

TriGem

Motherboard

User's Guide

LN620

COMPUTER

 TriGem

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Safety Information

Battery Warning Instruction

Caution

If battery is incorrectly replaced there poses a danger of explosion. Replace battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Attention

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du meme type ou d'un type recommande par le constructeur. Mettre au rebut les batteries usagees conformement aux instructions du fabricant.

Vorsicht

Explosionsgefahr bei unsachgemaäß em Austausch der Batterie. Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ. Entsorgung gebraushter Batterien nach Angaben des Herstellers.

Fuse Warning Instruction

Caution

For continued protection against risk of fire, replace only with same type and rating of fuse. Disconnect input power before servicing. Only connect this equipment to an earthed socket outlet.

Vorsicht

Vor jeder service-arbeit netzstecker ziehen! Apparatet ma kun tilkobles jordet stikkontakt.

Attention

Debrancher avant d'ouvrir. Apparat en skall anslutas till jordat nätuttag.

Atencion

Desconecte fuerza electrica antes del servicio. Laite on liitettävä suojäkosketinistoraasian.

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Chapter 1

Motherboard Description

This chapter describes the major features of your motherboard.

Features

The motherboard supports the following features:

- ❶ Slot 1 connector, 233 MHz, 266 MHz, or 300 MHz Intel Pentium II processor with MMX technology
- ❷ Three 168 pin DIMM sockets, support up to 384 MB of synchronous DRAM (SDRAM) memory and support unbuffered EDO DRAM
- ❸ 512 KB of synchronous Pipeline Burst SRAM external cache on the substrate in the Single Edge Contact (S.E.C.) cartridge
- ❹ Two built-in PCI bus Enhanced IDE hard disk drive controllers, each channel supports up to two hard disk drives or CD-ROM drives
- ❺ Intel 82443LX PCI/A.G.P. controller
- ❻ Intel 82371AB PCI/ISA/IDE Xcelerator
- ❼ ITE 8679F super I/O controller
- ❽ Two Universal Serial Bus (USB) interfaces
- ❾ Three 32-bit PCI slots, one 16-bit ISA slot, and one shared PCI/ISA slot
- ❿ One A.G.P. (Accelerated Graphics Port) connector

- System and video BIOS shadow RAM
- Plug-and-Play (PnP) BIOS feature
- A built-in PS/2 style keyboard connector and a built-in PS/2 compatible mouse connector
- Two serial ports (one built-in connector and one optional pin header) and one built-in parallel port

The following are manufacturing options:

- Wake up LAN connector
- Wake up Ring connector
- Management extension hardware
- Chassis security connector
- System fan controller connector

Note

The Accelerated Graphics Port (A.G.P.) is a high-performance interconnect for graphic-intensive applications, such as 3D applications. A.G.P. is independent of the PCI bus and is intended for exclusive use with graphical-display devices.

Note

The motherboard has two USB ports; one USB peripheral can be connected to each port. For more than two USB devices, an external hub can be connected to either port. The motherboard fully supports the universal host controller interface (UHCI) and uses UHCI-compatible software drivers.

Motherboard Overview

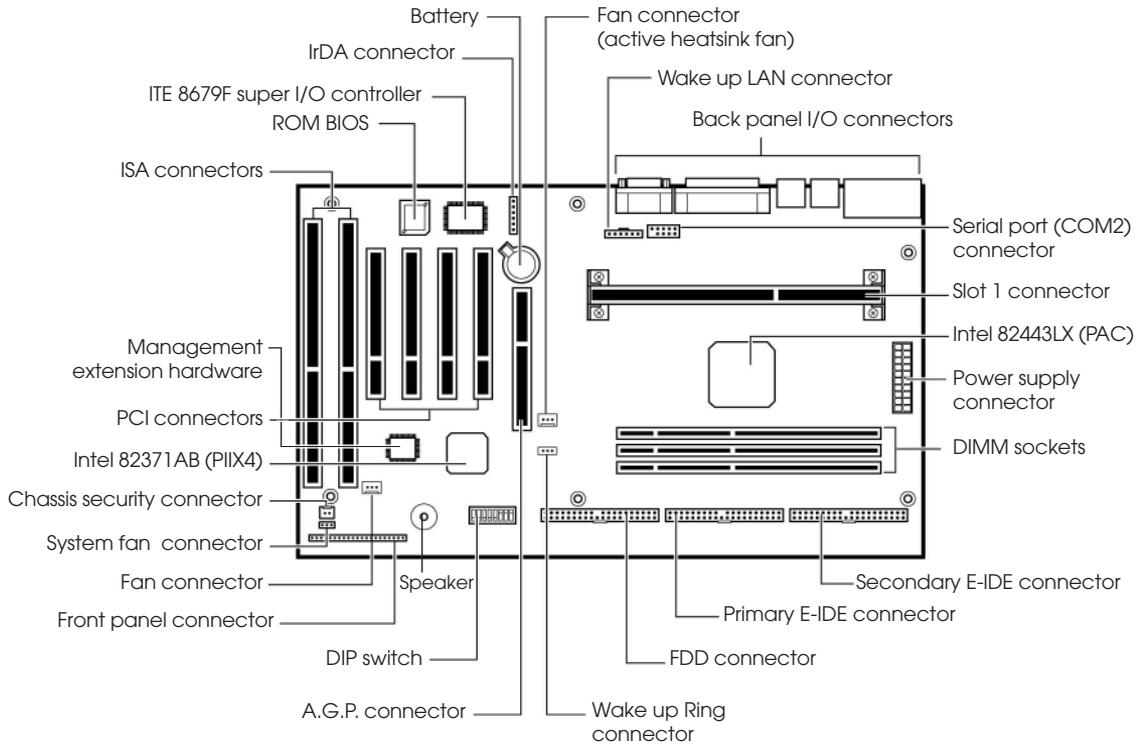


Figure 1. Motherboard overview

Motherboard Connectors

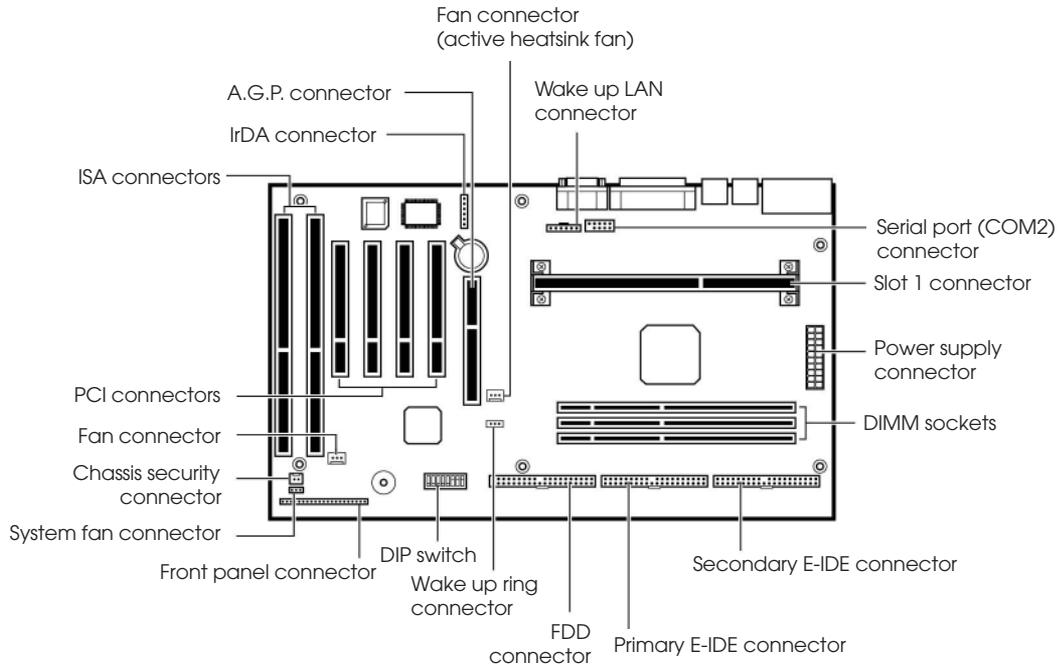


Figure 2. Motherboard connectors

Power Supply Connector

The power supply converts AC power from a wall outlet to the DC voltages required by motherboard and devices in your system. The power supply has a large motherboard connector and several internal device (hard disk, CD-ROM, and floppy disk drive, etc.) connectors.

The power supply should match the physical configuration of the chassis. Before attaching all components, make sure the proper voltage has been selected. Power supplies often can run on a wide range of voltages and must be set (usually via a switch) to the proper range.

You can connect the power supply cable to the power connector on the motherboard.

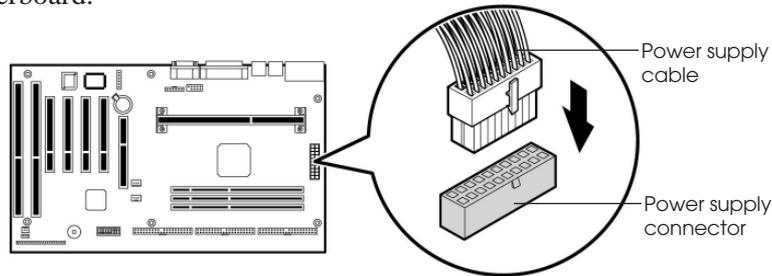


Figure 3. Connecting the power supply

Front Panel Connectors

The motherboard has connectors for controls and indicators typically located on the front panel of the computer.

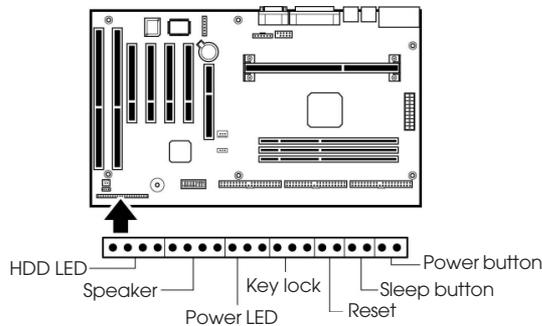


Figure 4. Front panel connectors

Rear Panel Connectors

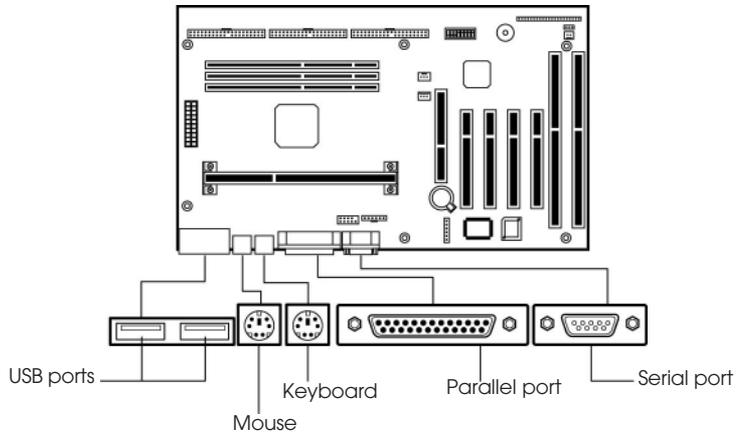


Figure 5. Rear panel connectors

Keyboard Connector

Your system's PS/2 style keyboard plugs into the keyboard connector.

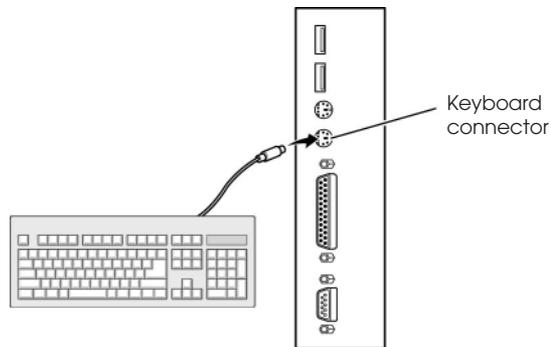


Figure 6. Connecting the keyboard

Mouse Connector

Your system's PS/2 compatible mouse plugs into the mouse connector.

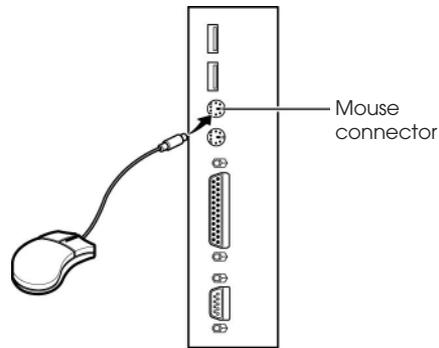


Figure 7. Connecting the mouse

USB Connectors

You can connect any USB compliant devices to either of the USB connectors. USB devices include low-speed peripherals such as microphone, digital joystick, and speaker.

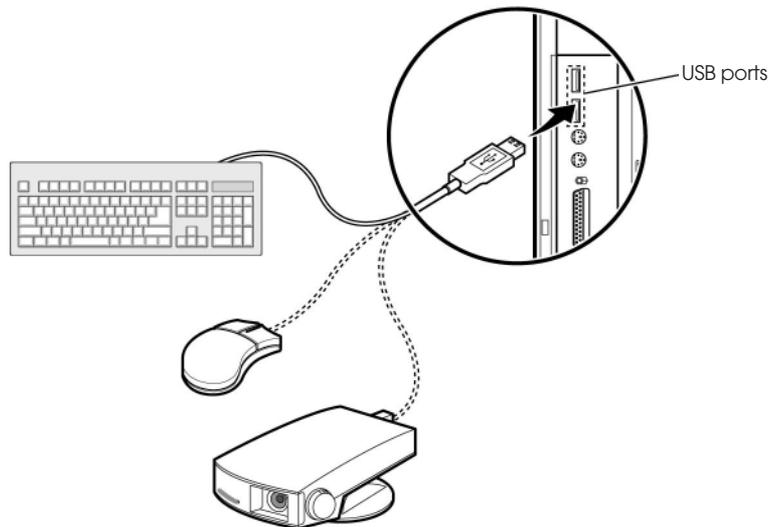


Figure 8. Connecting USB devices

Serial Ports (COM1)

You can connect a serial device, such as an external modem and printer, to the serial ports.

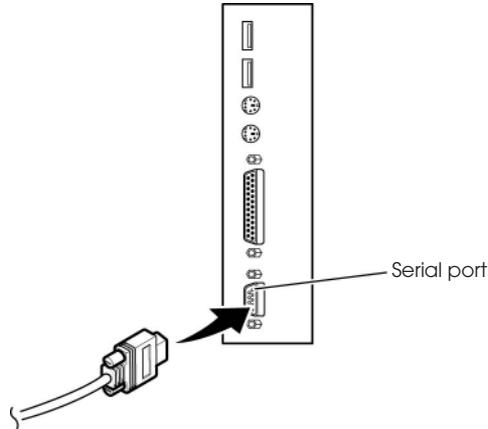


Figure 9. Connecting the serial device

Parallel Port (LPT1)

You can connect a parallel device, such as a printer, to the parallel port.

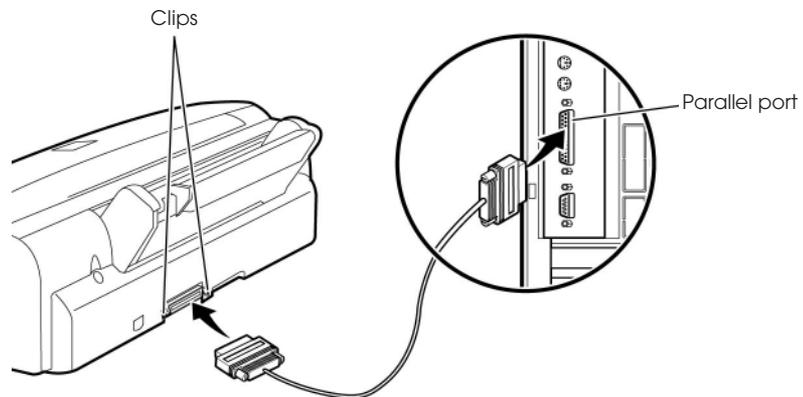


Figure 10. Connecting the parallel device

Board Expansion Connectors

There are three PCI slots, one ISA slot, and one shared slot (for a PCI or ISA card). The PCI bus supports up to four bus masters through the four PCI connectors.

Also the motherboard has one Accelerated Graphics Port (A.G.P.) connector. The Accelerated Graphics Port is a high-performance interconnect for graphic-intended for exclusive use with graphical-display devices.

FDD Connector

You can connect your diskette drive(s) to the diskette drive connector on the motherboard by using the diskette drive ribbon cable. The diskette drive ribbon cable has two connectors for diskette drives in general. After connecting the one end of the diskette drive ribbon cable to the motherboard, attach the connector(s) on the other end to the diskette drive(s).

Primary and Secondary E-IDE Connectors

Your motherboard has two built-in PCI E-IDE interfaces (primary and secondary). Each interface supports up to two IDE drives (master and slave). After connecting the one end of the IDE ribbon cable to the primary or secondary E-IDE connector on the motherboard, connect the connector(s) at the other end to your IDE drive(s) such as the hard disk drive or CD-ROM drive.

If you install two hard disks by using one IDE ribbon cable, you must configure the second drive to slave mode by setting its jumper accordingly. See the manual of your hard disk for the jumper settings.

You may configure two hard disk drives to be both masters by connecting one ribbon cable (one hard disk drive will be attached to it) to the primary E-IDE connector and another ribbon cable (the other hard disk drive will be attached to it) to the secondary IDE connector. When you install one operating system on an IDE drive and another on the other IDE drive, you can select the boot device through the Setup program.

The BIOS in the motherboard supports boot up from IDE CD-ROM drive, floptical drive, SCSI drive or network drive. So, you can select a CD-ROM drive or floptical drive as a boot device by setting the 1st/2nd/3rd Boot Device option to CD-ROM or Floptical in the Advanced Setup menu of the Setup program.

Note

The hard disk drive controller on the motherboard supports Ultra DMA/33, a DMA data transfer protocol for hard disk drives. This allows DMA commands to transfer data at a maximum burst rate of 33MB/sec. Both the controller and the hard disk must be capable of supporting Ultra DMA/33 in order to enable this feature.

Chapter 2

Using the BIOS Setup Program

About the Setup Program

This chapter explains how to use the BIOS Setup program. You can use the Setup program to change the computer's configuration information and boot-up sequence, etc.

The Setup program is stored in the computer's read only memory (ROM), so you can run the program at any time when you turn on or reset your computer. You need not insert a diskette or access the hard disk.

The Setup program lets you verify or change the followings:

- ❶ On the Setup menu, you can set up and modify some of the basic options of a system, such as time, date, diskette drives and hard disk drives.
- ❷ On the Utilities menu, you can perform system functions.
- ❸ On the Security menu, you can specify password that can be used to limit access to the system.
- ❹ On the Default menu, you can select a group of settings for all BIOS Setup options.

The configuration you define through the Setup program is stored in a special area of memory called CMOS RAM. The battery on the main board backs up this memory, so the memory is not erased when you turn off or reset the computer. Whenever you reboot the computer, it checks the settings, and if it discovers a difference between the information in the CMOS RAM and its actual hardware configuration, it prompts you to run the Setup program. If this happens, just press F1 to run the Setup program and then correct the setting.

Entering the Setup Program

To enter the Setup program, turn the computer on and press when you see the message:

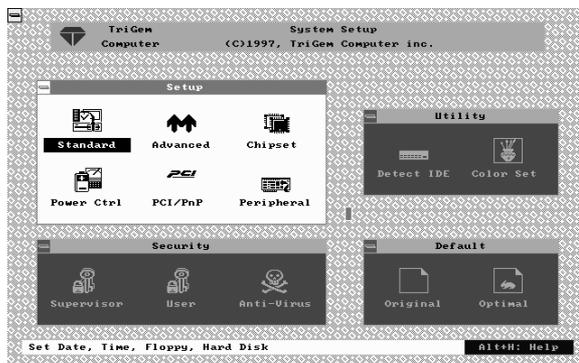
"Hit DEL if you want to run SETUP."

As soon as you see this message, hit the DEL key. If you do not press DEL key quickly, the computer starts loading the operating system and you will not be able to run the Setup program. If this happens, reset the computer again.

Note

For reference purposes, you should write down the current Setup settings. When you make changes to the settings, update this record.

When you enter the Setup program, you will see the Setup menu.



The Setup program is composed of four windows that contain several icons. An information line at the bottom of the menu displays simple explanations for each option.

You can use your keyboard or mouse to select the options.

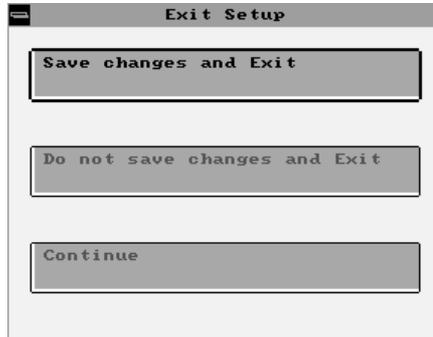
The mouse functions are click (change or select both global and current field) or double click (perform an operation in the selected field).

The following list provides an overview of function keys in the Setup program.

Setup Key	Description
Tab	Moves to the next window or field.
←, →, ↑, or ↓	Moves to the next field to the right, left, above, or below.
Enter	Selects the current field.
+	Increases a value.
-	Decreases a value.
Esc	Closes the current operation and return to previous level.
PgUp	Returns to the previous page.
PgDn	Advances to the next page.
Home	Returns to the beginning of the text.
End	Advances to the end of the text.
Alt-H	Accesses a help window. It describes the keys available in Setup
Alt-Spacebar	Exits System Setup
Alphabetic keys	A to Z are used in your keyboard
Numeric keys	0 to 9 are used in either the numeric keys along the top of the keyboard or the numeric keypad.

Exiting the Setup Program

To exit the Setup program, press Alt and Spacebar keys simultaneously. If you press these keys, you can see the following window.



To save the settings and exit, select Save changes and Exit. The system reboots with your new settings.

If you want to exit the Setup program without saving your settings, select Do not save changes and Exit. The system reboots with your original settings.

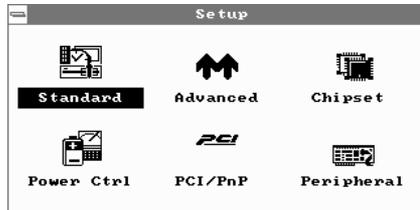
To return to the Setup menu to make corrections, select Continue.

If you saved your changes or quitted without saving the settings, the Setup program resets the system and the computer performs its power on diagnostic tests.

If your computer detects a problem in your Setup configuration, you may see an error message and a prompt to run the Setup program when it is rebooting. Follow the instructions on the screen to run the Setup program and correct the problem.

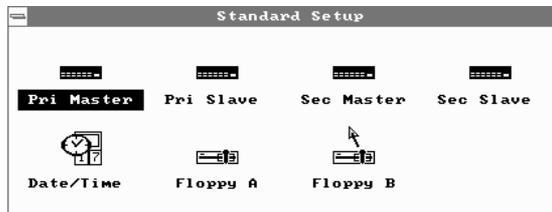
Setup Menu

The Setup menu has 6 icons, each of which contains a submenu.



Standard Setup Menu

Standard Setup options are displayed by choosing the Standard icon from the BIOS Setup menu. All Standard Setup options are described below.



Pri Master/Pri Slave/Sec Master/Sec Slave

Choose these icons to configure the hard disk drive named in the option. When you click on an icon, the following parameters are listed: Type, LBA/Large Mode, Block Mode, 32Bit Mode, and PIO Mode.



Type

You can choose the appropriate hard disk and CD-ROM drives type for yours.

- ① **Type** : The number for a drive with certain identification parameters.
- ① **Cyl** : The number of cylinders in the disk drive.
- ① **HD** : The number of heads.
- ① **WP** : The size of a sector gets progressively smaller as the track diameter diminishes. Yet each sector must still hold 512 bytes. Write precompensation circuitry on the hard disk compensates for the physical difference in sector size by boosting the write current for sectors on inner tracks. This parameter is the track number where write precompensation begins.
- ① **Sec** : The number of sectors per track. MFM drives have 17 sectors per track. RLL drives have 26 sectors per track. ESDI drives have 34 sectors per track. SCSI and IDE drives have more sectors per track.
- ① **Size (MB)** : The formatted capacity of the drive. (Size = Number of heads x Number of cylinders x Number of sectors per track x 512 bytes per sector.)
- ① **User** : If you are configuring a drive with drive parameters that do not match drive types, you can select the User in the Type field. You must then enter the drive parameters on the screen that appears.
- ① **AUTO** : If the hard disk drive to be configured is an IDE drive, select the appropriate drive icon (Pri Master, Pri Slave, Sec Master, or Sec Slave). Select the IDE Detect icon to automatically detect all drive parameters.

BIOS automatically detects the IDE drive parameters (including ATAPI CD-ROM drives) and displays them. Click on the OK button to accept these parameters Or you can set the parameters manually if you are absolutely certain that you know the correct IDE drive parameters.

- ① **CDROM** : Select the appropriate drive icon (Pri Master, Pri Slave, Sec Master, or Sec Slave). Choose the Type parameter and select CDROM. You can boot the computer from a CD-ROM drive. You can also choose Auto and let BIOS will automatically set the correct drive parameters.
- ① **Floptical** : If a floptical drive is connected to the IDE connector, select FLOPTICAL for the drive. You can boot the computer from the floptical drive.

LBA/Large Mode

To use the IDE drives with capacities greater than 528 MB, set this option to On. The settings are On and Off.

Block Mode

To use the IDE drives that use Block Mode, set this option to On. The settings are On and Off.

32Bit Mode

Set it to On to support IDE drives that permit 32-bit accesses. The settings are On and Off.

PIO Mode.

This option selects the IDE Programmed I/O mode. PIO programming also works with ATAPI CD-ROM drives. The settings are Auto, 0, 1, 2, 3, 4, and 5.

Choose Auto to allow BIOS to automatically find the PIO mode that the IDE drive being configured uses. If you select 0-5 you must make absolutely certain that you are selecting the PIO mode supported by the IDE drive being configured.

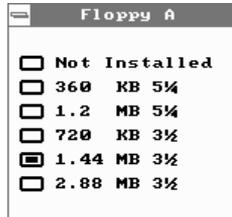
Date/Time

Select the Date/Time option to change the date or time. The current date and time are displayed. Enter new values through the displayed window.



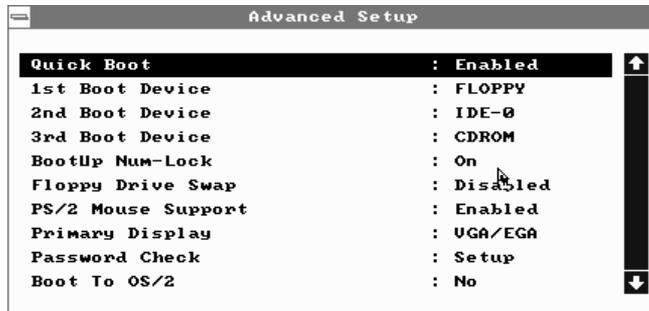
Floppy Drive A, B

Choose the Floppy Drive A or B icon to specify the floppy drive type. The settings are Not Installed, 360 KB 5 1/4, 1.2 MB 5 1/4, 720 KB 3 1/2, 1.44 MB 3 1/2, and 2.88 MB 3 1/2.



Advanced Setup Menu

Advanced Setup options are displayed by choosing the Advanced icon from the BIOS Setup main menu. All Advanced Setup options are described in this section.



Quick Boot

Set it to Enabled to instruct BIOS to boot quickly when the computer is powered on. The settings are:

- ❶ Disabled : BIOS test all system memory. BIOS waits up to 40 seconds for a READY signal from the IDE hard disk drive. BIOS waits for .5 seconds after sending a RESET signal to the IDE drive to allow the IDE drive time to get ready again. BIOS checks for a key press and runs Setup if the key has been pressed.
- ❷ Enabled : BIOS does not test system memory above 1 MB. BIOS does not wait up to 40 seconds for a READY signal from the IDE hard disk drive. If a READY signal is not received immediately from the IDE drive, BIOS does not configure that drive. BIOS does not wait for .5 seconds after sending a RESET signal to the IDE drive to allow the IDE drive time to get ready again.

You cannot run Setup at system boot, because there is no delay for the Hit to run Setup message.

1st/2nd/3rd Boot Device

Each menu allows you to select the first, second and third devices the computer checks when it looks for the operating system. The settings available for the 1st Boot Device option are Disabled, IDE-0, IDE-1, IDE-2, IDE-3, Floppy, Floptical, CDROM, SCSI, and Network. The settings available for 2nd Boot Device and 3rd Boot Device are Disabled, IDE-0, Floppy, Floptical, and CDROM.

BootUp Num-Lock

This option determines the beginning state of the Num Lock feature on your keyboard, when system is turned on or reset. The settings are On and Off.

Floppy Drive Swap

If you are using two diskette drives, you can easily switch between drives A and B. For example, if you are using a 1.44MB diskette drive as drive A and a 1.2MB diskette drive as drive B, you can switch the drives vice versa by enabling the option. When you set the option, you must switch between the settings for both drives from the Floppy A and Floppy B options in the Standard Setup menu. The settings are Disabled and Enabled.

PS/2 Mouse Support

If you enable this option, you can use a PS/2 mouse. The settings are Disabled and Enabled.

Primary Display

This option lets you define the type of adapter you are using for your primary display. The settings are Absent, VGA/EGA, CGA40X25, CGA80X25, and Mono.

Password Check

This option sets the type of password protection. The settings are Setup and Always. If you select Setup, every time you run the Setup program, the computer checks your password. Once you set password, you should enter your password whenever you run the Setup program.

If you select Always, every time you run the Setup program or turn on or reset the computer, it checks your password.

Boot To OS/2

If your system has above 64MB of main memory, set the option to Yes to allow the system to run OS/2 Warp version 3.0 properly. The settings are Yes and No.

External Cache

The option sets the type of caching algorithm for L2 external cache memory. The settings are Disabled and Enabled.

C000 / C400, 16K Shadow

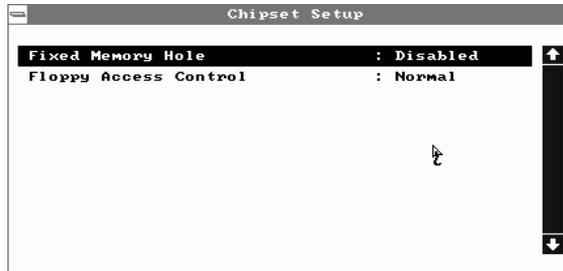
These options allow you to shadow the contents of video ROM listed on the screen to the system's RAM. The settings are Disabled and Enabled.

C800 / CC00 / D000 / D400 / D800 / DC00, 16K Shadow

These options allow you to shadow the contents of the adapter ROM listed on the screen to the system's RAM. The settings are Disabled and Enabled.

Chipset Setup Menu

If you select the Chipset icon from the Setup main menu, the Chipset Setup menu is displayed.



Fixed Memory Hole

This field enabled a memory hole in DRAM space. Host cycles matching an enabled hole are passed on to PCI. PCI cycles matching an enabled hole will be ignored. The settings are Disabled, 512~640KB, and 15MB~16MB.

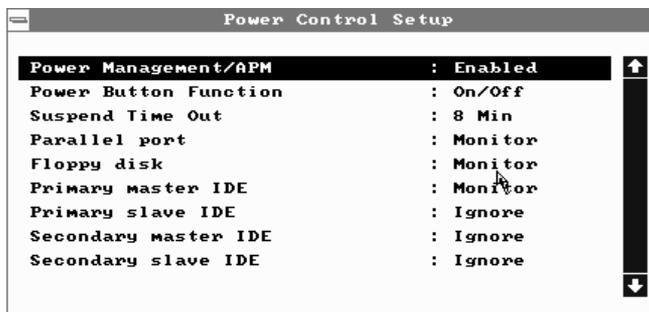
Floppy Access Control

These two options set read/write access for all attached diskette drives. The settings are Normal and Read Only. Normal means read/write access for drives.

If you select Read Only for each option, you can read a diskette and copy data from it, but you cannot store new data on it or delete any files it contains.

Power Control Setup Menu

If you select the Power Ctrl icon from the Setup main menu, the Power Control Setup menu is displayed.



Power Management / APM

Set the option to Enabled to enable the power management and APM (Advanced Power Management) features. If you set Disabled for the option, you will not see any options in the Power Control Setup menu. The settings are Disabled and Enabled.

Power Button Function

The option allows pressing power button on the computer to enter suspend mode as well as on/off feature of the power button. It takes effect after finishing power-on self-test. The settings are Suspend and On/Off.

From power-on until power-on self-test, you should press more than 4 seconds to turn off your system. However, after finishing power-on self-test, the methods for turning off the system depend on the setting for the option.

When the option is set to Suspend, you should press the power button for more than 4 seconds to turn off the system after finishing power-on self-test. When the option is set to On/Off, normally pressing the power button after power-on self-test makes the system turned off. When the option is set to Suspend and the system is on, if you press the power button for less than 4 seconds, the computer will go into suspend mode.

If the Power Management / APM option is set to Disabled, the Power Button Function option can be used only as normal On/Off feature.

Note

When you turn off the system in suspend mode, we recommend you turn off the system after resuming the system.

Suspend Time Out

The option specifies the length of the period of system inactivity for going into suspend mode. When the specified period expires, the computer enters suspend mode, beeping twice. If there are activities of devices described below, the computer exits the suspend mode. The settings are Disabled, 4Min, 8Min, 12Min, 20Min, 40Min, and 60Min.

Parallel port

When the computer is in suspend mode, the option sets whether or not the computer monitors the activity of devices connected to the parallel port. The settings are Ignore and Monitor.

Floppy disk

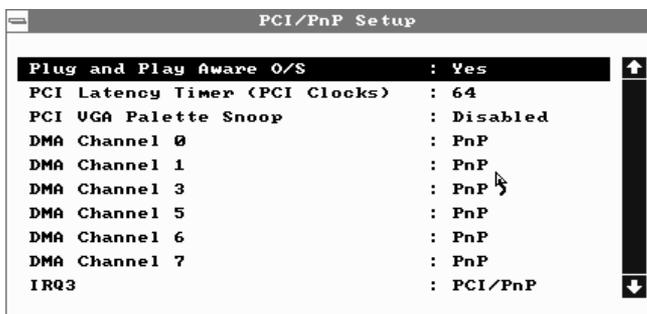
When the computer is in suspend mode, the option sets whether or not the computer monitors the activity of a diskette. The settings are Ignore and Monitor.

Primary master IDE, Primary slave IDE, Secondary master IDE, and Secondary slave IDE

When the computer is in suspend mode, the options set whether or not the computer monitors the activity of each of the primary master, primary slave, secondary master, and secondary slave IDE drives. The settings are Ignore and Monitor.

PCI/PnP Setup Menu

If you select the PCI/PnP icon from the Setup main menu, the PCI/PnP Setup menu is displayed.



Plug and Play Aware O/S

The option enables the computer to boot with an operating system capable of managing Plug and Play add-in cards. Set it to Yes if the operating system (such as Windows 95) installed in the computer follows the Plug and Play specification. AMIBIOS only detects and enables PnP ISA adapter cards that are required for system boot. The Windows 95 operating system detects and enables all other PnP-aware adapter cards. Windows 95 is PnP-aware. Set the option to No if the operating system (such as DOS, OS/2, Windows 3.X) does not use PnP. You must set this option correctly, or PnP-aware adapter cards installed in the computer will not be configured properly. The settings are No and Yes.

PCI Latency Timer (PCI Clocks)

This option sets the length of time (measured in the number of PCI clock cycles) that a device on the PCI bus can hold the bus when another device has requested the bus. The clock choices include every 32nd value between 32 and 248 clocks. The settings are 32, 64, 96, 128, 160, 192, 224, and 248.

PCI VGA Palette Snoop

The option controls the ability of a primary PCI graphics controller to share a common palette with an ISA add-in video card. The settings are Disabled and Enabled.

DMA Channel 0, 1, 3, 5, 6, and 7

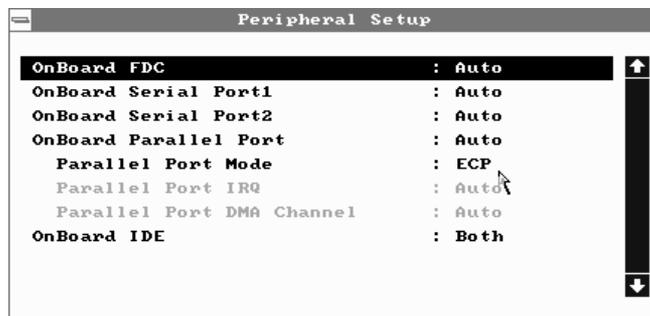
These options allow you to reserve DMAs for legacy ISA adapter cards. The settings are PnP and ISA.

IRQ 3, 4, 5, 7, 9, 10, 11, 14, and 15

These options set the status of the IRQ. If these interrupts are available for use by a PCI/PnP add-in card, the interrupts are assigned for the computer to use. If the computer contains an ISA agent that uses one of these interrupts, select ISA for that interrupt. The settings are PCI/PnP and ISA.

Peripheral Setup Menu

The Peripheral Setup menu is displayed if you select the Peripheral icon from the Setup main menu.



OnBoard FDC

Set this option to Enabled to enable the built-in diskette drive controller. If you install another FDC card, disable this option. The settings are Auto, Disabled, and Enabled.

OnBoard Serial Port 1 and 2

These options specify the base I/O port addresses of built-in serial ports 1 and 2(optional). The settings are Auto, Disabled, 3F8h, 2F8h, 3E8h, and 2E8h.

OnBoard Parallel Port

It specifies the base I/O port address of the built-in parallel port. The settings are Auto, Disabled, 378, 278, and 3BC.

Parallel Port Mode

It specifies the parallel port mode. ECP and EPP are both bi-directional data transfer schemes that adhere to the IEEE P1284 specifications. The settings are:

- ❶ Normal : Use this option to operate the parallel port in Standard Parallel Port (SPP) mode.
- ❷ EPP : The parallel port can be used with devices that adhere to the Enhanced Parallel Port (EPP) specification. EPP uses the existing parallel port signals to provide asymmetric bi-directional data transfer driven by the host device.
- ❸ ECP : The parallel port can be used with devices that adhere to the Extended Capabilities Port (ECP) specification. ECP uses the DMA protocol to achieve transfer rates of approximately 2.5 Mbs. ECP provides symmetric bi-directional communications.

Parallel Port DMA Channel

It is only available if the setting for the Parallel Port Mode option is ECP. The settings are 0, 1, and 3.

Parallel Port IRQ

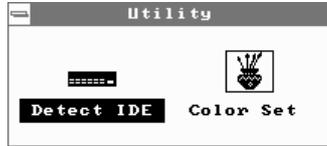
It is only available when the On Board Parallel Port option is not set to Auto. The settings are 5 and 7.

OnBoard IDE

The option allows you to set the built-in IDE controller you want to use. The settings are Disabled, Primary, Secondary, and Both.

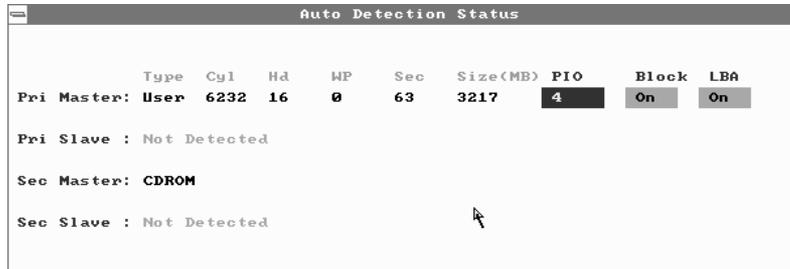
Utility Menu

There are 2 icons in the Utility menu.



Detect IDE

If an IDE-type hard disk drive, a CD-ROM drive, or a floptical drive is connected to the primary or secondary IDE controller, this option allows for automatic detection of the hard disk drive or CD-ROM drive type. Once SETUP detects the type of the hard disk or CD-ROM drive installed, it will display the relative information.



After SETUP detects all IDE drives, the hard disk drive type will be forced to be User and the CD-ROM drive type will be forced to be CDROM.

Color Set

This option allows you to change the color of the System Setup screen. The settings are Sky, Army, Pastel, and LCD.



Security Menu

Three icons appear in the Security menu.



Supervisor / User

These two options make it possible to restrict access to the Setup program and to restrict who can boot the computer by enabling you to set passwords for two different access modes: Supervisor mode and User mode.

A Supervisor password and a User password can be set for the Setup program and for booting the computer.

Supervisor mode has full access to all the Setup options whereas User mode has limited access to the options. Setting separate Supervisor and User passwords enables a system supervisor to restrict who can change critical Setup values.

When you run the Setup program by entering your User password, you can change the three items only: Advanced, User, and Color Set.

If you set both the Supervisor and User passwords, you must set the Supervisor password first. Once both are set, you can enter either the Supervisor password or the User password to access the Setup or the computer.

The system can be configured so that all users can enter a password every time you turn on or reset the system, or run the Setup program, using Supervisor password only or both passwords.

The table shows the effects of setting the Supervisor and User passwords.

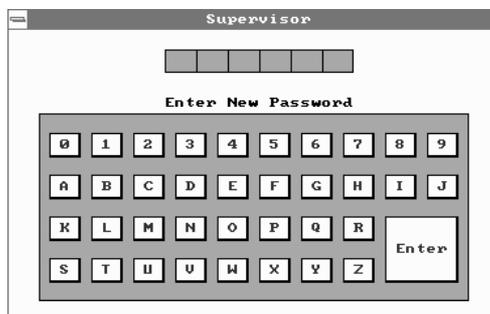
Supervisor and User password functions

Password set	Password during boot	Password to enter the Setup Program	Supervisor mode	User mode
Neither	None	None	Can change all options	Can change all options
Supervisor and User set	Supervisor or User	Supervisor or User	Can change all options	Can change a limited number of options
Supervisor only	Supervisor	Supervisor	Can change all options	-

Setting a Password

Follow these steps to set your password:

- 1 When you see "Enter New Password" in the Supervisor or User window, type the letter you want to use using the keyboard or click it using the mouse. You can type up to six characters using the keys listed in the window. The screen displays an asterisk for each character you type. After typing the password, press Enter.



- 2 When you see "Confirm New Password", type your password again and press Enter. If the password you type is different from your password, the screen displays the message "Enter New Password". As you see the following message, press Enter.

Supervisor Password Installed
or
User Password Installed

- 3 When you exit the SETUP program, save your new settings. When you turn on or reset your computer or run SETUP (depending on the setting in Password Check of the Advanced Setup menu), you will see the password prompt.

Note

Be sure to remember the password you enter or write it down. If you cannot remember it, you will not be able to access the computer the next time you turn it on or run SETUP. However, if you forgot your password, there is a way to use your system again. See "Accessing Your Current Password" for more information.

Deleting or Changing a Password

If you want to delete the current password, display the Supervisor or User window and then follow these steps:

- 1 Select the Supervisor or User icon from the Security menu.
- 2 When you see "Enter Current Password", type the current password and press Enter. If you select the User icon, the message does not appear.
- 3 When you see "Enter New Password", just press Enter to delete your current password.
- 4 When you see "Confirm New Password", press Enter again.

5 When you see the following message, press Enter.

Both Passwords Uninstalled
or
User Password Uninstalled

To change the current password, type your new password before pressing Enter on steps 3 and 4.

Disabling a Forgotten Password

If you forget your current password and cannot use your computer or run the Setup, follow these steps:

- 1** Turn off the computer and disable the password function by setting the DIP switch 3 to Off.
- 2** Turn on the computer. You will not see the prompt that asks you to enter your password when you turn on the computer or run the Setup program.
- 3** If you want to set a new password, turn off the computer and enable the password function by setting the DIP switch 3 to On.
- 4** Turn on the computer. As soon as the "Hit Del if you want to run SETUP" message appears on the screen, press the Del key.

If you set a new password, the prompt that asks you to enter the password will appear on the screen when you turn on or reset the computer or run the Setup program.

If you did not set a new password, you would immediately use your system.

If you attempt to set a new password after you set the DIP switch 3 to Off to disable your password, the password will not be saved to CMOS RAM.

Anti-Virus

This option allows the user to protect the hard disk driver or diskette's boot sector from unnecessary writing. The available settings are Enabled and Disabled.

Setting this option to Disabled makes writing on the boot sector possible.

If you select Enabled for this option, when you use the FORMAT, DISKCOPY, or SYS command or any program that tries to write on the boot sector, you will see the following warning message.

Boot Sector Write!!!

Possible VIRUS: Continue (Y/N)? _

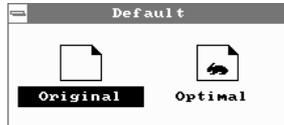
At this point if you want to complete the running of the program regardless of the message above, press Y.

If you see the message above in spite of having not run programs described above, viruses may try to write on the boot sector. Select N to prevent the virus from writing on the boot sector.

Notice that if you want to install MS-DOS, Windows 95, Windows NT, or OS/2, set this option to Disabled.

Defaults Menu

The icons in this section permit you to select a group of settings for all Setup options. Not only can you use these icons to quickly set system configuration parameters, you can choose a group of settings that have a better chance of working when the system is having configuration-related problems.



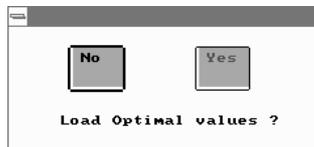
Original

Choose the Original icon to return to the system configuration values present in Setup when you first began this Setup session.



Optimal

You can load the optimal default settings for the Setup by selecting the Optimal icon. The Optimal default settings are best-case values that should optimize system performance. If NVRAM is corrupted, the Optimal settings are loaded automatically.



Chapter 3

Installing and Removing Board Options

This Chapter describes how to install and remove optional board options in your computer. You can use these instructions to install and remove a variety of devices and board options. Although your board options may look a bit different from the ones illustrated herein, you can install and remove it the same way.

Before You Begin

Warning

The procedures in this chapter assume familiarity with the general terminology associated with personal computers and with the safety practices and regulatory compliance required for using and modifying electronic equipment.

Disconnect the computer from its power source and from any telecommunications links, networks, or modems before performing any of the procedures described in this chapter. Failure to disconnect power, telecommunications links, networks, or modems before you open the computer or perform any procedures can result in personal injury or equipment damage. Some circuitry on the motherboard can continue to operate even though the front panel power button is off.

Caution

Electrostatic discharge (ESD) can damage components. Perform the procedures described in this chapter only at an ESD workstation. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the computer chassis.

Installing the Pentium II Processor

You can install a Pentium II processor in a Slot 1 connector in your motherboard.

To install a processor, you must:

- 1** Install the retention mechanism.
- 2** Install the processor.
- 3** Set the processor speed.

Detailed instructions for each of these procedures follow.

Note

The Pentium II processor can be different from illustrations described herein. There are two types, passive heatsink type (described herein) and active heatsink fan type, of the Pentium II processor, but no functional difference.

Installing the Retention Mechanism

Note

To install the retention mechanism, you need a screwdriver. The screwdriver also must have a shaft longer than 2 inches.

To install the retention mechanism, follow these steps:

- 1** Observe the precautions in "Before You Begin".
- 2** Locate Slot 1 and the four attachment studs on the motherboard.

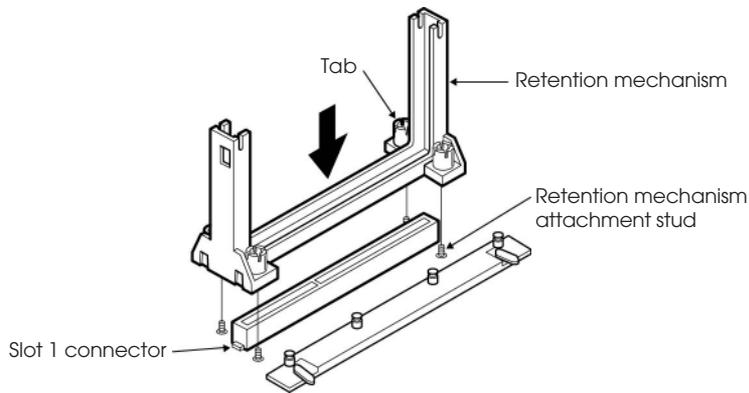


Figure 11. Installing the retention mechanism

- 3** To position the mechanism, orient it as shown above. The tab on the connector fits into a notch in the base of the mechanism. When properly seated, the base of the mechanism is flush with the motherboard.

Caution

Overtightening the captive nuts on the retention mechanism can damage the motherboard.

- 4** Finger tighten all four captive nuts to make sure they start correctly on the threads of the attachment studs.
- 5** To secure the mechanism, tighten the captive nuts with the torque screwdriver.

Installing the Pentium II Processor

To install the new microprocessor, follow these steps:

- 1** Insert the processor in the retention mechanism as shown below.
- 2** Press down on the processor until it is firmly seated in the Slot 1 connector and the latches on the processor lock into place.

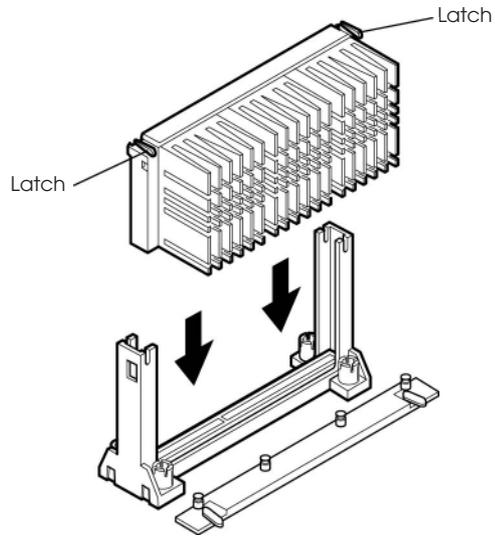


Figure 12. Installing the Pentium II processor

- 3** Slide the top heatsink support bar onto the retaining pins of the support's base as shown below.

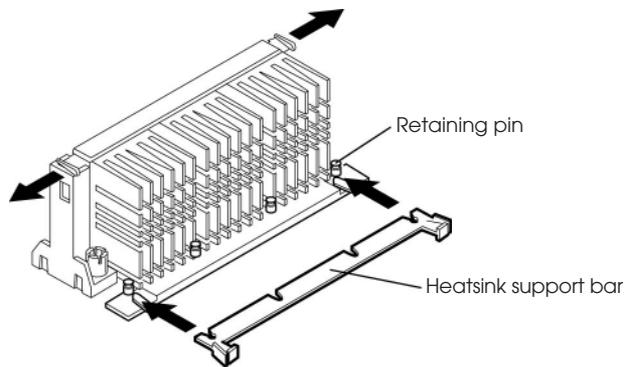


Figure 13. Sliding the heatsink support bar onto the retaining pins

Setting the Processor Speed

After you install the processor and install the motherboard, set the processor speed by changing the settings of the DIP switches. Refer to "Changing the DIP Switch Settings" in this Chapter

Upgrading to a Boxed Pentium II Processor

Use the instructions in this section to prepare the motherboard for a boxed Pentium II processor upgrade.

To prepare for a boxed Pentium II processor upgrade, you must:

- 1** Remove the heatsink support top bar and the installed processor.
- 2** Remove the heatsink support base.
- 3** Upgrade the processor.

Detailed instructions for each of these procedures follow.

Removing the Pentium II Processor

To remove the installed processor, follow these steps:

- 1** Observe the precautions in "Before You Begin".
- 2** Turn off all peripheral devices connected to the computer. Turn off the computer.
- 3** Remove the computer cover.
- 4** Remove the motherboard from the computer chassis.
- 5** Place the motherboard on a flat work surface and remove any components that block access to the installed processor.
- 6** Remove the top bar of the heatsink support from the base as shown in Figure 14. Press in on the latches to release the top bar.

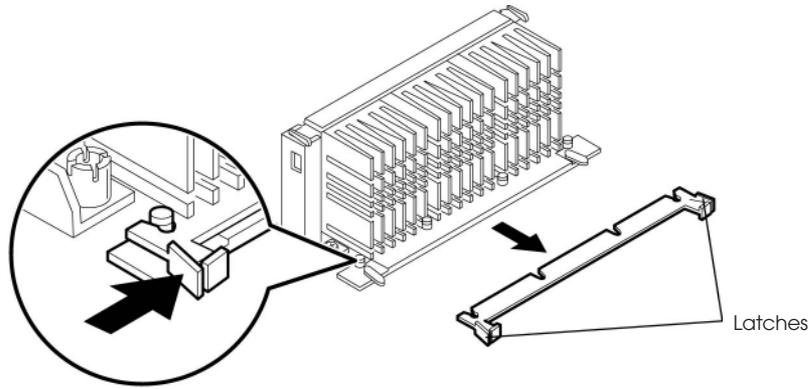


Figure 14. Removing the heatsink support bar from the base

Caution

Pressing on the motherboard or components during processor removal can cause damage. If necessary, you can safely press on the motherboard's plastic connectors to gain leverage while removing the processor.

- 7** Remove the processor by pressing in on the latches and pulling the processor straight up as shown in Figure 15. Place the processor aside.

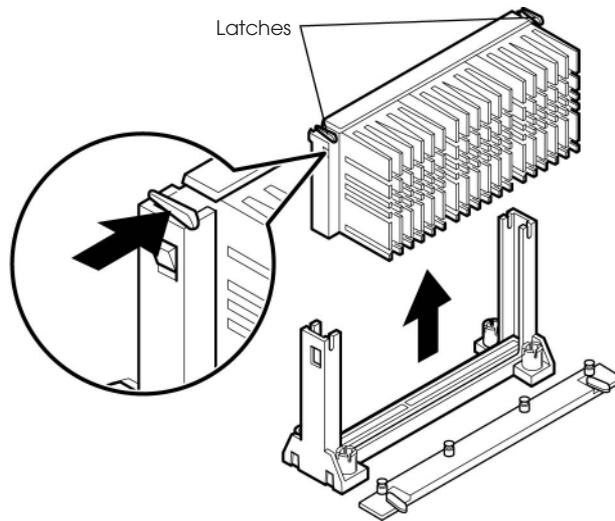


Figure 15. Removing the processor

Removing the Heatsink Support Base

Note

To remove the heatsink support base from the motherboard, you need a special removal tool that is available from Dexter Design.

To remove the heatsink support base follow these steps:

- 1 With your fingers, remove the two retention pins from the heatsink support base as shown below.

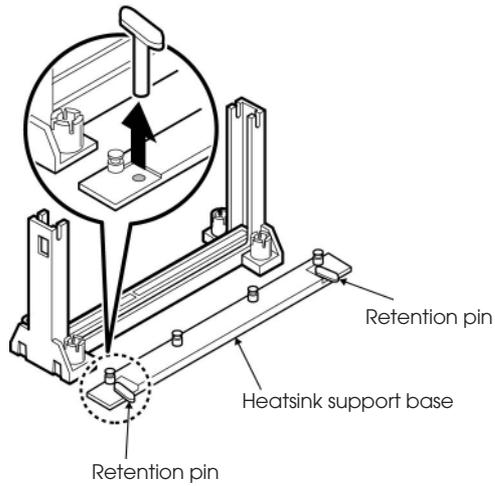


Figure 16. Removing the retention pins

- 2 Place the heatsink support removal tool over the two outside posts of the heatsink support base as shown below. Make sure the tool completely engages the posts.

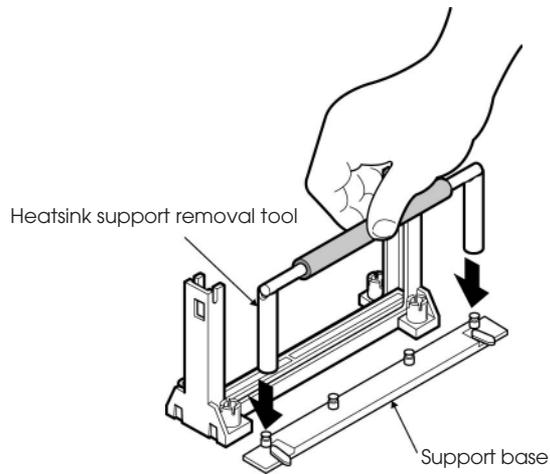


Figure 17. Inserting the heatsink support

- 3 Carefully rock the tool back and forth until the heatsink support base disengages from the holes in the motherboard. There is an audible click when the base disengages from the motherboard.

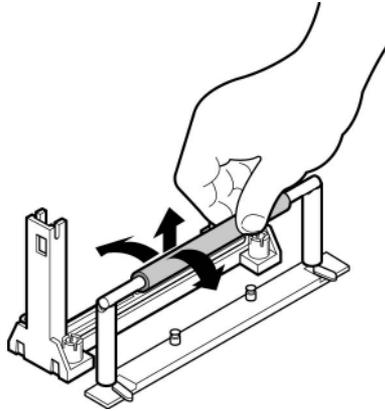


Figure 18. Removing the heatsink support base

- 4 Remove the tool and the heatsink support base from the motherboard.

Upgrading the Processor

Refer to the boxed Intel Pentium II processor documentation for installation instructions.

Installing and Removing Memory Modules

The motherboard has three dual inline memory module (DIMM) sockets. Minimum memory size is 8 MB; maximum memory size is 384 MB. The BIOS automatically detects memory type, size, and speed.

Each DIMM socket supports the following memory features:

- 168-pin 3.3 V DIMMs with gold-plated contacts
- 66 MHz SDRAM
- Unbuffered EDO DRAM
- Non-ECC (64-bit) and ECC (72-bit) memory
- Single or double sided DIMMs in the following sizes:

DIMM Size	Non-ECC Configuration	ECC Configuration
8 MB	1 Mbit x 64	1 Mbit x 72
16 MB	2 Mbit x 64	2 Mbit x 72
32 MB	4 Mbit x 64	4 Mbit x 72
64 MB	8 Mbit x 64	8 Mbit x 72
128 MB	16 Mbit x 64	16 Mbit x 72

Memory can be installed in one, two, or three sockets. Memory size and speed can vary between sockets.

Note

To function properly, SDRAM DIMMs must meet the Intel 4-clock, 66 MHz, unbuffered SDRAM specification for either 64-bit or 72-bit SDRAM.

Installing a Memory Module

Follow these steps to install DIMMs:

- 1** Make sure the clips at either end of the socket are pushed away from the socket.
- 2** Position it by aligning the notches in the DIMM's edge connector with the crossbars in the socket. Insert the bottom edge of the DIMM into the socket.
- 3** Press the DIMM straight down until retaining tabs snap into place around the ends of the DIMM.

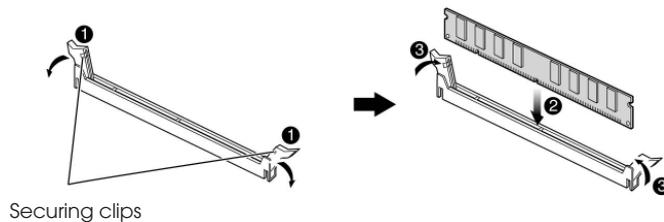


Figure 19. Installing a memory module

Removing a Memory Module

To remove memory modules, press down the retaining tabs that secure the DIMM at each end, using your fingers. Then carefully remove DIMM from the socket.

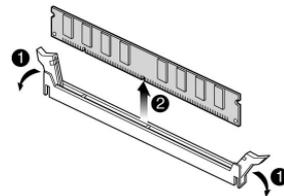


Figure 20. Removing a memory module

Changing DIP Switch Settings

A DIP (Dual Inline Package) switch is a small switch that controls one of the functions of your computer. DIP switch settings in your computer are preset at the factory; however, you can alter the functions by changing the standard settings:

- Specify CPU clock speed
- Enable or disable the password function
- Clear the CMOS settings
- Enable or disable the FDD write protect

DIP switches 5 through 8 allow you to adjust CPU clock speed in according to the type of your system. The following table lists their settings.

CPU clock	Switch 5	Switch 6	Switch 7	Switch 8
233 MHz	On	Off	Off	On
266 MHz	Off	On	On	On
300 MHz	Off	On	Off	On

The table below lists settings of DIP switches 1 through 4 and their functions.

DIP Switch No.	Switch Setting	Function
Switch 1	Off	Normal Mode
	On	Enables the FDD write protect
Switch 2	Off	Enables the entering Setup program
	On	Disables the entering Setup program
Switch 3	Off	Enables the password function
	On	Disables the password function
Switch 4	Off	Normal Mode
	On	Enables the CMOS clear

To set the DIP switches, push the DIP switches to the off or on position which you want to change to, as shown below.

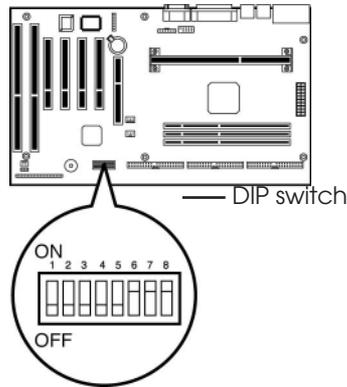


Figure 21. DIP switch

Caution

Do not move the DIP switches with the power on. Always turn off the power and unplug the power cord from the computer before changing the DIP switches.

The Things to do in Post-installation

After you install or remove board options, if necessary, be sure to run Setup program to update the configuration of your system. See Chapter 2 for detail information.

If you installed a new optional equipment and Windows 95 has installed in your system, you need to have Windows 95 detects it. See Windows 95 manual and the manual that came with your optional equipment for detail information.

Appendix A

Specifications

Form Factor

ATX form factor of 12 * 7.75 inches

Processor

- Single Pentium II processor
- 66 MHz bus speed
- Supports all Pentium II processor speeds (233 MHz, 266 MHz, and 300 MHz), voltages, and bus frequencies
- 512 KB second-level cache on the substrate in the Single Edge Contact (S.E.C.) cartridge
- Slot 1 connector

Main Memory

- Three 168-pin DIMM sockets
- Supports up to 384 MB of synchronous DRAM (SDRAM) memory
- ECC or non-ECC memory
- Unbuffered EDO DRAM

Intel 440LX AGPset and PCI/IDE Interface

- Intel 82443LX PCI/A.G.P. controller (PAC)
 - Integrated PCI bus mastering controller
 - Integrated Accelerated Graphics Port (A.G.P.) controller
- Intel 82371AB PCI/ISA/IDE Xcelerator (PIIX4)
 - Supports up to four IDE drives or devices
 - Multifunction PCI-to-ISA bridge
 - USB and DMA controllers
 - Two fast IDE interfaces
 - Power management logic
 - Real-time clock

I/O features

- ITE Super I/O controller
 - Integrates standard I/O functions: floppy-drive interface, one multimode parallel port, two FIFO serial ports, keyboard and mouse controller, IrDA-compatible interface
- Two Universal Serial Bus (USB) interfaces

Five usable expansion slots

- One ISA slot
- Three PCI slots
- One shared PCI/ISA slot

Other features

- AMI BIOS
- Plug and Play compatible
- Onboard A.G.P. connector
- Advanced Power Management (APM)

Manufacturing Options

- Management extension hardware
- Wake on LAN header
- Wake on Ring header
- Chassis security header

Power Supply

For typical configurations, the motherboard is designed to operate with at least a 200 W power supply. A higher-wattage power supply should be used for heavily-loaded configurations. The power supply must meet the following requirements:

- Rise time for power supply: 2 ms to 20 ms
- Minimum delay for reset to Power Good: 100 ms
- Minimum Powerdown warning: 1 ms
- 3.3 V output must reach its minimum regulation level within ± 20 ms of the +5 V output reaching its minimum regulation level

The following table lists the power supply's tolerances for DC voltages:

DC Voltage	Acceptable Tolerance
+ 3.3 V	$\pm 5\%$
+ 5 V	$\pm 5\%$
+ 5 VSB (standby)	$\pm 5\%$
- 5 V	$\pm 5\%$
+ 12 V	$\pm 5\%$
- 12 V	$\pm 5\%$

Appendix B

Error and Information Messages

BIOS Error Messages

Error Message	Explanation
Diskette drive A error or Diskette drive A error	Drive A: or B: is present but fails the POST diskette tests. Check that the drive is defined with the proper diskette type in Setup and that the diskette drive is installed correctly.
Extended RAM Failed at offset: nnnn	Extended memory not working or not configured properly at offset nnnn.
Failing Bits: nnnn	The hex number nnnn is a map of the bits at the RAM address (System, Extended, or Shadow memory) that failed the memory test. Each 1 in the map indicates a failed bit.
Fixed Disk 0 Failure or Fixed Disk 1 Failure or Fixed Disk Controller Failure	Fixed disk is not working or not configured properly. Check to see if fixed disk is installed properly. Run Setup be sure the fixed-disk type is correctly identified.
Incorrect drive A type - run SETUP	Type of floppy drive for drive A: not correctly identified in Setup.
Incorrect drive B type - run SETUP	Type of floppy drive for drive B: not correctly identified in Setup.
Invalid NVRAM media type	Problem with NVRAM (CMOS) access
Keyboard controller error	The keyboard controller failed test. Try replacing the keyboard.
Keyboard error	Keyboard not working.
Keyboard error nn	BIOS discovered a stuck key and displays the scan code nn for the stuck key.

Error Message	Explanation
Keyboard locked - Unlock key switch	Unlock the system to proceed.
Monitor type does not match CMOS - Run SETUP	Monitor type not correctly identified in Setup.
Operating system not found	Operating system cannot be located on either drive A: or drive C:. Enter Setup and see if fixed disk and drive A: are properly identified.
Parity Check 1	Parity error found in the system bus. BIOS attempts to locate the address and display it on the screen. If it cannot locate the address, it displays ????.
Parity Check 2	Parity error found in the I/O bus. BIOS attempts to locate the address and display it on the screen. If it cannot locate the address, it displays ????.
Press <F1> to resume, <F2> to Setup	Displayed after any recoverable error message. Press <F1> to start the boot process or <F2> to enter Setup and change any settings.
Real time clock error	Real-time clock fails BIOS test. May require motherboard repair.
Shadow RAM Failed at offset: nnnn	Shadow RAM failed at offset nnnn of the 64 KB block at which the error was detected.
System battery is dead - Replace and run SETUP	The CMOS clock battery indicator shows the battery is dead. Replace the battery and run Setup to reconfigure the system.
System cache error - Cache disabled	RAM cache failed the BIOS test. BIOS disabled the cache.
System CMOS checksum bad - run SETUP	System CMOS RAM has been corrupted or modified incorrectly, perhaps by an application program that changes data stored in CMOS. Run Setup and reconfigure the system either by getting the default values and/or making your own selections.
System RAM Failed at offset: nnnn	System RAM failed at offset nnnn of the 64 KB block at which the error was detected.
System timer error	The timer test failed. Requires repair of system motherboard.

BIOS Beep Codes

Beeps codes represent a terminal error. If the BIOS detects a terminal error condition, it outputs an error beep code, halts the POST, and attempts to display a port 80h code on the POST card's LED display.

Beeps	80h Code	Description
1	B4h	One short beep before boot
1-2	98h	Search for option ROMs
1-2-2-3	16h	BIOS ROM checksum
1-3-1-1	20h	Test DRAM refresh
1-3-1-3	22h	Test 8742 keyboard controller
1-3-4-1	2Ch	RAM failure on address line xxxx*
1-3-4-3	2Eh	RAM failure on data bits xxxx* of low byte of memory bus
1-4-1-1	30h	RAM failure on data bits xxxx* of high byte of memory bus
2-1-2-3	46h	Check ROM copyright notice
2-2-3-1	58h	Test for unexpected interrupts

Appendix C

Motherboard Resources

DMA Channels

DMA Channel Number	Data Width	System Resource
0	8- or 16-bits	Open
1	8- or 16-bits	Parallel port
2	8- or 16-bits	Floppy drive
3	8- or 16-bits	Parallel port (for ECP)
4		Reserved - cascade channel
5	16-bits	Open
6	16-bits	Open
7	16-bits	Open

Interrupts

IRQ	System Resource
NMI	I/O channel check
0	Reserved, interval timer
1	Reserved, keyboard buffer full
2	Reserved, cascade interrupt from slave PIC
3	COM2*
4	COM1*
5	LPT2 (Plug and Play option) / audio / user available
6	Floppy drive
7	LPT1*
8	Real time clock
9	User available
10	User available
11	User available
12	Onboard mouse port (if present, else user available)
13	Reserved, math coprocessor
14	Primary IDE (if present, else user available)
15	Secondary IDE (if present, else user available)

* Default, but can be changed to another IRQ

Appendix D

Update on Installing Windows 95

You must install the BM (Bus Master) IDE driver for Windows 95 immediately after reinstalling Windows 95. The driver allows Windows 95 to detect and configure PCI devices controlled by the integrated 82371AB PIIX4 bridge chip on the motherboard. Intel 82371xB INF Update Installer will update your system .INF files so that the 82371AB components can be recognized or configured properly in the system. For more information, see README.TXT in the Windows 95 BM IDE Driver diskette.

If you reinstalled or upgraded Windows 95 as the operating system, you need to install the USB driver. The USB driver is included in your Windows 95 CD or is in the USB install diskette.

Note

To install from your Windows 95 CD, be sure your Windows95 CD is OSR2 with USB support version. (See on the surface of Windows 95 CD title.)

Caution

To use the USB device after reinstalling Windows 95, install the Windows 95 BM IDE driver after installing the USB Supplement for Windows 95.

Installing the Bus Master IDE Driver

Follow these steps to install the driver:

- 1** Click the Start button, and then click Run.
- 2** Insert the Windows 95 BM IDE Driver diskette into your floppy disk drive.
- 3** Type A:\SETUP.EXE and press Enter.
- 4** When the Welcome dialog box is displayed, click on Next. The license agreement opens in the Notepad application program.
- 5** View the text file and close the Notepad application program.
- 6** When the Question dialog box is displayed, click Yes. Then Intel 82371xB INF Update Installer dialog box is displayed.
- 7** Click Next and then OK.
- 8** Remove the diskette from the diskette drive and click OK to restart the system.
- 9** The operating system detects new hardware and the Update Device Driver Wizard screen is displayed during boot-up.
- 10** Click Next, and then click Finish. When Windows 95 finishes loading, a dialog box informs you that the system configuration settings have changed and prompts you to restart your system.
- 11** Click OK to start the system.

Note

After you install the BM IDE driver, check the DMA option in the Settings tab of the GENERIC IDE DISK TYPExx Properties for faster hard disk access speed. To set this option click the Start button, point to Settings, and then click Control Panel. Then double click the System icon, select the Device Manager tab, and double click Disk Drive.

Installing the USB Driver

Your motherboard has two USB ports. USB is the next generation of peripheral interface design. USB allows easy attachment of peripherals to your system.

The USB port driver may be preloaded on your system. However, if you reinstalled or upgraded Windows 95 as the operating system, you may reinstall the USB driver. The USB driver is included in your Windows 95 CD or is in the USB install diskette.

Note

To install from your Windows 95 CD, be sure your Windows95 CD is OSR2 with USB support version. (See on the surface of Windows 95 CD title.)

Caution

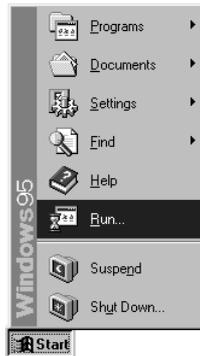
After you install the USB driver, install the Bus Master IDE driver to use the USB device. (If you install the USB driver, after reinstalling Windows 95.) For more information about the Bus Master IDE driver installation, see Chapter 4, "Bus Master IDE Driver for Windows 95."

Installing the USB Driver

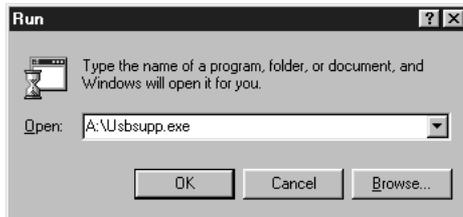
Follow these steps for USB driver installation.

- 1 Insert Windows 95 CD-ROM into CD-ROM drive. To install the driver from the floppy disk drive, insert the USB driver diskette in your floppy disk drive.

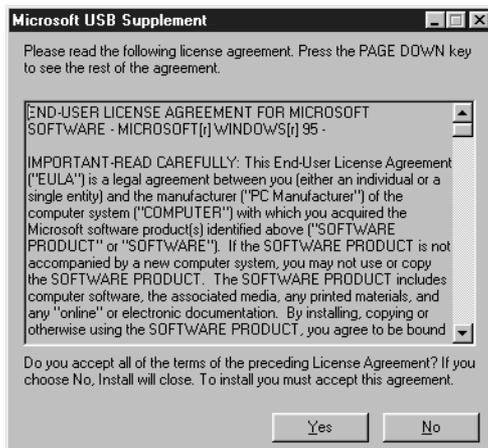
- 2 Click the Start button, and then click Run.



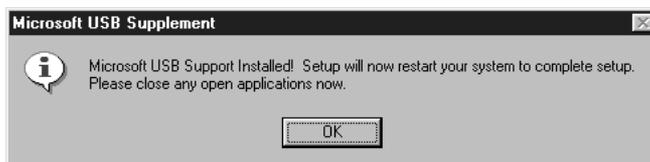
- 3 Set the path to "D:\other\usb\usbsupp.exe" and click OK to install the Microsoft USB Supplement to your system. To install the driver from the floppy disk drive, type the "A:\usbsupp.exe", then click OK. (To install from drive B, substitute B: for A:.)



- 4 Click Yes, and then click Yes to accept the agreement.



- 5 Setup will scan your system. Click OK to complete setup when the installation is finished. Setup will restart your system.



- 6 If an "Update Device Driver Wizard" window appears after Windows95 reboots, follow the instructions on screen. Proceed to step 4, otherwise USB installation is finished.
- 7 Click Next to continue.
- 8 Click the Finish button.
- 9 Set the path to "C:\windows\system" and click OK.