Fortress 1100

User's guide

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Changes may be made periodically to the information in this publication without obligation to notify any person of such revision or changes. Such changes will be incorporated in new editions of this manual or supplementary documents and publications. This company makes no representations or warranties, either expressed or implied, with respect to the contents hereof and specifically disclaims the implied warranties of merchantability or fitness for a particular purpose.

Record the model number, serial number, purchase date, and place of purchase information in the space provided below. The serial number and model number are recorded on the label affixed to your computer. All correspondense concerning your unit should include the serial number, model number, and purchase information.

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:

- a When the power cord or plug is damaged or frayed
- b If liquid has been spilled into the product
- c If the product has been exposed to rain or water
- d 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.
- e If the product has been dropped or the cabinet has been damaged
- f If the product exhibits a distinct change in performance, indicating a need for service.

12 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.

Contents

1 System overview

The Fortress 1100 is a 1U, high-density, rack-mountable 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 Fortress 1100 system is a PCI bus based single processor system built on an optimized baseboard. It comes with a socket 370 processor slot utilizing one Intel® Pentium III (Celeron, Coppermine or Tualatin®) FC-PGA processor integrated with the VIA Apollo Pro133T chipset. The mainboard integrates the Intel 82550 10/100 Mbps PCI Ethernet chipset that supports WOL (Wake on LAN) for better remote site management.

For expandability, the system includes two 32-bit/33 MHz PCI bus slots and three DIMM slots that allow memory installation up to a maximum of 3.0 GB.

For connectivity, the mainboard provides two USB (Universal Serial Bus) connectors, PS/2 interfaces for mouse and keyboard, one UART serial port, and two LAN ports.

For its storage features, this system supports one slim-type CD-ROM drive, one slim-type floppy disk drive and two IDE ATA 100 hard disk drives.

The system is fully compatible with MS-DOS, Windows NT 4.0, Windows 2000 Server, Windows XP Server, NetWare, SCO UnixWare and Red Hat/ Caldera/SuSE/Turbo Linux.

Processors

The Intel Tualatin processor implements Dynamic Execution performance, a multi-transaction system bus, and Intel MMX media enhancement technology. It also offers Streaming SIMD (Single Instruction Multiple Data) Extensions - 70 new instructions enabling advanced imaging, 3D, streaming audio and video, and speech recognition applications. With its on-die 512-KB level two (L2) cache implementing the Advanced Transfer Cache Architecture, the Tualatin processor delivers higher performance than previous Pentium processors while maintaining binary compatibility with all previous Intel Architecture processors.

The mainboard supports one Coppermine (up to 1 GHz with 256K L2 cache) or Tualatin (up to 1.26 GHz with 512K L2 cache) processor with external front side bus up to 133 MHz.

Memory

The three DIMM sockets on board accept 128-, 256-, 512-MB and 1-GB registered ECC SDRAM (synchronous DRAM) DIMMs for a maximum memory capacity of 3.0 GB.

For data integrity, the default setting of the ECC (error correcting code) function of the memory system in BIOS is enabled. Refer to “IPMI Configuration” on page 85 for more information on this BIOS parameter.

Note: The mainboard supports PC-133 SDRAM DIMMs working under 3.3 volts only; 5-volt memory devices are not supported.

Refer to “Mainboard layout” on page 38 for the location of these DIMM slots on the mainboard.

System chipsets

VIA Apollo Pro 133T chipset

The VIA Pro 133T chipset was specifically designed to meet the needs of high performance systems. It consists of two components: 694T (north bridge) and 686B (south bridge).

- 694T (north bridge) provides the host interface and memory system control interface.
- 686B (south bridge) integrates super I/O functions like keyboard and mouse interface, floppy disk controller, advanced digital data separator, one compatible serial port (UART), one floppy direct drive support and Intelligent Power Management (IPM) support.

LAN subsystem

Another cost-effective feature for network solution is the integration of four Intel 82550 10/100 Mbps Fast Ethernet controllers. With its sophisticated 32-bit PCI component and enhanced scatter-gather bus mastering capabilities, it enables high-level command processing and multiple operations which lowers CPU utilization. It also offers several new features including:

- IPSec integration
- Host side cardbus interface

- Enhanced power management
- Optimized support for flash devices and modem combination interface
- Auto-Negotiation capability

Video subsystem

The ATI Rage XL harbors 2D and 3D display capabilities that bring life to any multimedia and work applications. It also supports hardware DVD decoding. With remarkable color depths and high resolutions of up to 1600 x 1200 it enhances every visual experience on your system.

The onboard ATI Rage XL chipset comes with 4 MB VRAM (video RAM) and supports up to 1024 x 768 display mode at high colors.

Expansion slot

PCI bus

The mainboard has two 32-bit/33 MHz PCI bus slots with a riser card.

Hardware management support

The mainboard supports a 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 feature which helps save users from configuration problems, thus making the system more user-friendly.

Features summary

The system has the following major components:

- FC-PGA dual socket that supports a Pentium III Coppermine, Tualatin or Celeron) processor running at 1.13 GHz and1.26 GHz and future generations of Pentium III CPUs
- VIA Apollo Pro133T chipset which includes the north and the south bridge
- Onboard 10/100 Mbp/s Intel 82550 LAN chip that supports WOL
- Four DIMM sockets that accept 128-, 256- and 512-MB SDRAM (synchronous DRAM) DIMMs for a maximum memory capacity of 1.0 GB
- Storage support for:
    - One slim-type CD-ROM drive
    - One slim-type floppy disk drive
    - IDE disk drive interfaces
- Two 32-bit/33 MHz PCI slots
- ATI Rage XL video chipset
- System clock/calendar with battery backup
- Auxiliary power connector for 100 watts SPS and ATX power supply
- External ports:
    - 2 USB ports
    - PS/2-compatible keyboard ports
    - PS/2-compatible mouse port
    - 1 serial port
    - 2 LAN ports (RJ-45)
    - Monitor/VGA port

Weight

The table below lists the weight of individual components used in deployment of this system in third-party racks.

Item	Weight in Kg	Weight in lbs
Fully configured system	10.5 Kg	23.1 lbs
Rack mount kit	3.1 Kg	6.82 lbs
CPU and heat sink	0.35 Kg	0.77 lbs
Hard disk drive	1Kg	2.2 lbs
Power supply module	1.3 Kg	2.86 lbs
Floppy disk drive	0.16 Kg	0.35 lbs
CD-ROM drive	0.3 Kg	0.66 lbs
PCI card	0.04 ~ 0.4 Kg	0.09 ~ 0.88 lbs

Power consumption

The server power supply is rated for a maximum 100W DC output. Maximum input AC power consumption is approximately 124W.

- Using 110V AC power, a fully loaded system can consume up to 2A.
- Using 220V AC power, a fully loaded system can consume up to 1A

Deployment of ultra-dense 1U servers represent a significant power requirement. A simple formula to calculate server power requirements for an installation is:

(Number of servers) x (124W) = maximum power requirements for servers

Thermal dissipation

The server has the following cooling systems:

- Two 4-cm CPU fans
- Two rear chassis blowers

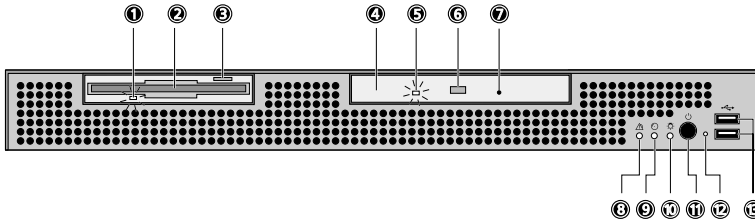
A fully configured server system under maximum workload can produce approximately 307 BTU/hr. Air temperature measurements around the server may vary as much as 25°C (45°F) from front to back. Deployment of multiple ultra-dense servers will produce a significant amount of heat. For example, 42 servers under maximum workload can generate as much as 12923 BTU/hr.

2 System tour

This chapter discusses the features and components of your system. Instructions on how to set up your system and connect basic and optional peripherals are also explained.

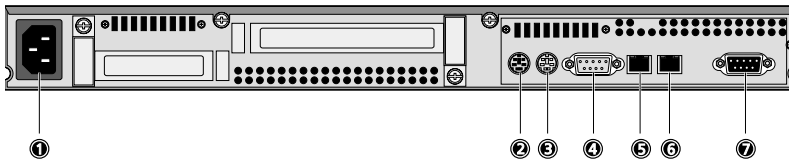
External and internal structure

Front panel



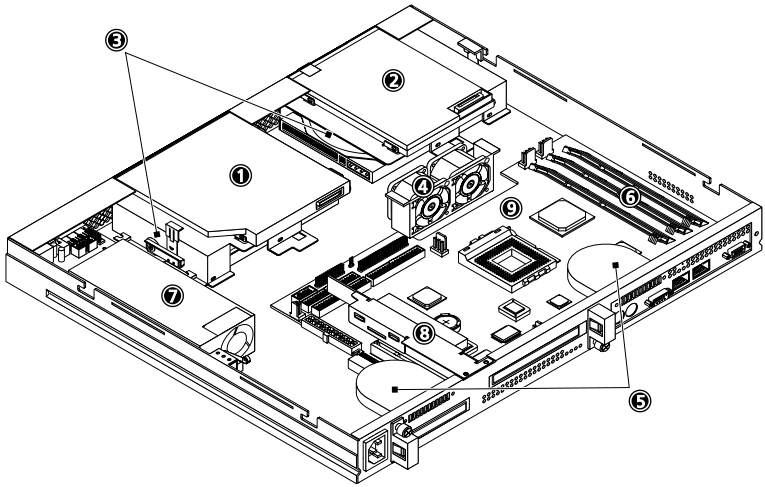
No.	Description
1	Floppy disk drive activity indicator
2	Floppy disk drive
3	Floppy disk drive eject button
4	CD-ROM drive
5	CD-ROM activity indicator
6	CD-ROM eject button
7	CD-ROM emergency eject button
8	System health indicator
9	Hard disk activity indicator
10	Power Indicator
11	Power button
12	Reset button
13	USB ports (2 ports, black)

Rear panel



No.	Color	Description
1	Black	Power
2	Light green	Mouse
3	Violet	Keyboard
4		Serial Port
5		LAN
6		LAN
7	Blue	Monitor

Internal components



No.	Item
1	Slim type CD-ROM drive
2	Slim type floppy drive
3	IDE hard disk drive bay
4	CPU fan module
5	Chassis blowers
6	DIMM sockets
7	Power supply
8	Riser card
9	Mainboard

Disk drives

Your system comes with the following disk drives:

Hard disk drive

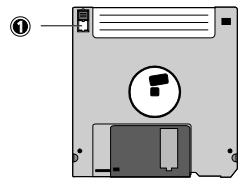
Your systemcan support two slim-type 3.5-inch IDE hard disk drives.

3.5-inch floppy disk drive

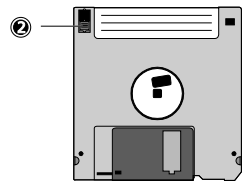
Your system's 3.5-inch slim-type floppy disk drive can handle 1.44- and 2.88-MB capacity diskettes.

Floppy diskettes are compact, lightweight, and easy to carry around. Here are some tips on how to take care of your diskettes:

- Always make backup copies of the diskettes that contain important data or program files.
- Keep diskettes away from magnetic fields and sources of heat.
- Avoid removing a diskette from the floppy drive when the drive activity indicator is on.
- Write-protect your diskettes to prevent accidental erasure. To do this, slide the write-protect tab to the write-protect position (1).



Sliding the write-protect tab to the not-write-protect position (2) will allow you to store and modify data in your diskettes.



- When you put a label on a 3.5-inch diskette, make sure that the label is properly attached (flat on the surface) and within the labeling area (area with a slight surface depression) on the diskette. An improperly attached label may cause a diskette to get stuck in the floppy drive when you are inserting or removing it.

CD-ROM drive

Your system comes with a slim-type CD-ROM drive. This drive is located on the front panel of your system. The CD-ROM drive allows you to play different types of compact discs (CDs) and video CDs.

CDs, like diskettes, are also compact, lightweight, and easy to carry around. However, they are more delicate than diskettes and must be handled with extra care.

To insert a CD into your system's CD-ROM drive:

1 Gently press the eject button located on the front panel.

2 When the disc tray slides open, insert the CD. Make sure that the label or title side of the disc is facing upward.

Caution! Hold the disc by the edges to avoid leaving smudges or fingerprints.

3 Press the eject button again to close the tray.

Ejecting the CD tray

- To eject the CD or DVD tray when the computer is turned on, press the CD-ROM drive eject button
- To eject the CD or DVD tray when the computer is turned off, insert the tip of a pen or a paperclip into the emergency eject hole to pop out the tray.

To take care of your CDs:

- Keep your discs in a disk case when not in use to avoid scratches or other damage. Any kind of dirt or damage can affect the data on the disc, impair the disc lens reader on the CD-ROM drive, or stop the system from successfully reading the disc.
- When handling discs, always hold them by the edges to avoid smudges or fingerprints.
- When cleaning discs, use a clean, dust-free cloth and wipe in a straight line from the center to the edge. Do not wipe in a circular motion.
- Clean your CD-ROM drive periodically. You may refer to a cleaning kit for instructions. Cleaning kits can be purchased in any system or electronics shop.

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:

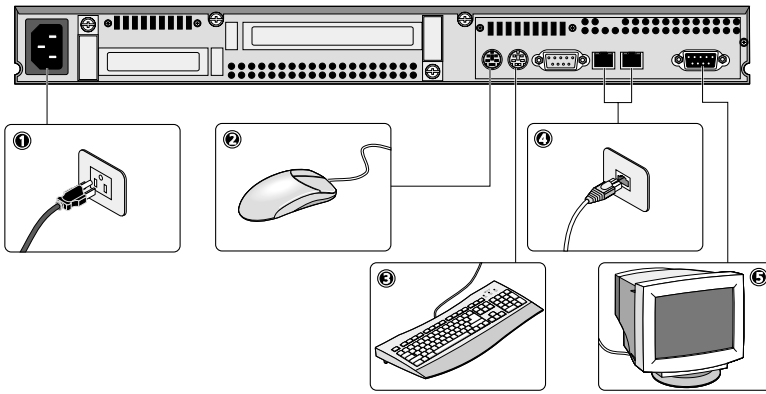
- Fortress 1100 system
- Fortress 1100 User's guide
- One rackmount kit
- Fortress Easy Installation Guide
- One heatsink
- One ASM CD and one driver CD
- Accessories package

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, PS/2 keyboard, PS/2 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 power cable

Plug the power cable into the power cable socket located on the rear panel of your system. Then plug the other end of the power cable into a power outlet. The figure below shows a complete connection of the whole system.

Connecting the PS/2 mouse

Plug the PS/2 mouse cable into the PS/2 mouse port (green port) located on the rear panel of your system

Note: If you are using a USB mouse, plug the mouse cable into either USB ports located on the front panel of your system.

Connecting the PS/2 keyboard

Plug the PS/2 keyboard cable into the PS/2 keyboard port (purple port) located on the rear panel of your system.

Note: If you are using a USB keyboard, plug the mouse cable into either USB ports located on the front panel of your system.

Connecting to the network

You can connect your computer to a Local Area Network (LAN) using a network cable. To do so, simply plug the network cable into any of the two network ports (black port) located on the rear panel of your system.

Note: Consult your operating system manual for information on how to configure your network setup.

Connecting the VGA monitor

To connect the VGA monitor, simply plug the monitor cable into the monitor/VGA port (blue port) located on the rear panel of your system.

Connecting options

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 system comes with two USB ports located on the front panel. These ports allow you to connect additional serial devices to your system without using up its system resources.

To connect a USB device, simply plug the device cable into either USB ports  (black port) located on the front panel of your system.

Note: Most USB devices have a built-in USB port which allows you to daisy-chain other devices.

Turning on your system

After making sure that you have set up the system properly and connected all the required cables, you can now power on your system.

To power on the system, press the power button on the front panel. 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 POST messages, you can determine if the system is in good condition by checking if the following occurred:

- Power indicator on the front bezel lights up (green)
- Num Lock, Caps Lock, and Scroll Lock 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 cable socket on the rear panel. Make sure that the cable is properly connected to the power source and to the power cable socket.
- 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 assist 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.

Turning off your system

To turn off your computer, on the Windows taskbar click on the **Start** button, point to **Shut Down...**, select **Shut down** from the drop-down window then click on **OK**. You can then turn off all peripherals connected to your computer.

If you cannot shut down your computer, press the power button for at least four seconds. Quickly pressing the button may put the computer in a Suspend mode only.

System maintenance

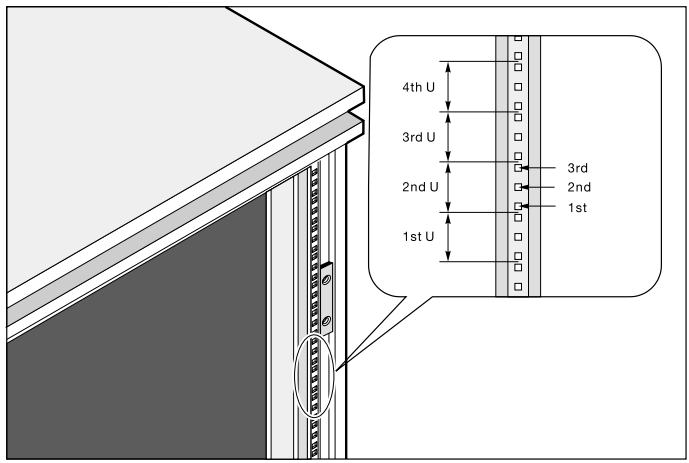
When servicing or performing maintenance tasks on the system, press the Service ID button, either the one located on the front panel or the one on the rear panel to turn on the Service ID indicator (red light) located on the rear panel. This will notify users that the system is being service and is non-operational.

System rack installation

Important! Observe the electrostatic discharge (ESD) precautions indicated on page 34 when perfoming the following procedures. Do not attempt the procedures described in the following sections unless you are a qualified technician.

Vertical mounting hole pattern

The four vertical rails of the system rack contain mounting holes arranged in a manner shown in the figure below:



The system occupies 1U in the rack. Count the U positions and hole numbers from the bottom up.

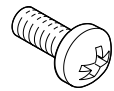
Note: The unit of measurement used in this document is "U" (1U = 1.75 inches or 44.45 mm). The total sum of the heights of all components in the rack measured in "U" cannot exceed the height of the rack. For more information, refer to the documentation that came with your system rack.

The distance from the center of two holes with closer spacing to the center of the next pair is equivalent to 1U.

When installing components, you must start your measurement from the center of the two holes with closer spacing. Otherwise, the screw holes on the component may not match those on the rack.

Screw types used

The following screws are used in the assembly of this system and the bundled rack-mountable components:

Screw type and part number	Figure	Usage
M3 x L6 86.5A524.6R0		Securing the front panel latch to the system
M4 x L5 86.6A536.8R0		Securing the component rails to the system
M6 x L10 86.6A52A.100		1. Securing the cable carrier and the mounting rails to the rack 2. Securing the system to the rack
#6-32 x 1/4” 86.BA226.016		1. Securing the cable carrier bracket to the system 2. Securing the cable carrrier to the cable carrier bracket
Locating ring for Knurr rack 34.94815.001		Supports the M6 metal screws for securing system components to the Knurr rack
Locating ring for Rittal rack 34.94814.001		Supports the M6 metal screws for securing system components to the Rittal rack

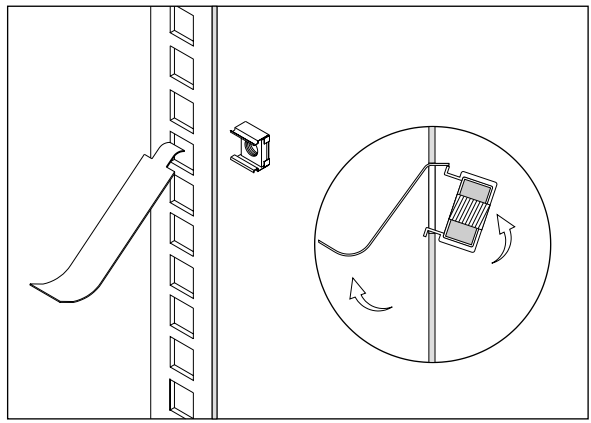
Installing cage nuts

Cage nuts are use to secure systems and other components to the vertical rails in the rack.

To install cage nuts:

1 Insert the lower lip of the cage nut over the bottom of the opening at the back of a rail.

2 Insert the small end of the cage-nut installation tool through the opening in front of the rail and hook the tool over the top lip of the cage nut as shown below.

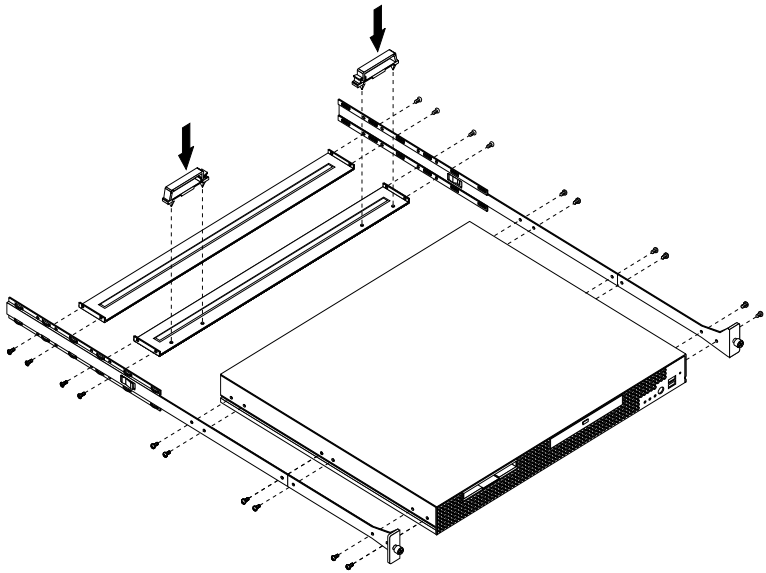


3 Push in the cage nut while rotating the tool up and pulling the tool back toward you until the top lip of the cage nut snaps into position.

4 Repeat this process to install the other cage nuts in their appropriate locations.

Installing the system into the rack

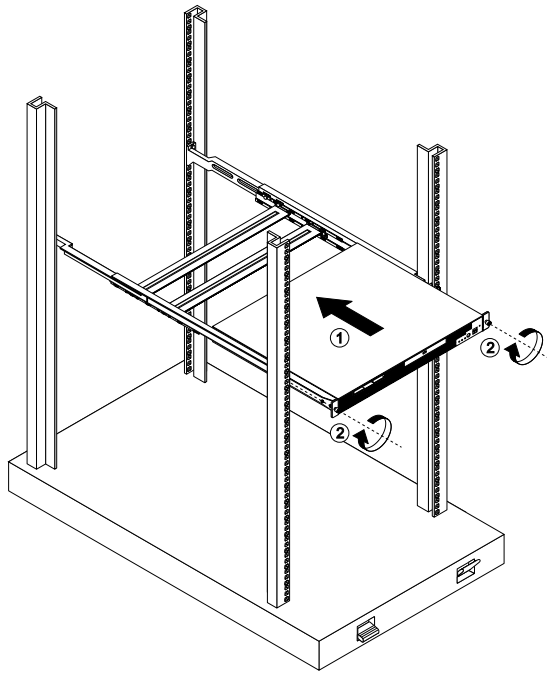
1 Attach the two component rails to the server with eight M4 x L5 screws.
Attach the two front panel latch with four M3 x L6 screws.



2 Assemble the mounting rails. Each of the two mounting rails consist of two outer brackets and a single inner bracket.

a Slide in the two outer brackets to the inner bracket to align the screw holes.

b Secure the pieces together with four M4 x L5 screws per rail.



3 Install the mounting rails with the cable carrier to the rack using three M6 x L10 screws.

You need first to insert the locating ring into the rack mount hole before securing the mounting rail with the screws.

Note: The system occupies 1U in the rack. Count the U positions and hole numbers from the bottom up. Secure the mounting bracket on the 1st and the 2nd holes of the 1st U using four M6 x L10 screws. Make sure that both mounting rails are at the same level. Take note of the vertical rail hole pattern. See “Vertical mounting hole pattern” on page 25.

3 Upgrading your system

This chapter contains basic information about your system boards that you will find helpful when performing the instructions of the upgrade process which are also discussed in this chapter.

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.

2 Unplug all cables from the power outlets.

3 Open your system according to the instructions on page 33.

4 Follow the ESD precautions described above when handling a computer component.

5 Remove any expansion board(s) or peripheral(s) that block access to the DIMM socket or other component connector.

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

Warning! **Warning! Failure to properly turn off the computer before you start installing 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 all components are installed according to the described step-by-step instructions.

2 Replace any expansion board(s) or peripheral(s) that you have previously removed.

3 Connect the necessary cables.

4 Replace the system cover.

5 Turn on the system.

Opening your system

Caution! Before you proceed, make sure that you have turned off your system and all peripherals connected to it. Read the “Preinstallation instructions” on page 33.

Warning! 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.

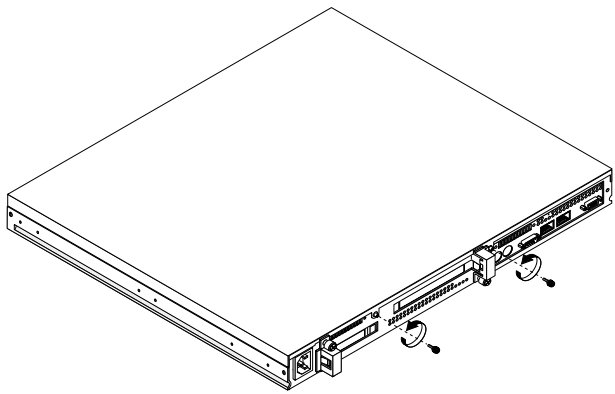
Removing the system cover

You need to open your system before you can install additional components.

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

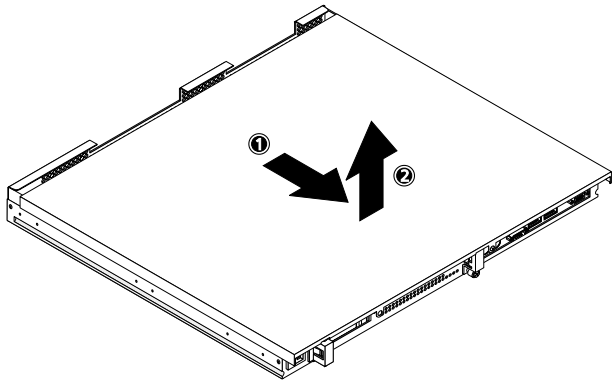
2 Place your system unit on a flat, steady surface.

3 Turn the two thumbscrews counterclockwise to release the cover.



4 Push the top cover approximately 2 cm backwards (1).

5 Hold the top cover with both hands and lift the cover upward to detach it from the housing.



Replacing the system cover

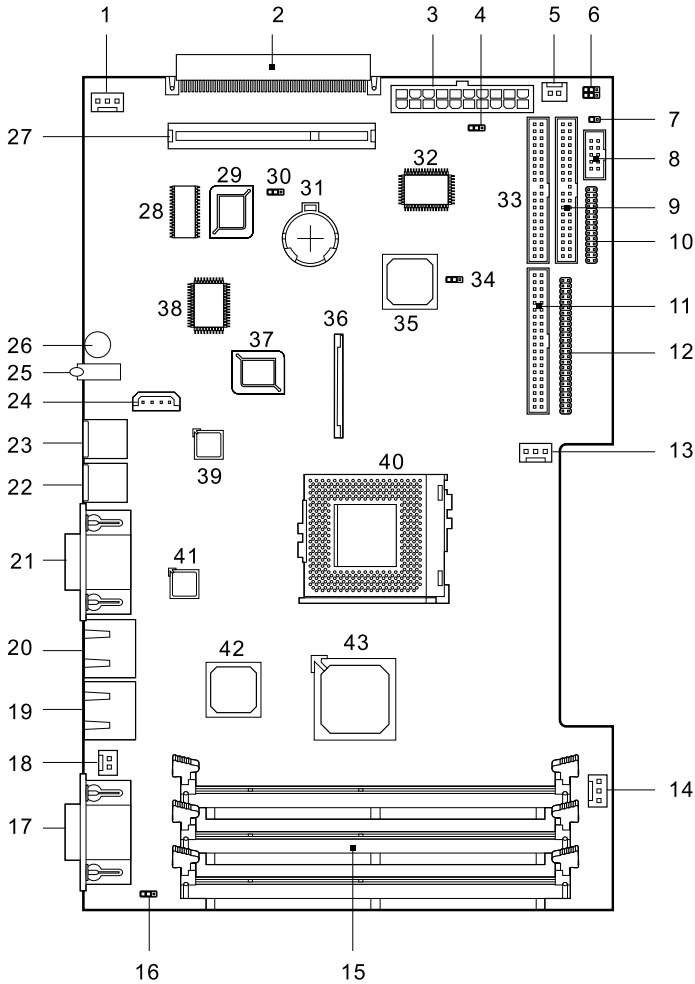
1 Align the top cover with the housing frame and slide it back into place.

2 Turn the thumbscrew clockwise to secure the cover.

System boards

Mainboard layout

The mainboard becomes accessible once you open the system. It should look like the figure shown below..



Number	Jumper/ Connector	Connects to...
1	JP1	FAN1
2	CN1	PCI low profile card
3	CN3	ATX power supply
4	JP2	IDE/RAID or ATA interface 1-2: RAID 2-3: ATA
5	CN2	Power supply fan sensor
6	JP10	Power on by South Bridge or IPMI 1-3 & 2-4: By South Bridge 3-5 & 4-6: By IPMI
7	JP4	Intrusion alarm cable
8	CN5	USB cable
9	CN7	RAID secondary channel
10	CN8	LED board cable
11	CN11	IDE primary channel
12	CN12	Slim type CD-ROM drive
13	JP6	FAN2
14	JP8	FAN3
15	DM1~3	DIMM
16	JP5	VGA IRQ 1-2: Disable 2-3: Enable
17	CN17	Monitor
18	JP7	FAN4
19	CN15	RJ45
20	CN16	RJ45
21	CN14	COM1
22	JK2	PS/2 keyboard
23	JK1	PS/2 mouse
24	CN9	IPMB connector
25	LED1	System event LED 1
26	BUZ1	Buzzer

Number	Jumper/ Connector	Connects to...
27		Riser card
28	U6	Memory
29	U7	IPMI ROM
30	JP3	Clear CMOS 1-2: Normal 2-3: Clear CMOS
31	BT1	RTC battery
32	U1	Promise PDC20265R
33	CN6	RAID primary channel
34	JP11	BIOS restore function 1-2: Disable 2-3: Enable
35	U14	VIA VT82C686B
36	CN13	Slim type floppy disk drive
37	U29	System BIOS
38	U16	Winbond W83910F IPMI controller
39	U41	Intel 82550 LAN controller
40	U44	CPU
41	U45	Intel 82550 LAN controller
42	U50	ATI Rage XL
43	U51	VIA VT82C694T

IDE RAID / ATA controller jumper (JP2)

This jumper allows you to decide the system to support IDE RAID or ATA interface.

IDE RAID (default) 1-2
ATA 2-3

Clear CMOS jumper (JP3)

This jumper allows you to enable or disable CMOS clearing function on the system board.

Normal (default)	1-2
Clear CMOS	2-3

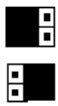
VGA interrupt jumper (JP5)

This jumper allows you to enable or disable VGA sending IRQ to the system.

Disable (default)	1-2
Enable	2-3

Power on circuit jumper (JP10)

This jumper allows you to decide the system is powered on by IPMI or South Bridge.



Power on by South Bridge 1-3 and 2-4

Power on by IPMI 3-5 and 4-6 (default)

BIOS restore jumper (JP11)

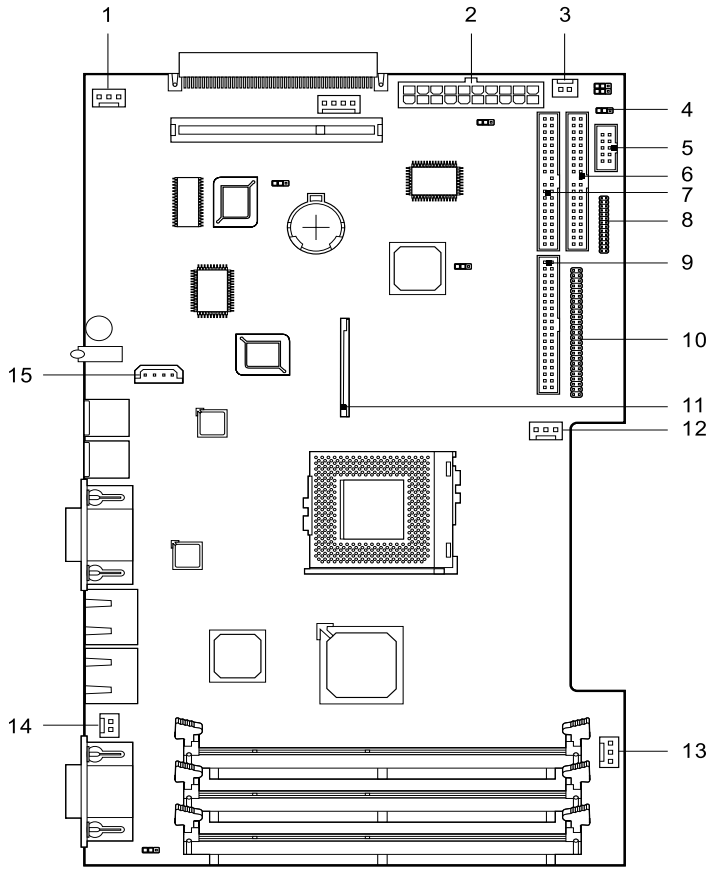
This jumper allows you to enable or disable the BIOS restore function.

Disable (default)	1-2
Enable	2-3

Internal cabling

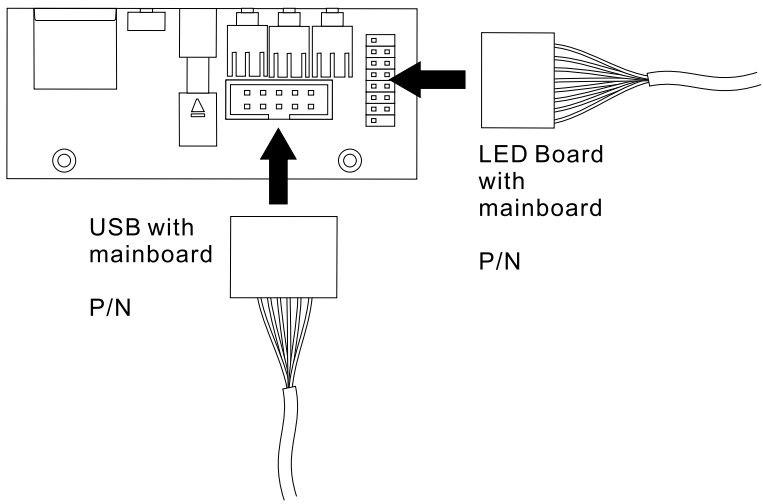
System board

Basic cabling (without PS, fan print, fan)

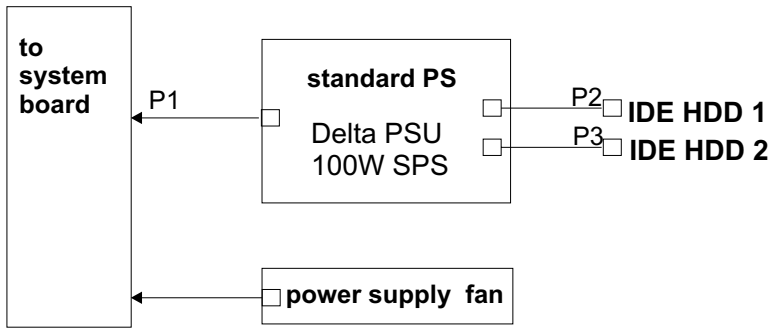


Number	Connects to...	Part Number
1	FAN1	23.10056.001
2	ATX power supply	60.04100.101
3	Power supply fan sensor	
4	Intrusion alarm cable	
5	USB cable	50.93A04.001
6	RAID secondary channel	
7	RAID primary channel	
8	LED board cable	
9	IDE primary channel	50.93A05.001
10	Slim type CD-ROM drive	50.93A03.001
11	Slim type floppy disk drive	50.93A07.001
12	FAN2	23.10056.001
13	FAN3	23.10056.001
14	FAN4	23.10055.001
15	IPMB connector	

Front panel cable:



Standard power supply, fan



Hard disk cabling

Connecting IDE RAID Hard Disk Drives

The following rules should provide a better understanding of how to connect IDE RAID hard disk drives to the associated controllers.

1 Non-RAID Configurations

- Internal hard disk drives are always connected to channel 0 (CHA) on the onboard IDE RAID controller.
- Backup devices are connected to channel 1 (CHB) on the onboard IDE RAID controller.

2 RAID Configurations

- Internal hard disk drives are always connected to channel 0 of the RAID controller installed in the slot with the highest (system board) identification number.
- The RAID controller is the first controller in the boot order only if it has the highest “slot identification number” of all installed IDE RAID controllers.
- Backup devices are connected to channel 1 (CHB) on the onboard IDE RAID controller.

3 Additional Controllers

- Should additional IDE/RAID controllers be installed, these are then available to connect external devices.

Installing an expansion card

Restrictions for PCI slots:

- PCI slot 1(via riser card):
  no 64Bit PCI board possible, only 32Bit/33MHz
  Maximum length: 175mm
- PCI slot 2 (on system board):
  no 64Bit PCI board possible, only 32Bit/33MHz
  Must be PCI low profile
  Maximum length: 170mm

Removing/installing a board

1 Shut down the operating system.

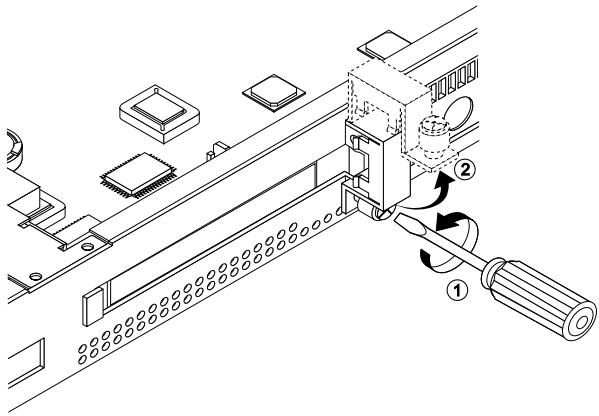
2 Switch off the server and disconnect it from the power supply.

Caution: The power button does not disconnect the server from the line voltage. To completely disconnect it from the line voltage, remove the power plug from the socket.

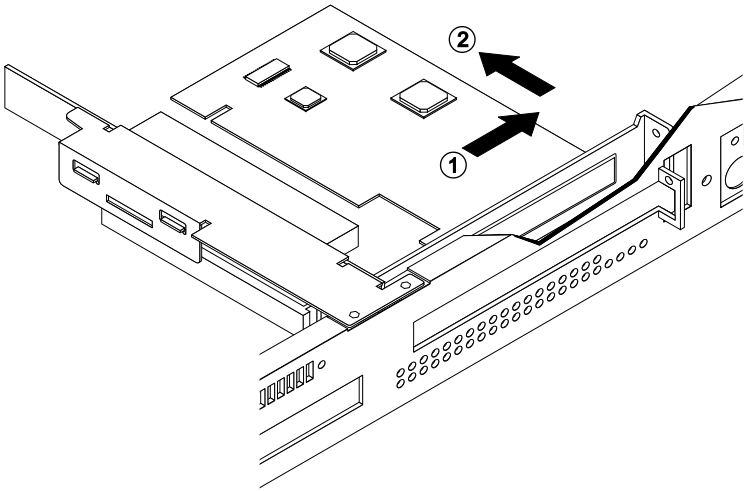
3 Open the server (see "Opening your system" on page 35).

4 Remove all cables from the card.

5 Turn the thumbscrew on the retainer counterclockwise (1). Lift the retainer to free the slot cover (2).



6 Pull the card out of the slot.



Warning! **Do not dispose the rear slot cover. For cooling, protection against fire and in order to comply with EMC regulations, you must refit the rear slot cover if you remove the board.**

The installation of an expansion card is done in reverse order.

7 Close the server (see "Replacing the system cover" on page 36).

Accessible drives

The server accommodates two hard disk drives. One is belowthe CD-ROM drive and the other one is below the floppy disk drive. When installing or removing drives, the following points must be observed:

IDE disk drive

- The drive must be entered in the *BIOS Setup* (see description of *BIOS Setup*).
- The proper master-slave setting must be set on the drive:
  - If the drive is connected to an IDE channel alone, then the drive must be set as the master.
  - If the drive is connected to an IDE channel together with a second drive, then one drive must be set as the master and the other as the slave.
- Always read the related documentation from the hardware provider before installing or removing a hard disk drive.

Installing/removing hard disks

Replacing the hard disk drive below the floppy disk drive

1 Shut down the operating system.

2 Switch off the server and disconnect it from the power supply.

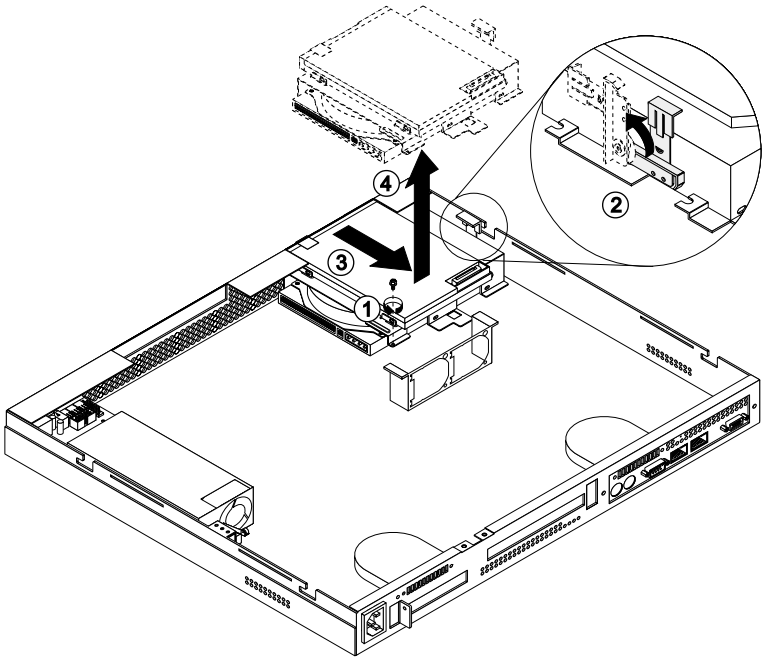
Caution: The power button does not disconnect the server from the line voltage. To completely disconnect it from the line voltage, remove the power plug from the socket.

3 Open the server (see "Opening your system" on page 35).

4 Remove the cables from all drives.

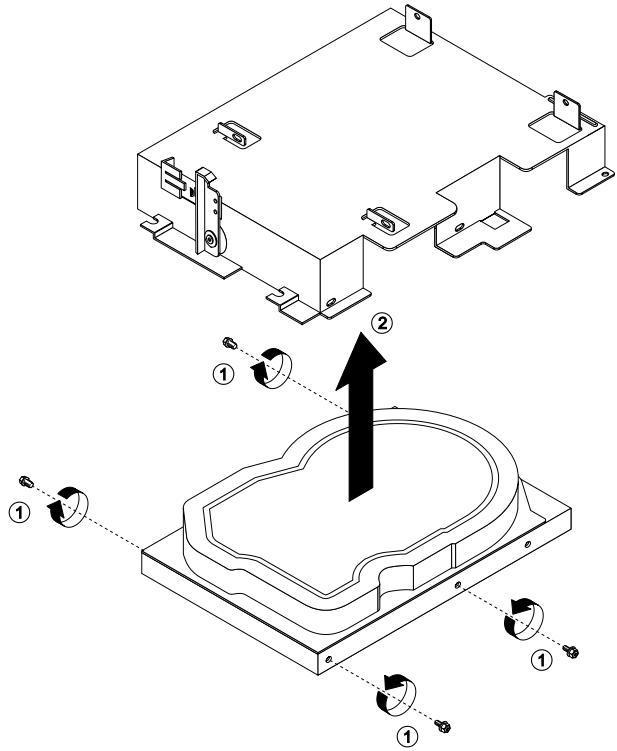
5 Remove the screw (1) and push the module lock lever (2) to unlock the floppy disk drive and hard disk drive combo module.

6 Push the combo module approximately 1 cm backwards (3) and remove the module (4).



7 Remove the floppy disk drive (see "Changing the floppy disk drive" on page 52).

8 Remove the mounting screws from the hard disk drive and detach the hard disk drive.



The new hard disk drive is installed in the reverse order.

9 Close the server (see "Replacing the system cover" on page 36).

Replacing the hard disk drive below the CD-ROM drive

1 Shut down the operating system.

2 Switch off the server and disconnect it from the power supply.

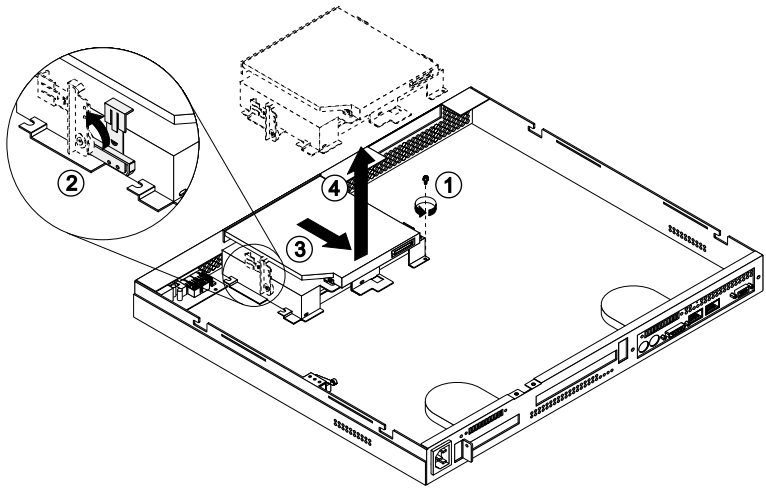
Caution: The power button does not disconnect the server from the line voltage. To completely disconnect it from the line voltage, remove the power plug from the socket.

3 Open the server (see "Opening your system" on page 35).

4 Remove the cables from all drives.

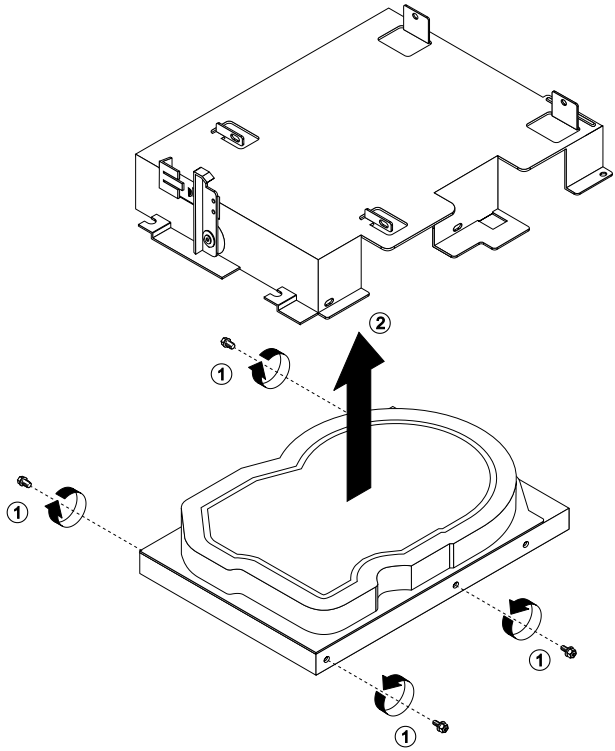
5 Remove the screw (1) and push the module lock lever (2) to unlock the CD-ROM drive and hard disk drive combo module.

6 Push the combo module approximately 1 cm backwards (3) and remove the module (4).



7 Remove the CD-ROM drive (see "Changing the CD-ROM drive" on page 54).

8 Remove the mounting screws from the hard disk drive and detach the hard disk drive.



The new hard disk drive is installed in the reverse order.

9 Close the server (see "Replacing the system cover" on page 36).

Changing the floppy disk drive

1 Shut down the operating system.

2 Switch off the server and disconnect it from the power supply.

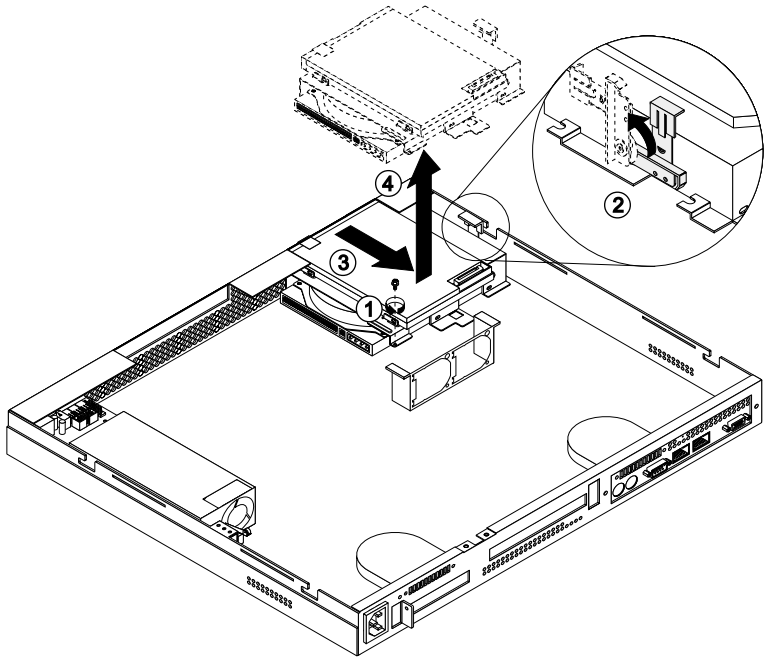
Caution: The power button does not disconnect the server from the line voltage. To completely disconnect it from the line voltage, remove the power plug from the socket.

3 Open the server (see "Opening your system" on page 35).

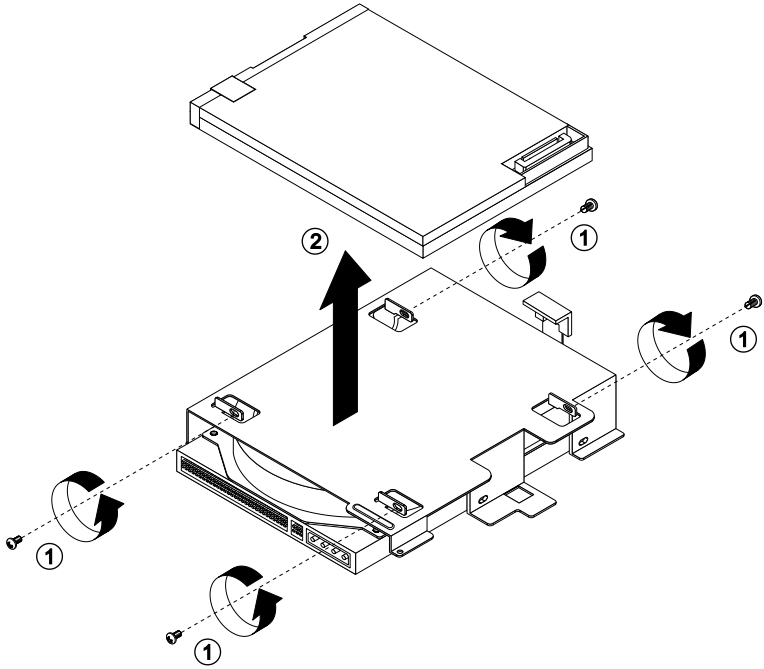
4 Remove the cables from all drives.

5 Remove the screw (1) and push the module lock lever (2) to unlock the floppy disk drive and hard disk drive combo module.

6 Push the combo module approximately 1 cm backwards (3) and remove the module (4).



7 Remove the four mounting screws from the floppy disk drive and detach the floppy disk drive.



The new floppy drive is installed in the reverse order.

8 Close the server (see "Replacing the system cover" on page 36).

Changing the CD-ROM drive

1 Shut down the operating system.

2 Switch off the server and disconnect it from the power supply.

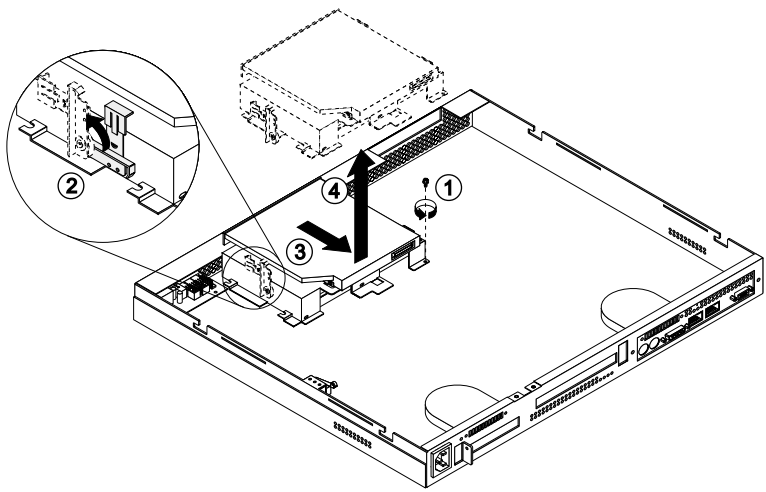
Caution: The power button does not disconnect the server from the line voltage. To completely disconnect it from the line voltage, remove the power plug from the socket.

3 Open the server (see "Opening your system" on page 35).

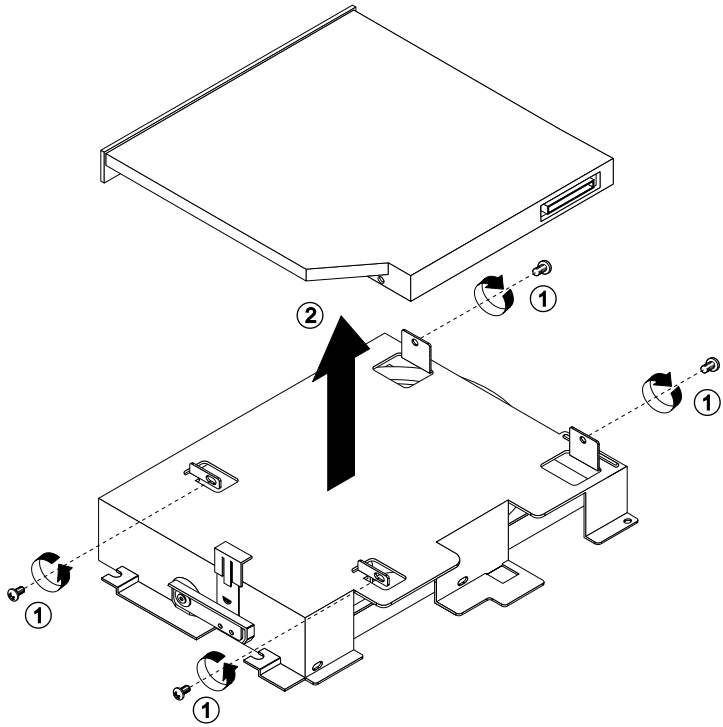
4 Remove the cables from all drives.

5 Remove the screw (1) and push the module lock lever (2) to unlock the 5.25-inch CD-ROM drive and hard disk drive combo module.

6 Push the combo module approximately 1 cm backwards (3) and remove the module (4).



7 Remove the four mounting screws from the CD-ROM drive and detach the CD-ROM drive.



8 The new CD-ROM drive is installed in the reverse order.

9 Close the server (see "Replacing the system cover" on page 36).

Removing and installing the CPU

This system is equipped with one processor. There are basic units with different Pentium III processors.

Caution: Processors are components which are extremely sensitive to electrostatic discharges and must be handled with caution. After taking a processor out of its protective wrapper or out of a socket, set it on an insulated antistatic surface with the smooth side down. Never slide a processor over a surface.

Follow these steps to remove and install a CPU:

1 Shut down the operating system.

2 Switch off the server and disconnect it from the power supply.

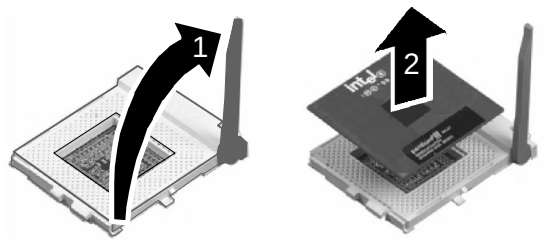
Caution: The power button does not disconnect the server from the line voltage. To completely disconnect it from the line voltage, remove the power plug from the socket.

3 Open the server (see "Opening your system" on page 35.

4 Locate the CPU socket on the mainboard.

5 Unhinge the release lever by pushing it lightly to one side and then turn it approximately 90 degrees in the direction of the arrow(1).

6 Carefully lift the installed processor out of the socket (2).



7 Position the new processor over the socket and insert it into the socket by carefully pushing downwards.

Removing and installing the CPU fan module

Follow these steps to remove the CPU fan module:

1 Shut down the operating system.

2 Switch off the server and disconnect it from the power supply.

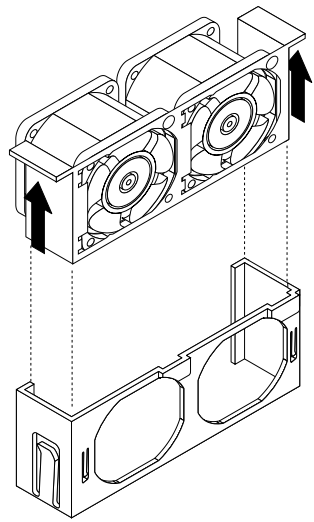
Caution: The power button does not disconnect the server from the line voltage. To completely disconnect it from the line voltage, remove the power plug from the socket.

3 Open the server (see "Opening your system" on page 35).

4 Locate the CPU fan module on the motherboard (refer to "Internal components" on page 13).

5 Pull the cable off the CPU fan module.

6 Lift out the CPU fan module.



7 The new CPU fan module is installed in the reverse order.

8 Close the server (see "Replacing the system cover" on page 36).

Removing and installing the rear chassis blowers

This system has two rear chassis blowers. Follow these steps to replace the rear chassis blowers:

1 Shut down the operating system.

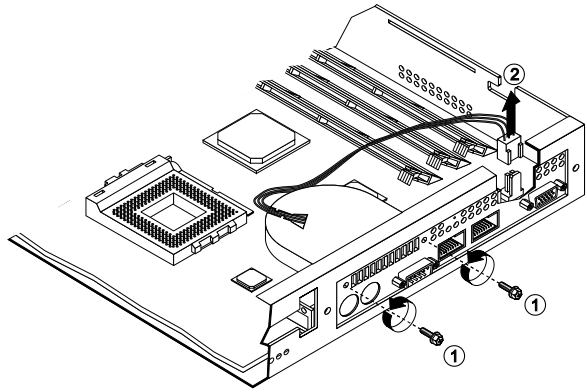
2 Switch off the server and disconnect it from the power supply.

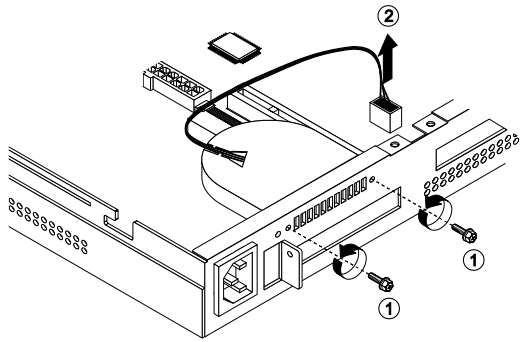
Caution: The power button does not disconnect the server from the line voltage. To completely disconnect it from the line voltage, remove the power plug from the socket.

3 Open the server (see "Opening your system" on page 35).

4 Locate the chassis fan blowers on the motherboard (refer to "Internal components" on page 13).

5 Remove the screws that fix the chassis blower to the chassis (1) and disconnect the blower power cable (2) from the motheboard.





6 The new chassis fan blower is installed in the reverse order.

7 Close the server (see "Replacing the system cover" on page 36).

4 BIOS Setup utility

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

BIOS Setup utility

The BIOS Setup utility is a hardware configuration program built into your computer's Basic Input/Output System (BIOS). Since most computers are already properly configured and optimized, there is no need to run this utility. However, if you encounter configuration problems and get the "Run Setup" message, you will need to run this utility.

The Setup program loads the configuration values in a battery-backed nonvolatile memory called CMOS RAM. This memory area is not part of the system RAM which allows configuration data to be retained when power is turned off.

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.

Entering Setup

Power on the computer to start the system POST (Power On Self Test) process. While booting, press the key combination **Ctrl+Alt+Esc** simultaneously.

The Basic Setup Utility main menu will appear.

Note: You must press **Ctrl+Alt+Esc** while the system is booting. This key combination does not work during any other time.

The system supports two Setup Utility levels: Basic and Advanced.

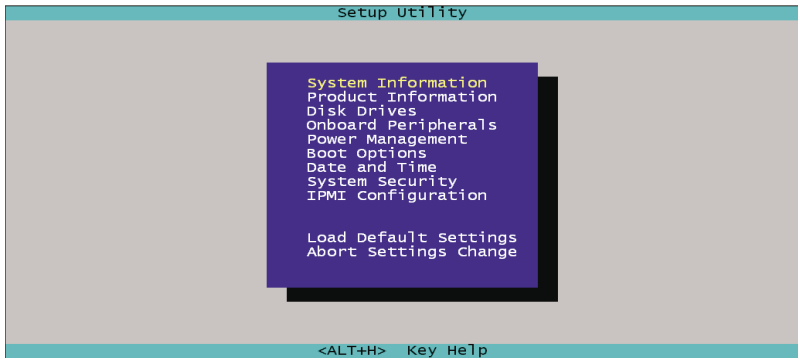
If you are an advanced user, you may want to check the detailed configuration of your system. Detailed system configurations are contained in the Advanced Level. To view the Advanced Level, press **F8** while viewing the Basic Setup main menu.

The Key Help Guide (press <Alt+H> to activate) shows you how to move around the BIOS setup screen:

- Use the **Up** and **Down** arrow keys to move around the Setup Utility screen.
- Use the **Left** and **Right** arrow keys to move to the next page or to return to the previous page if the setup screen has more than one page available.
- Use the **Page Up**, **Page Down**, **+**, or **-** keys to select the options if they are available.
- Press **Esc** to return to the Main menu.

Note: The parameters on the screens shown in this User's guide display default system values. These values may not be the same as those in your computer. The grayed-out items on the screens have fixed settings and are not user-configurable.

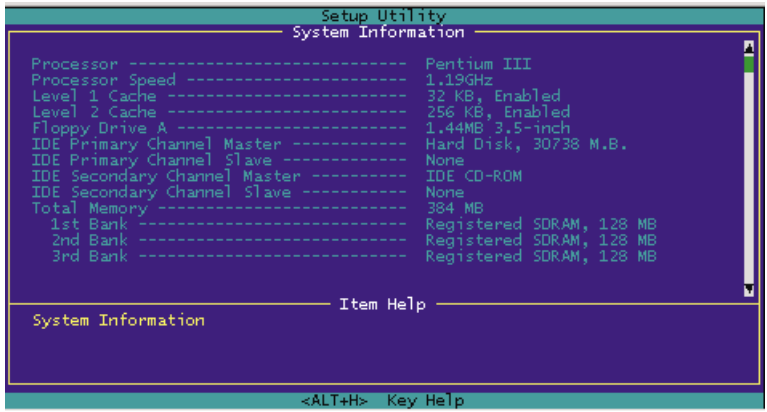
Setup Utility main menu



- The settings in **boldface** are the default and suggested parameter settings.

System Information

The screen below appears when you select **System Information** from the main menu:



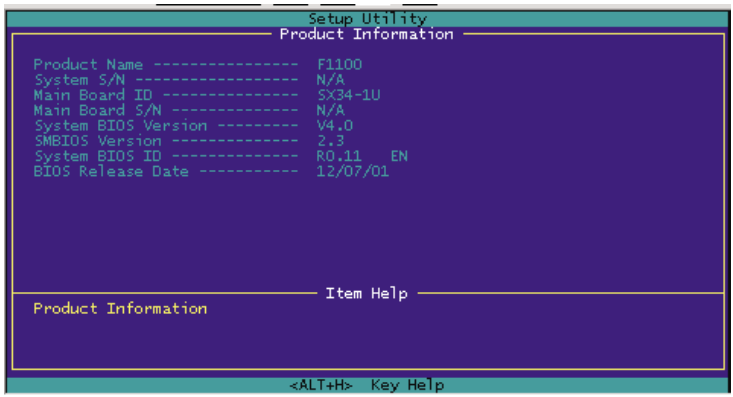
Parameter	Description
Processor	Type of processor currently installed in your system
Processor Speed	Clock speed of the processor currently installed in your system
Level 1 Cache	Total amount of first-level cache memory or the internal fast accessed memory size (i.e., the memory integrated into the CPU)
Level 2 Cache	Total amount of second-level cache memory that comes with the CPU. The available cache sizes are 256 and 512 KB.
Floppy Drive A	Current system settings for diskette drive A
IDE Primary/Secondary Channel Master	Current configuration of the IDE device connected to the master port of the primary/secondary IDE channel
IDE Primary/Secondary Channel Slave	Current configuration of the IDE device connected to the slave port of the primary/secondary IDE channel

Parameter	Description
Total Memory	Total amount of onboard memory. The memory size 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.
1st Bank 2nd Bank 3rd Bank	Type and size of DIMM installed in DIMM sockets 1, 2 and 3, respectively. The **None** setting indicates that there is no DIMM installed.

Product Information

Product Information displays general data about the system, such as the product name, serial number, BIOS version, etc. These information is necessary for troubleshooting and may be required when asking for technical support. These entries are for your reference only and are not user-configurable.

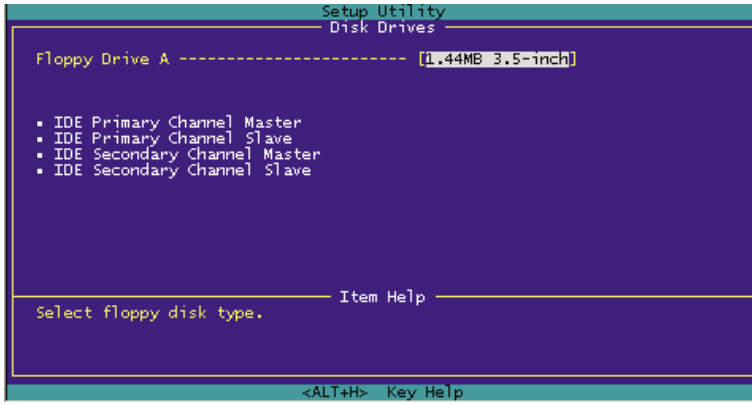
The screen below shows the Product Information parameters:



Parameter	Description
Product Name	Official name of the system
System S/N	System's serial number
Mainboard ID	Mainboard's identification number
Mainboard S/N	Mainboard's serial number
System BIOS Version	Version of the BIOS utility
SMBIOS Version	Version of the SMBIOS. SMBIOS (System Management BIOS) allows you to check your system's hardware without actually opening it up. Hardware checking is done via software checkpoints during start up.
System BIOS ID *	Version ID of the BIOS utility
BIOS Release Date *	Release date of the BIOS utility

Disk Drives

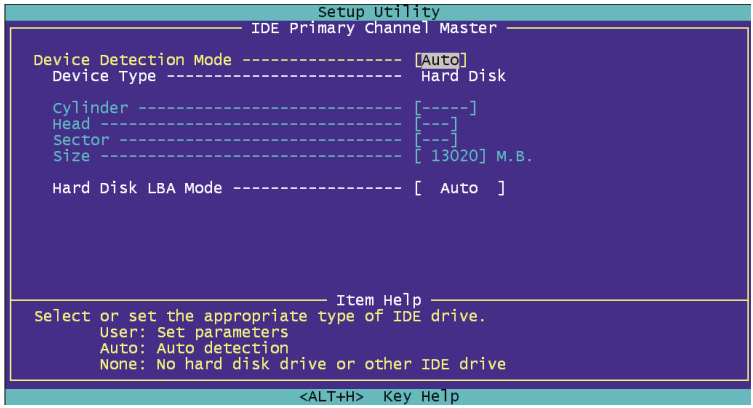
Select **Disk Drives** to input configuration values for the system disk drives. The screen below shows the Disk Drives parameters:



Parameter	Description	Option
Floppy Drive A	Indicates the floppy disk drive type	**1.44 MB, 3.5-inch** None 360 KB, 5.25-inch 1.2 MB, 5.25-inch 720 KB, 3.5-inch 2.88 MB, 3.5-inch
IDE Primary Channel Master and Slave IDE Secondary Channel Master and Slave	These items let you select the IDE hard disk parameters that your system supports. Auto. Enables BIOS to automatically detect the parameters of installed HDDs during the POST (power-on self-test). User. HDD parameters manually configured. None. No HDD is connected to the system. **Note:** The IDE CD-ROM is always automatically detected.	

IDE Channel Type

The screen below appears when you select any of the the IDE drive parameters from the Disk Drives screen:



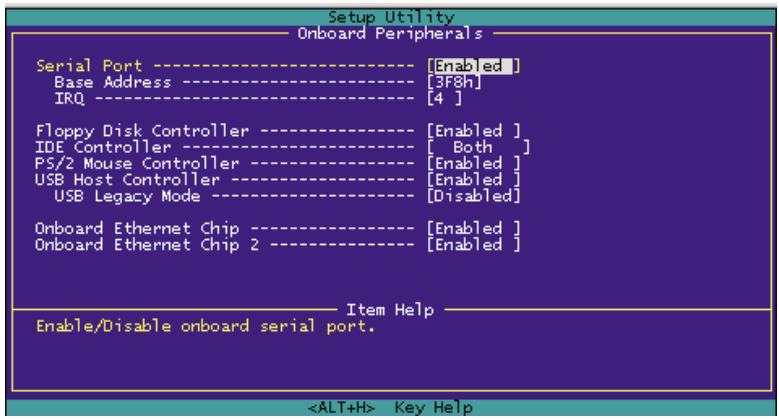
Parameter	Description	Option
Device Detection Mode	Lets you specify the type of hard disk installed in your system. If you want BIOS to automatically configure your hard disk, select Auto. If you know your hard disk type, you can enter the setting manually.	**Auto** User input None
Device Type	Indicates a hard disk type device	
Cylinder	Specifies the number of cylinders in your hard disk, and is automatically set depending on your Type parameter setting.	User input
Head	Specifies the number of heads in your hard disk, and is automatically set depending on your Type parameter setting.	User input

Parameter	Description	Option
Sector	Specifies the number of sectors in your hard disk, and is automatically set depending on your Type parameter setting.	User input
Size	Specifies the size of your hard disk, in MB	User input
Hard Disk LBA Mode*	When set to Auto, the BIOS utility automatically detects if the installed hard disk supports the function. If supported, it allows you to use a hard disk with a capacity of more than 528 MB. This is made possible through the Logical Block Address (LBA) mode translation. However, this enhanced IDE feature works only under DOS, Windows 3.x, Windows 95, Windows 98, Windows NT 3.5 and above, and Windows 2000. Other operating systems require this parameter to be set to Disabled.	**Auto** Disabled
Hard Disk Block Mode*	Enhances disk performance depending on the hard disk in use. If you set this parameter to Auto, the BIOS utility automatically detects if the installed hard disk drive suports the Block Mode function. If supported, it allows data transfer in blocks (multiple sectors) at a rate of 256 bytes per cycle.	**Auto** Disabled
Hard Disk 32-bit Access *	Improves system performance by allowing the use of the 32-bit hard disk access. This enhanced IDE feature works only under DOS, Windows 3.x, Windows 95, Windows 98, Windows NT, Windows 2000, and Novell Netware. If your software or hard disk does not support this function, set this parameter to Disabled.	**Enabled** Disabled

Parameter	Description	Option
Advanced PIO Mode *	When set to Auto, the BIOS utility automatically detects if the installed hard disk supports the function. If supported, it allows for faster data recovery and read/write timing that reduces hard disk activity time. This results in better hard disk performance. To disregard the feature, change the setting to Disabled.	**Enabled** Auto Mode 0 Mode 1 Mode 2 Mode 3 Mode 4 Disabled
DMA Transfer Mode *	The Ultra DMA and Multi-DMA modes enhance hard disk performance by increasing the transfer rate. However, besides enabling these features in the BIOS Setup, both the Ultra DMA and Multi-DMA modes require the DMA driver to be loaded.	**Auto** Multiword Mode 0 Multiword Mode 1 Multiword Mode 2 Ultra Mode 0 Ultra Mode 1 Ultra Mode 2 Ultra Mode 3 Ultra Mode 4 Ultra Mode 5 Disabled

Onboard Peripherals

Onboard Peripherals allows you to configure the onboard communication ports and the onboard devices. Selecting this option displays the screen below:



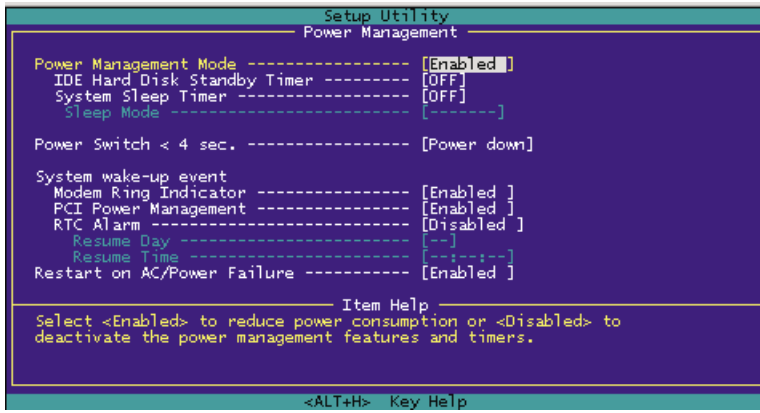
Parameter	Description	Option
Serial Port	Enables or disables the serial port	**Enabled** Disabled
Base Address	Sets the I/O base address of the serial port	**3F8h** 2F8h 3E8h 2E8h
IRQ	Sets the IRQ (interrupt request) channel of the serial port	**4** 11
Floppy Disk Controller	Enables or disables the onboard floppy disk controller	**Enabled** Disabled
IDE controller	Enables or disables the onboard IDE disk controller	**Enabled** Disabled
PS/2 Mouse Controller	Enables or disables the onboard PS/2 mouse controller	**Enabled** Disabled

Parameter	Description	Option
USB Host Controller	Enables or disables the onboard USB host controller	**Enabled** Disabled
USB Legacy Mode	Activates or deactivates the USB keyboard connected to your system. When activated, the USB keyboard functions in a DOS environment.	**Disabled** Enabled
Onboard Ethernet Chip	Enables or disables the first onboard network feature	**Enabled** Disabled
Onboard Ethernet Chip 2	Enables or disables the second onboard network feature	**Enabled** Disabled

Power Management

The **Power Management** menu allows you to configure the system's power management feature.

The screen below shows the Power Management parameters:



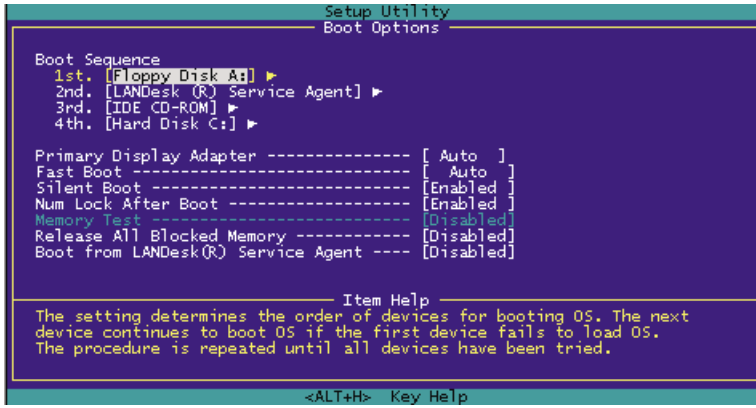
Parameter	Description	Option
Power Management Mode	Allows you to reduce power consumption. When this parameter is set to Enabled, you can configure the IDE hard disk and system timers. Setting it to Disabled deactivates the power management feature and its timers.	**Enabled** Disabled
IDE Hard Disk Standby Timer	Allows the hard disk to enter standby mode after inactivity of 1 to 15 minutes, depending on your setting. When you access the hard disk again, allow 3 to 5 seconds (depending on the hard disk) for the disk to return to normal speed. Set this parameter to Off if your hard disk does not support this function.	**Off** 1 minute to 15 minutes
System Sleep Timer	This parameter sets the system to the lowest power-saving mode after a specified period of inactivity. Any keyboard or mouse action or any activity detected from the IRQ channels resumes system operation.	**Off** 1 minute to 120 minutes

Parameter	Description	Option
Sleep Mode	Lets you specify the power-saving mode that the system will enter after a specified period of inactivity. This parameter becomes configurable only if the System Sleep Timer is on. Any keyboard or mouse action, or any enabled monitored activities occurring through the IRQ channels resume system operation.	**Standby** Suspend
Power Switch < 4 sec.	When set to Power off, the system automatically turns off when the power switch is pressed for less than 4 seconds. When set to Suspend, the system enters the suspend mode when the power switch is pressed for less than 4 seconds.	**Power off** Suspend
System Wake-up Event	The system wake-up event allows the system to resume operation when the modem ring indicator is enabled.	
Modem Ring Indicator	When Enabled, any modem activity wakes up the system from suspend mode.	**Disabled** Enabled
PCI Power Management	Enables or disabled the PCI power managment function	**Enabled** Disabled
RTC Alarm	Allows you to set a certain time on a certain day to wake-up your system from suspend mode.	**Disabled** Time Date/Time
Resume Day	If RTC alarm is enabled, the system will resume operation on the day indicated here.	User input
Resume Time	If RTC alarm is enabled, the system will resume operation at the time indicated here.	User input
Restart on AC/ Power Failure	When a power failure occurs and this item is set to Enabled, the system will be turned on, when the power comes back, if the system was on. When a power failure occurs and this setting is disabled, the system remains off when the power comes back, even if the system was on before the power failure occurs.	**Enabled** Disabled

Boot Options

This option allows you to specify your preferred settings for boot up.

The screen below appears when you select **Boot Options** from the main menu:



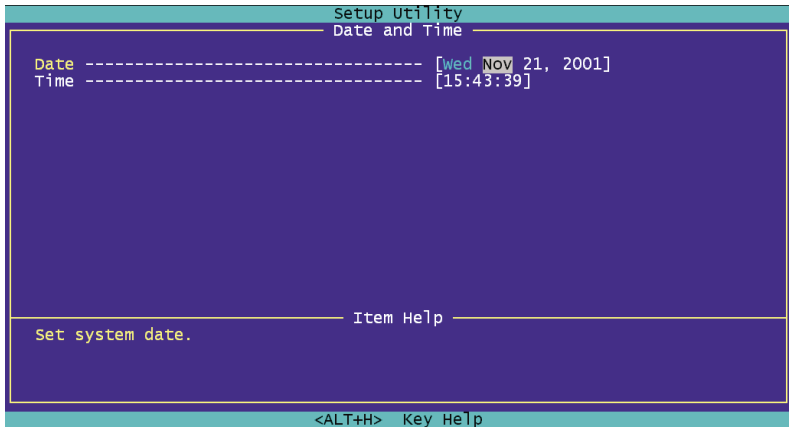
Parameter	Description	Option
Boot Sequence	This parameter allows you to specify the boot search sequence during POST. 1st. The system checks this drive first. 2nd. The system then checks this drive if it can not boot from the 1st specified drive. 3rd. If the 1st and 2nd searches fail then it boots from this drive. 4th. If the 1st, 2nd and 3rd searches fail then it boots from this drive. BIOS will display an error message if the drive(s) specified is not bootable.	Floppy Disk Hard DIsk IDE CD-ROM LANDesk (R) Service Agent

Parameter	Description	Option
Primary Display Adapter	This parameter allows you to activate the onboard video controller as the primary system display adapter or automatically disables it once the BIOS detects that there is a video card installed. Select Onboard to set the onboard video controller as the primary display adapter. Select Auto to disable the onboard video controller once a video card is detected.	**Auto** Onboard
Fast Boot	Allows the system to boot faster by skipping some POST routines	**Auto** Disabled
Silent Boot	Enables or disables the Silent Boot function. When set to Enabled, BIOS is in graphical mode and displays only an identification logo during POST and while booting. After booting the screen displays the operating system prompt (such as DOS) or logo (such as Windows 95). If any error occurs while booting, the system automatically switches to text mode. Even if your setting is Enabled, you may still switch to text mode while booting by pressing the **Delete** key when you see the "Press DELETE key to enter setup" message on the screen. When set to Disabled, BIOS is in the conventional text mode where you see the system initialization details on the screen.	**Enabled** Disabled
Num Lock After Boot	Allows you to activate the Num Lock function upon booting	**Disabled** Enabled
Memory Test	When set to Enabled, this parameter allows the system to perform a RAM test during the POST routine. When set to Disabled, the system detects only the memory size and bypasses the test routine.	**Disabled** Enabled
Release All Blocked Memory	When set to Enabled, this parameter allows the system to bypass testing the defective memory banks detected earlier.	**Disabled** Enabled

Parameter	Description	Option
Boot from LANDesk (R) Service Agent	Sets the system to boot from a LANDesk Service Agent network (Enabled) or from the drive specified in the Boot Sequence parameter (Disabled).	**Enabled** Disabled

Date and Time

The real-time clock keeps the system date and time. After setting the date and time, you do not need to enter them every time you turn on the system. As long as the internal battery remains good (approximately seven years) and connected, the clock continues to keep the date and time accurately even when the power is off.

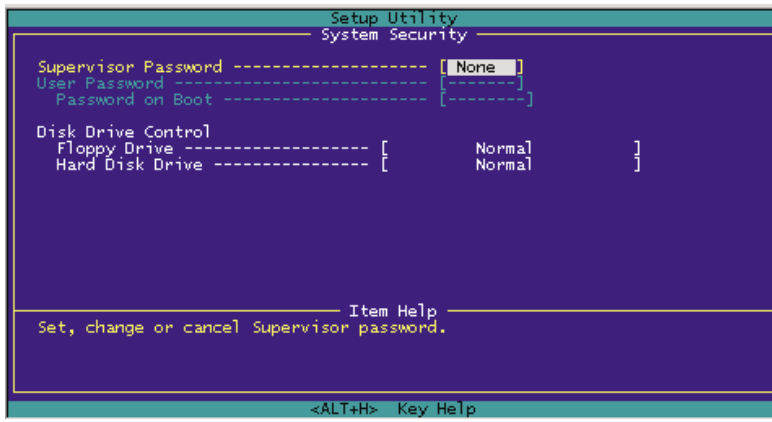


Parameter	Description
Date	Set the date following the weekday-month-day-year format. Valid values for weekday, month, day, and year are: Weekday: Sun, Mon, Tue, Wed, Thu, Fri, Sat Month: Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec Day: 1 to 31 Year: 1980 to 2099
Time	Set the time following the hour-minute-second format. Valid values for hour, minute, and second are: Hour: 00 to 23 Minute: 00 to 59 Second: 00 to 59

System Security

The Setup program has a number of security features to prevent unauthorized access to the system and its data.

The screen below appears when you select **System Security** from the main menu:



Parameter	Description	Option
Supervisor Password	Prevents unauthorized access to the BIOS Setup utility. The Present setting allows you to set a Supervisor password.	**None** Present
User Password	Secures your system against unauthorized use. Once you set this password, you have to type it whenever you boot the system. User password is available only when a Supervisor password is set. The Present settings allows you to set a User password.	**None** Present
Password on Boot	Select Enabled to activate security check during POST	**Disabled** Enabled

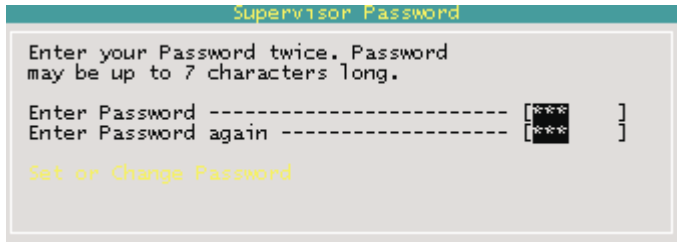
Parameter	Description	Option
Disk Drive Control	The disk drive control feature enable or disable the read/write functions of the disk drives. This parameter can also control the diskette drive boot function to prevent loading operating systems or other programs from a certain drive while the other drives remain operational.	
Floppy Drive	Sets the control level of the floppy drive.	**Normal** Write Protect All Sectors Write Protect Boot Sectors Disabled
Hard Disk Drive	Sets the control level of the IDE hard disk drive.	**Normal** Write Protect All Sectors Write Protect Boot Sectors Disabled

Setting and changing the password

To set or change a Supervisor/User password:

1 Enable the Supervisor Password or User Password parameter in the System Security menu by pressing the **Up** or **Down** arrow key to select **Present**. The corresponding password window appears:

Supervisor Password window



User Password window

2 Type a password then press **Enter**. The password may consist of up to seven alphanumeric characters.

Note: Be careful when typing your password because the actual characters do not appear on the screen; password characters appear as asterisks (*).

3 Retype the password to verify your first entry then press **Enter**.

4 Highlight the "**Set or Change Password**" option then press **Enter**.

5 Press **Esc** to return to the System Security screen.

6 Press **Esc** to exit Setup. The Exit Setup screen appears.

7 Choose "**Yes**" to save your settings and exit Setup. Your password will be saved to CMOS.

Removing a password

To remove your Supervisor/User password:

1 Disable the Supervisor Password or User Password parameter in the System Security menu by pressing the up or down arrow key to select **None**.

2 Press **Esc** to return to the System Security menu.

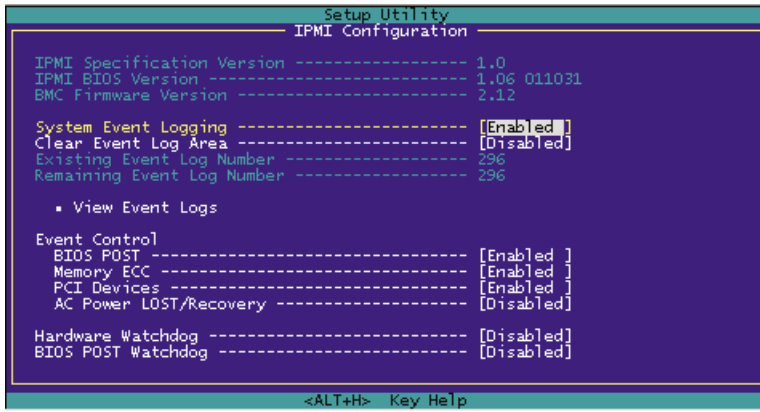
3 Press **Esc** to exit Setup. The Exit Setup screen appears:

4 Choose **Yes** to save your settings and exit Setup. Your previous password will be removed from CMOS.

IPMI Configuration

Intelligent Platform Management Interface

The system event log enables you to record and monitor events that occur in your system like system temperature changes, fan stops, and others. This feature also allows you to specify the appropriate settings for your system's event handling.



The table below describes the parameters in the IPMI Configuration screen.

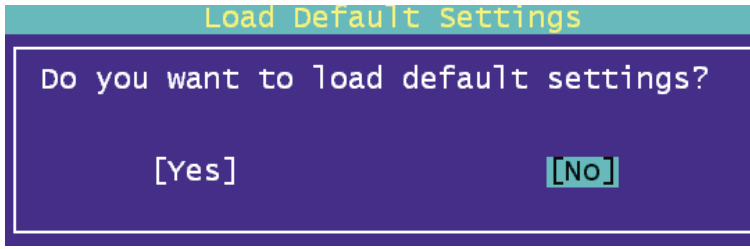
Parameter	Description	Option
IPMI Specification Version	Shows the version number of IPMI	
IPMI BIOS Version	Shows the version of IPMI BIOS	
BMC Firmware Version	Specifies the version of BaseBoard Management Controller (BMC) Firmware	
System Event Logging	Enables or disables the event logging function of your system	**Enabled** Disabled

Parameter	Description	Option
Clear Event Log Area	Clears the event log whenever the event log area is full	**Disabled** Enabled
Existing Event Log Number	Number of events currently located in the event log area	
Remaining Event Log Number	Number of spaces that are still available for logging system events	
View Event Logs	Opens the system event log file for viewing	
Event Control		
BIOS POST	BIOS checks the bad processors and memory modules during POST. When this parameter is enabled, BIOS will stop POST operation whenever it finds a bad processor or memory. Otherwise, the system will continue running.	**Enabled** Disabled
Memory ECC	ECC (error correcting code) tests the accuracy of data as it passes in and out of memory. This parameter enables or disables the monitoring of this function.	**Enabled** Disabled

Load Default Settings

Use this option to load the default settings for optimized system configuration. When you load the default settings, some of the parameters are grayed-out with their fixed settings. These grayed-out parameters are not user-configurable.

The dialog box below appears when you select **Load Default Settings** from the main menu:



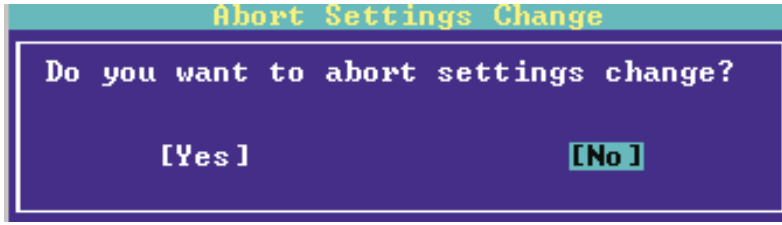
Select **Yes** to load the default settings.

Select **No** to ignore the message and return to the BIOS Setup utility main menu.

Abort Settings Change

Use this option to disregard the changes you have made to BIOS and reload your previous settings.

The dialog box below appears when you select **Abort Settings Change** from the main menu:



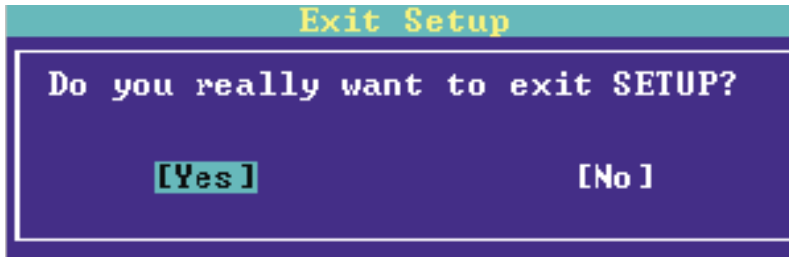
Select **Yes** to disregard your changes and reload your previous settings. After reload, the main menu appears on the screen.

Select **No** to ignore the message and return to the BIOS Setup utility main menu.

Exit Setup

Examine the system configuration values. When you are satisfied that all the values are correct, write them down. Store the recorded values in a safe place. In the future, if the battery loses power or the CMOS chip is damaged, you will know what values to enter when you rerun Setup.

Press the **Esc** key to leave Setup. The dialog box below appears:



Use the arrow keys to select your response.

Select **Yes** to save the changes in CMOS.

Select **No** to retain the previous configuration values.

Press the **Enter** key to exit.