ASUS

Vintage-PE1

Barebone System

E2012

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Notices

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received including interference that may cause undesired operation.

This equipment 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 equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment 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 equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING! The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This class B digital apparatus complies with Canadian ICES-003.

Safety information

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.

- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected.

- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation safety

- Before installing devices into the system, carefully read all the documentation that came with the package.

- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.

- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.

- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet. Place the product on a stable surface.

- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

Lithium-Ion Battery Warning

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

VORSICHT: Explosionsgetahr bei unsachgemäßen Austausch der Batterie. Ersatz nur durch denselben oder einem vom Hersteller empfohlenem ähnljchen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

LASER PRODUCT WARNING

CLASS 1 LASER PRODUCT

About this guide

Audience

This guide provides general information and installation instructions about the ASUS Vintage-PE1 barebone system. This guide is intended for experienced users and integrators with hardware knowledge of personal computers.

How this guide is organized

This guide contains the following parts:

1. **Chapter 1: System introduction**

   This chapter gives a general description of the ASUS Vintage-PE1. The chapter lists the system features, including introduction on the front and rear panel, and internal components.

2. **Chapter 2: Basic installation**

   This chapter provides step-by-step instructions on how to install components in the system.

3. **Chapter 3: Starting up**

   This chapter helps you power up the system and install drivers and utilities from the support CD.

4. **Chapter 4: Motherboard information**

   This chapter gives information about the motherboard that comes with the system. This chapter includes the motherboard layout, jumper settings, and connector locations.

5. **Chapter 5: BIOS information**

   This chapter tells how to change system settings through the BIOS Setup menus and describes the BIOS parameters.

Conventions used in this guide

WARNING: Information to prevent injury to yourself when trying to complete a task.

CAUTION: Information to prevent damage to the components when trying to complete a task.

IMPORTANT: Instructions that you MUST follow to complete a task.

NOTE: Tips and additional information to aid in completing a task.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. **ASUS Websites**

   The ASUS websites worldwide provide updated information on ASUS hardware and software products. Refer to the ASUS contact information.

2. **Optional Documentation**

   Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

System package contents

Check your Vintage-PE1 system package for the following items.

If any of the items is damaged or missing, contact your retailer immediately.

Item description
1. ASUS Vintage-PE1 barebone system with
• ASUS motherboard
• 300 W power supply unit w/ PFC
• ASUS chassis
2. Cable
• AC power cable
3. Support CD
4. User guide

Chapter 1

This chapter gives a general description of the ASUS Vintage-PE1. The chapter lists the system features including introduction on the front and rear panel, and internal components.

System introduction

ASUS Vintage-PE1

1.1   Welcome!

Thank you for choosing the ASUS Vintage-PE1!

The ASUS Vintage-PE1 is an all-in-one barebone system with a versatile home entertainment feature.

The system comes in a stylish mini-tower casing and powered by the ASUS motherboard that supports the Intel® Pentium® 4 processor in the 775-land package with 800 MHz FSB and up to 2 GB system memory.

With audio capabilities and extensive connectivity, the Vintage-PE1 is designed to deliver cutting edge technology for your computing and multimedia needs.

1.2   Front panel

The front panel includes the optical drive(s), floppy disk drive slot, power button, and several I/O ports are located at the front panel.

1. **Two empty 5.25-inch bays**. These bays are for IDE optical drives.

2. **Hard disk drive bay**. This door covers a hard disk drive.

3. **Floppy drive door**. This drive is for 1.44MB, 3.5-inch floppy disk.

4. **Reset button**. Press this button to reboot the system without turning off the power.

5. **Power button**. Press this button to turn the system on.

6. **Headphone port**. This Line In (green) port connects a headphone with a stereo mini-plug.

7. **Microphone port**. This Mic (pink) port connects a microphone.

8. **USB 2.0 ports**. These Universal Serial Bus 2.0 (USB 2.0) ports are available for connecting USB 2.0 devices such as a mouse, printer, scanner, camera, PDA, and others.

9. **IEEE1394 port**. This 6-pin IEEE 1394 port provides high-speed connectivity for audio/video devices, storage peripherals, PCs, or portable devices.

1.3   Rear panel

The system rear panel includes the power connector and several I/O ports that allow convenient connection of devices.
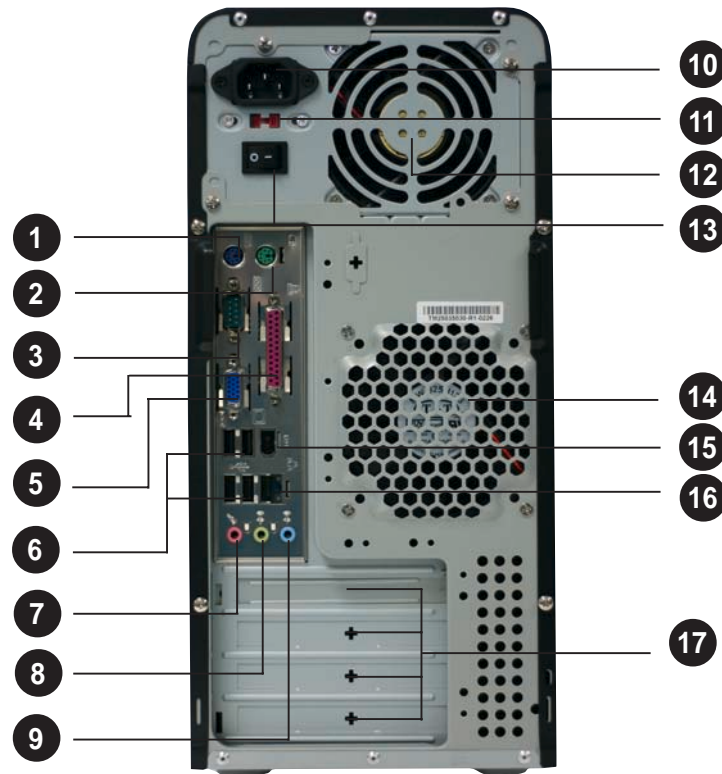
1. **PS/2 keyboard port**. This purple 6-pin connector is for a PS/2 keyboard.

2. **PS/2 mouse port**. This green 6-pin connector is for a PS/2 mouse.

3. **Serial port** . This port connects a mouse, modem, or other devices that conforms with serial specification.

4. **Parallel port.** This 25-pin port connects a printer, scanner, or other devices.

5. **VGA port.** This port connects a VGA monitor.

6. **USB 2.0 ports 1, 2, 3 and 4.** These 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.

7. **Microphone port (pink).** This port connects a microphone.

8. **Line Out port (lime).** This port connects a headphone or a speaker. In 4-channel, 6-channel, and 8-channel configuration, the function of this port becomes Front Speaker Out.

9. **Line In port (light blue).** This port connects the tape, CD, DVD player, or other audio sources.

Audio 2, 4, or 6-channel configuration

Port	Headset 2-channel	4-channel	6-channel
Light Blue	Line In	Line In	Line In
Lime	Line Out	Front Speaker Out	Front Speaker Out
Pink	Mic In	Mic In	Mic In

10. **Power connector.** This connector is for the power cable and plug.

11. **Voltage selector.** This switch allows you to adjust the system input voltage according to the voltage supply in your area. See the "Voltage selector" section on page 1-6 before adjusting this switch.

12. **Power supply unit fan vent.** This vent is for the PSU fan that provides ventilation inside the power supply unit.

13. **Power supply unit power switch.** This switch allows you to turn ON or OFF the flow of power to the power supply unit.

14. **Chassis fan vent.** This vent is for the fan that provides ventilation inside the system chassis.

15. **IEEE 1394 port.** This port connects IEEE 1394 devices such as digital still/video cameras, camcorders, external disk drives, or other devices.

16. **LAN (RJ-45) port.** This port allows Gigabit connection to a Local Area Network (LAN) through a network hub.

17. **Expansion slot covers**. Remove these cover when installing expansion cards.

Voltage selector

The PSU has a 115 V/230 V voltage selector switch located beside the power connector. Use this switch to select the appropriate system input voltage according to the voltage supply in your area.

If the voltage supply in your area is 100-127 V, set the switch to 115 V.

If the voltage supply in your area is 200-240 V, set the switch to 230 V.

115V/230V Voltage selector
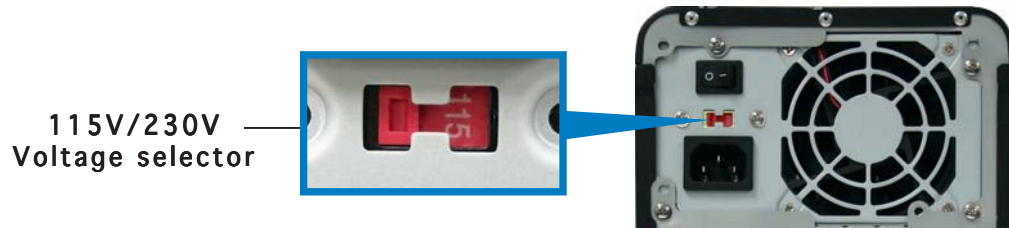
Setting the switch to 115V in a 230V environment or 230V in a 115V environment will seriously damage the system!

1.4 Internal components

The illustration below is the internal view of the system when you remove the top cover and the power supply unit. The installed components are labeled for your reference. Proceed to Chapter 2 for instructions on installing additional system components.

1. 5.25-inch drive bay
2. Floppy disk drive bay
3. Front panel cover
4. Hard disk drive bay
5. Chassis fan
6. ASUS motherboard
7. DIMM sockets
8. LGA775 socket with PnP cap
9. AGP 8X slot
10. PCI slots
11. Serial ATA connectors
12. Expansion card slots
13. Power supply unit

2.6   Expansion slots

In the future, you may need to install expansion cards. The following sub-sections describe the slots and the expansion cards that they support.

> Make sure to unplug the power cord before adding or removing expansion cards. Failure to do so may cause you physical injury and damage motherboard components.

2.6.1   Installing an expansion card

To install an expansion card:

1. Before installing the expansion card, read the documentation that came with it and make the necessary hardware settings for the card.
2. Remove the system unit cover (if your motherboard is already installed in a chassis).
3. Remove the bracket opposite the slot that you intend to use. Keep the screw for later use.
4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.
5. Secure the card to the chassis with the screw you removed earlier.
6. Replace the system cover.

2.6.2   Configuring an expansion card

After installing the expansion card, configure the it by adjusting the software settings.

1. Turn on the system and change the necessary BIOS settings, if any. See Chapter 5 for information on BIOS setup.
2. Assign an IRQ to the card. Refer to the tables on the next page.
3. Install the software drivers for the expansion card.

Standard interrupt assignments

IRQ	Priority	Standard Function
0	1	System Timer
1	2	Keyboard Controller
2	-	Re-direct to IRQ#9
3	11	Communications Port (COM2)*
4	12	Communications Port (COM1)*
5	13	IRQ holder for PCI steering*
6	14	Floppy Disk Controller
7	15	Printer Port (LPT1)*
8	3	System CMOS/Real Time Clock
9	4	IRQ holder for PCI steering*
10	5	IRQ holder for PCI steering*
11	6	IRQ holder for PCI steering*
12	7	PS/2 Compatible Mouse Port*
13	8	Numeric Data Processor
14	9	Primary IDE Channel
15	10	Secondary IDE Channel

* These IRQs are usually available for ISA or PCI devices.

IRQ assignments for this motherboard

	A	B	C	D	E	F	G	H
PCI slot 1	—	—	—	—	—	used	—	—
PCI slot 2	—	—	—	—	—	—	used	—
PCI Express x16 slot	shared	—	—	—	—	—	—	—
PCI Express x1 slot1	—	shared	—	—	—	—	—	—
Onboard USB controller 1	—	—	—	—	—	—	—	shared
Onboard USB controller 2	—	—	—	shared	—	—	—	—
Onboard USB controller 3	—	—	shared	—	—	—	—	—
Onboard USB controller 4	shared	—	—	—	—	—	—	—
Onboard USB 2.0 controller	—	—	—	—	—	—	—	shared
Onboard Azalia Audio	shared	—	—	—	—	—	—	—
Onboard IDE Controller	—	—	shared	—	—	—	—	—
Onboard SATA Controller	—	—	—	shared	—	—	—	—
Onboard LAN	—	—	—	—	shared	—	—	—

When using PCI cards on shared slots, ensure that the drivers support "Share IRQ" or that the cards do not need IRQ assignments; otherwise, conflicts will arise between the two PCI groups, making the system unstable and the card inoperable.

2.6.3 PCI slots

The PCI slots support cards such as a LAN card, SCSI card, USB card, and other cards that comply with PCI specifications. The figure shows a LAN card installed on a PCI slot.
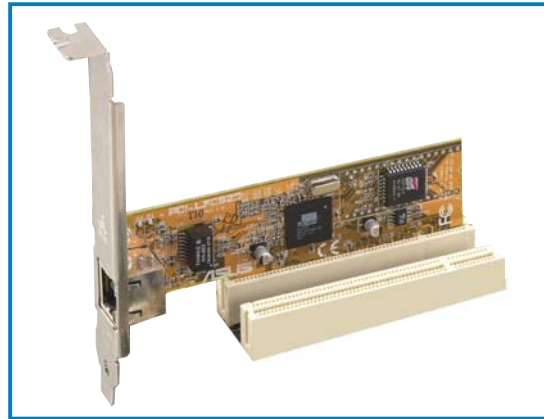
2.6.4 AGP slot

The Accelerated Graphics Port (AGP) slot supports AGP8X/4X cards. When you buy an AGP card, make sure that you ask for one with +1.5V specification. Note the notches on the card golden fingers to ensure that they fit the AGP slot on your motherboard.

Keyed for 1.5v

Accelerated Graphics Port (AGP)
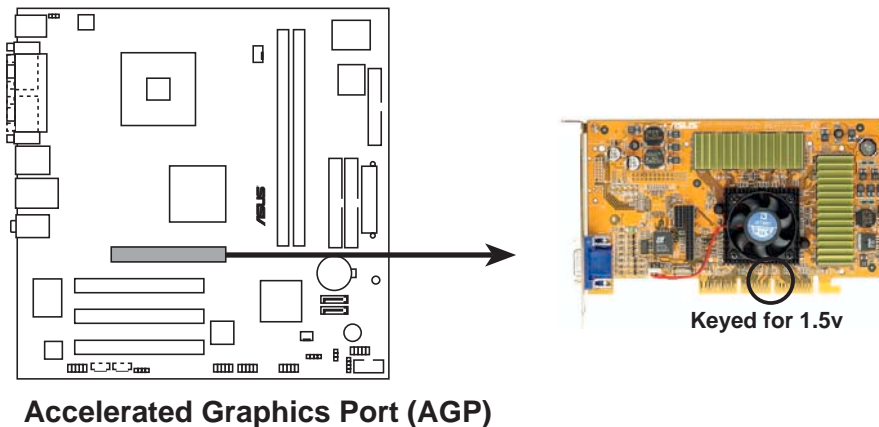
2.7   Installing an optical drive

The optical drive is an optional item in this desktop system. Refer to the instructions in this section if you acquired a model without an optical drive.

Follow these steps to install an optical drive.

1. Place the chassis upright.
2. Insert the optical drive into the upper 5.25-inch drive bay.
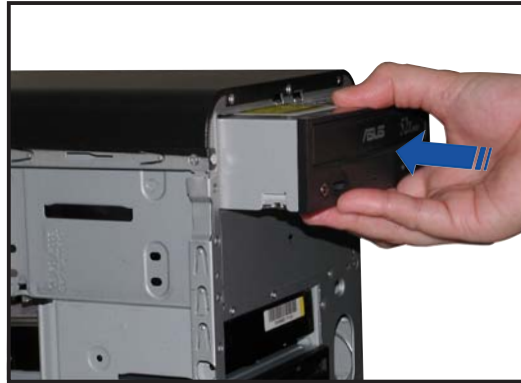
3. Carefully push the optical drive into the bay until its screw holes align with the holes on the bay as shown.
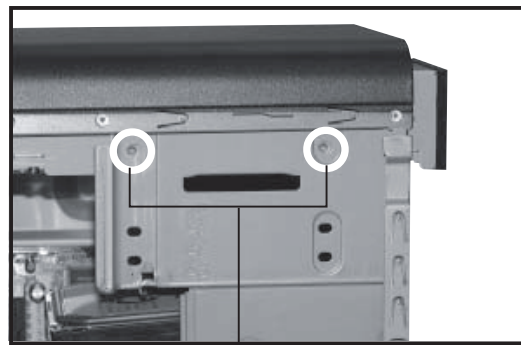
Screw holes

4. Secure the optical drive with two screws on both sides of the bay.

Screws

5. Connect a power cable from the power supply to the power connector at the back of the optical drive.

6. Connect one end of the IDE ribbon cable to the IDE interface at the back of the optical drive, matching the red stripe on the cable with Pin 1 on the IDE interface.

7. Connect one end of the audio cable to the 4-pin connector at the back of the optical drive.

Audio cable

IDE ribbon cable

Red stripe to pin 1

Power cable

8. Connect the other end of the IDE ribbon cable to the secondary IDE connector (labeled SEC_IDE1) on the motherboard. See page 4-5 for the location of this connector.

9. Connect the other end of the audio cable to the black 4-pin connector labeled CD1 on the motherboard. See page 4-9 for the location of this connector.

2.8 Installing a hard disk drive

The system may have one pre-installed 3.5-inch Serial ATA or IDE hard disk drive. Refer to this section to install up to three additional Serial ATA hard disk drives, or up to two IDE hard disk drives.

To install a Serial ATA hard disk drive:

1. Place the chassis upright.

2. With the HDD label side up, carefully insert the drive into the 3.5-inch bay.
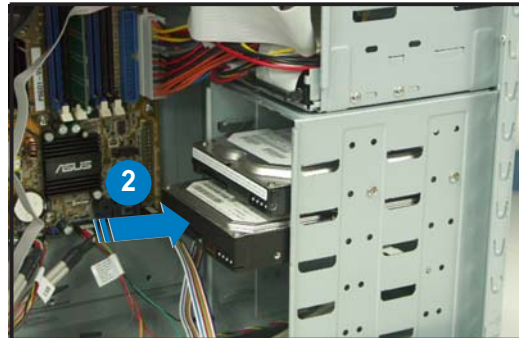
3. Push the drive into the bay until its screw holes align with the holes on the drive bay.
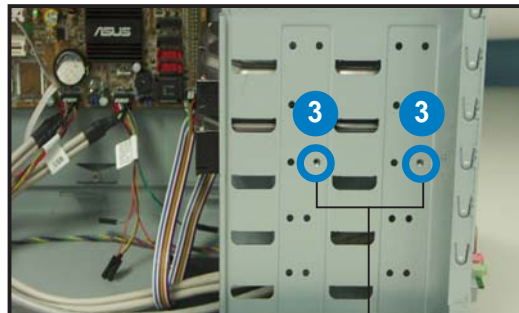
HDD screw holes

4. Secure the drive with two screws on both sides.
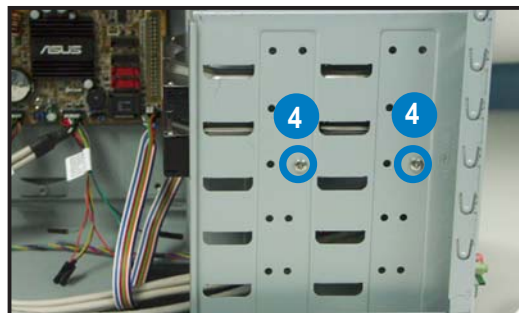
5. Connect one end of the Serial ATA cable to the SATA connector at the back of the drive, then connect the other end to a Serial ATA connector on the motherboard. See page 4-7 for the location of the Serial ATA connectors.

6. Connect a 15-pin Serial ATA power plug from the power supply unit to the power connector at the back of the drive.

- OR -

Connect a 4-pin (female) power plug from the power supply unit to the 4-pin (male) power connector at the back of the drive.

> ⚠ If your Serial ATA HDD has both 4-pin and 15-pin connectors at the back, use either the 15-pin SATA power adapter plug **OR** the legacy 4-pin power connector. **DO NOT** use both to prevent damage to components and to keep the system from becoming unstable.

To install an IDE hard disk drive:

1. Follow steps 1-4 of the previous section.

> ✎ • If you will install only one hard disk drive, make sure to configure your hard disk drive as Master device before connecting the IDE cable and power plug. Refer to the HDD documentation on how to set the drive as a Master device.
>
> • If you will install two IDE hard disk drives, configure the other device as Slave.

2. Connect the blue interface of the IDE ribbon cable to the primary IDE connector (blue connector labeled PRI_IDE1) on the motherboard. See

3. Connect the gray interface of the IDE ribbon cable to the IDE connector on the drive.

4. If you install two IDE hard disk drives, connect the black interface of the IDE ribbon cable to the IDE connector on the second (Slave) IDE hard disk drive.

5. Connect a 4-pin power plug from the power supply unit to the power connector at the back of the drive.

2.9   Installing a floppy disk drive

The Vintage-PE1 system comes with one 3.25-inch drive bay for a floppy disk drive.

To install a floppy disk drive:

1.   Remove the front panel cover.

> For instructions on how to remove the front panel cover, refer to page 2-3 of section "2.3 Removing the side plates and front cover"

2.   Carefully insert the floppy disk drive into the floppy drive bay until the screw holes align with the holes on the bay.

3.   Secure the floppy disk drive with two screws.

4.   Connect the floppy disk drive signal cable to the signal connector at the back of the drive.

5.   Connect the other end of the signal cable to the floppy disk drive connector on the motherboard.

6.   Connect a power cable from the power supply unit to the power connector at the back of the floppy disk drive.
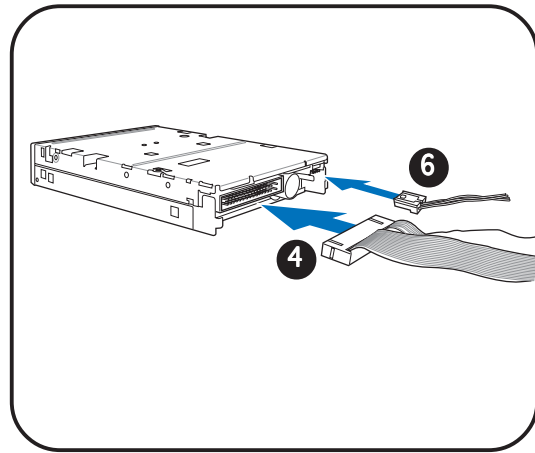
2.10 Re-connecting cables

You may have disconnected some cables when you were installing components. You must re-connect these cables before you replace the chassis cover.

LED cables

System panel connector
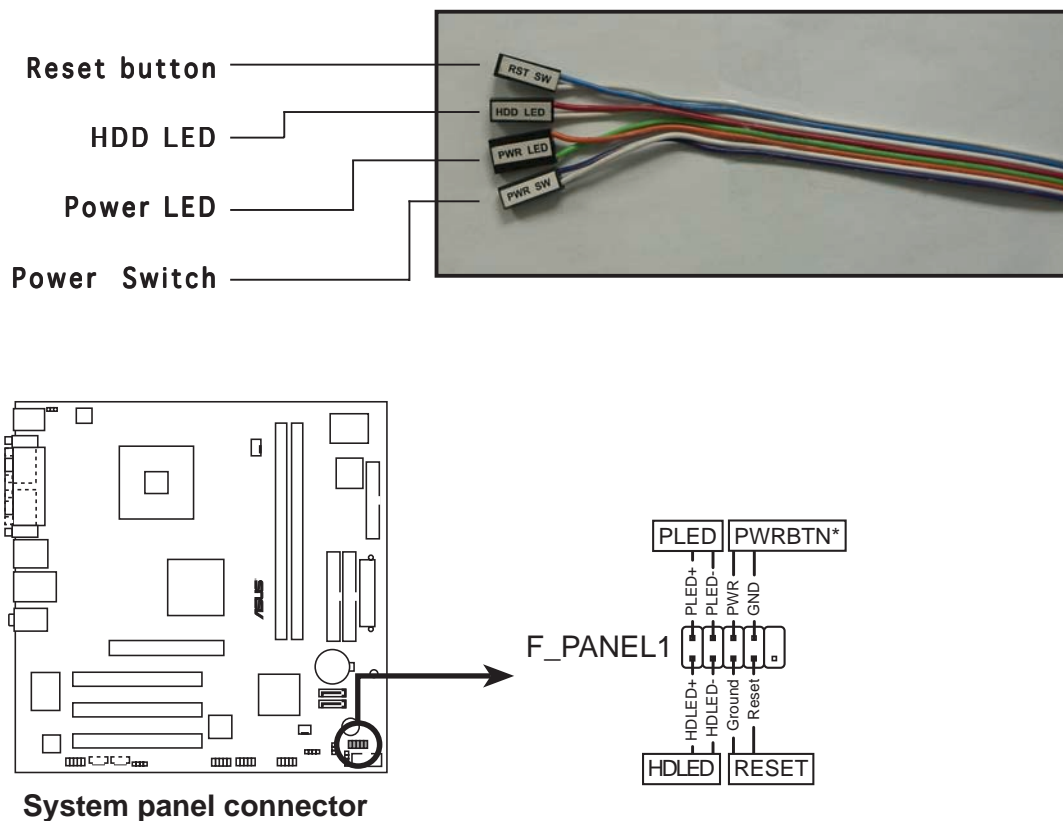
Connect the **reset button, power switch**, **power LED,** and **HDD LED** cables to their respective leads in the system panel connector on the motherboard.

2.11 Replacing the side plates and front cover

After you have installed all the internal components and you have connected all the necessary cables, you are now ready to put the system back together.

1. Hook the hinge-like tabs to the holes on the right side of the front panel to attach the front panel assembly to the chassis.

2. Swing the front panel inward.

Hinge-like tab
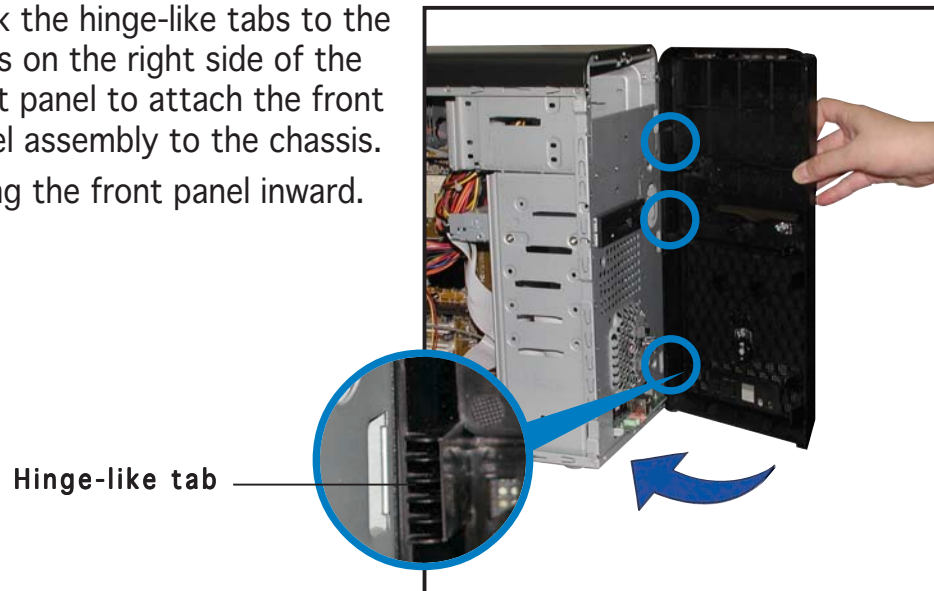
3. Snap the side lock tabs to the steel railing.

Side lock tab

Steel railing
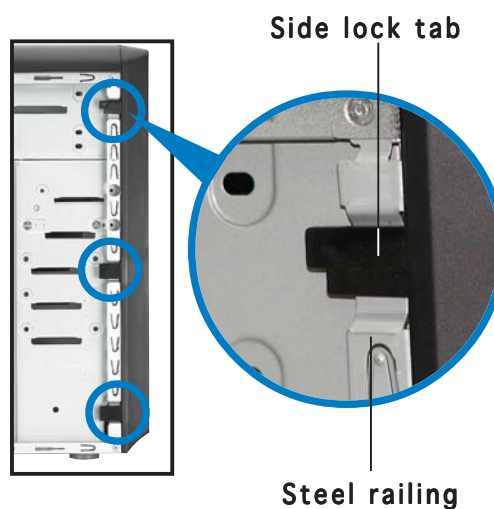
4. Fit the rail tabs on the side plate into the locking tab holes in the chassis.

Locking tab hole

Rail tabs
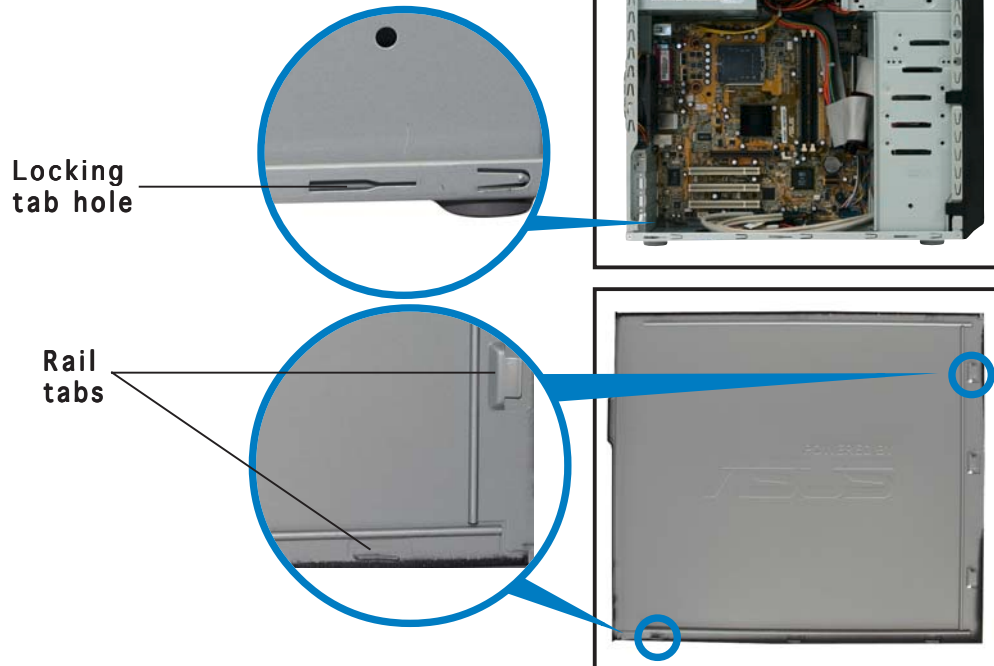
5. Firmly push the side plate from the rear until it fits the chassis completely.

The locking tabs snap into the hole on the chassis to indicate that the side plate is in place.

6. Lock the side plate with the screws on the rear panel.

7. Repeat steps 4, 5 and 6 to replace the other side plate cover.

Screw
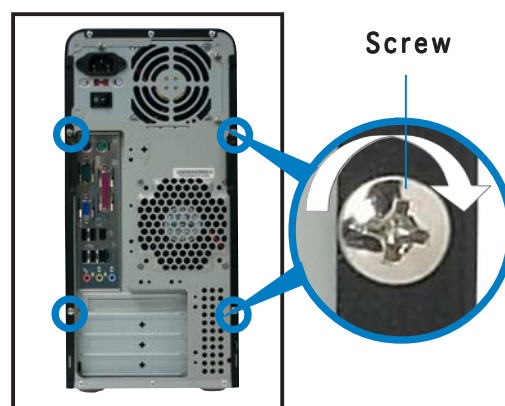
2.12 Connecting external devices

The figure below shows the specific connectors and devices that you can connect to the rear panel ports.

PS/2 KB

Serial

VGA

RJ-45

AC

PS/2 Mouse

Parallel

IEEE 1394

USB

Line Out

Line In

Mic
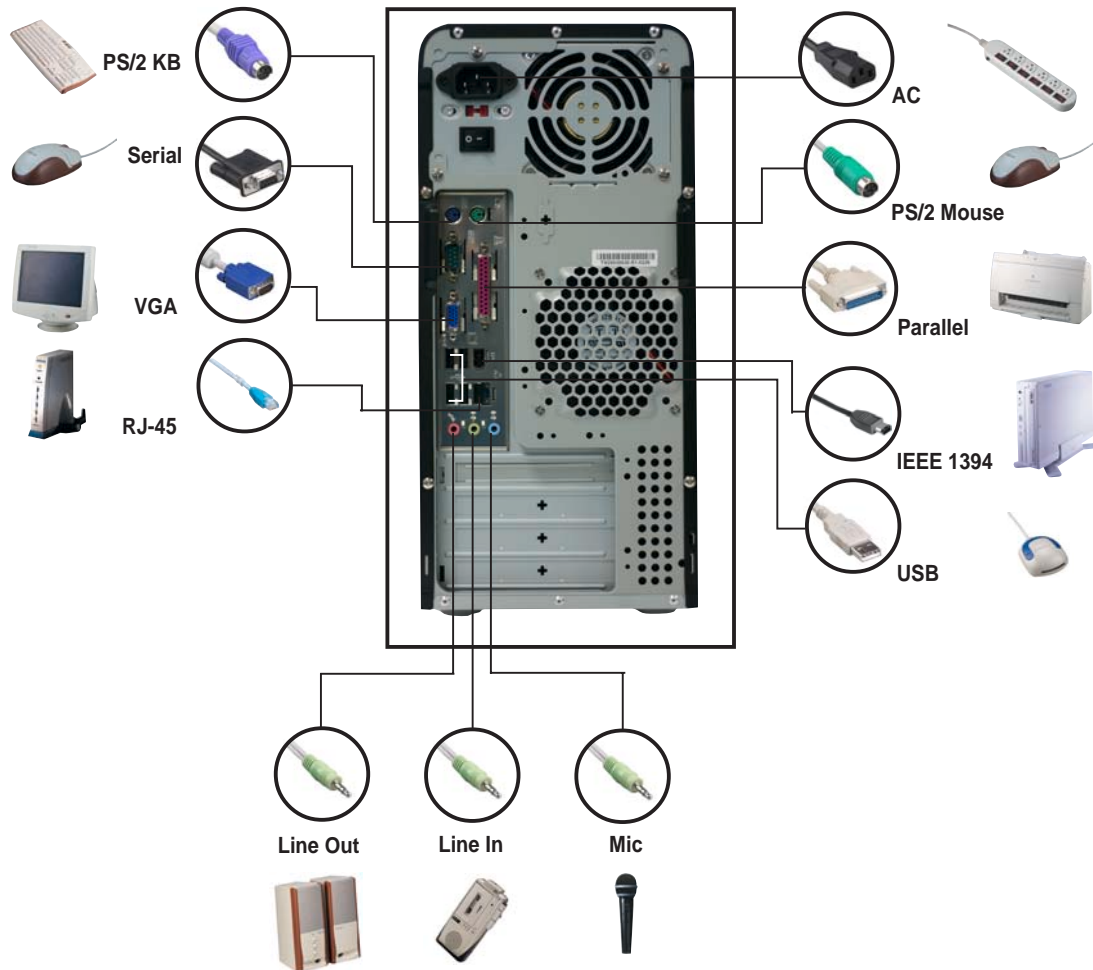
Chapter 3

This chapter helps you power up the system and install drivers and utilities from the support CD.

ASUS Vintage-PE1

3.1   Installing an operating system

The barebone system supports Windows® 2000/XP operating systems (OS). Always install the latest OS version and corresponding updates so you can maximize the features of your hardware.

Because motherboard settings and hardware options vary, use the setup procedures presented in this chapter for general reference only. Refer to your OS documentation for more information.

3.2   Powering up

The system has two power buttons located in the front panel. Press the system power button (⏻) to enter the OS.

Press to turn ON the system ———

3.3   Support CD information

The support CD that came with the system contains useful software and several utility drivers that enhance the system features.

- • Screen display and driver options may not be the same for other operating system versions.

- • The contents of the support CD are subject to change at any time without notice. Visit the ASUS website for updates.

3.3.1 Running the support CD

To begin using the support CD, place the CD in your optical drive. The CD automatically displays the **Drivers** menu if Autorun is enabled in your computer.
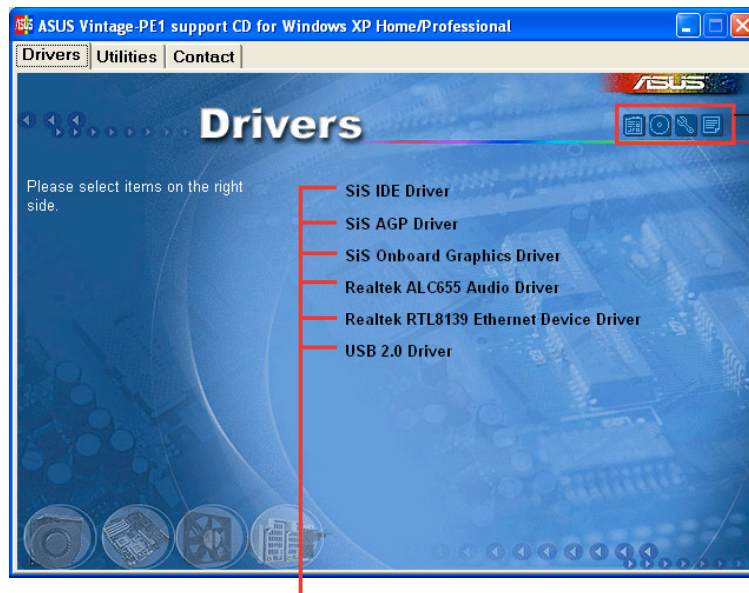
Click an icon to display support CD/motherboard information

Click an item to install

If **Autorun** is NOT enabled in your computer, browse the contents of the support CD to locate the file ASSETUP.EXE from the BIN folder. Double-click the **ASSETUP.EXE** to run the CD.

SIS IDE Driver

Installs the SIS chipset IDE driver. When installed to the target system, this driver provides the method for configuring the chipset components.

SIS AGP Driver

Installs the SIS AGP driver.

SIS Onboard Graphics Driver

Installs the onboard SIS graphics driver.

Realtek ALC655 Audio Driver

Executes the wizard to install the Realtek® ALC655 audio driver and application.

Realtek RTL8139 Ethernet Device Driver

Installs the Realtek® RTL8139 Ethernet device driver.

USB 2.0 Driver

Installs the USB 2.0 driver.

3.3.2 Utilities menu

The Utilities menu shows the applications and other software that the motherboard supports.
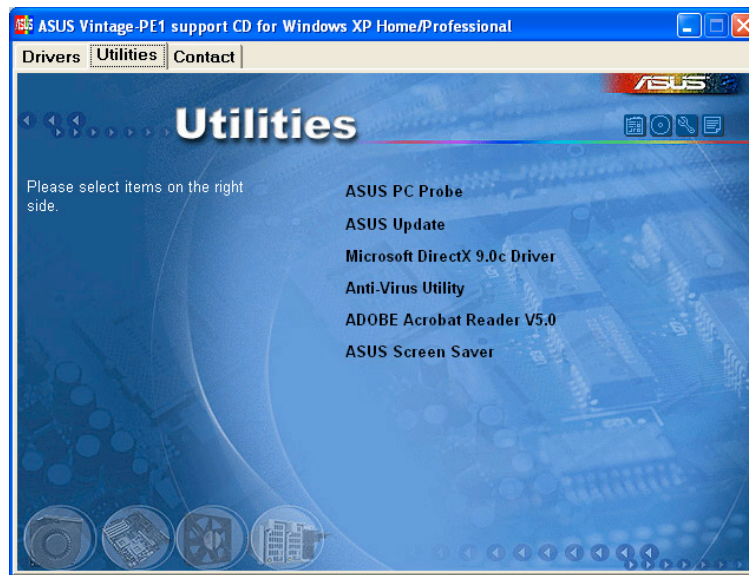
ASUS PC Probe

This smart utility monitors the fan speed, CPU temperature, and system voltages, and alerts you of any detected problems. This utility helps you keep your computer in healthy operating condition.

ASUS Update

The ASUS Update utility allows you to update the motherboard BIOS in a Windows® environment. This utility requires an Internet connection either through a network or an Internet Service Provider (ISP).

Microsoft DirectX

Installs the Microsoft® DirectX 9.0c driver.

Anti-Virus Utility

The anti-virus application scans, identifies, and removes computer viruses. View the online help for detailed information.

ADOBE Acrobat Reader

Installs the Adobe® Acrobat® Reader V5.0.

ASUS Screen Saver

Installs the ASUS screen saver.

> ✎ The screen display and utilities option may not be the same for different operating system versions.

3.2.3   ASUS Contact information

Click the **Contact** tab to display the ASUS contact information. You can also find this information on the inside front cover of this user guide.
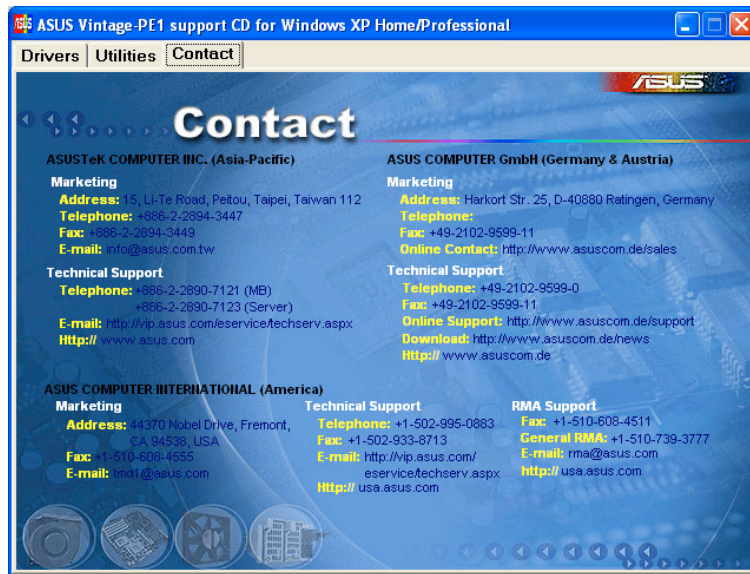
Chapter 4

This chapter gives information about the motherboard that comes with the system. This chapter includes the motherboard layout, jumper settings, and connector locations.

Motherboard info

ASUS Vintage-PE1

4.1   Introduction

The Vintage-PE1 barebone system comes with an ASUS motherboard. This chapter provides technical information about the motherboard for future upgrades or system reconfiguration.

4.2   Motherboard layout
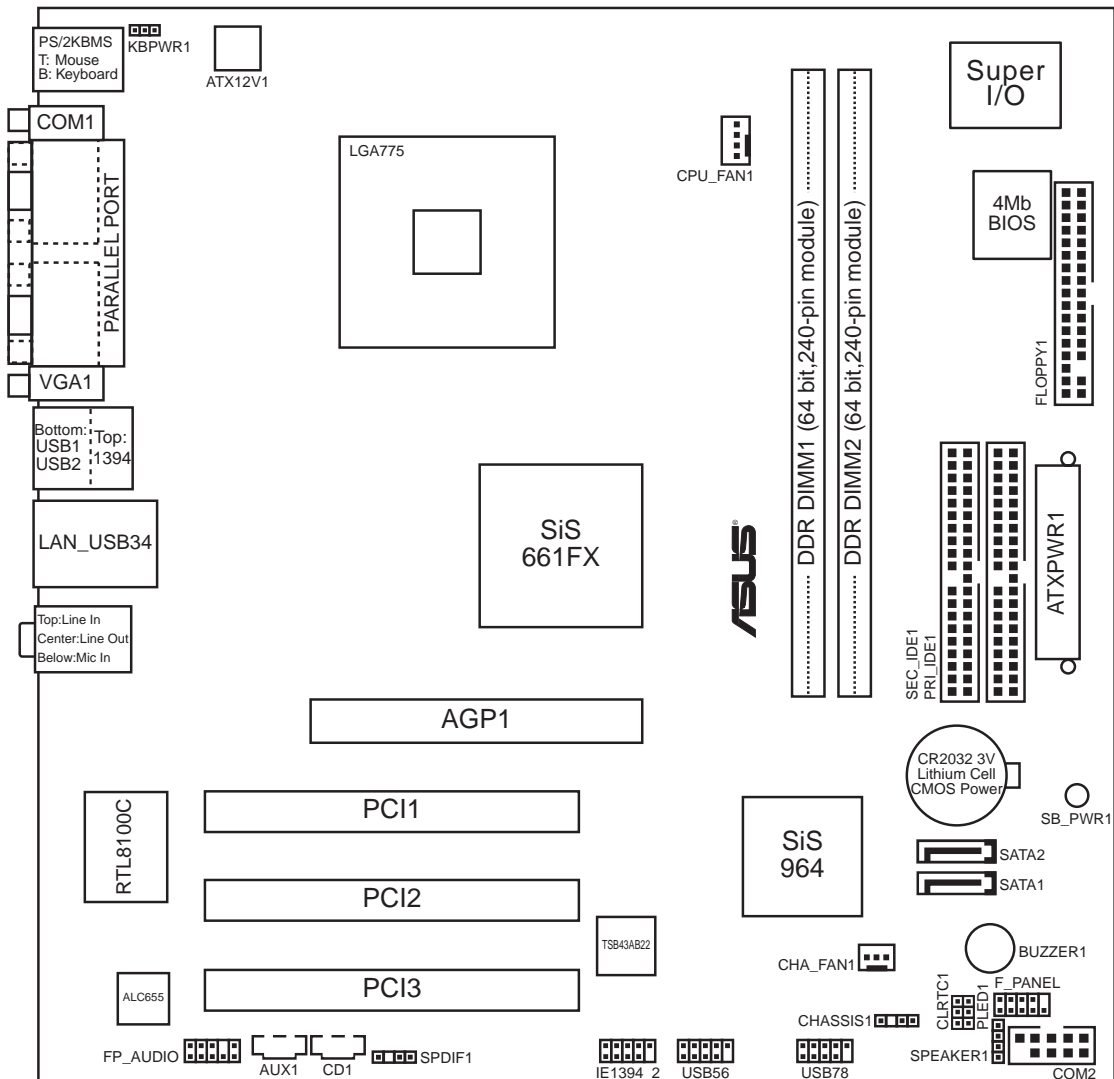
4.3 Jumpers

1. Clear RTC RAM (CLRTC1)

This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in the CMOS, which includes the system setup information such as system passwords.

To erase the RTC RAM:

1. Turn OFF the computer and unplug the power cord.
2. Remove the battery.
3. Move the jumper cap from pins 2-3 (default) to pins 1-2. Keep the cap on pins 1-2 for about 5-10 seconds, then move the cap back to pins 2-3.
4. Re-install the battery.
5. Plug the power cord and turn ON the computer.
6. Hold down the <Del> key during the boot process and enter BIOS setup to re-enter data.

CLRTC1

Clear RTC RAM

Clear CMOS

Normal
(Default)
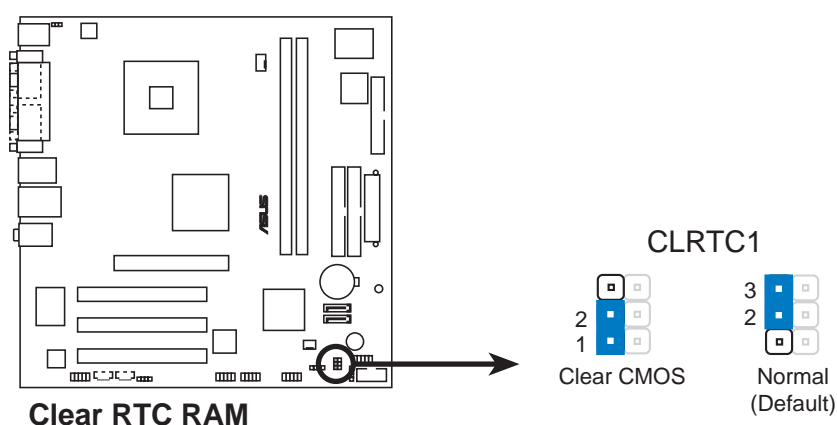
Except when clearing the RTC RAM, never remove the cap on CLRTC jumper default position. Removing the cap will cause system boot failure.

2. Keyboard power (3-pin KBPWR1)

This jumper allows you to enable or disable the keyboard wake-up feature. Default setting is 2-3. Set this jumper to pins 1-2 (+5V) if you do not want to wake up the computer when you press a key on the keyboard. This feature requires an ATX power supply that can supply at least 1A on the +5VSB lead, and a corresponding setting in the BIOS.

KBPWR1

1 2
+5V

2 3
+5VSB
(Default)

Keyboard power setting
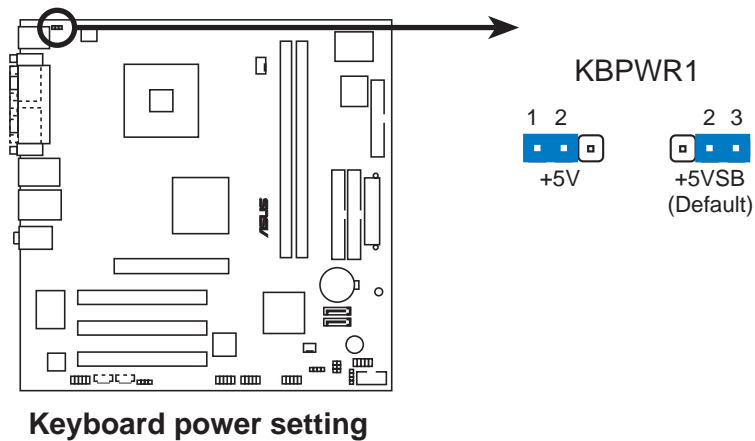
4.4 Connectors

1. **Floppy disk drive connector (34-1 pin FLOPPY1)**

   This connector is for the provided floppy disk drive (FDD) signal cable. Insert one end of the cable to this connector, then connect the other end to the signal connector at the back of the floppy disk drive.

   > Pin 5 on the connector is removed to prevent incorrect cable connection when using a FDD cable with a covered Pin 5.
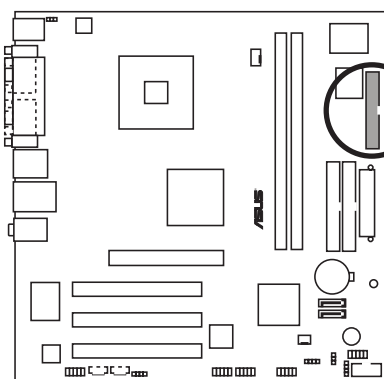
   FLOPPY1
   NOTE: Orient the red markings on the floppy ribbon cable to PIN 1.

   PIN 1

   Floppy disk drive connector

2. **IDE connectors (40-1 pin PRI_IDE1, SEC_IDE1)**

   This connector is for an Ultra DMA 100/66 signal cable. The Ultra DMA 100/66 signal cable has three connectors: a blue connector for the primary IDE connector on the motherboard, a black connector for an Ultra DMA 100/66 IDE slave device (optical drive/hard disk drive), and a gray connector for an Ultra DMA 100/66 IDE master device (hard disk drive). If you install two hard disk drives, you must configure the second drive as a slave device by setting its jumper accordingly. Refer to the hard disk documentation for the jumper settings.

   > • Pin 20 on the IDE connector is removed to match the covered hole on the Ultra DMA cable connector. This prevents incorrect insertion when you connect the IDE cable.
   >
   > • Use the 80-conductor IDE cable for Ultra DMA 100/66 IDE devices.
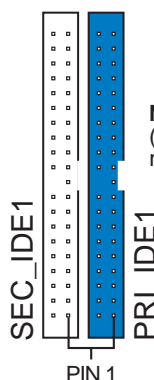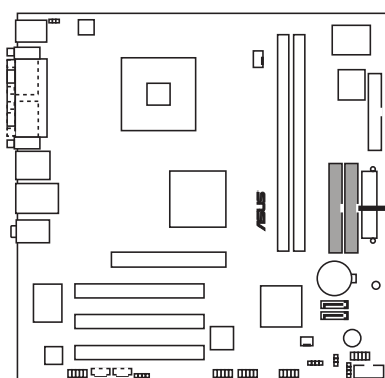
   NOTE: Orient the red markings (usually zigzag) on the IDE ribbon cable to PIN 1.

   SEC_IDE1   PRI_IDE1

   IDE connectors   PIN 1

4. Serial ATA connectors (7-pin SATA1, SATA2)

These connectors are for the Serial ATA signal cables for Serial ATA hard disk drives.

SATA connectors

SATA2

GND
RSATA_RXN2
RSATA_RXP2
GND
RSATA_TXN2
RSATA_TXP2
GND

SATA1

GND
RSATA_RXN1
RSATA_RXP1
GND
RSATA_TXN1
RSATA_TXP1
GND
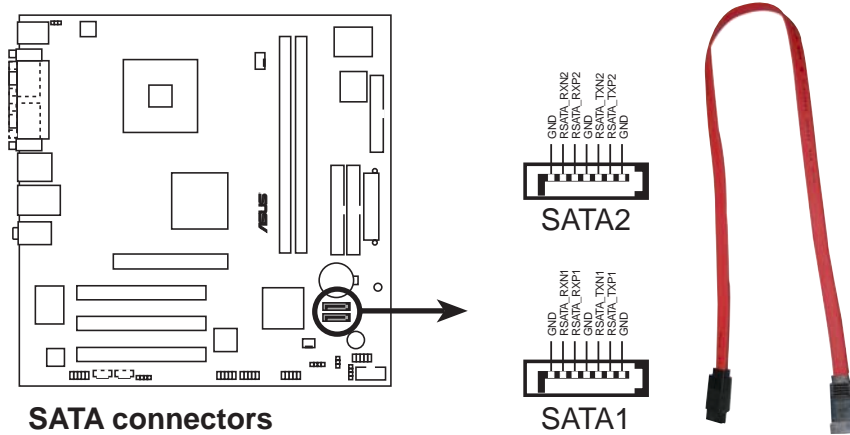
You must install Windows® 2000 Service Pack 4 or the Windows® XP Service Pack1 before using Serial ATA hard disk drives.

5. CPU and Chassis Fan connectors
(4-pin CPU_FAN1, 3-pin CHA_FAN1)

The fan connectors support cooling fans of 350 mA~740 mA (8.88 W max.) or a total of 1 A~2.22 A (26.64 W max.) at +12V. Connect the fan cables to the fan connectors on the motherboard, making sure that the black wire of each cable matches the ground pin of the connector.

> ⚠ Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! Do not place jumper caps on the fan connectors!

CPU_FAN1

CPU FAN PWM
CPU FAN IN
CPU FAN PWR
GND

CHA_FAN1

GND
+12V
Rotation
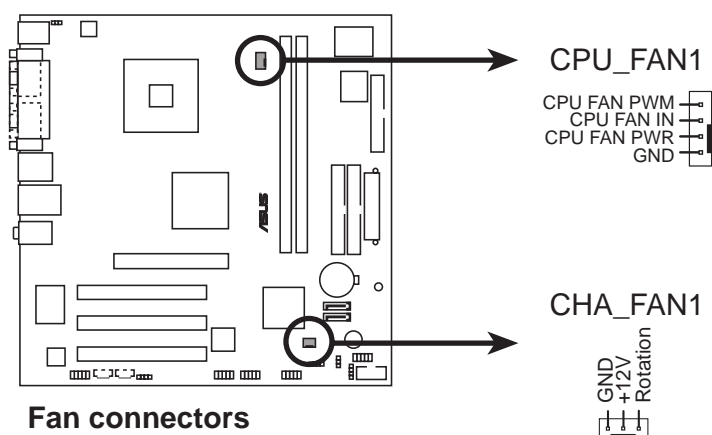
Fan connectors

> 🖉 Make sure that your fan power setting is correct. See page 2-8 for details.

6. USB connectors (10-1 pin USB56, USB78)

These connectors are for USB 2.0 ports. Connect the USB/GAME module cable to any of these connectors, then install the module to a slot opening at the back of the system chassis. These USB connectors comply with USB 2.0 specification that supports up to 480 Mbps connection speed.

USB 2.0 connectors

USB56

USB+5V
USB_P6-
USB_P6+
GND
NC

USB+5V
USB_P5-
USB_P5+
GND

USB78

USB+5V
USB_P8-
USB_P8+
GND
NC

USB+5V
USB_P7-
USB_P7+
GND
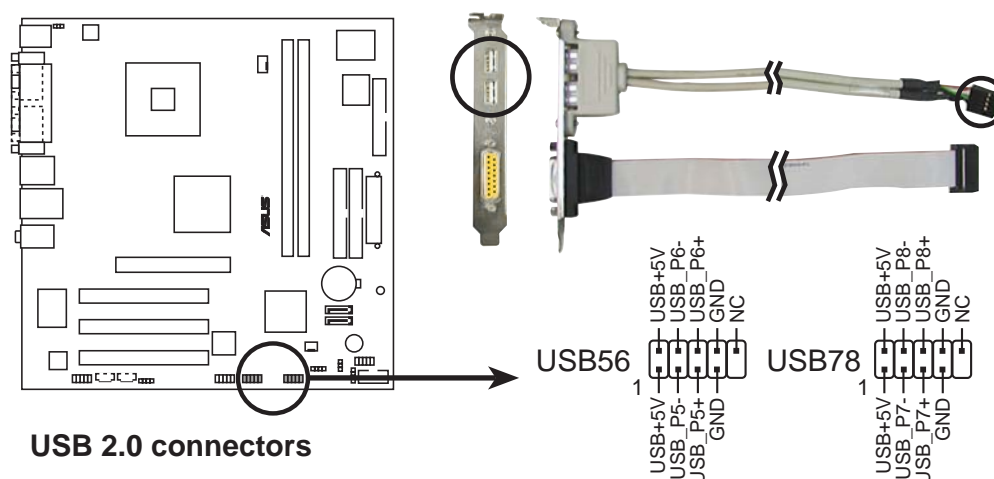
⚠ Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard!

✎ The USB module is purchased separately.

7. ATX power connectors (20-pin ATXPWR1, 4-pin ATX12V1)

These connectors are for ATX power supply plugs. The plugs from the power supply are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit.

ATX power connectors

ATX12V1

+12V DC   GND

+12V DC   GND

ATXPWR1

+12.0VDC	+5.0VDC
+5VSB	+5.0VDC
PWR_OK	-5.0VDC
COM	COM
+5.0VDC	COM
COM	COM
+5.0VDC	PS_ON#
COM	COM
+3.3VDC	-12.0VDC
+3.3VDC	+3.3VDC
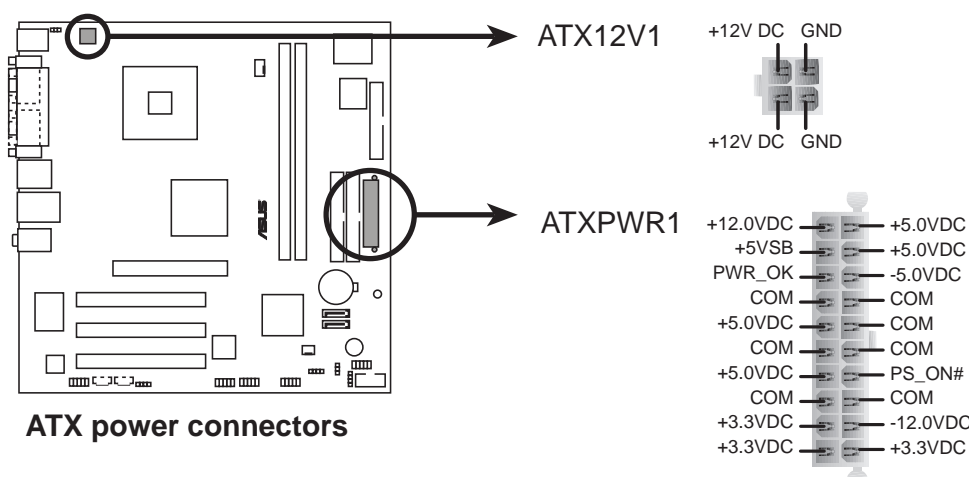
8. Optical drive audio connector (4-pin CD1)

This connector is for the 4-pin audio cable that connects to the audio connector at the back of the optical drive.

Internal audio connectors

AUX1 (White)   CD1 (Black)
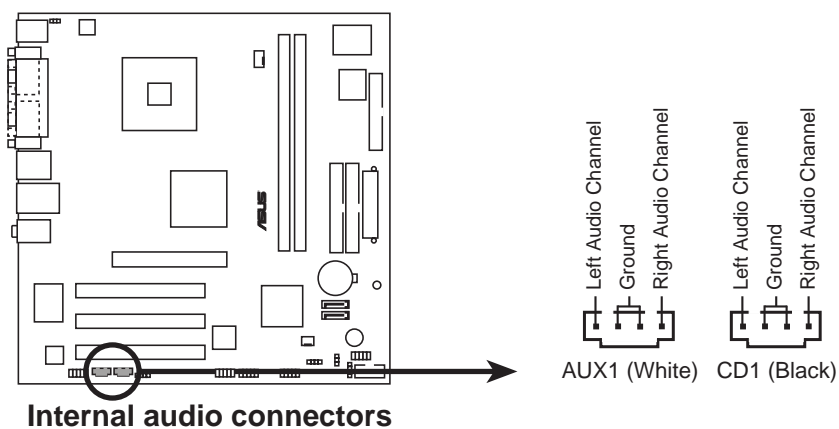
9. Front panel audio connector (10-1 pin FP_AUDIO1)

This connector is for a chassis-mounted front panel audio I/O module that supports AC'97 audio standard.

Front panel audio connector

FP_AUDIO1
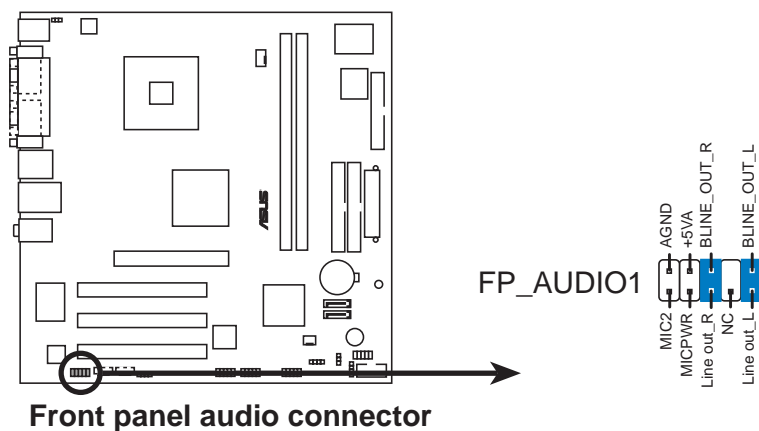
10. Chassis intrusion connector (4-1 pin CHASSIS1)

This connector is for a chassis-mounted intrusion detection sensor or switch. Connect one end of the chassis intrusion sensor or switch cable to this connector. The chassis intrusion sensor or switch sends a high-level signal to this connector when a chassis component is removed or replaced. The signal is then generated as a chassis intrusion event.

By default, the pins labeled "Chassis Signal" and "Ground" are shorted with a jumper cap. Remove the jumper caps only when you intend to use the chassis intrusion detection feature.

CHASSIS1

+5VSB_MB
Chassis Signal
GND

(Default)

Chassis intrusion connector
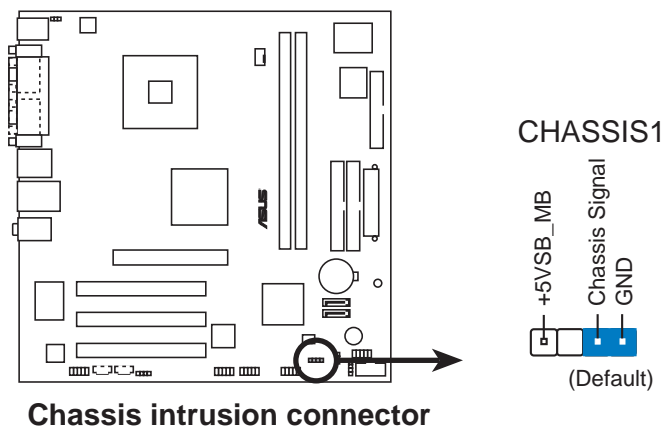
11. Speaker connector (4-pin SPEAKER1)

This 4-pin connector is for the chassis-mounted system warning speaker. The speaker allows you to hear system beeps and warnings.

SPEAKER1

Speak Out
GND
GND
+5V

1

Speaker out connector
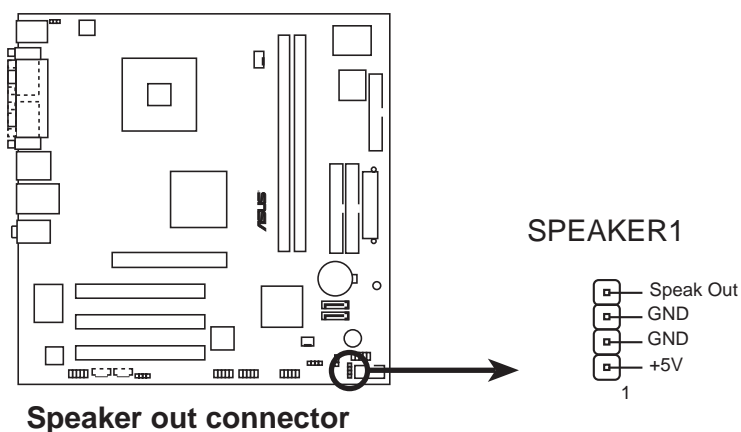
12. Digital audio connector (4-1 pin SPDIF1)

This connector is for an additional Sony/Philips Digital Interface (S/PDIF) port(s). Connect the S/PDIF module cable to this connector, then install the module to a slot opening at the back of the system chassis.

The S/PDIF module is purchased separately.

Digital audio connector

SPDIF1

+5V
SPDIFOUT
GND
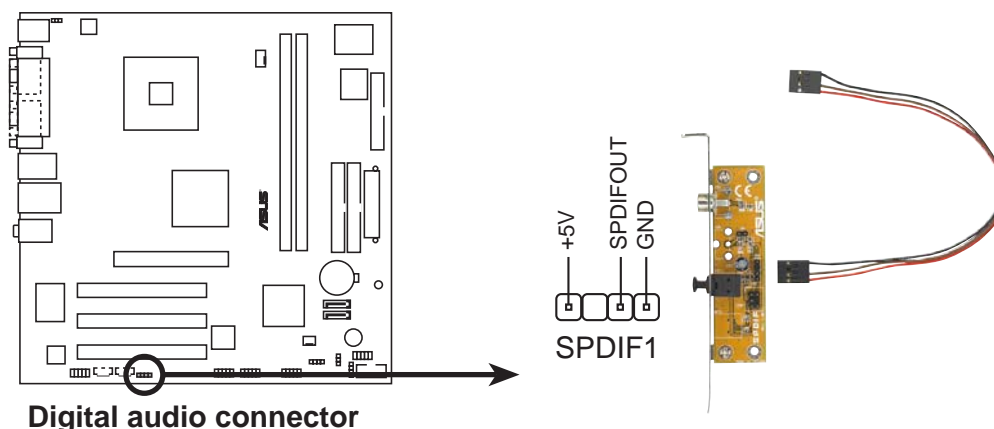
13. Power LED (3-pin PLED1)

This 3-pin connector is for the system power LED. Connect the 3-pin power LED cable from the system chassis to this connector. The LED lights up when you turn on the system power, and blinks when the system is in sleep mode.

PLED connector

PLED1

PLED-
NC
PLED+
1
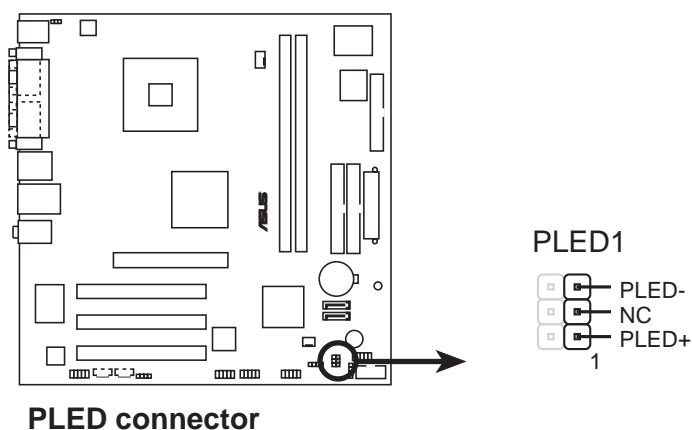
14. System panel connector (10-1 pin F_PANEL1)

This connector supports several chassis-mounted functions.

System panel connector
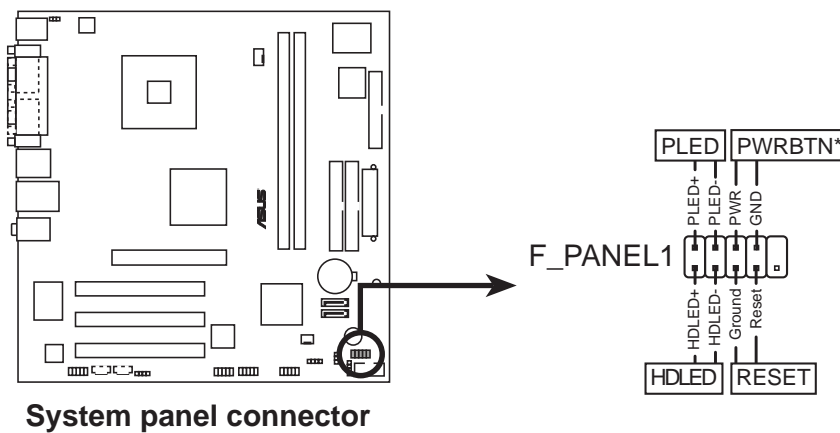
✏️ The sytem panel connector is color-coded for easy connection. Refer to the connector description below for details.

- **Power LED (Green 2-pin PLED)**
  This 2-pin connector is for the Power LED. Connect the 2-pin power LED cable from the system chassis to this connector. The LED lights up when you turn on the system power, and blinks when the system is in sleep mode.

- **Hard disk drive activity LED (Red 2-pin HDLED)**
  This 2-pin connector is for the HDD Activity LED. Connect the HDD Activity LED cable to this connector. The IDE LED lights up or flashes when data is read from or written to the HDD.

- **ATX power button/soft-off button (Black 2-pin PWRBTN)**
  This connector is for the system power button. Pressing the power button turns the system on or puts the system in sleep or soft-off mode depending on the BIOS settings. Pressing the power switch for more than four seconds while the system is ON turns the system OFF.

- **Reset button (Blue 2-pin RESET)**
  This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power.

Chapter 5

This chapter tells how to change system settings through the BIOS Setup menus and describes the BIOS parameters.

BIOS setup

ASUS Vintage-PE1

5.1 Managing and updating your BIOS

The following utilities allow you to manage and update the motherboard Basic Input/Output System (BIOS) setup.

1. **ASUS AFUDOS** (Updates the BIOS in DOS mode using a bootable floppy disk.)
2. **ASUS EZ Flash** (Updates the BIOS using a floppy disk during POST.)
3. **ASUS CrashFree BIOS 2** (Updates the BIOS using a bootable floppy disk or the motherboard support CD when the BIOS file fails or gets corrupted.)
4. **ASUS Update** (Updates the BIOS in Windows® environment.)

Refer to the corresponding sections for details on these utilities.

> Save a copy of the original motherboard BIOS file to a bootable floppy disk in case you need to restore the BIOS in the future. Copy the original motherboard BIOS using the ASUS Update or AFUDOS utilities.

5.1.1 Creating a bootable floppy disk

1. Do either one of the following to create a bootable floppy disk.

   DOS environment

   a. Insert a 1.44MB floppy disk into the drive.

   b. At the DOS prompt, type `format` `A:/S` then press <Enter>.

   Windows® XP environment

   a. Insert a 1.44 MB floppy disk to the floppy disk drive.

   b. Click **Start** from the Windows® desktop, then select **My Computer**.

   c. Select the 3 1/2 Floppy Drive icon.

   d. Click **File** from the menu, then select **Format**. A **Format 3 1/2 Floppy Disk** window appears.

   e. Select **Create an MS-DOS startup disk** from the format options field, then click **Start**.

   Windows® 2000 environment

   To create a set of boot disks for Windows® 2000:

   a. Insert a formatted, high density 1.44 MB floppy disk into the drive.

   b. Insert the Windows® 2000 CD to the optical drive.

   c. Click **Start**, then select **Run**.

d. From the Open field, type

   D:\bootdisk\makeboot a:

   assuming that D: is your optical drive.

e. Press <Enter>, then follow screen instructions to continue.

2. Copy the original or the latest motherboard BIOS file to the bootable floppy disk.

5.1.2   ASUS EZ Flash utility

The ASUS EZ Flash feature allows you to update the BIOS without having to go through the long process of booting from a floppy disk and using a DOS-based utility. The EZ Flash utility is built-in the BIOS chip so it is accessible by pressing <Alt> + <F2> during the Power-On Self Tests (POST).

To update the BIOS using EZ Flash:

1. Visit the ASUS website (www.asus.com) to download the latest BIOS file for the motherboard and rename the same to **P5S800VM.ROM**.

2. Save the BIOS file to a floppy disk, then restart the system.

3. Press <Alt> + <F2> during POST to display the following.

```
EZFlash starting BIOS update
Checking for floppy...
```

4. Insert the floppy disk that contains the BIOS file to the floppy disk drive. When the correct BIOS file is found, EZ Flash performs the BIOS update process and automatically reboots the system when done.

```
EZFlash starting BIOS update
Checking for floppy...
Floppy found!
Reading file "P5S800VM.ROM". Completed.
Start erasing.......|
Start programming...|
Flashed successfully. Rebooting.
```

> • Do not shut down or reset the system while updating the BIOS to prevent system boot failure!
>
> • A "Floppy not found!" error message appears if there is no floppy disk in the drive. A "P5S800VM.ROM not found!" error message appears if the correct BIOS file is not found in the floppy disk. Make sure that you rename the BIOS file to P5S800VM.ROM.

5.1.3 AFUDOS utility

The AFUDOS utility allows you to update the BIOS file in DOS environment using a bootable floppy disk with the updated BIOS file. This utility also allows you to copy the current BIOS file that you can use as backup when the BIOS fails or gets corrupted during the updating process.

Copying the current BIOS

To copy the current BIOS file using the AFUDOS utility:

> • Make sure that the floppy disk is not write-protected and has at least 600 KB free space to save the file.
>
> • The succeeding BIOS screens are for reference only. The actual BIOS screen displays may not be exactly the same as shown.

1. Copy the AFUDOS utility (afudos.exe) from the motherboard support CD to the bootable floppy disk you created earlier.

2. Boot the system in DOS mode, then at the prompt type:

    afudos /o[filename]

    where the [filename] is any user-assigned filename not more than eight alphanumeric characters for the main filename and three alphanumeric characters for the extension name.

    ```
    A:\>afudos /oOLDBIOS1.ROM
    ```

    Main filename   Extension name

3. Press <Enter>. The utility copies the current BIOS file to the floppy disk.

    ```
    A:\>afudos /oOLDBIOS1.ROM
    AMI Firmware Update Utility - Version 1.10
    Copyright (C) 2002 American Megatrends, Inc. All rights reserved.
       Reading flash ..... done
    A:\>
    ```

    The utility returns to the DOS prompt after copying the current BIOS file.

Updating the BIOS file

To update the BIOS file using the AFUDOS utility:

1. Visit the ASUS website (www.asus.com) and download the latest BIOS file for the motherboard. Save the BIOS file to a bootable floppy disk.

> Write the BIOS filename on a piece of paper. You need to type the exact BIOS filename at the DOS prompt.

2. Copy the AFUDOS utility (afudos.exe) from the motherboard support CD to the bootable floppy disk you created earlier.

3. Boot the system in DOS mode, then at the prompt type:

   afudos /i[filename]

   where [filename] is the latest or the original BIOS file on the bootable floppy disk.

```
A:\>afudos /iP5S800VM.ROM
```

4. The utility reads the file and starts updating the BIOS.

```
A:\>afudos /iP5S800VM.ROM
AMI Firmware Update Utility - Version 1.19(ASUS V2.07(03.11.24BB))
Copyright (C) 2003 American Megatrends, Inc. All rights reserved.

    WARNING!! Do not turn off power during flash BIOS
    Reading file ..... done
    Reading flash .... done
    Search bootblock version
    Advance Check........
    Erasing flash .... done
    Writing flash .... 0x0008CC00 (9%)
```

> Do not shut down or reset the system while updating the BIOS to prevent system boot failure!

5.   The utility returns to the DOS prompt after the BIOS update process is completed. Reboot the system from the hard disk drive.

```
A:\>afudos /iP5S800VM.ROM
AMI Firmware Update Utility - Version 1.19(ASUS V2.07(03.11.24BB))
Copyright (C) 2003 American Megatrends, Inc. All rights reserved.

    WARNING!! Do not turn off power during flash BIOS
    Reading file ..... done
    Reading flash .... done
    Search bootblock version
    Advance Check........
    Erasing flash ..... done
    Writing flash ..... done
    Verifying flash ... done

    Please restart your computer

A:\>
```

5.1.4   ASUS CrashFree BIOS 2 utility

The ASUS CrashFree BIOS 2 is an auto recovery tool that allows you to restore the BIOS file when it fails or gets corrupted during the updating process. You can update a corrupted BIOS file using the motherboard support CD or the floppy disk that contains the updated BIOS file.

- Prepare the motherboard support CD or the floppy disk containing the updated motherboard BIOS before using this utility.

- Make sure that you rename the original or updated BIOS file in the floppy disk to **P5S800VM.ROM**.

Recovering the BIOS from a floppy disk

To recover the BIOS from a floppy disk:

1.   Turn on the system.

2.   Insert the floppy disk with the original or updated BIOS file to the floppy disk drive.

3. The utility displays the following message and automatically checks the floppy disk for the original or updated BIOS file.

```
Bad BIOS checksum. Starting BIOS recovery...
Checking for floppy...
```

When found, the utility reads the BIOS file and starts flashing the corrupted BIOS file.

```
Bad BIOS checksum. Starting BIOS recovery...
Checking for floppy...
Floppy found!
Reading file "P5S800VM.ROM". Completed.
Start flashing...
```

⚠️ DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure!

4. Restart the system after the utility completes the updating process.

Recovering the BIOS from the support CD

To recover the BIOS from the support CD:

1. Remove any floppy disk from the floppy disk drive, then turn on the system.
2. Insert the support CD to the optical drive.
3. The utility displays the following message and automatically checks the floppy disk for the original or updated BIOS file.

```
Bad BIOS checksum. Starting BIOS recovery...
Checking for floppy...
```

When no floppy disk is found, the utility automatically checks the optical drive for the original or updated BIOS file. The utility then updates the corrupted BIOS file.

```
Bad BIOS checksum. Starting BIOS recovery...
Checking for floppy...
Floppy not found!
Checking for CD-ROM...
CD-ROM found!
Reading file "P5S800VM.ROM". Completed.
Start flashing...
```

	DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure!

4.   Restart the system after the utility completes the updating process.

	The recovered BIOS may not be the latest BIOS version for this motherboard. Visit the ASUS website (www.asus.com) to download the latest BIOS file.

5.1.5   ASUS Update utility

The ASUS Update is a utility that allows you to manage, save, and update the motherboard BIOS in Windows® environment. The ASUS Update utility allows you to:

- •   Save the current BIOS file
- •   Download the latest BIOS file from the Internet
- •   Update the BIOS from an updated BIOS file
- •   Update the BIOS directly from the Internet, and
- •   View the BIOS version information.

This utility is available in the support CD that comes with the motherboard package.

	ASUS Update requires an Internet connection either through a network or an Internet Service Provider (ISP).

Installing ASUS Update

To install ASUS Update:

1.   Place the support CD in the optical drive. The **Drivers** menu appears.
2.   Click the **Utilities** tab, then click **Install ASUS Update VX.XX.XX**. See page 3-4 for the **Utilities** screen menu.
3.   The ASUS Update utility is copied to your system.

	Quit all Windows® applications before you update the BIOS using this utility.

Updating the BIOS through the Internet

To update the BIOS through the Internet:

1. Launch the ASUS Update utility from the Windows® desktop by clicking
    Start > **Programs** > **ASUS** > **ASUSUpdate** > **ASUSUpdate**. The
    ASUS Update main window appears.
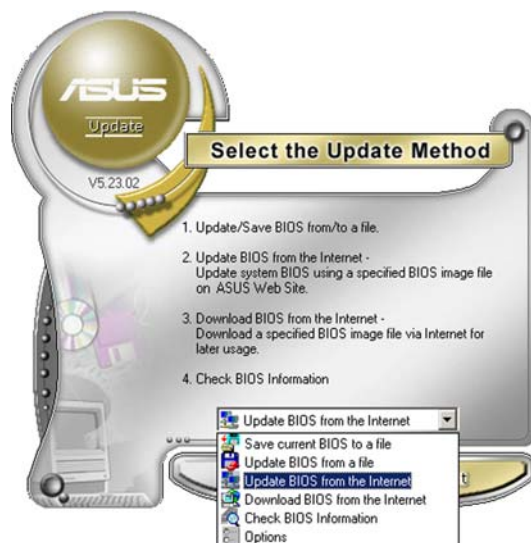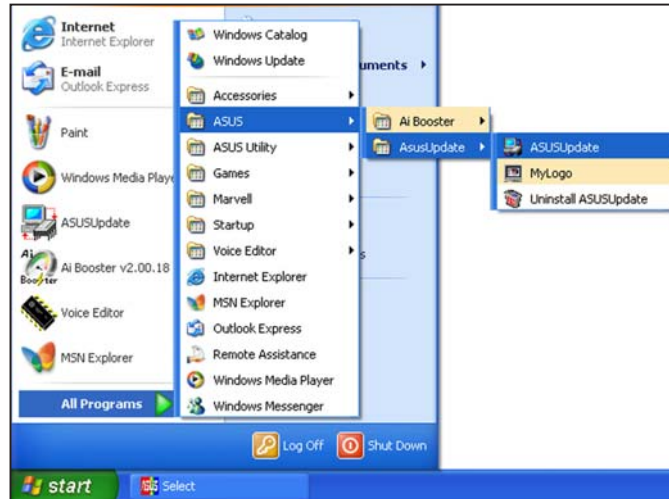
2. Select **Update BIOS from the Internet** option from the drop-down menu, then click **Next**.

3. Select the ASUS FTP site nearest you to avoid network traffic, or click **Auto Select**. Click **Next**.

4. From the FTP site, select the
    BIOS version that you wish to
    download. Click Next.

5. Follow the screen instructions to
    complete the update process.

The ASUS Update utility is
capable of updating itself
through the Internet. Always
update the utility to avail all
its features.

Updating the BIOS through a BIOS file

To update the BIOS through a BIOS file:

1. Launch the ASUS Update utility from the Windows® desktop by
    clicking **Start** > **Programs** > **ASUS** > **ASUSUpdate** >
    ASUSUpdate. The ASUS Update main window appears.

2. Select **Update BIOS from a
    file** option from the drop-down
    menu, then click **Next**.
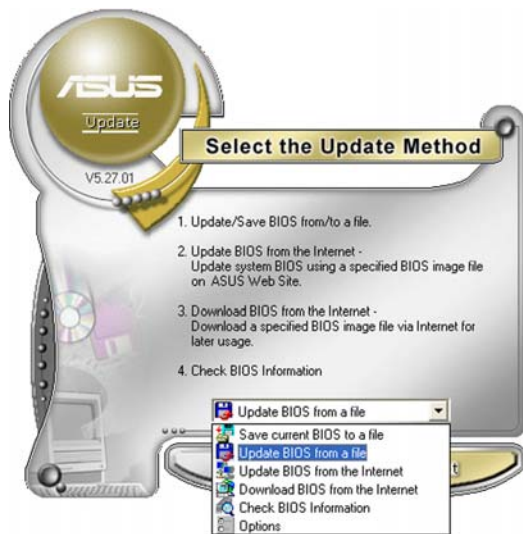
3. Locate the BIOS file from the
    Open window, then click **Save**.

4. Follow the screen instructions to
    complete the update process.
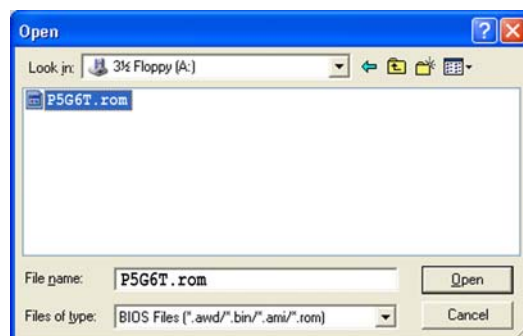
5.2   BIOS setup program

This motherboard supports a programmable firmware chip that you can update using the provided utility described in section "5.1 Managing and updating your BIOS."

Use the BIOS Setup program when you are installing a motherboard, reconfiguring your system, or prompted to "Run Setup". This section explains how to configure your system using this utility.

Even if you are not prompted to use the Setup program, you can change the configuration of your computer in the future. For example, you can enable the security password feature or change the power management settings. This requires you to reconfigure your system using the BIOS Setup program so that the computer can recognize these changes and record them in the CMOS RAM of the firmware hub.

The firmware hub on the motherboard stores the Setup utility. When you start up the computer, the system provides you with the opportunity to run this program. Press <Del> during the Power-On Self-Test (POST) to enter the Setup utility; otherwise, POST continues with its test routines.

If you wish to enter Setup after POST, restart the system by pressing <Ctrl+Alt+Delete>, or by pressing the reset button on the system chassis. You can also restart by turning the system off and then back on. Do this last option only if the first two failed.

The Setup program is designed to make it as easy to use as possible. Being a menu-driven program, it lets you scroll through the various sub-menus and make your selections from the available options using the navigation keys.

- • The default BIOS settings for this motherboard apply for most conditions to ensure optimum performance. If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability. Select the **Load Default Settings** item under the Exit Menu. See section "5.7 Exit Menu."

- • The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.

- • Visit the ASUS website (www.asus.com) to download the latest BIOS file for this motherboard and .

5.2.1 BIOS menu screen

Menu items   Menu bar   Configuration fields   General help

```
                        BIOS SETUP UTILITY
Main    Advanced    Power    Boot    Exit

   System Time                [11:51:19]              Use [ENTER], [TAB]
   System Date                [Thu 10/07/2004]        or [SHIFT-TAB] to
   Legacy Diskette A          [1.44M, 3.5 in]         select a field.

   ▶ Primary IDE Master       : [ST320413A]           Use [+]  or [-] to
   ▶ Primary IDE Slave        : [ASUS CD-S360]        configure system time.
   ▶ Secondary IDE Master     : [Not Detected]
   ▶ Secondary IDE Slave      : [Not Detected]

   OnChip SATA Controller      [Enabled]
   ▶ System Information                               ↔     Select Screen
                                                      ↑↓    Select Item
                                                      +-    Change Option
                                                      F1    General Help
                                                      F10   Save and Exit
                                                      ESC   Exit

        v00.00 (C)Copyright 1985-2002, American Megatrends, Inc.
```

Sub-menu items   Navigation keys

5.2.2 Menu bar

The menu bar on top of the screen has the following main items:

Main   For changing the basic system configuration

Advanced   For changing the advanced system settings

Power   For changing the advanced power management (APM) configuration

Boot   For changing the system boot configuration

Exit   For selecting the exit options and loading default settings

To select an item on the menu bar, press the right or left arrow key on the keyboard until the desired item is highlighted.

5.2.3 Navigation keys

At the bottom right corner of a menu screen are the navigation keys for that particular menu. Use the navigation keys to select items in the menu and change the settings.

Some of the navigation keys differ from one screen to another.

5.2.4 Menu items

The highlighted item on the menu bar displays the specific items for that menu. For example, selecting **Main** shows the Main menu items.

The other items (Advanced, Power, Boot, and Exit) on the menu bar have their respective menu items.
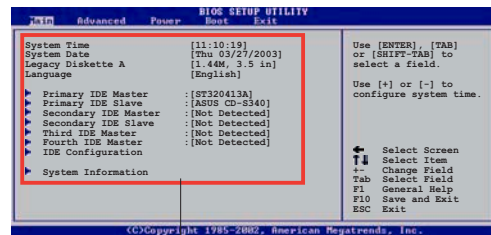
Main menu items

5.2.5 Sub-menu items

A solid triangle before each item on any menu screen means that the iteam has a sub-menu. To display the sub-menu, select the item and press <Enter>.

5.2.6 Configuration fields

These fields show the values for the menu items. If an item is user-configurable, you can change the value of the field opposite the item. You cannot select an item that is not user-configurable.

A configurable field is enclosed in brackets, and is highlighted when selected. To change the value of a field, select it then press <Enter> to display a list of options. Refer to "5.2.7 Pop-up window."

5.2.7 Pop-up window

Select a menu item then press <Enter> to display a pop-up window with the configuration options for that item.

5.2.8 Scroll bar

A scroll bar appears on the right side of a menu screen when there are items that do not fit on the screen. Press the
Up/Down arrow keys or <Page Up> / <Page Down> keys to display the other items on the screen.
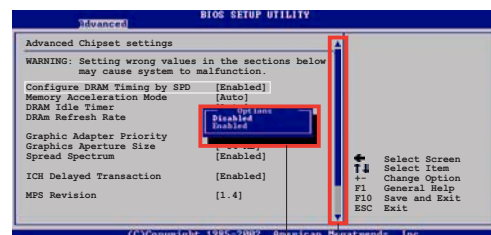
Pop-up window

Scroll bar

5.2.9 General help

At the top right corner of the menu screen is a brief description of the selected item.

5.3   Main menu

When you enter the BIOS Setup program, the Main menu screen appears, giving you an overview of the basic system information.

Refer to section "5.2.1 BIOS menu screen" for information on the menu screen items and how to navigate through them.

```
                          BIOS SETUP UTILITY
  Main    Advanced    Power    Boot    Exit

  System Time                 [11:51:19]
  System Date                 [Thu 10/07/2004]
  Legacy Diskette A           [1.44M, 3.5 in]

  ► Primary IDE Master        :[ST320413A]
  ► Primary IDE Slave         :[ASUS CD-S360]
  ► Secondary IDE Master      :[Not Detected]
  ► Secondary IDE Slave       :[Not Detected]

  OnChip SATA Controller      [Enabled]
  ► System Information
                                               ↔    Select Screen
                                               ↑↓   Select Item
                                               +-   Change Option
                                               F1   General Help
                                               F10  Save and Exit
                                               ESC  Exit

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```

5.3.1   System Time [xx:xx:xxxx]

Allows you to set the system time.

5.3.2   System Date [Day xx/xx/xxxx]

Allows you to set the system date.

5.3.3   Legacy Diskette A [1.44M, 3.5 in.]

Sets the type of floppy drive installed. Configuration options: [Disabled] [360K, 5.25 in.] [1.2M , 5.25 in.] [720K , 3.5 in.] [1.44M, 3.5 in.] [2.88M, 3.5 in.]

5.3.4 Primary and Secondary IDE Master/Slave

While entering Setup, the BIOS automatically detects the presence of IDE devices. There is a separate sub-menu for each IDE device. Select a device item then press <Enter> to display the IDE device information.

```
                        BIOS SETUP UTILITY
 Main

 Primary IDE Master
 Device            : Hard Disk
 Vendor            : ST320413A
 Size              : 20.0GB
 LBA Mode          : Supported
 Block Mode        : 16 Sectors
 PIO Mode          : 4
 Async DMA         : MultiWord DMA-2
 Ultra DMA         : Ultra DMA-5
 SMART Monitoring: Supported
                                              ↔    Select Screen
 Type                          [Auto]         ↑↓   Select Item
 LBA/Large Mode                [Auto]         +-   Change Option
 Block(Multi-sector Transfer)  [Auto]         F1   General Help
 PIO Mode                      [Auto]         F10  Save and Exit
 DMA Mode                      [Auto]         ESC  Exit
 Smart Monitoring              [Auto]
 32Bit Data Transfer           [Disabled]

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```

The BIOS automatically detects the values opposite the dimmed items (Device, Vendor, Size, LBA Mode, Block Mode, PIO Mode, Async DMA, Ultra DMA, and SMART monitoring). These values are not user-configurable. These items show N/A if no IDE device is installed in the system.

Type [Auto]

Selects the type of IDE drive. Setting to Auto allows automatic selection of the appropriate IDE device type. Select CDROM if you are specifically configuring a CD-ROM drive. Select ARMD (ATAPI Removable Media Device) if your device is either a ZIP, LS-120, or MO drive.
Configuration options: [Not Installed] [Auto] [CDROM] [ARMD]

LBA/Large Mode [Auto]

Enables or disables the LBA mode. Setting to Auto enables the LBA mode if the device supports this mode, and if the device was not previously formatted with LBA mode disabled.
Configuration options: [Disabled] [Auto]

Block (Multi-sector Transfer) [Auto]

Enables or disables data multi-sectors transfers. When set to Auto, the data transfer from and to the device occurs multiple sectors at a time if the device supports multi-sector transfer feature. When set to [Disabled], the data transfer from and to the device occurs one sector at a time.
Configuration options: [Disabled] [Auto]

PIO Mode [Auto]

Selects the PIO mode.
Configuration options: [Auto] [0] [1] [2] [3] [4]

DMA Mode [Auto]

Selects the DMA mode. Configuration options: [Auto] [SWDMA0]
[SWDMA1] [SWDMA2] [MWDMA0] [MWDMA1] [MWDMA2] [UDMA0]
[UDMA1] [UDMA2] [UDMA3] [UDMA4] [UDMA5]

SMART Monitoring [Auto]

Sets the Smart Monitoring, Analysis, and Reporting Technology.
Configuration options: [Auto] [Disabled] [Enabled]

32Bit Data Transfer [Disabled]

Enables or disables 32-bit data transfer.
Configuration options: [Disabled] [Enabled]

5.3.5   OnChip SATA Controller [Enabled]

Enables or disables the onchip Serial ATA controller.
Configuration options: [Disabled] [Enabled]

5.3.6   System Information

This menu gives you an overview of the general system specifications. The
BIOS automatically detects the items in this menu.


```
                          BIOS SETUP UTILITY
    Main

        AMIBIOS
        Version    : 08.00.10
        Build Date : 10/07/04

        Processor
        Type       : Genuine Intel(R) CPU 3.20GHz
        Speed      : 2800 MHz
        Count      : 1

        System Memory
        Size       : 512MB
                                              ↔     Select Screen
```
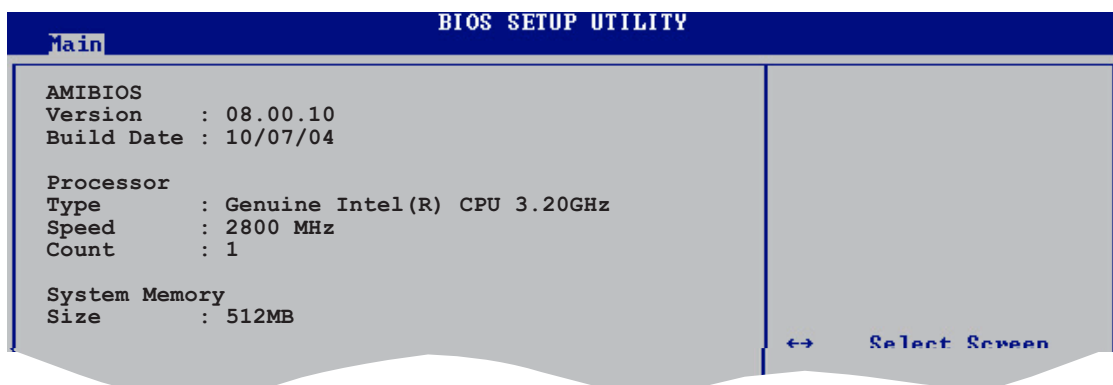
AMI BIOS

Displays the auto-detected BIOS information

Processor

Displays the auto-detected CPU specification

System Memory

Displays the auto-detected system memory

5.4   Advanced menu

The Advanced menu items allow you to change the settings for the CPU and other system devices.

⚠️ Take caution when changing the settings of the Advanced menu items. Incorrect field values may cause the system to malfunction.

```
                          BIOS SETUP UTILITY
  Main    Advanced    Power    Boot    Exit
┌──────────────────────────────────────────┬─────────────────────────┐
│                                           │                         │
│  ▶ JumperFree Configuration               │                         │
│  ▶ CPU Configuration                      │                         │
│  ▶ Chipset                                │                         │
│  ▶ Onboard Devices Configuration          │                         │
│  ▶ PCIPnP                                  │                         │
│  ▶ USB Configuration                      │                         │
│  ▶ Instant Music Configuration            │                         │
│    SMBIOS SMI Support          [Disabled] │                         │
│                                           │                         │
│                                           │  ↔     Select Screen    │
│                                           │  ↑↓    Select Item       │
│                                           │  Enter Go to Sub Screen  │
│                                           │  F1    General Help      │
│                                           │  F10   Save and Exit     │
│                                           │  ESC   Exit              │
│                                           │                         │
└──────────────────────────────────────────┴─────────────────────────┘
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```

5.4.1   JumperFree Configuration

```
                          BIOS SETUP UTILITY
    Advanced
┌──────────────────────────────────────────┬─────────────┐
│  Configure System Frequency/Voltage       │             │
│                                           │             │
│  AI Overclock Tuner            [Standard] │             │
│  Spread Spectrum               [Enabled]  │             │
│  DRAM Frequency                [Auto]     │             │
│  CPU Lock Free                 [Auto]     │             │
│                                           │             │
```

AI Overclock Tuner [Standard]

Allows selection of CPU overclocking options to achieve desired CPU internal frequency. Configuration options: [Standard] [Overclock 5%] [Overclock 10%] [Overlock 20%] [Overclock 30%]

CPU Lock Free [Auto]

Allows you to adjust the CPU multiplier to 14x. Setting this item to [Auto] allows the motherboard to automatically reduce the CPU multiplier value for more flexibility when increasing the external FSB. This item appears only if you installed a CPU with the CPU Lock Free feature.
Configuration options: [Auto] [Disabled] [Enabled]

Spread Spectrum [Enabled]

Enables or disables the generator spread spectrum.
Configuration options: [Disabled] [Enabled]

DRAM Frequency [Auto]

Sets the DDR operating frequency.
Configuration options: [200 MHz] [266 Mhz] [333 Mhz] [400 Mhz] [Auto]

- Refer to the DDR documentation before setting the memory frequency. Setting a very high memory voltage may damage the memory module(s)!

- Selecting a DRAM frequency that is not supported by your DIMM module may cause the system to become unstable! If this happens, revert to the default setting.

5.4.2 CPU Configuration

The items in this menu show the CPU-related information auto-detected by BIOS.

```
                          BIOS SETUP UTILITY
   Advanced

  Configure Advanced CPU settings

  Manufacturer: Intel
  Brand String: Intel(R) Pentium(R) 4 CPU 2.80GHz
  Frequency   : 2806Mhz
  FSB Speed   : 800Mhz

  Cache L1    : 16 KB
  Cache L2    : 1024 KB
  Cache L3    : 0 KB

  Ratio Status: Unlocked
  Ratio Actual Value: 14                           ↔    Select Screen
  Ratio CMOS Setting:             [ 14]            ↑↓   Select Item
  CPU Lock Free                   [Auto]           +-   Change Option
  Max CPUID Value Limit:          [Disabled]       F1   General Help
  Enhanced C1 Control             [Auto]           F10  Save and Exit
  CPU Internal Thermal Control    [Auto]           ESC  Exit

  Hyper Threading Function        [Enabled]

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```

Ratio CMOS Setting [14]

Sets the ratio between the CPU core clock and the FSB frequency.

Microcode Updation [Enabled]

Enables or disables the Microcode updation feature.
Configuration options: [Enabled] [Disabled]

CPU Lock Free [Auto]

Allows you to adjust the CPU multiplier to 14x. Setting this item to [Auto] allows the motherboard to automatically reduce the CPU multiplier value for more flexibility when increasing the external FSB. This item appears only if you installed a CPU with the CPU Lock Free feature.
Configuration options: [Auto] [Disabled] [Enabled]

Max CPUID Value Limit [Disabled]

This item allows you to enable or disable the maximum CPUID value limit.
Configuration options: [Disabled] [Enabled]

Enhanced C1 Control [Auto]

When set to Auto, the BIOS checks if the CPU supports the Intel® Enhanced Halt State mode. In Enhanced Halt State mode, the CPU's power consumption is lower in idle state. Configuration options: [Auto] [Disabled]

CPU Internal Thermal Control [Auto]

This item allows you to disable or set to auto the Intel® Thermal Monitoring 2 feature. Configuration options: [Auto] [Disabled]

Hyper-Threading Function [Enabled]

This item allows you to enable or disable the processor Hyper-Threading Technology. Configuration options: [Disabled] [Enabled]

5.4.3   Chipset

The Chipset menu items allow you to change the advanced chipset settings. Select an item then press <Enter> to display the sub-menu.

```
                    BIOS SETUP UTILITY
        Advanced

    ▶   NorthBridge SiS661FX Configuration
    ▶   SouthBridge SiS964 Configuration
```

NorthBridge SiS661FX Configuration

```
                    BIOS SETUP UTILITY
        Advanced

    Primary Graphics Adapter        [PCI]
    MA 1T/2T Select                 [Auto]
    DRAM CAS# Latency               [By SPD]
    DRAM Precharge Delay            [Auto]
    DRAM RAS# to CAS# Delay         [Auto]
    DRAM RAS# Precharge             [Auto]
    Graphic Win Size                [ 64MB]
    AGP Fast Write Control          [Disabled]

    Share Memory Size               [ 32MB]
```
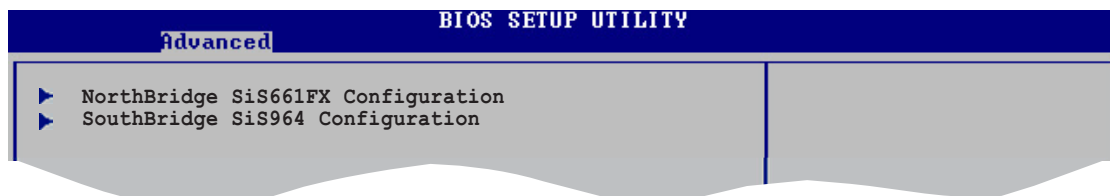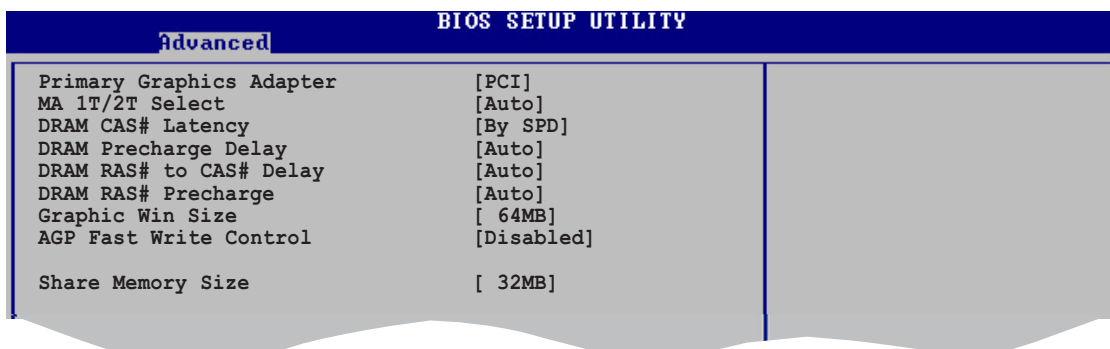
Primary Graphics Adapter [PCI]

Allows selection of the graphics controller to use as primary boot device. Configuration options: [PCI] [AGP] [Onboard AGP]

MA 1T/2T Select [Auto]

Configuration options: [Auto] [MA 2T] [1T] [MA 1T]

DRAM CAS# Latency [By SPD]

This item controls the latency between the SDRAM read command and the time the data actually becomes available.
Configuration options: [By SPD] [2T] [2.5T] [3T]

DRAM Precharge Delay [Auto]

Configuration options: [Auto] [6T] [7T] [5T] [4T] [8T] [9T]

DRAM RAS# to CAS# Delay [Auto]

This item controls the latency between the DDR SDRAM active command and the read/write command.
Configuration options: [Auto] [3T] [2T] [4T] [5T]

DRAM RAS# Precharge [Auto]

This item controls the idle clocks after issuing a precharge command to the DDR SDRAM. Configuration options: [Auto] [3T] [2T] [4T] [5T]

Graphics Win Size [64MB]

Allows you to select the size of mapped memory for AGP graphic data.
Configuration options: [32MB] [64MB] [128MB]

AGP Fast Write Control [Disabled]

Disables or enables the AGP Fast Write Control function.
Configuration options: [Disabled] [Enabled]

Share Memory Size [32MB]

Sets the share memory size. Configuration options: [16MB] [32MB] [64MB] [128MB] [Disabled]

SouthBridge SiS964 Configuration

```
                        BIOS SETUP UTILITY
         Advanced

   Onboard AC97 Audio Device      [Enabled]
```
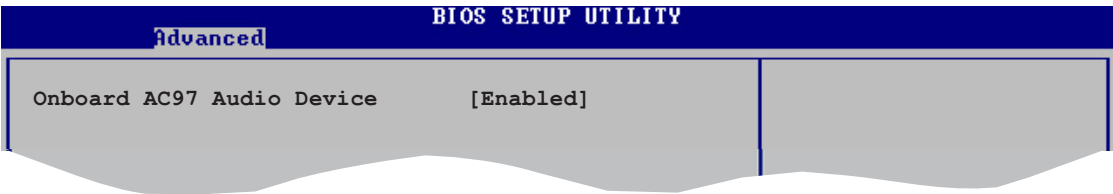
Onboard AC97 Audio Device [Enabled]

This item enables or disables the onboard AC'97 audio CODEC device.
Configuration options: [Disabled] [Enabled]

5.4.4   Onboard Devices Configuration

```
                        BIOS SETUP UTILITY
         Advanced

   Configure Win637 Super IO Chipset

   Serial Port1 Address           [3F8/IRQ4]
   Serial Port2 Address           [2F8/IRQ3]
   Parallel Port Address          [378]
   Parallel Port Mode             [ECP]
   ECP Mode DMA Channel           [DMA3]
   Parallel Port IRQ              [IRQ7]

   Onboard RTL8100C LAN DEVICE    [Enabled]
   Onboard LAN Boot ROM           [Disabled]
                                               ←→   Select Screen
                                               ↑↓   Select Item
```
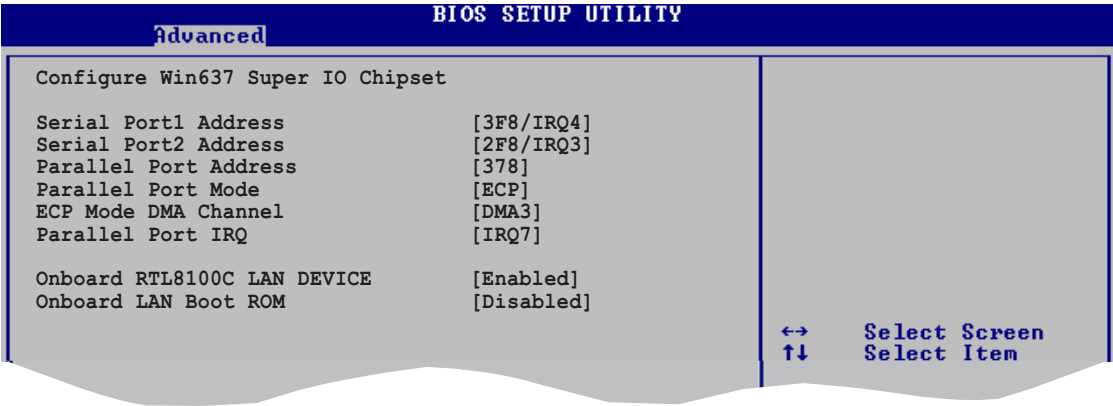
Serial Port1 Address [3F8/IRQ4]

Allows you to select the Serial Port1 base address.
Configuration options: [Disabled] [3F8/IRQ4] [3E8/IRQ4] [2E8/IRQ3]

Serial Port2 Address [2F8/IRQ3]

Allows you to select the Serial Port2 base address. Configuration options:
[Disabled] [2F8/IRQ3] [3E8/IRQ4] [2E8/IRQ3]

Parallel Port Address [378]

Allows you to select the Parallel Port base addresses. Configuration options: [Disabled] [378] [278] [3BC]

Parallel Port Mode [ECP]

Allows you to select the Parallel Port mode. When the item **Parallel Port Address** is set to **3BC**, the Parallel Port Mode options are only Normal, Bi-directional, and ECP. Configuration options: [Normal] [Bi-directional] [EPP] [ECP]

EPP Version [1.9]

Allows selection of the Parallel Port EPP version. This item appears only when the **Parallel Port Mode** is set to **EPP**. Configuration options: [1.9] [1.7]

Parallel Port IRQ [IRQ7]

Allows you to select the Parallel Port IRQ. Configuration options: [IRQ5] [IRQ7]

ECP Mode DMA Channel [DMA3]

Allows selection of the Parallel Port ECP DMA channel. This item appears only when the **Parallel Port Mode** is set to **ECP**. Configuration options: [DMA0] [DMA1] [DMA3]

Onboard RTL8100C LAN DEVICE [Enabled]

Enables or disables the onboard RTL8100C LAN device. Configuration options: [Disabled] [Enabled]

OnBoard LAN Boot ROM [Disabled]

Allows you to enable or disable the onboard LAN Boot ROM. Configuration options: [Disabled] [Enabled]

5.4.5 PCI PnP

The PCI PnP menu items allow you to change the advanced settings for PCI/PnP devices. The menu includes setting IRQ and DMA channel resources for either PCI/PnP or legacy ISA devices, and setting the memory size block for legacy ISA devices.

⚠ Take caution when changing the settings of the PCI PnP menu items. Incorrect field values can cause the system to malfunction.

```
                        BIOS SETUP UTILITY
        Advanced

   Advanced PCI/PnP Settings                      ▲

   WARNING: Setting wrong values in below sections
            may cause system to malfunction.

   Plug And Play O/S           [No]
   PCI Latency Timer           [64]
   Allocate IRQ to PCI VGA     [Yes]
   Palette Snooping            [Disabled]
   PCI IDE BusMaster           [Enabled]

   IRQ3                        [Available]
   IRQ4                        [Available]          ↔    Select Screen
   IRQ5                        [Available]          ↑↓   Select Item
   IRQ7                        [Available]          +-   Change Option
   IRQ9                        [Available]          F1   General Help
   IRQ10                       [Available]          F10  Save and Exit
   IRQ11                       [Available]          ESC  Exit
   IRQ14                       [Available]
   IRQ15                       [Available]          ▼

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```

Plug and Play O/S [No]

When set to [No], BIOS configures all the devices in the system. When set to [Yes] and if you install a Plug and Play operating system, the operating system configures the Plug and Play devices not required for boot. Configuration options: [No] [Yes]

PCI Latency Timer [64]

Allows you to select the value in units of PCI clocks for the PCI device latency timer register. Configuration options: [32] [64] [96] [128] [160] [192] [224] [248]

Allocate IRQ to PCI VGA [Yes]

When set to [Yes], BIOS assigns an IRQ to PCI VGA card if the card requests for an IRQ. When set to [No], BIOS does not assign an IRQ to the PCI VGA card even if requested. Configuration options: [No] [Yes]

Palette Snooping [Disabled]

When set to [Enabled], the pallete snooping feature informs the PCI devices that an ISA graphics device is installed in the system so that the latter can function correctly. Configuration options: [Disabled] [Enabled]

PCI IDE BusMaster [Enabled]

Allows BIOS to use PCI bus mastering when reading/writing to IDE devices.
Configuration options: [Disabled] [Enabled]

IRQ xx assigned to [Available]

When set to [Available], the specific IRQ is free for use of PCI/PnP devices.
When set to [Reserved], the IRQ is reserved for legacy ISA devices.
Configuration options: [Available] [Reserved]

5.4.6 USB Configuration

The items in this menu allows you to change the USB-related features.
Select an item then press Enter to display the configuration options.

```
                              BIOS SETUP UTILITY
     Advanced

   Onboard SiS USB1.1 DEVICE        [Enabled]
   Onboard SiS USB2.0 DEVICE        [Enabled]

   USB Configuration

   Module  Version - 2.23.2-9.4

   USB Devices Enabled: None

   Legacy USB Support               [Auto]
   USB 2.0 Controller Mode          [HiSpeed]
   Stop EHCI HC in OHCI handover    [Enabled]       ←→    Select Screen
                                                    ↑↓    Select Item
```
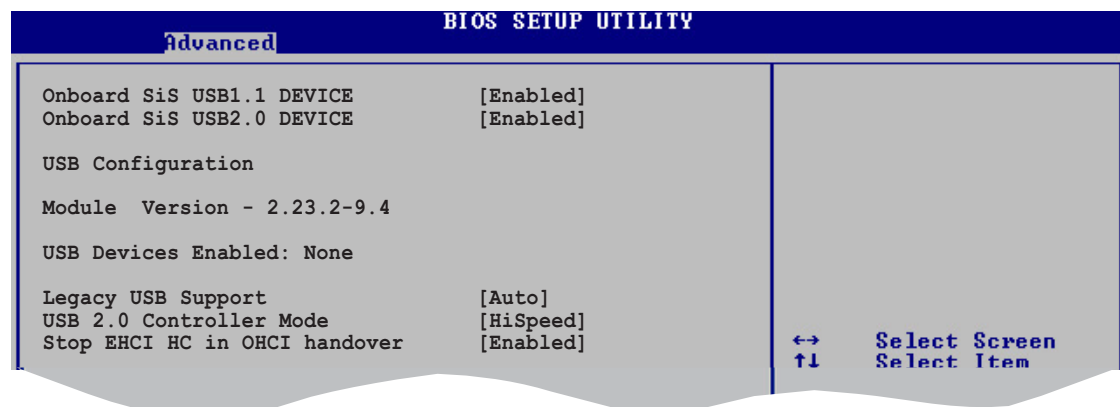
OnBoard SiS USB 1.1 Device [Enabled]

Allows you to enable or disable the onboard SiS USB 1.1 device.
Configuration options: [Disabled] [Enabled]

OnBoard SiS USB 2.0 Device [Enabled]

Allows you to enable or disable the onboard SiS USB 2.0 device.
Configuration options: [Disabled] [Enabled]

- The Module Version and USB Devices Enabled items show the auto-detected values. If no USB device is detected, the item shows None.
- Set to [Disabled] if you are using a Windows® 98SE or Windows® ME OS.

Legacy USB Support [Auto]

Allows you to enable or disable support for legacy USB devices. Setting to Auto allows the system to detect the presence of USB devices at startup. If detected, the USB controller legacy mode is enabled. If no USB device is detected, the legacy USB support is disabled.
Configuration options: [Disabled] [Enabled] [Auto]

USB 2.0 Controller Mode [HiSpeed]

Allows you to configure the USB 2.0 controller in HiSpeed (480 Mbps) or Full Speed (12 Mbps). Configuration options: [HiSpeed] [Full Speed]

Stop EHCI HC in OHCI handover [Enabled]

Allows you to enable or disable the feature to stop the EHCI host controller during the OHCI OS handover call. This is needed when installing operating systems that do not support EHCI host controllers.
Configuration options: [Disabled] [Enabled]

5.4.7   Instant Music Configuration

```
                          BIOS SETUP UTILITY
            Advanced

   Instant Music Option

   Instant Music                    [Disabled]
```
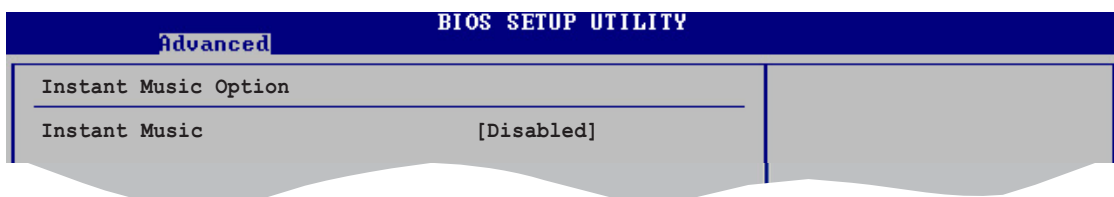
Instant Music [Disabled]

Allows you to enable or disable the Instant Music feature in BIOS.
Configuration options: [Disabled] [Enabled]

> When Instant Music is enabled, the PS/2 keyboard power up feature is automatically disabled.

Instant Music CD-ROM Drive [IDE Secondary Master]

Allows you to select the CD-ROM drive that you wish to use for the Instant Music CD playback. Configuration options: [IDE Primary Master]
[IDE Primary Slave] [IDE Secondary Master] [IDE Secondary Slave]

> The above item appears only if you enabled the Instant Music item.

5.5 Power menu

The Power menu items allow you to change the settings for the Advanced Configuration and Power Interface (ACPI) and the Advanced Power Management (APM). Select an item then press <Enter> to display the configuration options.

```
                        BIOS SETUP UTILITY
 Main    Advanced   Power    Boot    Exit


 Suspend Mode              [Auto]
 ACPI 2.0 Support          [No]
 ACPI APIC Support         [Enabled]

 ▶ APM Configuration
 ▶ Hardware Monitor




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


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```
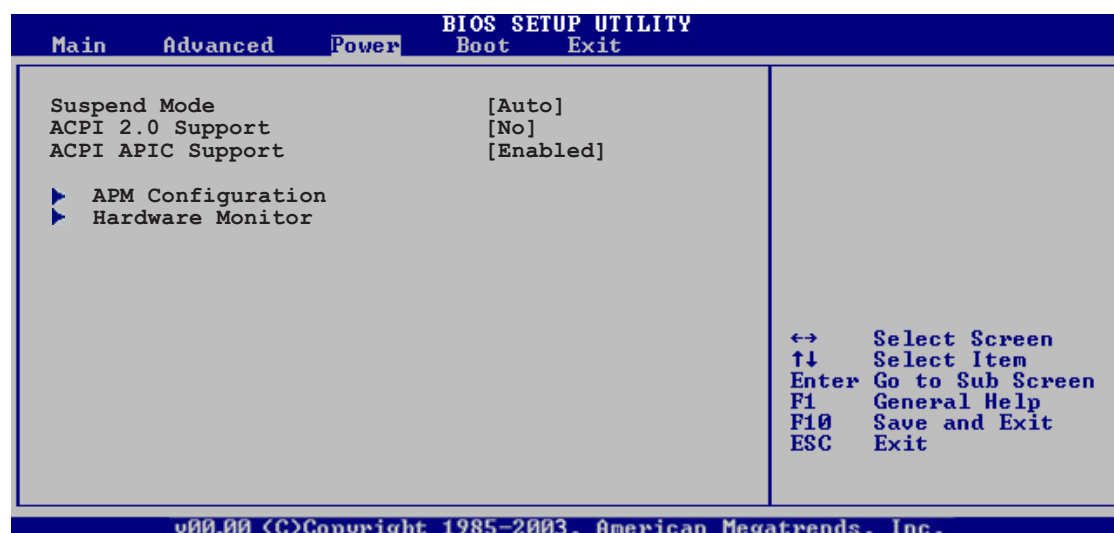
5.5.1 Suspend Mode [Auto]

Allows you to select the Advanced Configuration and Power Interface (ACPI) state to be used for system suspend.
Configuration options: [S1 (POS) Only] [Auto] [S3 Only]

5.5.2 ACPI 2.0 Support [No]

Allows you to add more tables for Advanced Configuration and Power Interface (ACPI) 2.0 specifications. Configuration options: [No] [Yes]

5.5.3 ACPI APIC Support [Enabled]

Allows you to enable or disable the Advanced Configuration and Power Interface (ACPI) support in the Application-Specific Integrated Circuit (ASIC). When set to Enabled, the ACPI APIC table pointer is included in the RSDT pointer list. Configuration options: [Disabled] [Enabled]

5.5.5 APM Configuration

```
                          BIOS SETUP UTILITY
              Power

   Power Button Mode             [On/Off]

   Restore on AC Power Loss      [Always OFF]
   Power On By PS2 Keyboard      [Disabled]
   Power On By PS2 Mouse         [Disabled]
   Power On by PCI Devices       [Disabled]
   Power On By External Modems   [Disabled]
   Power On By RTC Alarm         [Disabled]
```

Power Button Mode [On/Off]

Allows the system to go into On/Off mode or suspend mode when the power button is pressed. Configuration options: [On/Off] [Suspend]

Restore on AC Power Loss [Always OFF]

When set to Power Off, the system goes into off state after an AC power loss. When set to Power On, the system goes on after an AC power loss. When set to Last State, the system goes into either off or on state, whatever the system state was before the AC power loss. Configuration options: [Always OFF] [Always On] [Keep Previous State]

Power On By PS/2 Keyboard [Disabled]

Allows you to disable the PS/2 Power-On by keyboard feature or use specific keys on the keyboard to turn on the system. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead. Configuration options: [Disabled] [Space Bar] [Ctrl-Esc] [Power Key]

Power On By PS/2 Mouse [Disabled]

When set to [Enabled], this parameter allows you to use the PS/2 mouse to turn on the system. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead. Configuration options: [Disabled] [Enabled]

Power On By PCI Devices [Disabled]

When set to [Enabled], this parameter allows you to turn on the system through a PCI LAN or modem card. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead. Configuration options: [Disabled] [Enabled]

Power On By External Modems [Disabled]

This allows either settings of [Enabled] or [Disabled] for powering up the computer when the external modem receives a call while the computer is in Soft-off mode. Configuration options: [Disabled] [Enabled]

> The computer cannot receive or transmit data until the computer and applications are fully running. Thus, connection cannot be made on the first try. Turning an external modem off and then back on while the computer is off causes an initialization string that turns the system power on.

Power On By RTC Alarm [Disabled]

Allows you to enable or disable RTC to generate a wake event. When this item is set to Enabled, the items RTC Alarm Date, RTC Alarm Hour, RTC Alarm Minute, and RTC Alarm Second appear with set values. Configuration options: [Disabled] [Enabled]

5.5.6   Hardware Monitor

```
                        BIOS SETUP UTILITY
              Power

   Hardware Monitor

   CPU Temperature              [51°C/122.5°F]
   MB Temperature               [41°C/105.5°F]

   CPU Fan Speed                [3813 RPM]
   CPU Q-Fan Control            [Enabled]
   CPU Q-Fan Mode               [PWM]
   CPU/Chassis Fan Ratio        [Auto]
   CPU Target Temperature       [65°C]
   Chassis Fan Speed            [N/A]
   Chassis Q-Fan Control        [Enabled]
                                              ←→    Select Screen
   VCORE Voltage                [ 1.320V]     ↑↓    Select Item
   3.3V Voltage                 [ 3.345V]     +-    Change Option
   5V Voltage                   [ 5.094V]     F1    General Help
   12V Voltage                  [11.880V]     F10   Save and Exit
                                              ESC   Exit


         vMM.mm (C)Copyright 1985-2002, American Megatrends, Inc.
```

CPU Temperature [xxxC/xxxF]
MB Temperature [xxxC/xxxF]

The onboard hardware monitor automatically detects and displays the motherboard and CPU temperatures. Select Ignored if you do not wish to display the detected temperatures.

CPU Fan Speed [xxxxRPM] or [N/A]

The onboard hardware monitor automatically detects and displays the CPU fan speed in rotations per minute (RPM). If the fan is not connected to the motherboard, the field shows N/A. Select Ignored if you do not wish to display the detected fan speed.

CPU Q-Fan Control [Enabled]

Allows you to enable or disable the CPU Q-Fan feature that smartly adjusts the fan speeds for more efficient system operation.
Configuration options: [Disabled] [Enabled]

> The CPU Q-Fan Mode, CPU/Chassis Fan Ratio, and CPU Target Temperature items appear when you enable the CPU Q-Fan Control feature.

CPU Q-Fan Mode [PWM]

Allows you to select the type of CPU fan cable connected to the CPU fan connector. Set to [PWM] when using a 4-pin CPU fan cable. Set to [DC] when using a 3-pin CPU fan cable. Configuration options: [PWM] [DC]

CPU/Chassis Fan Ratio [Auto]

Allows you to select the appropriate CPU and chassis fan speed ratio for the system. The default [Auto] automatically selects the fan speed ratio when operating a low chassis temperature. Select a higher ratio if you installed additional devices and the system requires more ventilation. This item appears only when the chassis Q-Fan Control item is Enabled. Configuration options: [Auto] [60%] [50%] [40%] [35%]

CPU Target Temperature [xxxºC]

Allows you to set the CPU temperature threshold when the CPU fan speed is increased to lower the CPU temperature. This item appears only when the CPU Q-Fan Control item is Enabled. The configuration options vary depending on the CPU installed.

Chassis Fan Speed [xxxxRPM] or [N/A]

The onboard hardware monitor automatically detects and displays the chassis fan speed in rotations per minute (RPM). If the fan is not connected to the chassis, the specific field shows N/A. Select Ignored if you do not wish to display the detected fan speed.

Chassis Q-Fan Control [Enabled]

Allows you to enable or disable the chassis Q-Fan feature that smartly adjusts the fan speeds for more efficient system operation.
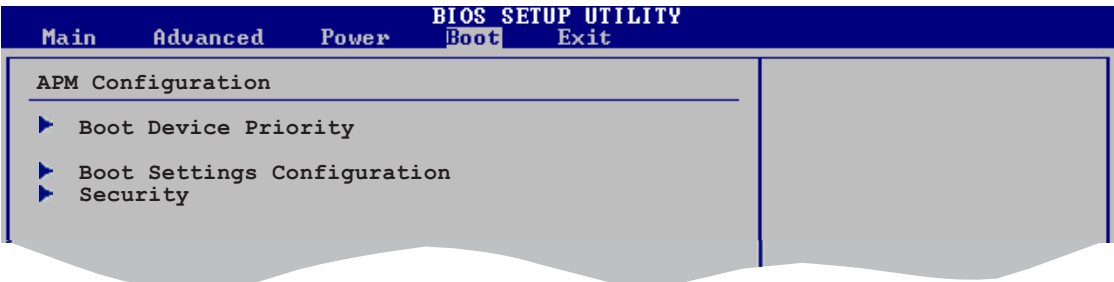Configuration options: [Disabled] [Enabled]

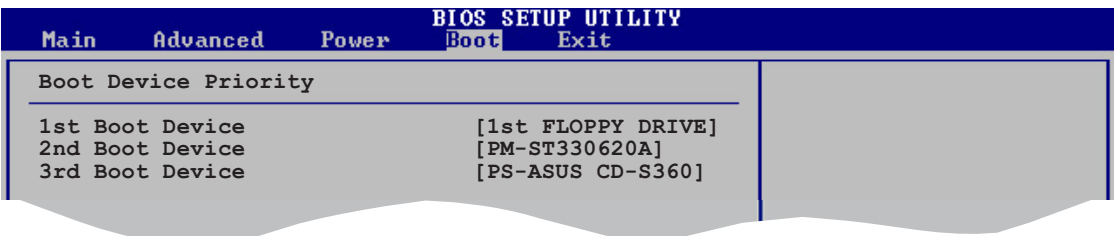## VCORE Voltage, 3.3V Voltage, 5V Voltage, 12V Voltage

The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators.

5.6 Boot menu

The Boot menu items allow you to change the system boot options. Select an item then press <Enter> to display the sub-menu.

```
                      BIOS SETUP UTILITY
  Main   Advanced   Power   Boot   Exit

  APM Configuration

  ▶ Boot Device Priority

  ▶ Boot Settings Configuration
  ▶ Security
```

5.6.1 Boot Device Priority

```
                      BIOS SETUP UTILITY
  Main   Advanced   Power   Boot   Exit

  Boot Device Priority

  1st Boot Device              [1st FLOPPY DRIVE]
  2nd Boot Device              [PM-ST330620A]
  3rd Boot Device              [PS-ASUS CD-S360]
```

1st ~ xxth Boot Device [1st Floppy Drive]

These items specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.
Configuration options: [xxxxx Drive] [Disabled]

5.6.2 Hard Disk Drives

```
                      BIOS SETUP UTILITY
  Main   Advanced   Power   Boot   Exit

  Hard Disk Drives

  1st Drive                    [PM-IBM-DJNA-371350]
  2nd Drive                    [Maxtor 6B200M0]
```
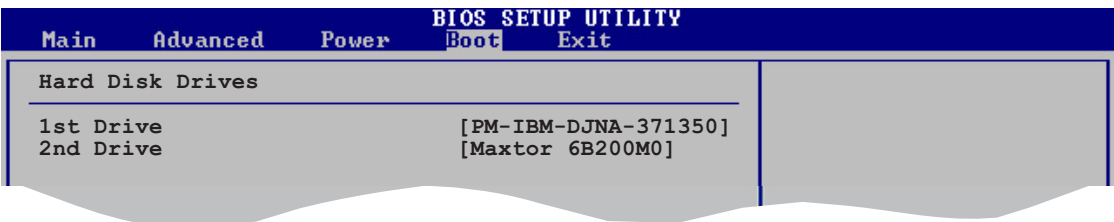
1st ~ xxth Drive [XXXXXXXXXXXXXXXXX]

Displays the available hard disk drives. The number of device items that appears on the screen depends on the number of devices installed in the system. This item appears only when you install additional disk drives on your system. Configuration options: [xxxxx Drive] [Disabled]

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5.6.3 Removable Drives

```
                        BIOS SETUP UTILITY
  Main    Advanced    Power    Boot    Exit

   Removable Drives

   1st Drive                      [1st Floppy Drive]
```
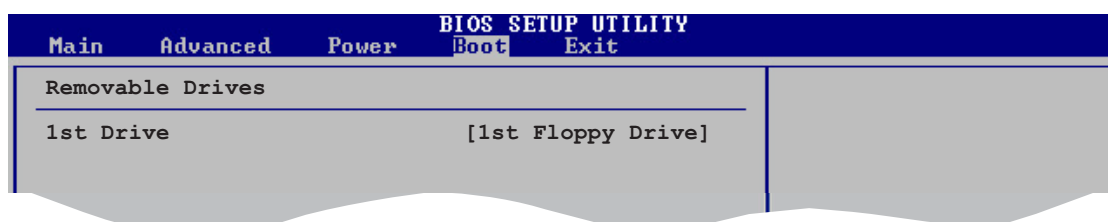
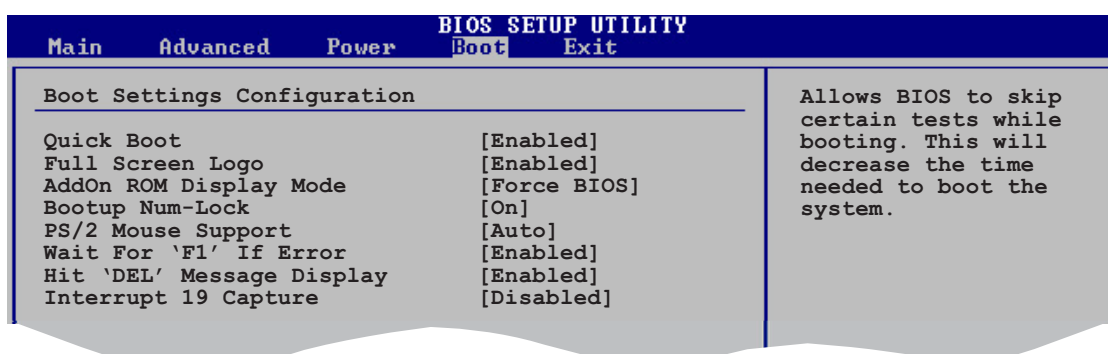## 1st ~ xxth Drive [XXXXXXXXXXXXXXXX]

Displays the available removable drives. The number of device items that appears on the screen depends on the number of removable devices installed in the system. This item appears only when you install additional removable drives on your system.
Configuration options: [xxxxx Drive] [Disabled]

5.6.4 Boot Settings Configuration

```
                        BIOS SETUP UTILITY
  Main    Advanced    Power    Boot    Exit

   Boot Settings Configuration                    Allows BIOS to skip
                                                  certain tests while
   Quick Boot              [Enabled]              booting. This will
   Full Screen Logo        [Enabled]              decrease the time
   AddOn ROM Display Mode   [Force BIOS]          needed to boot the
   Bootup Num-Lock         [On]                   system.
   PS/2 Mouse Support      [Auto]
   Wait For 'F1' If Error  [Enabled]
   Hit 'DEL' Message Display [Enabled]
   Interrupt 19 Capture    [Disabled]
```

Quick Boot [Enabled]

Enabling this item allows the BIOS to skip some power on self tests (POST) while booting to decrease the time needed to boot the system. When set to [Disabled], BIOS performs all the POST items.
Configuration options: [Disabled] [Enabled]

Full Screen Logo [Enabled]

This allows you to enable or disable the full screen logo display feature.
Configuration options: [Disabled] [Enabled]

Set this item to [Enabled] to use the ASUS MyLogo2™ feature.

Add On ROM Display Mode [Force BIOS]

Sets the display mode for option ROM.
Configuration options: [Force BIOS] [Keep Current]

Bootup Num-Lock [On]

Allows you to select the power-on state for the NumLock.
Configuration options: [Off] [On]

PS/2 Mouse Support [Auto]

Allows you to enable or disable support for PS/2 mouse.
Configuration options: [Disabled] [Enabled] [Auto]

Wait for 'F1' If Error [Enabled]

When set to Enabled, the system waits for the F1 key to be pressed when
error occurs. Configuration options: [Disabled] [Enabled]
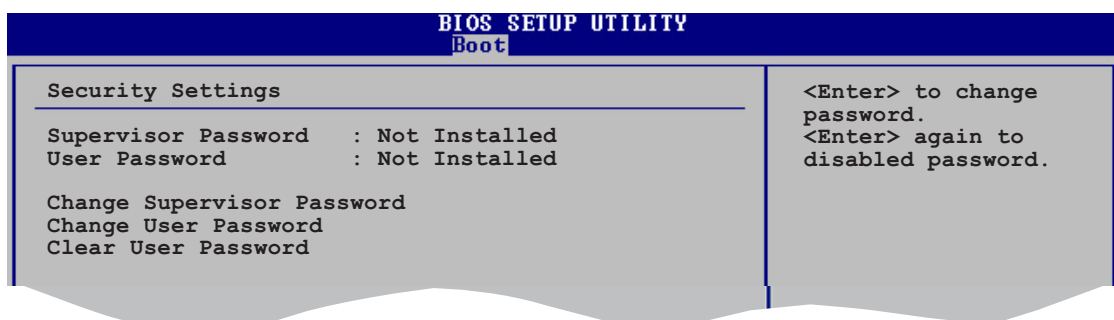
Hit 'DEL' Message Display [Enabled]

When set to Enabled, the system displays the message "Press DEL to run
Setup" during POST. Configuration options: [Disabled] [Enabled]

Interrupt 19 Capture [Disabled]

When set to [Enabled], this function allows the option ROMs to trap
Interrupt 19. Configuration options: [Disabled] [Enabled]

5.6.5   Security

The Security menu items allow you to change the system security settings.
Select an item then press <Enter> to display the configuration options.

```
                    BIOS SETUP UTILITY
                    Boot

    Security Settings                         <Enter> to change
                                              password.
    Supervisor Password   : Not Installed     <Enter> again to
    User Password         : Not Installed     disabled password.

    Change Supervisor Password
    Change User Password
    Clear User Password
```

Change Supervisor Password

Select this item to set or change the supervisor password. The Supervisor
Password item on top of the screen shows the default **Not Installed**.
After you set a password, this item shows **Installed**.

To set a Supervisor Password:

1.   Select the Change Supervisor Password item and press <Enter>.
2.   From the password box, type a password composed of at least six
     letters and/or numbers, then press <Enter>.
3.   Confirm the password when prompted.

The message "Password Installed" appears after you successfully set your password.
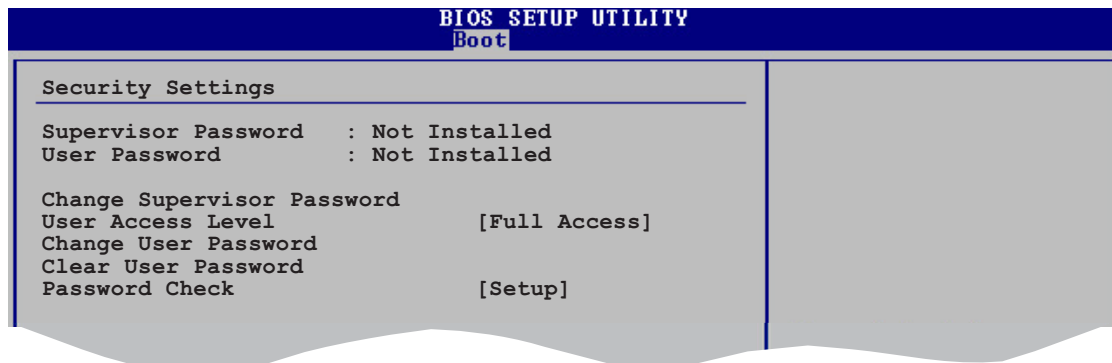
To change the supervisor password, follow the same steps as in setting a user password.

To clear the supervisor password, select the Change Supervisor Password then press <Enter>. The message "Password Uninstalled" appears.

> If you forget your BIOS password, you can clear clear it by erasing the CMOS Real Time Clock (RTC) RAM. See section "4.3 Jumpers" for information on how to erase the RTC RAM.

After you have set a supervisor password, the other items appear to allow you to change other security settings.

```
                        BIOS SETUP UTILITY
                           Boot

   Security Settings

   Supervisor Password   : Not Installed
   User Password         : Not Installed

   Change Supervisor Password
   User Access Level                [Full Access]
   Change User Password
   Clear User Password
   Password Check                   [Setup]
```

User Access Level (Full Access]

This item allows you to select the access restriction to the Setup items. Configuration options: [No Access] [View Only] [Limited] [Full Access]

> **No Access** prevents user access to the Setup utility.

> **View Only** allows access but does not allow change to any field.

> **Limited** allows changes only to selected fields, such as Date and Time.

> **Full Access** allows viewing and changing all the fields in the Setup utility.

Change User Password

Select this item to set or change the user password. The User Password item on top of the screen shows the default **Not Installed**. After you set a password, this item shows **Installed**.

To set a User Password:

1. Select the Change User Password item and press <Enter>.
2. On the password box that appears, type a password composed of at least six letters and/or numbers, then press <Enter>.
3. Confirm the password when prompted.

The message "Password Installed" appears after you set your password successfully.

To change the user password, follow the same steps as in setting a user password.

Clear User Password

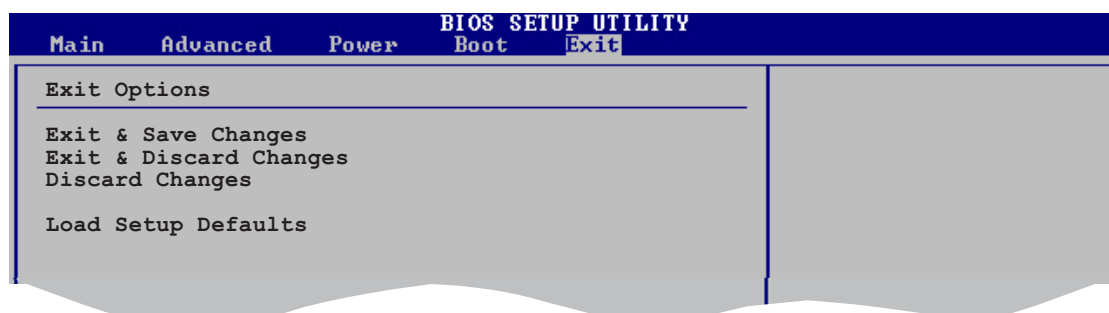Select this item to clear the user password.

Password Check [Setup]

When set to [Setup], BIOS checks for user password when accessing the Setup utility. When set to [Always], BIOS checks for user password both when accessing Setup and booting the system.
Configuration options: [Setup] [Always]

5.7   Exit menu

The Exit menu items allow you to load the optimal or failsafe default values
for the BIOS items, and save or discard your changes to the BIOS items.

```
                        BIOS SETUP UTILITY
  Main    Advanced    Power    Boot    Exit

  Exit Options

  Exit & Save Changes
  Exit & Discard Changes
  Discard Changes

  Load Setup Defaults
```

> Pressing <Esc> does not immediately exit this menu. Select one of the
> options from this menu or <F10> from the legend bar to exit.

Exit & Save Changes

Once you are finished making your selections, choose this option from the
Exit menu to ensure the values you selected are saved to the CMOS RAM.
An onboard backup battery sustains the CMOS RAM so it stays on even
when the PC is turned off. When you select this option, a confirmation
window appears. Select Ok to save changes and exit.

> If you attempt to exit the Setup program without saving your changes,
> the program prompts you with a message asking if you want to save
> your changes before exiting. Press <Enter> to save the changes while
> exiting.

Exit & Discard Changes

Select this option only if you do not want to save the changes that you
made to the Setup program. If you made changes to fields other than
System Date, System Time, and Password, the BIOS asks for a confirmation
before exiting.

Discard Changes

This option allows you to discard the selections you made and restore the
previously saved values. After selecting this option, a confirmation appears.
Select Ok to discard any changes and load the previously saved values.

Load Setup Defaults

This option allows you to load the default values for each of the
parameters on the Setup menus. When you select this option or if you
press <F5>, a confirmation window appears. Select Ok to load default
values. Select Exit & Save Changes or make other changes before
saving the values to the non-volatile RAM.