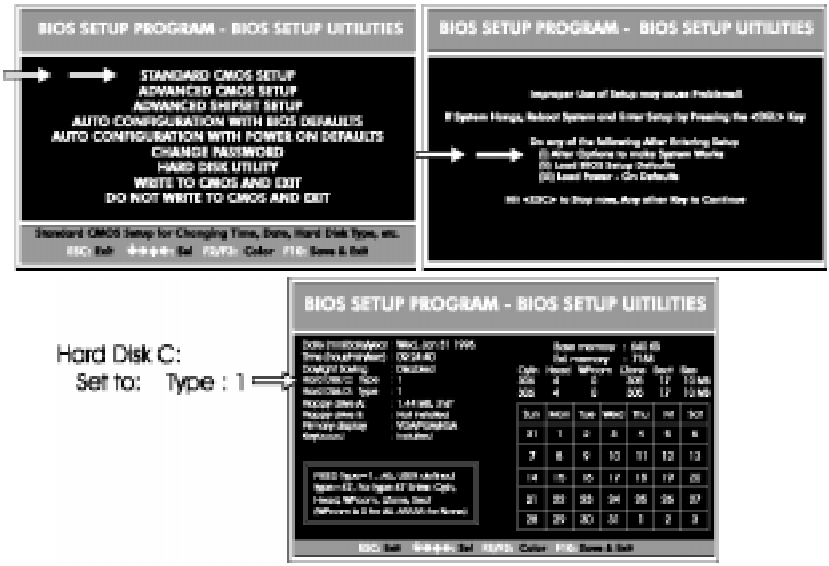
STEP 4: Configuring Mainboard BIOS CMOS Setup Settings

The Mainboard BIOS CMOS Setup settings are significant since they are read by the EIDE*PRO* BIOS for configuration information. For example, setting Drive TYPE1 in the Mainboard BIOS will enable drive translation from the EIDE*PRO* BIOS for the particular drive. Carefully read this Mainboard BIOS section to properly set up the EIDE*PRO* BIOS.

The EIDE*PRO* BIOS enables LBA drive translation if the Mainboard BIOS is set for Drive Type 1. It then autosenses for IDE hard disks on the Secondary (J2) IDE controller and automatically enables LBA mode parameters.

Enabling LBA Drive Translation

For DOS, Windows 3.1x and Windows95 installations, LBA drive translation should be ***Enabled*** for drives that exceed 504MBs capacity. With drive translation, the DOS partition utility FDISK will be able to access the full capacity. It is assumed that the drives with >504MB capacity have not been formatted previously (see warning below if drive has been previously formatted).



WARNING: If you have a >504MB hard drive that was partitioned with "software" drive translation (e.g. Ontrack Disk Manager), refer to Chapter 6 for information to remove this software.

Drive Translation for the Primary IDE controller (Drives 0&1)

Enable EIDE*PRO* BIOS (Recommended): Enter the Mainboard "Standard CMOS Setup Menu," and set the C: and D: drive Types to "TYPE 1" which will list as a 10MB capacity drive. When the EIDE*PRO* BIOS loads, it can detect the mainboard BIOS CMOS setting of drive TYPE 1 and enable drive translation autodetect. Note that the Standard CMOS Drive Types normally apply only to the Primary IDE controller.

You may optionally disable LBA Mode: Enter the Mainboard "Standard CMOS Setup Menu," set the C: and D: drive types to "USER DEFINED" or "AUTO DETECT" settings. Note that this applies only to the Primary IDE controller.

Drive Translation for the Secondary IDE controller (Drives 2&3)

The EIDE*PRO* BIOS always enables LBA drive translation and IDE autodetection for the Secondary IDE controller. By default, you may connect the third and fourth drive on the Secondary IDE connector and the Promise BIOS will autodetect and attach the drives.

If in the unlikely event LBA drive translation must be disabled for the Secondary IDE controller, the EIDE*PRO* BIOS must be completely disabled. When the BIOS is disabled, the Promise Banner will not appear and Secondary IDE drive autodetect and Primary IDE controller LBA support will not function. Refer to Chapter 2 - EIDE*PRO* Jumper Settings for the JP2 jumper BIOS disable setting.

EIDE*PRO* BIOS LBA Drive Translation in DOS environment

The EIDE*PRO* controller has an onboard BIOS which supports >504MB drives with LBA drive translation. The EIDE*PRO* BIOS supports >504MB EIDE drives even if your Mainboard BIOS does not.

In the majority of DOS/Windows and Windows95 environments, LBA drive translation should be ***Enabled*** to access the full capacity of EIDE hard disks. If using other operating systems such as UNIX or NetWare - Refer to Chapter 5 - Other Operating Systems for details.

The LBA feature will not perform translation on Non-EIDE hard disks with less than 504MB to maintain compatibility. There is no need to repartition or reformat drives less than 504MB. Drives with existing data that are greater than 504MB in capacity should be backed up and repartitioned. You may elect not to repartition the drive by disabling the EIDE*PRO* >504MB capacity support. Check with the drive manufacturer if you are unsure if the drive is capable of LBA translation.

NOTE: Many systems shipped with 540MB drives should be repartitioned when LBA is enabled.

LBA Drive Translation

Logical Block Addressing (LBA) drive translation method overcomes the 1024 cylinder limitation in the system BIOS. The EIDE*PRO* BIOS builds a translation table which reduces the Cylinder count of the drive while increasing the Head count proportionally. Thus, the effective capacity of the drive remains the same but is now accessible by operating systems that are limited by the system BIOS. Enhanced IDE drives and Fast-ATA drives that exceed 504MB in capacity support for LBA drive translation.

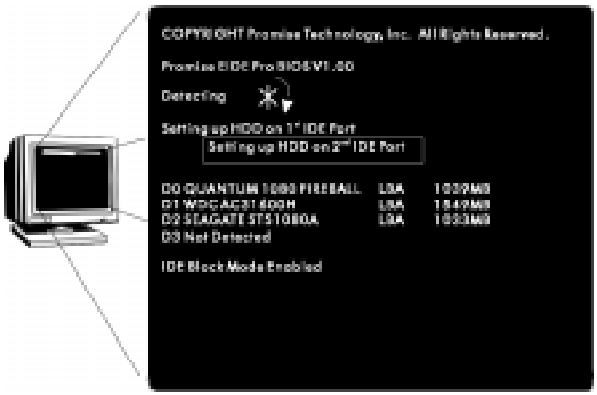
Example: Translation of 1 GB drive

Parameters	*Cylinders*	*Head*	*Sectors*	*DOS Capacity*
Actual	2100	16	63	504MB*
	/4	x4		
Translated	525	64	63	1034MB

* Capacity due to 1024 Cylinder Limitation

Reading the EIDE*PRO* BIOS Messages

On the system bootup, the EIDE*PRO* BIOS will appear and display the version and configuration status information. See the screen below:



The EIDE*PRO* BIOS enables LBA if it reads that the Mainboard BIOS is set for Drive Type 1. Then it autosenses IDE hard disks on the Secondary (J2) IDE controller and automatically sets up LBA parameters.

NOTE: LBA translation cannot be disabled for the Secondary (J2) IDE connector.

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