Acer Altos G300

User's guide

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User's guide

Model Number : _____

Serial Number: _____

Purchase Date: _____

Place of Purchase: _____

Notices

FCC notice

This device has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna

• Increase the separation between the device and receiver

• Connect the device into an outlet on a circuit different from that to which the receiver is connected

• Consult the dealer or an experienced radio/television technician for help

Notice: Shield cables

All connections to other computing devices must be made using shielded cables to maintain compliance with FCC regulations.

Notice: Peripheral devices

Only peripherals (input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this equipment. Operation with noncertified peripherals is likely to result in interference to radio and TV reception.

> **Caution!** Changes or modifications not expressly approved by the manufacturer could void the user's authority, which is granted by the Federal Communications Commission, to operate this computer.

Use conditions

This part complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Notice: Canadian users

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Remarque à l'intention des utilisateurs canadiens

Cet appareil numérique de la classe B respected toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Important safety instructions

Read these instructions carefully. Save these instructions for future reference.

1   Follow all warnings and instructions marked on the product.
2   Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
3   Do not use this product near water.
4   Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
5   Slots and openings in the cabinet and the back or bottom are provided for ventilation; to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation is provided.
6   This product should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
7   Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.
8   If an extension cord is used with this product, make sure that the total ampere rating of the equipment plugged into the extension cord does not exceed the extension cord ampere rating. Also,

make sure that the total rating of all products plugged into the wall outlet does not exceed the fuse rating.

9   Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

10 Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks. Refer all servicing to qualified service personnel.

11 Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

12 When the power cord or plug is damaged or frayed

   a   If liquid has been spilled into the product

   b   If the product has been exposed to rain or water

   c   If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal condition.

   d   If the product has been dropped or the cabinet has been damaged

   e   If the product exhibits a distinct change in performance, indicating a need for service.

   f   Replace the battery with the same type as the product's battery we recommend. Use of another battery may present a risk of fire or explosion. Refer battery replacement to a qualified serviceman.

13 Warning! Batteries may explode if not handled properly. Do not disassemble or dispose of them in fire. Keep them away from children and dispose of used batteries promptly.

14 Use only the proper type of power supply cord set (provided in your accessories box) for this unit. It should be a detachable type: UL listed/CSA certified, type SPT-2, rated 7A 125V minimum, VDE approved or its equivalent. Maximum length is 15 feet (4.6 meters).

Laser compliance statement

The CD-ROM drive in this computer is a laser product. The CD-ROM drive's classification label (shown below) is located on the drive.

CLASS 1 LASER PRODUCT
CAUTION: INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.

APPAREIL A LASER DE CLASSE 1 PRODUIT
LASERATTENTION: RADIATION DU FAISCEAU LASER INVISIBLE EN CAS D'OUVERTURE. EVITTER TOUTE EXPOSITION AUX RAYONS.

LASER KLASSE 1
VORSICHT: UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET, NICHT DEM STRAHLL AUSSETZEN

PRODUCTO LÁSER DE LA CLASE I
ADVERTENCIA: RADIACIÓN LÁSER INVISIBLE AL SER ABIERTO. EVITE EXPONERSE A LOS RAYOS.

ADVARSEL: LASERSTRÅLING VEDÅBNING SE IKKE IND I STRÅLEN

VARO! LAVATTAESSA OLET ALTTINA LASERSÅTEILYLLE.
VARNING: LASERSTRÅLNING NÅR DENNA DEL ÅR ÖPPNAD ÅLÅ TUIJOTA SÅTEESEENSTIRRA EJ IN I STRÅLEN

VARNING: LASERSTRÅLNING NAR DENNA DEL ÅR ÖPPNADSTIRRA EJ IN I STRÅLEN

ADVARSEL: LASERSTRÅLING NAR DEKSEL ÅPNESSTIRR IKKE INN I STRÅLEN

Lithium battery statement

CAUTION
Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

ADVARSEL!
Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Léver det brugte batteri tilbage til leverandøren.

ADVARSEL
Eksplosjonsfare ved feilaktig skifte av batteri. Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten. Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

VARNING
Explosionsfara vid felaktigt batteribyte. Använd samma batterityp

eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

VAROITUS

Pariso voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

VORSICHT!

Explosionsgefahr bei unsachgemäßen Austausch der Batterie Ersatz nur durch denselben oder einem vom Hersteller empfohlenem ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

Contents

1 Getting started

The Acer Altos G300 is a PCI bus based single processor system loaded with a host of new and innovative features. The system offers a new standard for flexible productivity ideal for local or wide area networks and multiuser server environments.

Overview

The Acer Altos G300 is a PCI bus based single processor system board built on an extended ATX baseboard. It comes with a single mPGA478 processor socket utilizing an Intel® Pentium® 4 processor integrated with the ServerWorks GC-SL chipset. The system board also integrates the Intel® 82540EM Gigabit Ethernet controller that supports WOL (Wake on LAN) for better remote site management.

For expandability, the system board using ATI Rage XL integrated with 8MB memory, one 32bit/33MHz 3.3V PCI bus slot, four 64bit/33MHz 3.3V PCI bus slots and four DIMM sockets that allow memory installation to a maximum of 4GB using four 1GB Registered DDR SDRAM (Synchronous DRAM) with ECC DIMMs.

For connectivity, the system board supports two USB (Universal Serial Bus) connectors, one UART NS16C550 serial ports, one enhanced parallel port with Enhanced Parallel Port (EPP)/Extended Capabilities Port (ECP) support, two PS/2 port, a diskette drive interface, three embedded hard disk interfaces, one RJ-45 network port and a 9-pin connector for video output.

The system is fully compatible with MS-DOS V6.X, Novell Netware, RedHat Linux, Windows NT 4.0 server, and Windows 2000 server.

Processor

The Pentium® 4 processor implements Intel® NetBurst™ microarchitecture, Hyper-Pipelined Technology, Advanced Dynamic Execution, Enhanced Floating-Point and Multimedia Unit, Streaming SIMD Extensions 2 (SSE2) Instructions. Based on Intel® NetBurst™ microarchitecture, the Pentium 4 processor offers higher-performance processing than ever before. Built with Intel's 0.13-micron technology, the Pentium 4 processor delivers significant performance gains for use in home computing, business solutions and all your processing needs.

This system board supports 400MHz system bus frequencies for one Pentium 4 processor supporting frequencies start at 1.6GHz.

Memory

The four DIMM sockets on board allow memory upgrade to a maximum of 4GB using four 1-GB DDR SDRAM (Synchronous DRAM) DIMMs. For data integrity, the default setting of the ECC (error-correcting code) function of the memory system in BIOS is enabled.

The system board supports DDR266 SDRAMs; PC-133, PC-100, PC-66 MHz SDRAMs are not supported.

System chipsets

ServerWorks GC-SL chipset

The ServerWorks GC-SL+SL chipset was specifically designed to meet the needs of high perfomance systems. It consists of two components: SeverWorks CMIC-SL (North bridge) and ServerWorks CSB6 (South bridge).

- ServerWorks CMIC-SL(North bridge) supports Intel® Pentuim® 4 CPU with mPGA478 package. Build-in features include main memory interface with optimized support for DDR SDRAM, 64-bit, 33MHz primary PCI bus interface (PCI) with integrated PCI arbiter, I2C bus support and other related functions.
- ServerWorks CSB6 (South bridge) integrates support for ACPI, USB 1.1, SMBus, PCI master, PCI arbiter, LPC bus controller, LPC arbiter, seven channel 8237 compatible DMA controller and DMA 66/100 on primary & secondary IDE with DMA66 on third IDE and other standard PC functions.

LAN subsystem

Another cost-effective feature for network solution is the integration of Intel® 82540EM Gigabit Ethernet controller which supports Advanced Configuration and Power Interface (ACPI) 2.0 based power management, advanced System Management Bus (SMBus) based manageability, Wired for Management (WfM) 2.0 compliance, TCP/UDP/IP checksum calculation and segmentation, PCI 2.2 compliance, and PC 2001 compliance.

Expansion slots

PCI bus

The system board has one PCI buses that support 32-bit/33 MHz/3.3V PCI devices and four PCI buses supporting 64-bit/33 MHz/3.3V PCI devices.

Hardware management support

The system board supports the power-management function that conforms to the power-saving standards of the U.S. Environmental Protection Agency (EPA) Energy Star program. It also offers Plug-and-Play. This feature saves the user from configuration troubles, thus making the system more user-friendly.

Additional features include hardware support for ASM (Advanced Server Management). ASM detects CPU thermal condition problems, CPU working voltage detection (±12V/±5V/3.3V/1.5V), and PCI bus utilization calculation. It also detects if the CPU fan or the chassis fan malfunctions.

Features summary

The main board has the following major components:

- Utilizes a mPG478 processor socket that supports a Pentium 4 processor running start at 1.6 GHz and future generations of Pentium CPUs
- ServerWorks GC-SL chipset which includes the north and the south bridge
- Onboard Gigabit Ethernet chip that supports WOL and AOL
- Four DIMM sockets that accept 128-, 256-, 512-, and 1-GB DDR SDRAMs with a maximum memory upgrade of 4-GB
- On-board ATI Rage XL and 5 PCI bus slots with 4 supporting 64-bit PCI
- System clock/calendar with battery backup
- IDE hard disk and diskette drive interfaces
- Auxiliary power connector for 300W SPS and ATX power supply
- Advanced Server Management (ASM)
- External ports:
  - 2 USB connectors
  - PS/2-compatible keyboard port
  - PS/2-compatible mouse port
  - RJ-45 jack
  - Parallel port
  - Serial port

Preinstallation requirements

Selecting a site

Before unpacking and installing the system, select a suitable site for the system for maximum efficiency. Consider the following factors when choosing a site for the system:

• Near a grounded power outlet

• Clean and dust-free

• Sturdy surface free from vibration

• Well-ventilated and away from sources of heat

• Secluded from electromagnetic fields produced by electrical devices such as air-conditioners, radio and TV transmitters, etc.

Checking the package contents

Check the following items from the package:

• Acer Altos G300 system

• Acer Altos G300 user's guide (with system binder)

• CD-ROM driver kits

• System keys (hung inside the front panel door)

If any of the above items are damaged or missing, contact your dealer immediately.

Save the boxes and packing materials for future use.

Basic connections

The system unit, keyboard, mouse, and monitor constitute the basic system. Before connecting any other peripherals, connect these peripherals first to test if the system is running properly.

Connecting the keyboard
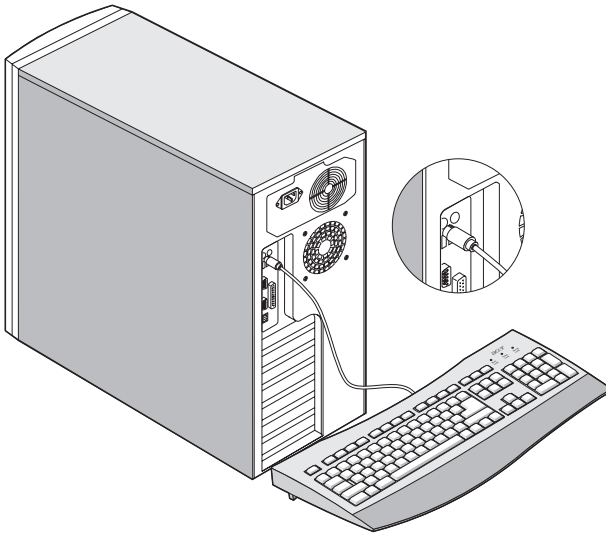
Connecting the mouse
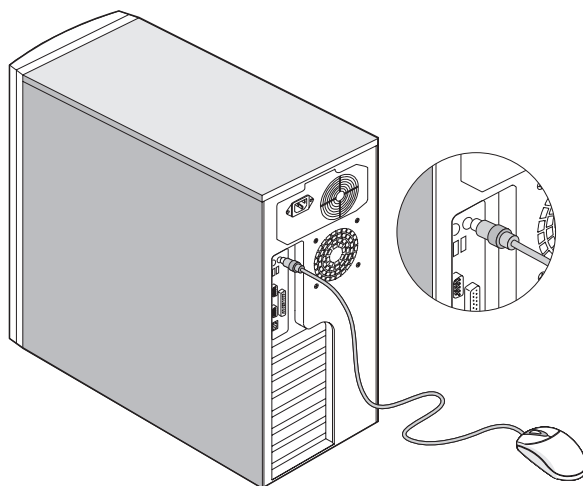
Connecting the VGA monitor
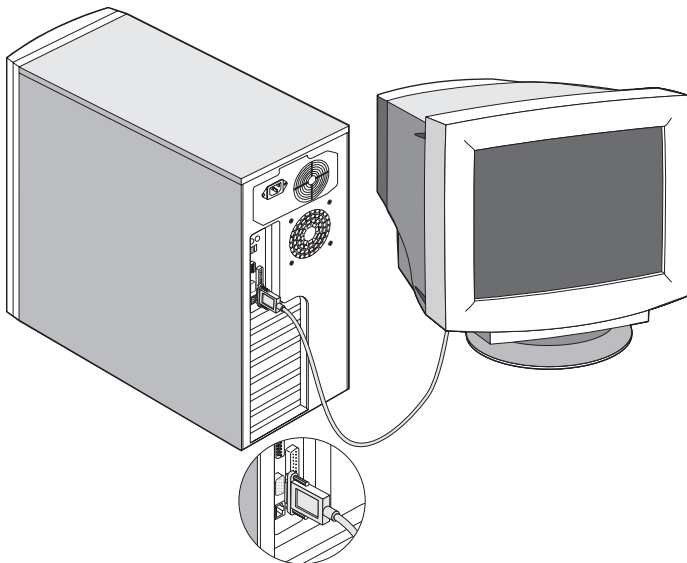
Connecting to the network
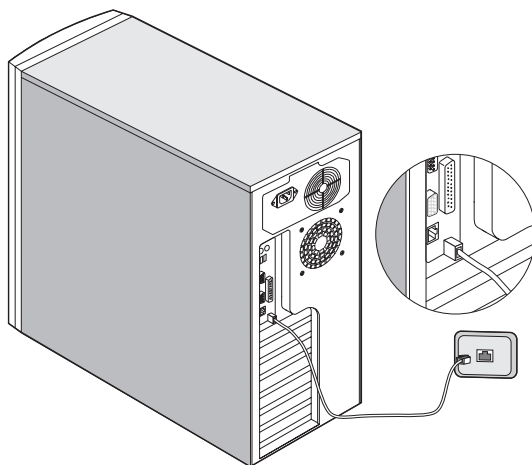
Connecting the power cable
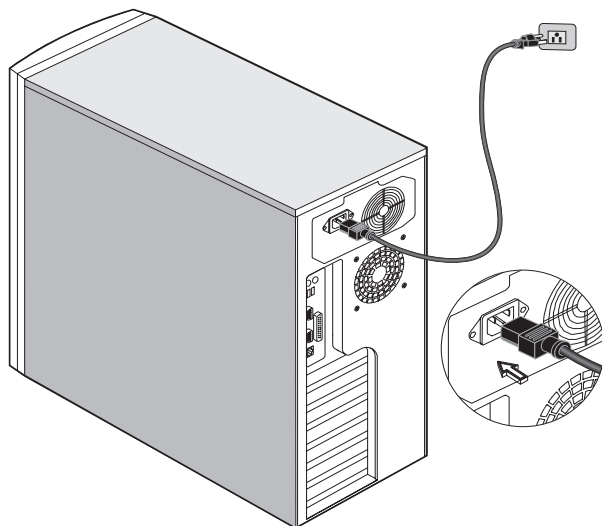
System startup

After making sure that you have set up the system properly and connected all the required cables, you may now apply power to the system.

To power on the system:

Open the front panel door and press the power button. The system starts up and displays a welcome message. After that, a series of power-on self-test (POST) messages appears. The POST messages indicate if the system is running well or not.

> **Note:** If the system does not turn on or boot after pressing the power button, go to the next section for the possible causes of the boot failure.

Aside from the self-test messages, you can determine if the system is in good condition by checking if the following occurred:

• Power indicator LED on the front bezel lights up (green)

• Power, Num Lock, and Caps Lock LED indicators on the keyboard light up

Power-on problems

If the system does not boot after you have applied power, check the following factors that might have caused the boot failure.

- The external power cable may be loosely connected.

  Check the power cable connection from the power source to the power socket on the rear panel. Make sure that each cable is properly connected to each power supply.

- No power comes from the grounded power outlet.

  Have an electrician check your power outlet.

- Loose or improperly connected internal power cables.

  Check the internal cable connections. If you are not confident to perform this step, ask a qualified technician to help you.

  Warning! Make sure all power cords are disconnected from the electrical outlet before performing this task.

  Note: If you have gone through the preceding actions and the system still fails to boot, ask your dealer or a qualified technician for assistance.

Connecting options

Printer

To connect a printer, plug the printer cable into the parallel port located on the rear panel of your computer.
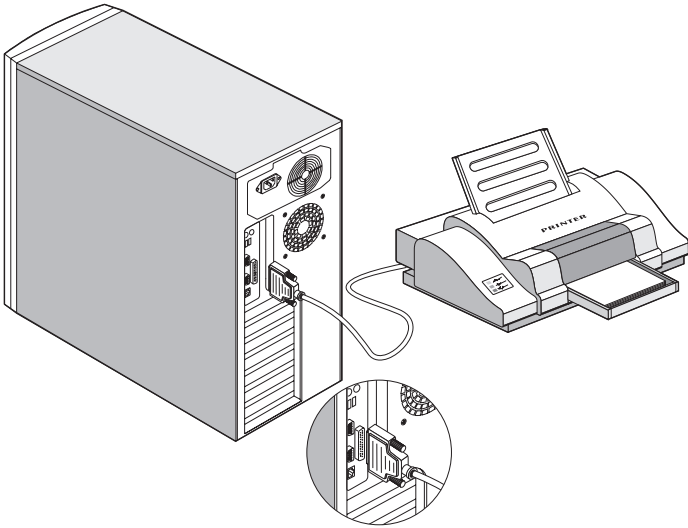
USB devices

Universal Serial Bus (USB) is a new serial bus design that is capable of cascading low-/medium-speed peripherals (less than 12 Mbps) such as a keyboard, mouse, joystick, scanner, printer and modem. With USB, complex cable connections can be eliminated.

Your computer comes with two USB ports. These ports allow you to connect additional serial devices to your computer without using up its system resources.

To connect a USB device, simply plug the device cable into any of the USB ports.
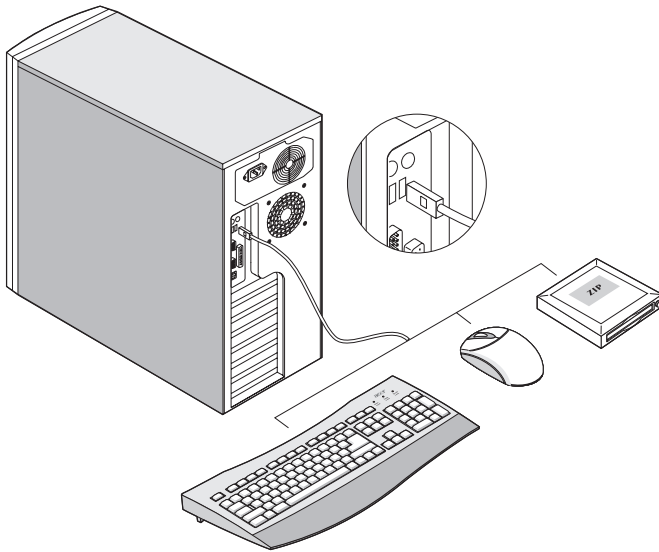
Note: Most USB devices have a built-in USB port which allows you to daisy-chain other devices.

2 System tour

This chapter discusses the features and components of your computer.

External and internal structure

Front panel
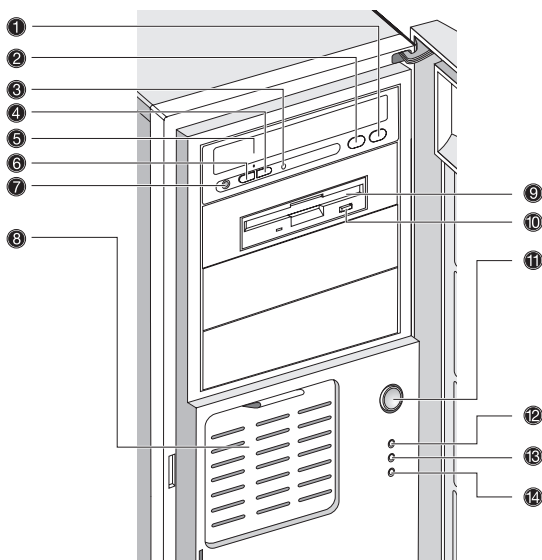
No.	Description
1	CD-ROM drive stop/eject button
2	CD-ROM drive play/forward button
3	CD-ROM drive LED
4 and 6	CD-ROM volume control
5	CD-ROM drive tray
7	CD-ROM drive earphone socket
8	Altos EasyStor Cage (Removable HDD tray)
9	Floppy disk drive tray

No.	Description
10	Floppy disk drive eject button
11	Power button
12	System power LED
13	Hard disk access LED
14	Warning LED

Rear panel
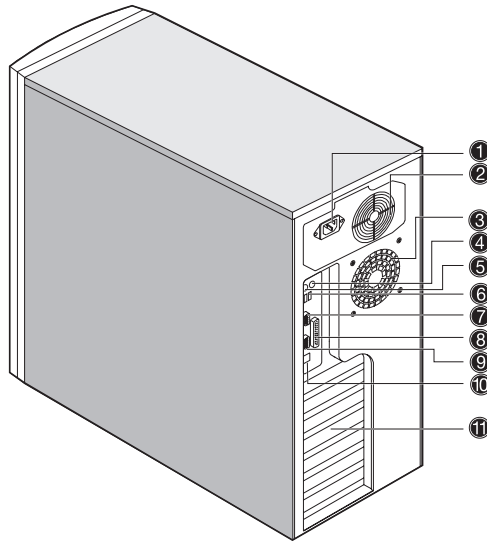
No.	Description
1	Power cable socket
2	Power Supply Fan
3	System fan
4	PS/2 mouse port
5	PS/2 keyboard port
6	USB ports
7	Serial port
8	Parallel port
9	VGA port
10	LAN port
11	PCI expansion card slots

Internal components
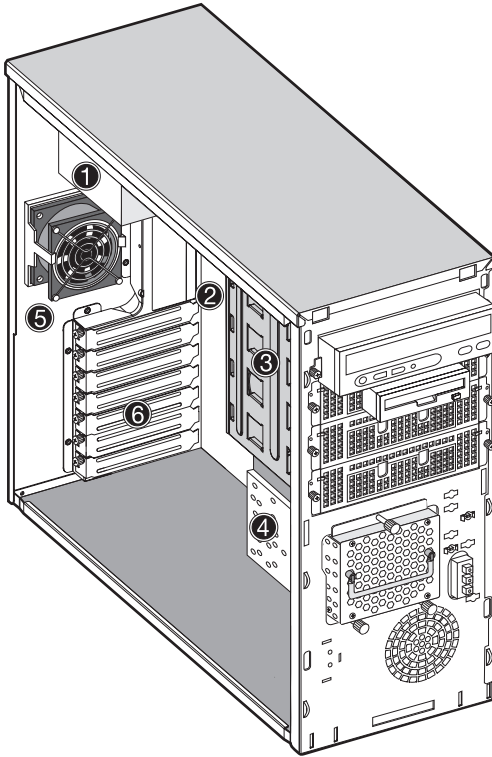
No.	Description
1	Power supply
2	System board
3	5.25-inch drive bays
4	Altos EasyStor Cage (Removable HDD tray)
5	System fan
6	PCI expansion card slots

System board layout
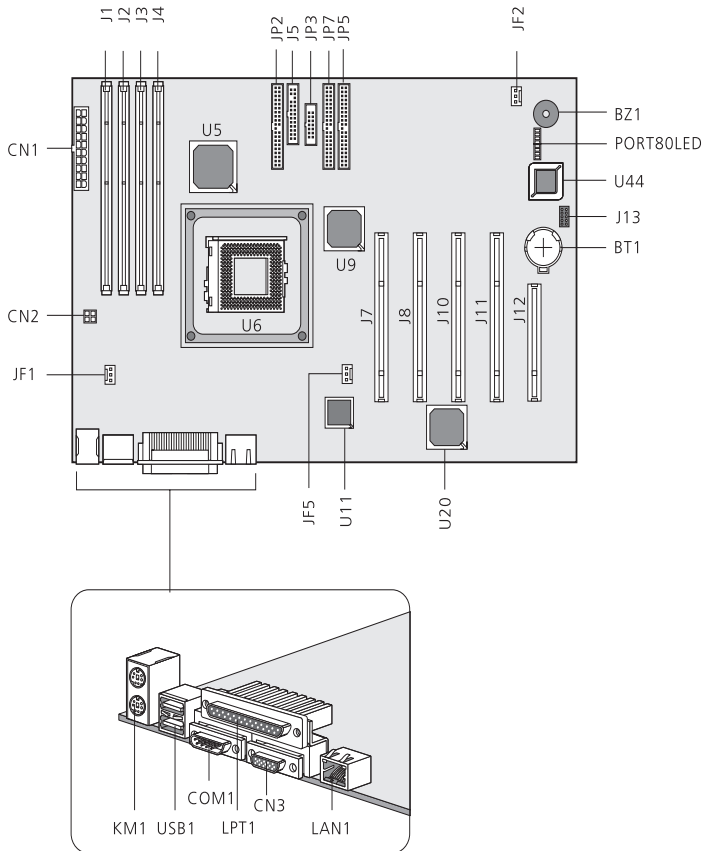
Item	Description
KM1	PS/2 Keyboard & PS/2 Mouse
USB1	USB Connector * 2
COM1	Serial Port
CN3	VGA Port

Item	Description
LPT1	Parallel Port
LAN1	RJ45 LAN Port
U11	Intel® 82540EM Gigabit Ethernet Controller
U20	ATI RageXL
CN2	Power Connector (4-pin)
CN1	Power Connector (20-pin)
JF1	System FAN2
JF2	System FAN1
JF5	CPU FAN
J1	DDR DIMM A
J2	DDR DIMM B
J3	DDR DIMM C
J4	DDR DIMM D
U6	P4 CPU Socket 478
U5	North Bridge (CMIC-SL)
U9	South Bridge (CSB6)
JP2	Third IDE Channel
J5	Floppy Connector
JP3	Control Panel
JP7	Primary IDE Connector
JP5	Secondary IDE Connector
J7	64-bit/33MHz/3.3V PCI Slot 5

Item	Description
J8	64-bit/33MHz/3.3V PCI Slot 4
J10	64-bit/33MHz/3.3V PCI Slot 3
J11	64-bit/33MHz/3.3V PCI Slot 2
J12	32-bit/33MHz/3.3V PCI Slot 1
J13	Jumper Setting
U44	BIOS
BT1	Battery
BZ1	Buzzer
Port80LED	Diagnostics LED

Control Panel (JP3)
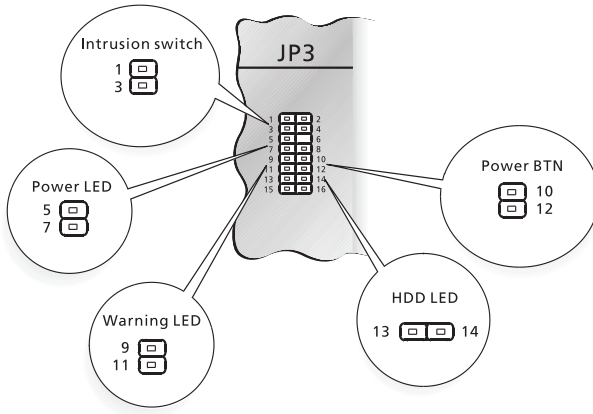
Jumper Setting (J13)
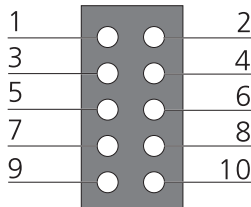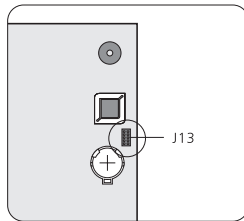
	Function	Default setting
PIN 1-2	Clear password	ON

	Function	Default setting
PIN 3-4	Clear NVRAM	OFF
PIN 5-6	Recover BIOS ROM	OFF

Diagnostics LED (Port80LED)
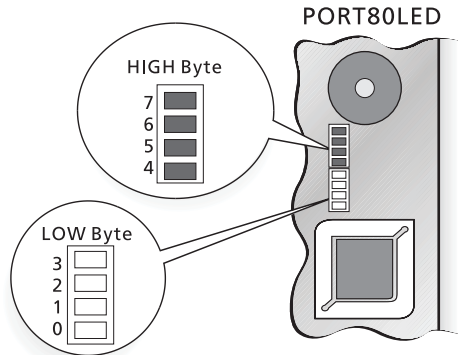
Note: Diagnostics LED show POST checkpoint codes when BIOS performs the Power On Self Test. See page 82.

3 Upgrading your system

This chapter contains instructions on how to upgrade your computer.

Installation precautions

Before you install any system component, we recommend that you read the following sections. These sections contain important ESD precautions along with preinstallation and post-installation instructions.

ESD precautions

Electrostatic discharge (ESD) can damage your processor, disk drives, expansion boards, and other components. Always observe the following precautions before you install a computer component:

1   Do not remove a component from its protective packaging until you are ready to install it.

2   Wear a wrist grounding strap and attach it to a metal part of the computer before handling components. If a wrist strap is not available, maintain contact with the computer throughout any procedure requiring ESD protection.

Preinstallation instructions

Always observe the following before you install any component:

1   Turn off your system and all the peripherals connected to it before opening it. Then unplug all cables from the power outlets.

2   Open your computer according to the instructions on page 33.

3   Follow the ESD precautions described above before handling a computer component.

4   Remove any expansion boards or peripherals that block access to the DIMM sockets or component connector.

5   See the following sections for specific instructions on the component you wish to install.

Warning! Not turning off the computer properly before you start installing the components may cause serious damage.
Do not attempt the procedures described in the following sections unless you are a qualified service technician.

Post-installation instructions

Observe the following after installing a computer component:

1   See to it that the components are installed according to the step-by-step instructions in their respective sections.

2   Replace any expansion boards or peripherals that you removed earlier.

3   Replace the computer cover.

4   Connect the necessary cables and turn on your computer.

Opening your system

> ⚠ **Caution:** Before you proceed, make sure that you have turned off your computer and all peripherals connected to it. Read the "Preinstallation instructions" on page 31.

You need to open your computer before you can install additional components. See the following section for instructions.

Removing the front panel

1 Unlock the door lock.

2 Insert your hand in the opening under the front panel. Reach for the panel handle and press it to release the cover from the housing frame.

3 Pull the cover to detach it completely from the frame.
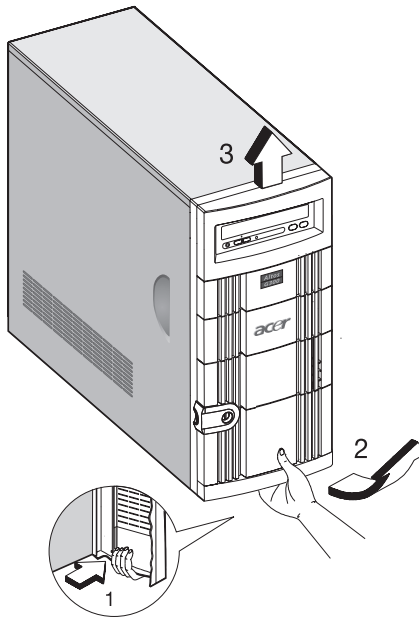
Removing the side panels

The system housing has one front panel and two removable side panels. Always observe the following ESD (electrostatic discharge) precautions before installing any system component:

1   Do not remove any system component from its packaging unless you are ready to install it.

2   Wear a wrist grounding strap before handling electronic components. Wrist grounding straps are available at most electronic component stores.

> *Danger! DO NOT attempt the procedures in the following sections unless you are confident of your capability to perform them. Otherwise, ask a service technician for assistance.*

A microswitch is allocated on the right side of the front chassis. It helps indicate whether the panel is removed or intact. Also, a security lock secures the front panel to protect against unauthorized access.

To remove the side panels:

1   Turn off the power to the system unit and unplug all cables.

2   Place the system unit on a flat, steady surface.

3   Remove the front panel. See page 33.

4   Remove the one front screw with a Phillips screwdriver to remove one side panel. Keep them in a safe place for later use.

5   Detach the side panel.

4

3

2   1
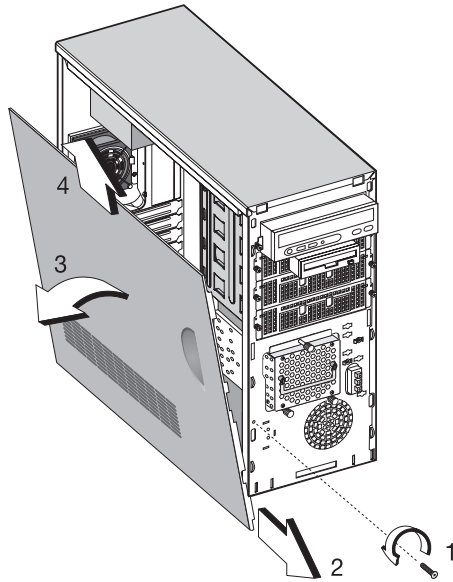
6   Repeat steps 4 to 5 to remove the other side panel.

1

4

3

2
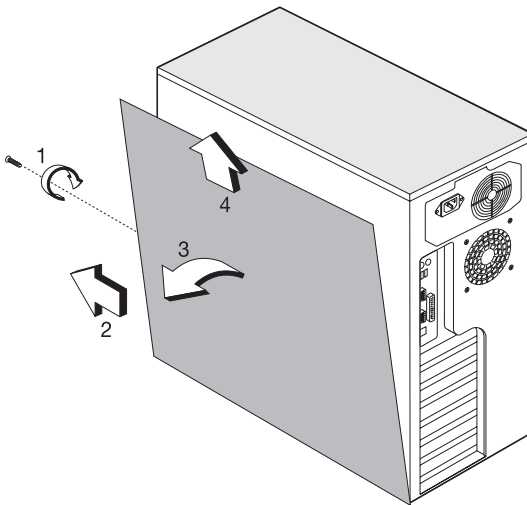
Installing and removing storage devices

The housing supports four 5.25-inch, and three internal 3.5-inch storage devices. The empty drive bays allow you to install additional drives such as a CD-ROM drive, digital audio tape (DAT) drive or another hard disk drive.

Note: Your basic system comes with a CD-ROM drive, a 3.5-inch diskette drive, and a hard disk drive already installed.

Replacing a 3.5-inch or a 5.25-inch storage device

To replace a 3.5-inch storage device:

1   Open the front panel door and pull down the door of the Altos EasyStor Cage.

2   Remove the thumb screws from the Altos EasyStor Cage.

3   Pull out the Altos EasyStor Cage.

4   Disconnect the power cable of the hard disk fan.

5   Disconnect the power and signal cable from the old drive.

6   Remove the four screws with a Philips screw driver and remove the old drive from the 3.5-inch hard disk tray.
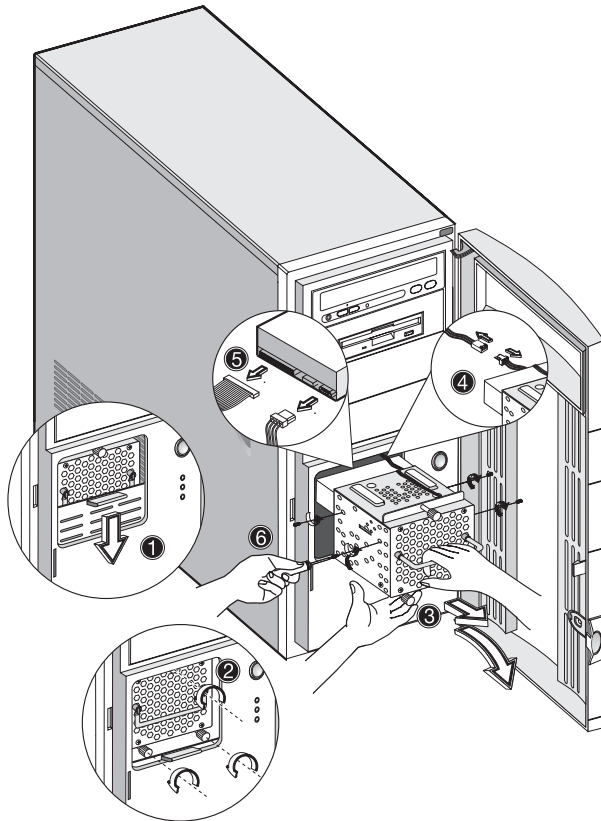
Note 1: Pull down the door of the EasyStor Cage till it clicks into place.

Note 2: Pull the EasyStor Cage out in horizontal position. And pull it out carefully with both hands for its heavy weight.

Installing a hard disk

To install a hard disk drive into the hard disk frame:

1   Insert the drive tray.

2   Secure the drive tray with two screws.

3   Connect the power and signal cables.
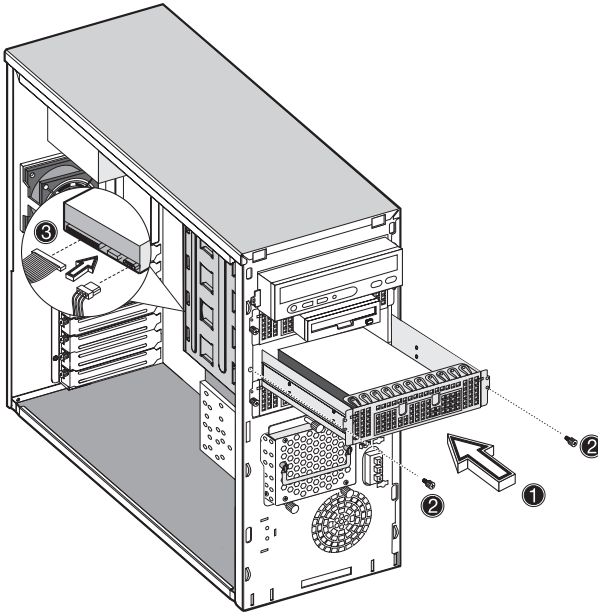
Installing a DLT

To install a DLT drive into the 5.25-drive frame.

1   Insert the DLT.
2   Secure the DLT with two screws.
3   Connect the power and signal cables.

> **Note:** DLT drive should be installed in the 1st or 2nd 5.25-inch drive tray.
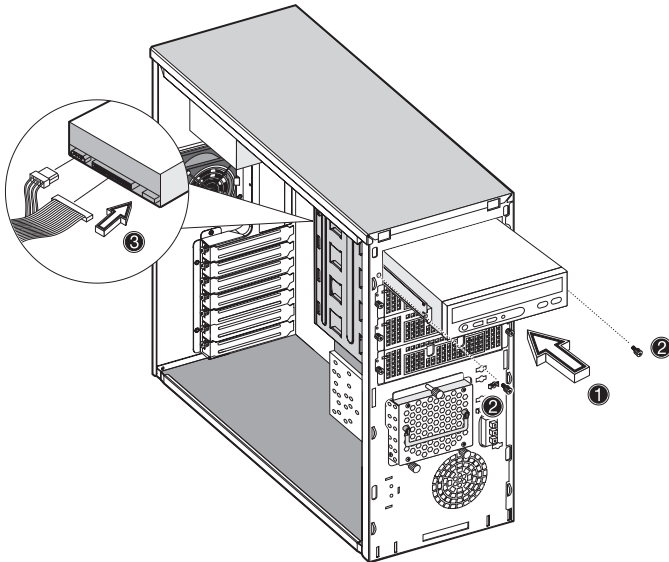
Installing and removing the CPU

The Pentium 4 comes in a mPGA478 package. The mPGA478 package is designed for the new breed of sleek, high performance, small form factor PCs.

The system board supports a Pentium 4 processor running start at 1.6 GHz and future generations of Pentium CPUs.

Caution: Always observe the ESD precautions when installing or removing a system component. Refer to page 31.

Installing a CPU

Follow these steps to install a CPU:

1   Remove the processor from its protective packaging.

2   Insert the new CPU into the CPU socket. Make sure that pin 1 (indicated by a notched corner) of the CPU connects to hole 1 of the socket.

Push down the socket lever to lock the new CPU into the socket.
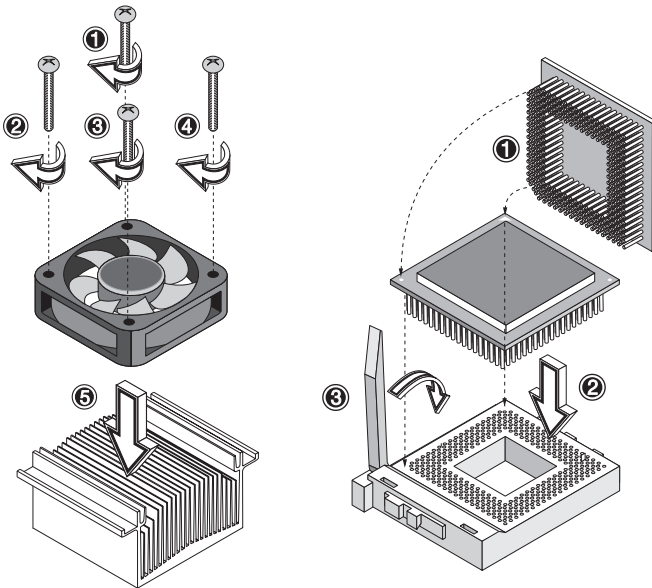
3   Attach one side of the fan/heatsink metal bracket to the CPU
     socket and then gently push down the other side of the metal
     bracket until it locks in place.
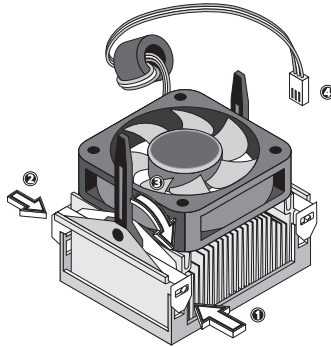
4   Connect the 3-pin fan/thermal cable to the system board. Refer to
     section "System board layout" on page 23 for the location of the
     fan/thermal connectors.

> **Note:** The heatsink becomes very hot when the system is on.
> NEVER touch the heatsink with any metal or with your hands.

Removing a CPU

Follow these steps to remove a CPU:

1   Disconnect the 3-pin fan/heatsink cables from the system board.

2   Unhook one side of the fan/heatsink metal bracket and gently lift
     it before removing the other side.
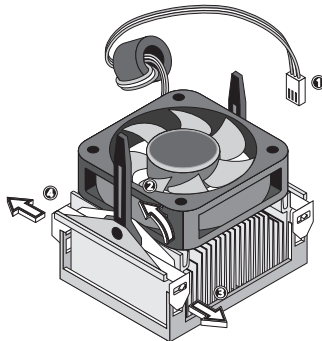
3   Gently push the socket lever down to release the lever and then
    pull it up.
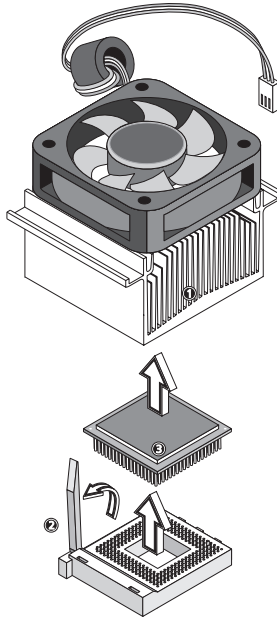
4   Remove the CPU.

Installing and removing memory modules

The four 184-pin sockets onboard support DDR SDRAM-type DIMMs. You may install 128-MB, 256-MB, 512-MB, or 1-GB DIMMs for a maximum of 4-GB system memory.

This system board supports DDR266 266MHz SDRAM.

Each of the DIMM socket is independent from the others. This independence allows you to install DIMMs with different capacities to form different configurations.

To install a DIMM, align it to an empty slot and press it in until the holding clips secure the DIMM in place.
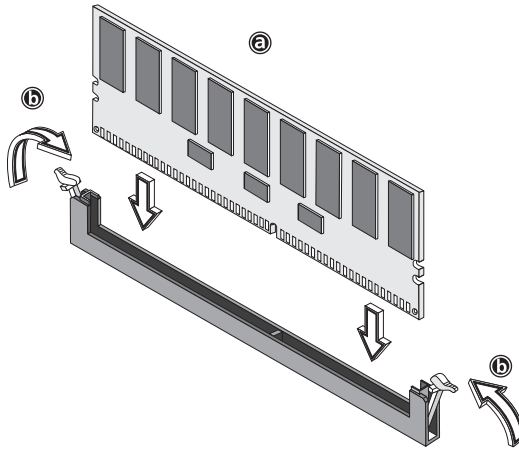
Note: The DIMM socket is slotted to ensure proper installation. If you slip in a DIMM but it does not completely fit, you may have inserted it the wrong way. Reverse the orientation of the DIMM.

To remove a DIMM, press the holding clips on both sides of the socket outward to release the DIMM.
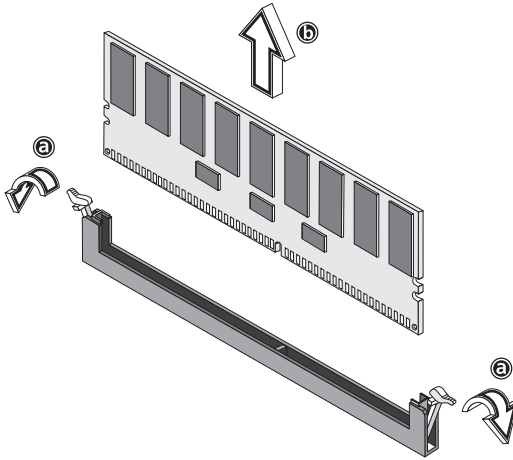
Note: Place your forefingers on the top of the DIMM before you press the holding clips to gently disengage the DIMM from the socket.

Reconfiguring the system

The system automatically detects the amount of memory installed. Run Setup to view the new value for total system memory and make a note of it.

Installing expansion cards

There are two kinds of expansion slots available in this system board. These are 32-bit PCI (Peripheral Component Interconnect) and 64-bit PCI.

To install expansion cards:

1   Locate an empty expansion slot on the system board.

2   Remove the metal bracket located opposite the empty expansion slot using a Phillips screwdriver.
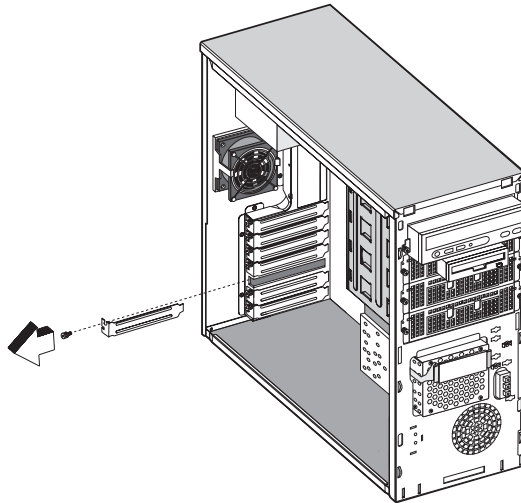
3   Insert an expansion card into the slot. Make sure that the card is properly seated.

4   Secure the card to the housing with a screw.
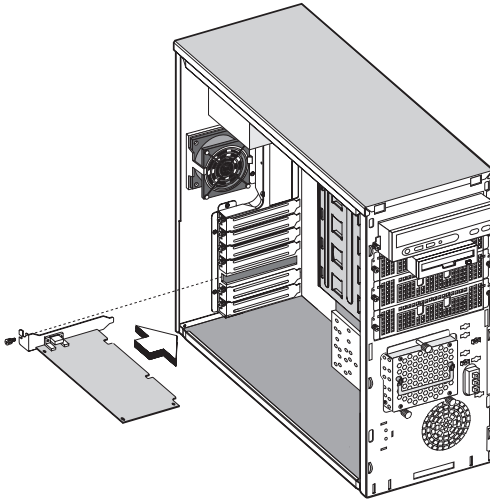
When you turn on the system, BIOS automatically detects and assigns resources to the new device.

Note: BIOS detects and configures only PnP (Plug n Play) expansion cards.

4 Setup utility

This chapter gives information about the system BIOS and tells how to configure the system by changing the settings of the BIOS parameters.

Introduction

Most systems are already configured by the manufacturer or the dealer. There is no need to run Setup when starting the computer unless you get a Run Setup message.

The Setup program loads configuration values into the battery-backed nonvolatile memory called CMOS RAM. This memory area is not part of the system RAM.

Note: If you repeatedly receive Run Setup messages, the battery may be bad. In this case, the system cannot retain configuration values in CMOS. Ask a qualified technician for assistance.

Before you run Setup, make sure that you have saved all open files. The system reboots immediately after you exit Setup.

Setup Menu

The computer employs the latest AMI BIOS CMOS chip with support for Windows Plug and Play. This CMOS chip contains the ROM Setup instructions for configuring the mainboard's BIOS. The BIOS (Basic Input and Output System) Setup utility is a menu driven utility that enables you to make changes to the system configuration and tailor your system to suit your individual work needs. BIOS is a ROM-based configuration utility that displays the system's configuration status and provides you with a tool to set system parameters. These parameters are stored in non-volatile battery-backed-up CMOS RAM that saves this information even when the power is turned off. When the system is turned back on, the system is configured with the values found in CMOS.

Configure such items as:

• Hard drives, diskette drives, and peripherals

• Password protection from unauthorized use

• Power Management Features

This Setup utility should be executed under the following conditions:

• When changing the system configuration

• When a configuration error is detected by the system and you are prompted to make changes to the Setup utility

• When redefining the communication ports to prevent any conflicts

• When making changes to the Power Management configuration

• When changing the password or making other changes to the security setup

BIOS Setup Options at Boot

The user will be able to initiate SETUP by pressing the respective keys. **<CTRL>-<ALT>-<ESC>**Enter the BIOS Setup

Setup submenu: Main

```
                        BIOS SETUP UTILITY
    Main    Advanced    Power    Boot    Security    Exit

    AMIBIOS Version    :        07.00.xx
    BIOS Build Date    :        05/07/02
    BIOS ID            :        T133A01

    Processor Type     :        IntelÆ PentiumÆ 4
    Processor Speed    :        2200MHz
    Processor Cache    :        512KB

    System Memory      :        2048MB

    System Time                 [14:21:40]       ← →   Select Screen
    System Date                 [Tue 04/16/2002] ↓ ↑   Select Item
                                                 + -   Change Option
                                                 Tab   Select Field
                                                 F1    General Help
                                                 F10   Save and Exit
                                                 ESC   Exit

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```

Parameter	Description	Options
AMIBIOS Version	The core version of AMI BIOS.	N/A
BIOS Build Date	The date when the BIOS build.	N/A
BIOS ID	The version of current BIOS.	N/A
Processor Type	Type of processor currently installed in your system.	N/A
Processor Speed	Clock speed of processor currently installed in your system.	N/A
Processor Cache	Total amount of second-level cache memory that comes with the CPU (the available cache size is 256/512 KB).	N/A

Parameter	Description	Options
System Memory	Total amount of system memory, which is automatically detected by BIOS during the POST; if you install additional memory, the system automatically adjusts this parameter to display the new memory size.	N/A
System Time	Use these items to set the correct time.	[HH:MM:SS]
System Date	Use these items to set the correct date.	[mm/dd/yyyy]

Setup submenu: Advanced

```
                          BIOS SETUP UTILITY

        Main    Advanced    Power    Boot    Security    Exit

   Setup Warning                                Configure SuperIO
   Setting items on this screen to incorrect values    Chipset Nat414
   may cause the system to malfunction!

   ► SuperIO Configuration
   ► IDE Configuration
   ► Floppy Configuration
   ► OnBoard Devices Configuration

   ► PCIPnP Configuration
   ► Boot Settings Configuration
   ► Event Log Configuration
   ► System Health Monitoring Hardware      ←  →   Select Screen
   ► Remote Access Configuration            ↓  ↑   Select Item
                                            Enter  Go to Sub Screen
                                            F1     General Help
                                            F10    Save and Exit
                                            ESC    Exit

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```

Parameter	Description
SuperIO Configuration	Configure SuperIO Chipset Nat414.
IDE Configuration	Configure the IDE device(s).
Floppy Configuration	Configure the Floppy drive(s).
OnBoard Devices Configuration	OnBoard devices control Enable/Disable.
PCIPnP Configuration	Legacy USB control and PCI slot IRQ preference assign.
Boot Settings Configuration	Boot Settings Configuration.
Event Log Configuration	Configure Event Logging.
System Health Monitoring Hardware	Configure System Health Monitoring Hardware parameters.

Parameter	Description
Remote Access Configuration	Configure Remote Access.

SuperIO Configuration

SuperIO Chipset Nat414

Advanced

Configure Nat414 Serial Port(s) and Parallel Port
_____

Serial Port1 (Address/IRQ)   [3F8/IRQ4]
Parallel Port Address   [378]
  Parallel Port IRQ   [7]
  Parallel Port Mode   [ECP]
    ECP Mode DMA Channel   [3]

←→   Select Screen
↓ ↑ Select Item
+ - Change Option
F1   General Help
F10 Save and Exit
ESC Exit

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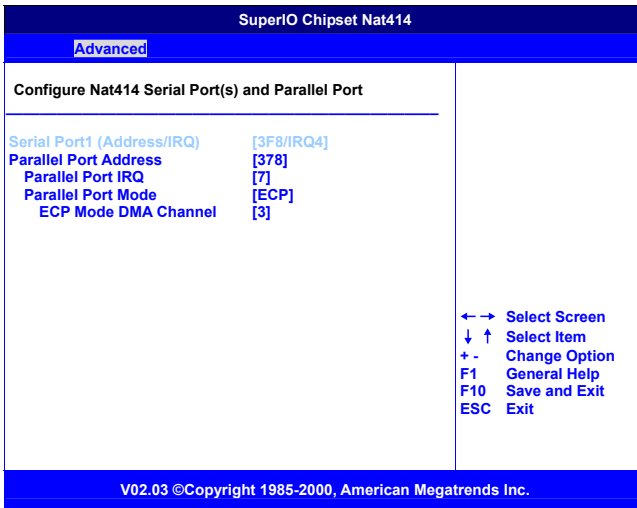
- **Onboard Serial Port 1**
  Use these items to disable the serial ports or to assign a port address and IRQ to the ports.

- **Onboard Parallel Port**
  Use this item to disable the parallel port or assign a port address to the parallel port.

- **Parallel Port IRQ**
  Use this item to determine the IRQ of the parallel port.

- **Parallel Port Mode Select**
  Use this item to determine the mode of the parallel port. You can select Normal, Bi-directional, EPP (Enhanced Parallel Port) or ECP (Extended Capabilities Port).

- **Parallel Port DMA Channel**
  These items are not available in most circumstances. If they are available, use them to allocate DMA (Direct Memory Access) channel for the parallel port.

IDE Configuration

```
                    BIOS SETUP UTILITY
        Advanced

    IDE Configuration                              While entering setup,
    _____                    BIOS auto detects the
                                                   presence of IDE
    ► Primary IDE Master        [Hard Disk]        devices. This displays
    ► Primary IDE Slave         [Hard Disk]        the status of auto
    ► Secondary IDE Master      [ATAPI CDROM]      detection of IDE
    ► Secondary IDE Slave       [ATAPI CDROM]      devices.
    ► Third IDE Master          [Hard Disk]
    ► Third IDE Slave           [Hard Disk]

    Hard Disk Write Protect     [Disabled]         ← →   Select Screen
    IDE Channel 3 mode          [Native]           ↓  ↑  Select Item
                                                   + -   Change Option
                                                   F1    General Help
                                                   F10   Save and Exit
                                                   ESC   Exit

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```

Parameter	Description	Options
Primary IDE Master	Device detected as primary IDE master.	Manual configure IDE device parameters if device could not been detected by BIOS.
Primary IDE Slave	Device detected as primary IDE slave.	
Secondary IDE Master	Device detected as secondary IDE master.	
Secondary IDE Slave	Device detected as secondary IDE slave.	
Third IDE Master	Device detected as third IDE master.	
Third IDE Slave	Device detected as third IDE slave.	
Hard Disk Write Protect	Disable/Enable device write protection. This will be effective only if device is accessed through BIOS.	Disabled Enabled

Parameter	Description	Options
IDE channel 3 mode	Configure the operation mode for 3rd IDE channel. Different O.S. IDE driver might require different operation mode.Choose Native mode for Windows 2000, NT, .NET, Unixware, LinuxChoose Legacy mode for Netware.	Native Legacy

Auto Detect Hard Disks

This item automatically detects and installs any hard disk drives installed on the primary and secondary IDE channels. Most modern drives can be detected. If you are using a very old drive that can't be detected, you can install it manually.

Primary IDE Master (if attached Hard Disk)

```
                          BIOS SETUP UTILITY
            Advanced

    Primary IDE Master

    Device       :    Hard              Disk
    Vendor       :    IBM-DTT                A-307030
    Size         :    30.7GB
    LBA Mode     :    Supported
    Block Mode   :    16Sectors
    PIO Mode     :    4
    Async Mode   :    MultiW            ord DMA-2
    Ultra DMA    :    Ultra             DMA-5
    S.M.A.R.T.   :    Supported


    Type      [Auto]
    LBA/Large Mode              [Auto]          ←  →   Select Screen
    Block Mode                  [Auto]          ↓  ↑   Select Item
    PIO Mode                    [Auto]          + -    Change Option
    DMA Mode                    [Auto]          F1     General Help
    S.M.A.R.T.                  [Auto]          F10    Save and Exit
    32Bit Data Transfer         [Disabled]      ESC    Exit
    ARMD Emulation Type         [Auto]

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```

Parameter	Description	Options
Type	Configure the driver type.	Auto CDROM ARMD Not Installed
LBA/Large Mode	Select the hard disk drive translation method. For drivers with more than 504MB, the LBA mode is necessary.	Auto Disabled
Block Mode	**Auto:** The Data transfer from and to the device occurs multiple sectors at a time if the device supports it. **Disable:** The Data transfer from and to the device occurs one sector at a time.	Auto Disabled

Parameter	Description	Options
PIO Mode	Select PIO (Programmed Input/Output) Mode. Mode 0 to 4 provide successive increase of performance.	Auto 0 1 2 3 4
DMA Mode	Select DMA Mode: **Auto**: Auto detected **SWDMAn**: SingleWordDMAn **MWDMAn**: MultiWordDMAn **UDMAn**: UltraDMAn	Auto SWDMAn MWDMAn UDMAn
S.M.A.R.T.	Enable or disable the S.M.A.R.T (Self-Monitoring, Analysis and Reporting Technology) in the internal hard disk. If '**Auto**' is selected, the BIOS will enable the S.M.A.R.T if the driver supported.	Auto Disabled Enabled
32Bit Data Transfer	Enable/disable 32bit data transfer.	Enabled Disabled
ARMD Emulation Type	Select ARMD device emulation type by BIOS.	Auto Floppy Hard Disk

Secondary IDE Master (if attached ATAPI CDROM)

```
                    BIOS SETUP UTILITY
   Advanced

   Secondary IDE Master

   Device        :    A          TAPI CDROM
   Vendor        :    MA         TSHITA CD-177
   LBA Mode      :    Supported
   Block Mode    :    16Sectors
   PIO Mode      :    4
   Async Mode    :    MultiW        ord DMA-2
   Ultra DMA     :    Ultra         DMA-2

   Type       [Auto]
   LBA/Large Mode           [Auto]
   Block Mode               [Auto]
   PIO Mode                 [Auto]          ←  →  Select Screen
   DMA Mode                 [Auto]          ↓  ↑  Select Item
   S.M.A.R.T.               [Auto]          + -    Change Option
   32Bit Data Transfer      [Disabled]      F1     General Help
   ARMD Emulation Type      [Auto]          F10    Save and Exit
                                            ESC    Exit


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```

Secondary IDE Slave (if no attached)

```
                    BIOS SETUP UTILITY
   Advanced

   Secondary IDE Slave

   Device        :               Not Detected

   Type       [Auto]
   LBA/Large Mode           [Auto]
   Block Mode               [Auto]
   PIO Mode                 [Auto]
   DMA Mode                 [Auto]
   S.M.A.R.T.               [Auto]
   32Bit Data Transfer      [Disabled]
   ARMD Emulation Type      [Auto]

                                            ←  →  Select Screen
                                            ↓  ↑  Select Item
                                            + -    Change Option
                                            F1     General Help
                                            F10    Save and Exit
                                            ESC    Exit


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```

Floppy Configuration

```
                    BIOS SETUP UTILITY
      Advanced

  Floppy Configuration                          Select the Floppy
                                                drive type.
  Floppy A                  [1.44MB 3¹/₂ï]



                                                ← → Select Screen
                                                ↓ ↑ Select Item
                                                + -   Change Option
                                                F1    General Help
                                                F10   Save and Exit
                                                ESC   Exit


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```
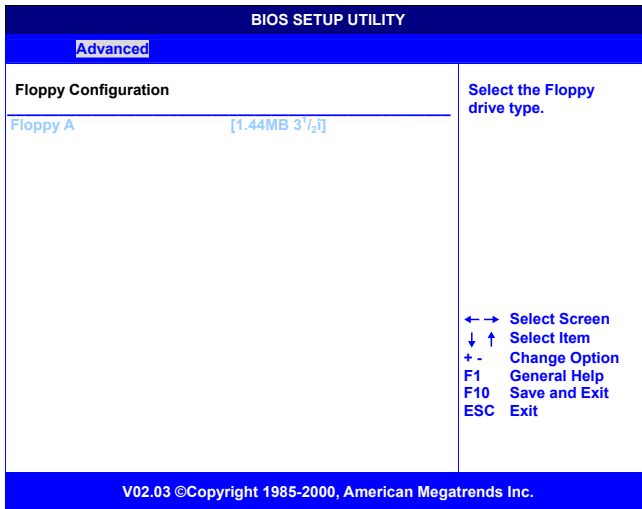
Parameter	Description
Floppy Drive A	Select the floppy drive type

•   **Floppy Drive A**
     If you have one floppy drive installed change the item Floppy Drive
     A so that it describes the characteristics of the drive.

PCIPnP Configuration

BIOS SETUP UTILITY	
Advanced	
PCIPnP Configuration	Enables support for legacy USB.
Legacy USB Support [Disabled]	
PCI Slot-1 IRQ Preference [Auto] **PCI Slot-2 IRQ Preference** [Auto] **PCI Slot-3 IRQ Preference** [Auto] **PCI Slot-4 IRQ Preference** [Auto] **PCI Slot-5 IRQ Preference** [Auto]	←→ Select Screen ↓ ↑ Select Item + - Change Option F1 General Help F10 Save and Exit ESC Exit
V02.03 ©Copyright 1985-2000, American Megatrends Inc.	

Parameter	Description	Options
Legacy USB Support	Enable support for legacy USB.	Enabled Disabled
PCI Slot-1 IRQ Preference	Manually configure the IRQ of PCI slot-1.	Auto 3
PCI Slot-2 IRQ Preference	Manually configure the IRQ of PCI slot-2.	4 5 7
PCI Slot-3 IRQ Preference	Manually configure the IRQ of PCI slot-3.	9 10
PCI Slot-4 IRQ Preference	Manually configure the IRQ of PCI slot-4.	11 12 14
PCI Slot-5 IRQ Preference	Manually configure the IRQ of PCI slot-5.	15

Boot Settings Configuration

BIOS SETUP UTILITY	
Advanced	
Boot Settings Configuration	Select Power-on state for Numlock.
Bootup Num-Lock [On]	← → Select Screen ↓ ↑ Select Item + - Change Option F1 General Help F10 Save and Exit ESC Exit
V02.03 ©Copyright 1985-2000, American Megatrends Inc.	
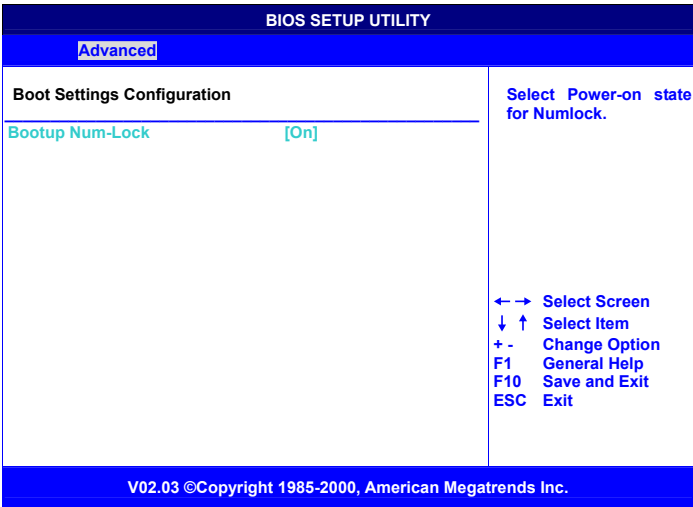
Parameter	Description	Options
Bootup Num-Lock	Select Power-on state for Numlock	On Off

Event Log Configuration

```
                          BIOS SETUP UTILITY
        Advanced

    Event Log Configuration                                Enabled: Allow logging of
                                                           events.

    Event Log Area:              Space Available
    Event Log Data:              Valid

    Event Logging                [Enabled]
    ECC Event Logging            [Disabled]
    Intrusion Event logging      [Enabled]
    Clear Intrusion Status       [No]
    Clear All Event Logs         [No]

    ► View Event Log                                       ←  →   Select Screen
                                                           ↓  ↑   Select Item
    ► Mark All Events As Read                              + -    Change Option
                                                           F1     General Help
                                                           F10    Save and Exit
                                                           ESC    Exit


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```

Note: If there are any event logs recorded, "View Event Log" and "Mark All Events As Read" will appear. If no event recorded, these two options will NOT appear.

Parameter	Description	Options
Event Log Area	The space utilization of event log NVRAM. If space is full, no new event type could be record.	
Event Log Data	The state of event log data. The event log data is only available if '**valid**'.	
Event Logging	Allow/Not allow logging of events.	Enabled Disabled
ECC Event Logging	Allow/Not allow logging of ECC events.	Enabled Disabled
Intrusion Event logging	Allow/Not allow logging of chassis intrusion events.	Enabled Disabled

Parameter	Description	Options
Clear Intrusion Status	Clear chassis intrusion status and set this value as '**disabled**' at next time system boot if this item is enabled.	Yes No
Clear All Event Logs	Clear event log area and set this value as '**disabled**' at next time system boot if this item is enabled.	Yes No
View Event Log	This allows user to see the detail BIOS and IPMI event.	N/A
Mark All Events As Read	Mark all events in the event log area as read.	N/A

View Event Log

This allows user to see the detail BIOS and IPMI event.

```
                              View Event Log
00/00/00        00:00:33    CMOS Battery Failure
00/00/00        00:02:15    CMOS System Options Not Set
90/03/01        00:13:04    CMOS System Options Not Set
90/03/02        00:07:50    CMOS System Options Not Set
90/03/10        00:55:37    CMOS System Options Not Set
90/03/12        00:58:37    CMOS System Options Not Set
```

Mark All Events As Read

```
            Mark All Event Log Records As Read
            [OK]                    [Cancel]
```

OnBoard Devices Configuration
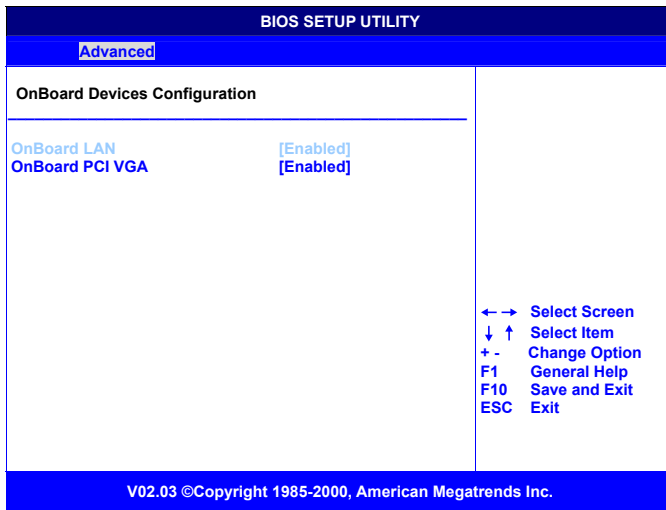
Parameter	Description	Options
OnBoard LAN	Enable or disable onboard LAN.	Enabled Disabled
OnBoard PCI VGA	Enable or disable onboard VGA.	Enabled Disabled

System Health Monitoring Hardware

Hardware Monitor Setup Page

This page lets you install hardware monitoring parameters so that the system can warn you when critical parameters are exceeded.

System Hardware Monitor

If your mainboard supports hardware monitoring, these items are auto-detected and the results are reported. You cannot make changes to these items.

BIOS SETUP UTILITY	
Advanced	
System Health Monitoring Hardware	**Configure System Health Monitoring Hardware parameters.**
Case Status Closed	
Current CPU1 Temp. 36^0C/96^0F	
Current System Temp. 26^0C/78^0F	
Current CPU Fan Speed [4200RPM]	
Current System Fan 1 Speed [0RPM]	
Current System Fan 2 Speed [0RPM]	
► Voltage monitoring	
	←→ Select Screen
	↓ ↑ Select Item
	+ - Change Option
	F1 General Help
	F10 Save and Exit
	ESC Exit
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Parameter	Description
Case Status	The current status detected by chassis intrusion switch.
Current CPU1 Temp	Current CPU temperature detected by the sensor on the board.
Current System Temp	Current board temperature detected by the sensor on the board.
Current CPU Fan Speed	Current CPU Fan speed detected.
Current System Fan 1 Speed	Current System Fan 1 speed detected.
Current System Fan 2 Speed	Current System Fan 2 speed detected.

Parameter	Description
Voltage monitoring	Press '**Enter**' to view the voltage monitored.

Voltage monitoring

```
                    BIOS SETUP UTILITY
   Advanced

   System Health Monitoring Hardware

   VTT      1.2408              V
   Vcc 12V                 11.9375 V
   Vcc 5V                   4.9660 V
   Vcc 3.3V                 3.3024 V
   Vcc 2.5V                 2.4960 V
   CPU Vcore                1.4554 V
   LAN 1.5V                 1.5087 V
   Vcc 5V Standby           5.0700 V
   Vcc 3.3V Standby         3.3368 V
   VGA 2.5V                 2.4960 V
   Vdd_IMB 1.5V             1.4946 V
                                        ← →   Select Screen
                                        ↓ ↑   Select Item
                                        + -   Change Option
                                        F1    General Help
                                        F10   Save and Exit
                                        ESC   Exit

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```
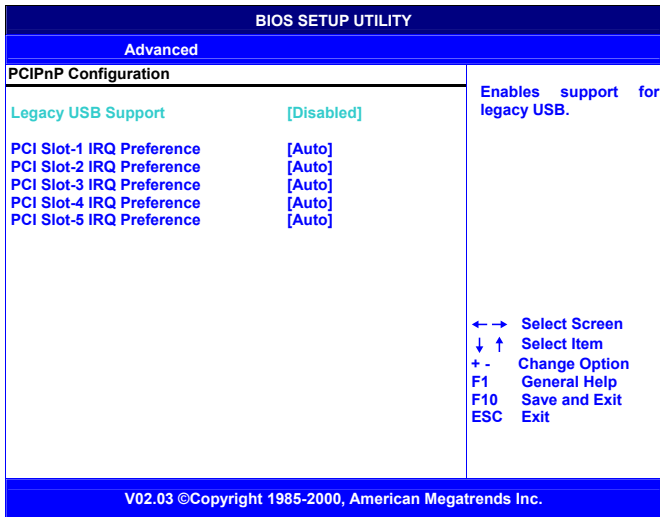
Remote Access Configuration

```
                          BIOS SETUP UTILITY
      Advanced

   Configure Remote Access type and parameters            Select remote
                                                          access type
   Remote Access              [Serial (ANSI)]

   Serial Port Mode           [115200 8,n,1]




                                                    ← →  Select Screen
                                                    ↓  ↑  Select Item
                                                    + -  Change Option
                                                    F1   General Help
                                                    F10  Save and Exit
                                                    ESC  Exit


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```
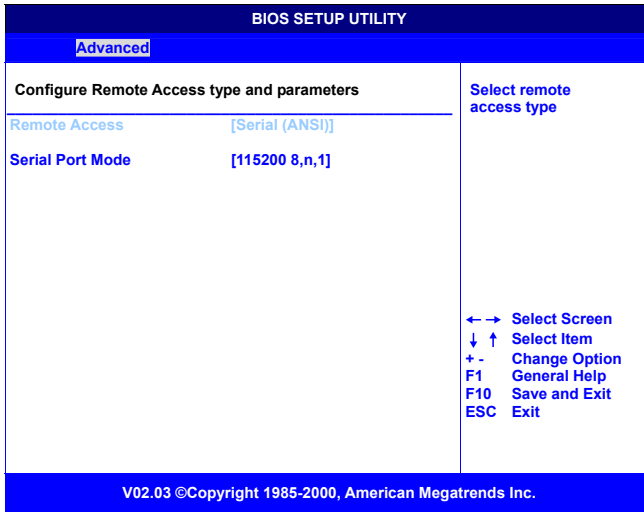
Parameter	Description	Options
Remote Access	Select remote access type.	Disabled Serial (ANSI)
Serial Port Mode	Select Serial Port setting.	115200 8,n,1 57600 8,n,1 19200 8,n,1 9600 8,n,1

Setup submenu: Power

```
                    BIOS SETUP UTILITY
     Main     Advanced    Power     Boot     Security     Exit


AC Power Failure                  [Last State]

Power Button Mode                 [On/Off]
Enable RTC Resuming From S4       [Enabled]




                                              ←  →    Select Screen
                                              ↓  ↑    Select Item
                                              + -     Change Option
                                              F1      General Help
                                              F10     Save and Exit
                                              ESC     Exit


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```
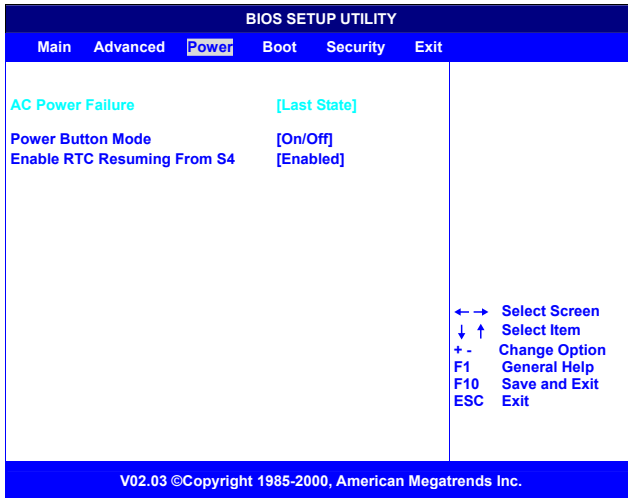
Parameter	Description	Options
AC Power Failure	This sets the power state after a shutdown due to an unexpected interrupt of AC power. If the value is set to "**Stay OFF**," the system remains turned off. If the value is set to "**Last State**," the system returns to the last power state.	Last State Stay Off
Power Button Mode	If this item is set to "**On/Off**," the power button acts as a standard on/off switch. If you set this item to "**Suspend**," pressing the power button enters the system into a power-saving suspend mode.	On/Off Suspend
Enable RTC Resuming From S4	Enable or Disable RTC (Real Time Clock) resume from ACPI S4. If this option is set to "**Enable**", the system could wake up from ACPI S4 (Hibernation in Windows 2000/.NET) if O.S. configured properly.	Enable Disable

Setup submenu: Boot

```
                         BIOS SETUP UTILITY

        Main    Advanced    Power    Boot    Security    Exit

        ► Boot Device Priority
        ► Hard Disk Drives
        ► Removable Devices
        ► ATAPI CDROM Drives



                                                ← →    Select Screen
                                                ↓  ↑   Select Item
                                                Enter  Go to Sub Screen
                                                F1     General Help
                                                F10    Save and Exit
                                                ESC    Exit


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```

Parameter	Description
Boot Device Priority	Specifies the boot sequence from the available devices.
Hard Disk Drives	Specifies the available hard disk drives boot sequence. Only first drive could boot the system.
Removable Devices	Specifies the available removable devices boot sequence. Only first drive could boot the system.
ATAPI CDROM Drives	Specifies the available CD-ROM drives boot sequence. Only first drive could boot the system.

Boot Device Priority

```
                    BIOS SETUP UTILITY
                                              Boot

1ˢᵗ Boot Device        [Removable Device]      Specifies the boot
2ⁿᵈ Boot Device        [ATAPI CDROM]           sequence from the
3ʳᵈ Boot Device        [Hard Drive]            available devices.




                                              ← →   Select Screen
                                              ↓  ↑   Select Item
                                              + -    Change Option
                                              F1     General Help
                                              F10    Save and Exit
                                              ESC    Exit


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```
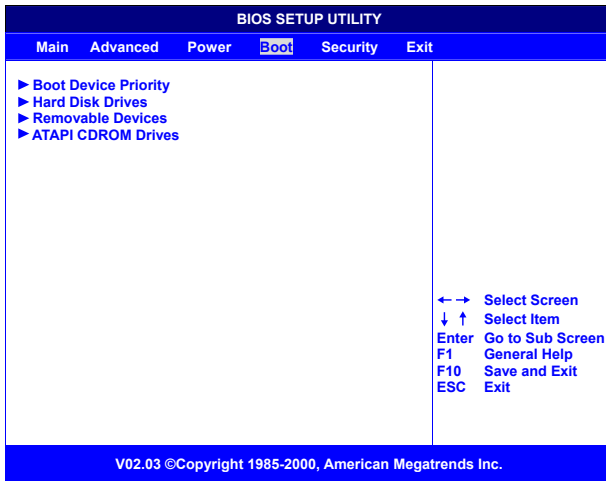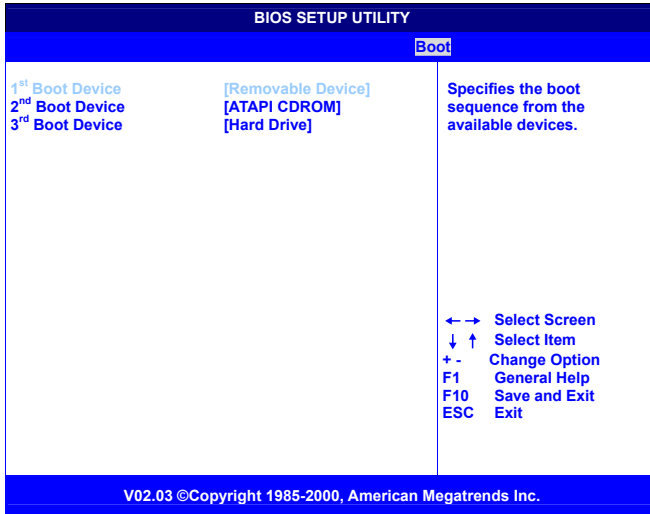
Parameter	Description	Options
1ˢᵗ Boot Device	Configure the first boot device type.	Available boot device type.
2ⁿᵈ Boot Device	Configure the second boot device type. If first boot device fail to boot the system, BIOS will try to boot the system from 2ⁿᵈ boot device.	
...		
Nth Boot Device	Configure the N-th boot device type. If N-1 th boot device fail to boot the system, the BIOS will try to boot the system from N-th boot device.	

Hard Disk Drives

```
                            BIOS SETUP UTILITY
                                                    Boot

 1st Hard Drive    [IDE PRIMARY MASTER - IBM-DATA-3]    Specifies the boot
 2nd Hard Drive    [IDE PRIMARY SLAVE - IBM-DATA-35]    sequence from the
                                                        available devices.




                                                        ←  →    Select Screen
                                                        ↓  ↑    Select Item
                                                        + -     Change Option
                                                        F1      General Help
                                                        F10     Save and Exit
                                                        ESC     Exit


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```

Parameter	Description
1st Hard Drive	Configure the hard drive to boot the system.
2nd Hard Drive	Configure the 2nd hard drive. Note that only 1st hard drive could boot the system.

Removable Devices

BIOS SETUP UTILITY		
	Boot	
1st Removable Dev	[1st Floppy]	Specifies the boot sequence from the available devices. ← → Select Screen ↓ ↑ Select Item + - Change Option F1 General Help F10 Save and Exit ESC Exit
V02.03 ©Copyright 1985-2000, American Megatrends Inc.		
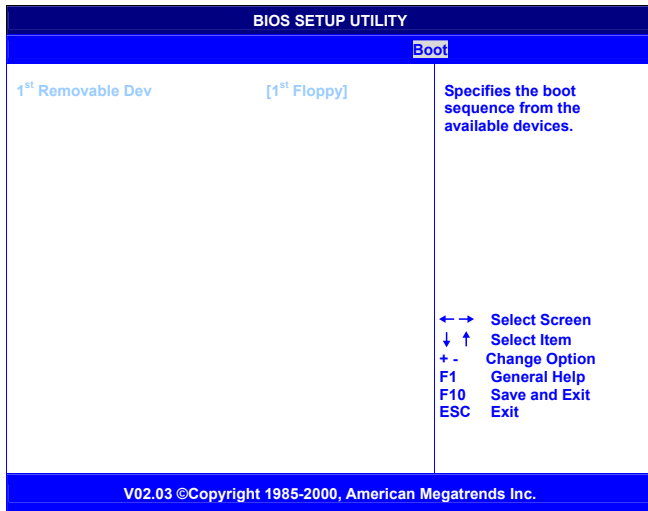
Parameter	Description
1st Removable Dev	Configure the 1st removable device to boot the system.

ATAPI CDROM Drives

```
                        BIOS SETUP UTILITY
                                          Boot

 1ˢᵗ ATAPI CDROM  [IDE SECONDARY MASTER - MATSHITA]    Specifies the boot
                                                        sequence from the
                                                        available devices.




                                                   ←  → Select Screen
                                                   ↓  ↑ Select Item
                                                   + -    Change Option
                                                   F1     General Help
                                                   F10    Save and Exit
                                                   ESC    Exit


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```
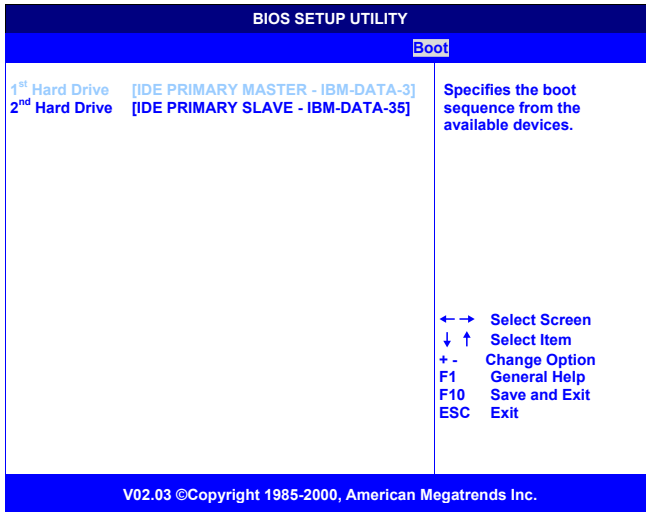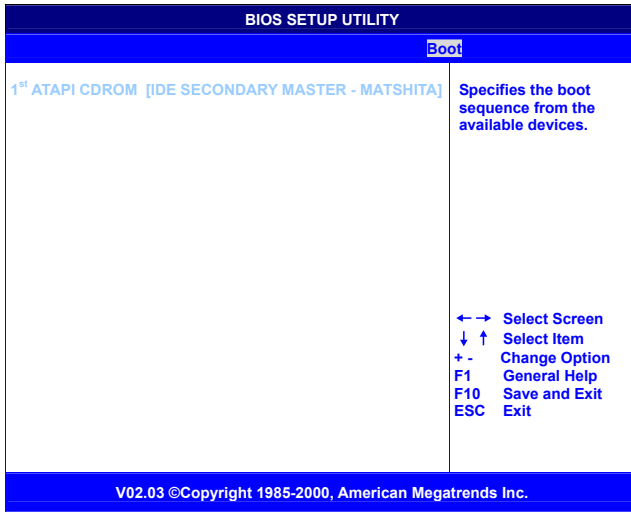
Parameter	Description	Options
1ˢᵗ ATAPI CDROM	Configure the first ATAPI CDROM to boot the system. Only first CDROM could boot the system.	CD-ROM available to the system.

Setup submenu: Security

```
                            BIOS SETUP UTILITY
      Main    Advanced    Power    Boot    Security    Exit

   Supervisor Password    :            Not Installed        Install or Change the
   User Password          :            Not Installed        password.

   ►  Change Supervisor Password
   ►  Change User Password
   ►  Clear User Password




                                                            ← →    Select Screen
                                                            ↓  ↑    Select Item
                                                            Enter   Change
                                                            F1      General Help
                                                            F10     Save and Exit
                                                            ESC     Exit

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```
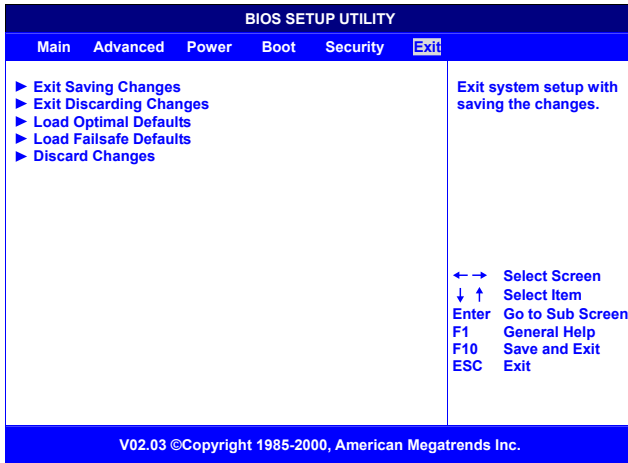
Parameter	Description
Change User/ Supervisor Password	You can install a Supervisor password, and if you install a supervisor password, you can then install a user password. A user password does not provide access to many of the features in the Setup utility.If you highlight these items and press **Enter**, a dialog box appears which lets you enter a password. You can enter no more than six letters or numbers. Press **Enter** after you have typed in the password. A second dialog box asks you to retype the password for confirmation. Press **Enter** after you have retyped it correctly. The password is required at boot time, or when the user enters the Setup utility. The characters allow for password are ['a'-'z', 'A'-'Z', '0'-'9']. Six characters are allowed for a password.
Clear User Password	Highlight this item and type in the current password. At the next dialog box press **Enter** to disable password protection.

Setup submenu: Exit

```
                    BIOS SETUP UTILITY
  Main   Advanced   Power   Boot   Security   Exit

  ► Exit Saving Changes            Exit system setup with
  ► Exit Discarding Changes        saving the changes.
  ► Load Optimal Defaults
  ► Load Failsafe Defaults
  ► Discard Changes




                                   ← →   Select Screen
                                   ↓ ↑   Select Item
                                   Enter  Go to Sub Screen
                                   F1     General Help
                                   F10    Save and Exit
                                   ESC    Exit


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```

Parameter	Description
Exit Saving Changes	Exit system setup with saving the changes.
Exit Discarding Changes	Exit system setup without saving the changes.
Load Optimal Defaults	Load Optimal Defaults.
Load Failsafe Defaults	Load Failsafe Defaults.
Discard Changes	Discard changes.

Auto Configuration with Optimal Settings

If you highlight this item and press **Enter**, a dialog box asks if you want to install optimal settings for all the items in the Setup utility. Press the **Y** key to indicate Yes, and then press **Enter** to install the optimal settings.

The optimal settings default values are quite demanding and your system might not function properly if you are using slower memory chips or other kinds of low-performance components.

Auto Configuration with Fail-Safe Settings

If you highlight this item and press **Enter**, a dialog box asks if you want to install fail-safe settings for all the items in the Setup utility. Press the **Y** key to indicate Yes, and then press **Enter** to install the fail-safe settings.

The fail-safe settings default values are not demanding so a system should be able to operate with the fails safe settings even if it is installed with slower memory chips or other kinds of low-performance components.

Appendix A: AMIBIOS
POST Checkpoint Codes

AMIBIOS POST Checkpoint Codes

Uncompressed Initialization Codes

The uncompressed initialization checkpoint codes are listed in order of execution:

Checkpoint Code	Description
D0h	The NMI is disabled. Power on delay is starting. Next, the initialization code checksum will be verified.
D1h	Initializing the DMA controller, performing the keyboard controller BAT test, starting memory refresh, and entering 4 GB flat mode next.
D3h	Starting memory sizing next.
D4h	Returning to real mode. Executing any OEM patches and setting the stack next.
D5h	Passing control to the uncompressed code in shadow RAM at E000:0000h. The initialization code is copied to segment 0 and control will be transferred to segment 0.
D6h	Control is in segment 0. Next, checking if <Ctrl> <Home> was pressed and verifying the system BIOS checksum. If either **<Ctrl> <Home>** was pressed or the system BIOS checksum is bad, next will go to checkpoint code E0h. Otherwise, going to checkpoint code D7h.

POST Checkpoint Codes

Bootblock Recovery Codes

The bootblock recovery checkpoint codes are listed in order of execution:

Checkpoint Code	Description
E0h	The onboard floppy controller if available is initialized. Next, beginning the base 512 KB memory test.
E1h	Initializing the interrupt vector table next.
E2h	Initializing the DMA and Interrupt controllers next.
E6h	Enabling the floppy drive controller and Timer IRQs. Enabling internal cache memory.
Edh	Initializing the floppy drive.
Eeh	Looking for a floppy diskette in drive A:. Reading the first sector of the diskette.
Efh	A read error occurred while reading the floppy drive in drive A:.
F0h	Next, searching for the AMIBOOT.ROM file in the root directory.
F1h	The AMIBOOT.ROM file is not in the root directory.
F2h	Next, reading and analyzing the floppy diskette FAT to find the clusters occupied by the AMIBOOT.ROM file.
F3h	Next, reading the AMIBOOT.ROM file, cluster by cluster.
F4h	The AMIBOOT.ROM file is not the correct size.
F5h	Next, disabling internal cache memory.
FBh	Next, detecting the type of flash ROM.

Checkpoint Code	Description
FCh	Next, erasing the flash ROM.
FDh	Next, programming the flash ROM.
FFh	Flash ROM programming was successful. Next, restarting the system BIOS.

Uncompressed Initialization Codes

The following runtime checkpoint codes are listed in order of execution. These codes are uncompressed in F0000h shadow RAM.

Checkpoint Code	Description
03h	The NMI is disabled. Next, checking for a soft reset or a power on condition.
05h	The BIOS stack has been built. Next, disabling cache memory.
06h	Uncompressing the POST code next.
07h	Next, initializing the CPU and the CPU data area.
08h	The CMOS checksum calculation is done next.
0Ah	The CMOS checksum calculation is done. Initializing the CMOS status register for date and time next.
0Bh	The CMOS status register is initialized. Next, performing any required initialization before the keyboard BAT command is issued.
0Ch	The keyboard controller input buffer is free. Next, issuing the BAT command to the keyboard controller.

Checkpoint Code	Description
0Eh	The keyboard controller BAT command result has been verified. Next, performing any necessary initialization after the keyboard controller BAT command test.
0Fh	The initialization after the keyboard controller BAT command test is done. The keyboard command byte is written next.
10h	The keyboard controller command byte is written. Next, issuing the Pin 23 and 24 blocking and unblocking command.
11h	Next, checking if **<End>** or **<Ins>** keys were pressed during power on. Initializing CMOS RAM if the *Initialize CMOS RAM in every boot* AMIBIOS POST option was set in AMIBCP or the **<End>** key was pressed.
12h	Next, disabling DMA controllers 1 and 2 and interrupt controllers 1 and 2.
13h	The video display has been disabled. Port B has been initialized. Next, initializing the chipset.
14h	The 8254 timer test will begin next.
19h	The 8254 timer test is over. Starting the memory refresh test next.
1Ah	The memory refresh line is toggling. Checking the 15 second on/off time next.
23h	Reading the 8042 input port and disabling the MEGAKEY Green PC feature next. Making the BIOS code segment writable and performing any necessary configuration before initializing the interrupt vectors.
24h	The configuration required before interrupt vector initialization has completed. Interrupt vector initialization is about to begin.

Checkpoint Code	Description
25h	Interrupt vector initialization is done. Clearing the password if the POST DIAG switch is on.
27h	Any initialization before setting video mode will be done next.
28h	Initialization before setting the video mode is complete. Configuring the monochrome mode and color mode settings next.
2Ah	Bus initialization system, static, output devices will be done next, if present. See page 91 for additional information.
2Bh	Passing control to the video ROM to perform any required configuration before the video ROM test.
2Ch	All necessary processing before passing control to the video ROM is done. Looking for the video ROM next and passing control to it.
2Dh	The video ROM has returned control to BIOS POST. Performing any required processing after the video ROM had control.
2Eh	Completed post-video ROM test processing. If the EGA/VGA controller is not found, performing the display memory read/write test next.
2Fh	The EGA/VGA controller was not found. The display memory read/write test is about to begin.
30h	The display memory read/write test passed. Look for retrace checking next.
31h	The display memory read/write test or retrace checking failed. Performing the alternate display memory read/write test next.
32h	The alternate display memory read/write test passed. Looking for alternate display retrace checking next.
34h	Video display checking is over. Setting the display mode next.

Checkpoint Code	Description
37h	The display mode is set. Displaying the power on message next.
38h	Initializing the bus input, IPL, general devices next, if present. See page 91 for additional information.
39h	Displaying bus initialization error messages. See page 91 for additional information.
3Ah	The new cursor position has been read and saved. Displaying the Hit **<DEL>** message next.
3Bh	The Hit **<DEL>** message is displayed. The protected mode memory test is about to start.
40h	Preparing the descriptor tables next.
42h	The descriptor tables are prepared. Entering protected mode for the memory test next.
43h	Entered protected mode. Enabling interrupts for diagnostics mode next.
44h	Interrupts enabled if the diagnostics switch is on. Initializing data to check memory wraparound at 0:0 next.
45h	Data initialized. Checking for memory wraparound at 0:0 and finding the total system memory size next.
46h	The memory wraparound test is done. Memory size calculation has been done. Writing patterns to test memory next.
47h	The memory pattern has been written to extended memory. Writing patterns to the base 640 KB memory next.
48h	Patterns written in base memory. Determining the amount of memory below 1 MB next.
49h	The amount of memory below 1 MB has been found and verified. Determining the amount of memory above 1 MB memory next.

Checkpoint Code	Description
4Bh	The amount of memory above 1 MB has been found and verified. Checking for a soft reset and clearing the memory below 1 MB for the soft reset next. If this is a power on situation, going to checkpoint 4Eh next.
4Ch	The memory below 1 MB has been cleared via a soft reset. Clearing the memory above 1 MB next.
4Dh	The memory above 1 MB has been cleared via a soft reset. Saving the memory size next. Going to checkpoint 52h next.
4Eh	The memory test started, but not as the result of a soft reset. Displaying the first 64 KB memory size next.
4Fh	The memory size display has started. The display is updated during the memory test. Performing the sequential and random memory test next.
50h	The memory below 1 MB has been tested and initialized. Adjusting the displayed memory size for relocation and shadowing next.
51h	The memory size display was adjusted for relocation and shadowing. Testing the memory above 1 MB next.
52h	The memory above 1 MB has been tested and initialized. Saving the memory size information next.
53h	The memory size information and the CPU registers are saved. Entering real mode next.
54h	Shutdown was successful. The CPU is in real mode. Disabling the Gate A20 line, parity, and the NMI next.
57h	The A20 address line, parity, and the NMI are disabled. Adjusting the memory size depending on relocation and shadowing next.

Checkpoint Code	Description
58h	The memory size was adjusted for relocation and shadowing. Clearing the Hit **<DEL>** message next.
59h	The Hit **<DEL>** message is cleared. The **<WAIT...>** message is displayed. Starting the DMA and interrupt controller test next.
60h	The DMA page register test passed. Performing the DMA Controller 1 base register test next.
62h	The DMA controller 1 base register test passed. Performing the DMA controller 2 base register test next.
65h	The DMA controller 2 base register test passed. Programming DMA controllers 1 and 2 next.
66h	Completed programming DMA controllers 1 and 2. Initializing the 8259 interrupt controller next.
67h	Completed 8259 interrupt controller initialization.
7Fh	Extended NMI source enabling is in progress.
80h	The keyboard test has started. Clearing the output buffer and checking for stuck keys. Issuing the keyboard reset command next.
81h	A keyboard reset error or stuck key was found. Issuing the keyboard controller interface test command next.
82h	The keyboard controller interface test completed. Writing the command byte and initializing the circular buffer next.
83h	The command byte was written and global data initialization has completed. Checking for a locked key next.
84h	Locked key checking is over. Checking for a memory size mismatch with CMOS RAM data next.

Checkpoint Code	Description
85h	The memory size check is done. Displaying a soft error and checking for a password or bypassing WINBIOS Setup next.
86h	The password was checked. Performing any required programming before WINBIOS Setup next.
87h	The programming before WINBIOS Setup has completed. Uncompressing the WINBIOS Setup code and executing the AMIBIOS Setup or WINBIOS Setup utility next.
88h	Returned from WINBIOS Setup and cleared the screen. Performing any necessary programming after WINBIOS Setup next.
89h	The programming after WINBIOS Setup has completed. Displaying the power on screen message next.
8Bh	The first screen message has been displayed. The **<WAIT...>** message is displayed. Performing the PS/2 mouse check and extended BIOS data area allocation check next.
8Ch	Programming the WINBIOS Setup options next.
8Dh	The WINBIOS Setup options are programmed. Resetting the hard disk controller next.
8Fh	The hard disk controller has been reset. Configuring the floppy drive controller next.
91h	The floppy drive controller has been configured. Configuring the hard disk drive controller next.
95h	Initializing the bus option ROMs from C800 next. See page 91 for additional information.
96h	Initializing before passing control to the adaptor ROM at C800.

Checkpoint Code	Description
97h	Initialization before the C800 adaptor ROM gains control has completed. The adaptor ROM check is next.
98h	The adaptor ROM had control and has now returned control to BIOS POST. Performing any required processing after the option ROM returned control.
99h	Any initialization required after the option ROM test has completed. Configuring the timer data area and printer base address next.
9Ah	Set the timer and printer base addresses. Setting the RS-232 base address next.
9Bh	Returned after setting the RS-232 base address. Performing any required initialization before the Coprocessor test next.
9Ch	Required initialization before the Coprocessor test is over. Initializing the Coprocessor next.
9Dh	Coprocessor initialized. Performing any required initialization after the Coprocessor test next.
9Eh	Initialization after the Coprocessor test is complete. Checking the extended keyboard, keyboard ID, and Num Lock key next. Issuing the keyboard ID command next.
A2h	Displaying any soft errors next.
A3h	The soft error display has completed. Setting the keyboard typematic rate next.
A4h	The keyboard typematic rate is set. Programming the memory wait states next.
A5h	Memory wait state programming is over. Clearing the screen and enabling parity and the NMI next.
A7h	NMI and parity enabled. Performing any initialization required before passing control to the adaptor ROM at E000 next.

Checkpoint Code	Description
A8h	Initialization before passing control to the adaptor ROM at E000h completed. Passing control to the adaptor ROM at E000h next.
A9h	Returned from adaptor ROM at E000h control. Performing any initialization required after the E000 option ROM had control next.
Aah	Initialization after E000 option ROM control has completed. Displaying the system configuration next.
Abh	Uncompressing the DMI data and executing DMI POST initialization next.
B0h	The system configuration is displayed.
B1h	Copying any code to specific areas.
00h	Code copying to specific areas is done. Passing control to INT 19h boot loader next.

Bus Checkpoint Codes

The system BIOS passes control to different buses at the following checkpoints:

Checkpoint Code	Description
2Ah	Initializing the different bus system, static, and output devices, if present.
38h	Initialized bus input, IPL, and general devices, if present.
39h	Displaying bus initialization error messages, if any.
95h	Initializing bus adaptor ROMs from C8000h through D8000h.

Additional Bus Checkpoints

While control is inside the different bus routines, additional checkpoints are output to I/O port address 0080h as word to identify the routines being executed.

These are word checkpoints. The low byte of checkpoint is the system BIOS checkpoint where control is passed to the different bus routines.

The high byte of checkpoint indicates that the routine is being executed in different buses.

High Byte

The high byte of these checkpoints includes the following information:

Bits	Description
Bits 7-4	0000 Function 0. Disable all devices on the bus.
	0001 Function 1. Initialize static devices on the bus.
	0010 Function 2. Initialize output devices on the bus.
	0011 Function 3. Initialize input devices on the bus.
	0100 Function 4. Initialize IPL devices on the bus.
	0101 Function 5. Initiate general devices on the bus.
	0110 Function 6. Initialize error reporting on the bus.
	0111 Function 7. Initialize add-on ROMs for all buses.
Bits 3-0	Specify the bus
	0 Generic DIM Device Initialization Manager.
	1 Onboard System devices.
	2 ISA devices.
	3 EISA devices.
	4 ISA PnP devices.
	5 PCI devices.

Appendix B: ASM
quick installation guide

This appendix shows you how to install the ASM software package.

Installing ASM

Acer Server Manager (ASM) consists of the ASM Console and the ASM Agent. These two components are both required to perform server management tasks.

System requirements

ASM requires TCP/IP connectivity between the ASM Console and the ASM Agent.

ASM Agent

- Intel Pentium III (500 MHz) or higher processor
- 128 MB of RAM
- SCSI/IDE hard drive with at least 100 MB free hard disk space
- Microsoft Windows NT 4.0 or Windows 2000 Server/Advanced Server operating system

ASM Console

- Intel Pentium III (500 MHz) or higher processor
- 128 MB of RAM
- SCSI/IDE hard drive with at least 100 MB free hard disk space
- Microsoft Windows 2000 Professional/XP/Server/Advanced Server operating system
- Ethernet card

System setup

Make sure that your system meets the requirements listed above before proceeding. You may also want to change your screen to 800 x 600 resolution or higher for optimum viewing.

Installing ASM Agent

To install ASM Agent:

1   Log in to the managed server using the Administrator account.

2   Insert the EasyBUILD™ Management CD into the server's CD-ROM drive.

    The installation sequence will automatically be displayed.

3   Select the option for ASM installation.

    The installation wizard will be initialized.

4   Follow all onscreen instructions to complete installation.

    For detailed instructions on installing ASM Agent, refer to the ASM User's manual.

To launch the program, on the Windows taskbar click on the **Start** button, point to **Programs**, select **Acer Server Management Suite** then click **ASM Agent**.

Installing ASM Console

To install ASM Console:

1   Log in to the target Windows-based PC using the Administrator account.

2   Insert the EasyBUILD™ Management CD into the computer's CD-ROM drive.

    The installation sequence will automatically be displayed.

3   Select the option for ASM installation.

    The installation wizard will be initialized.

4   Follow all onscreen instructions to complete installation.

    For detailed instructions on installing ASM Console, refer to the ASM User's manual.

To launch the program, on the Windows taskbar click on the **Start** button, point to **Programs**, select **Acer Server Management Suite** then click **ASM Console**.