

**P5VDC-TVM
SE**

ASUS[®]

Motherboard

E2827

First Edition
September 2006

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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.



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 possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Make sure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- 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 the motherboard and adding devices on it, carefully read all the manuals 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.



This symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Please check local regulations for disposal of electronic products.

About this guide

This user guide contains the information you need when installing and configuring the motherboard.

How this guide is organized

This manual contains the following parts:

- **Chapter 1: Product introduction**
This chapter describes the features of the motherboard and the new technology it supports. This chapter also lists the hardware setup procedures that you have to perform when installing system components. It includes description of the jumpers and connectors on the motherboard.
- **Chapter 2: BIOS setup**
This chapter tells how to change system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

Where to find more information

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

1. **System builder websites**
The system builder website provides updated information on hardware and software products. Refer to the 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.

Conventions used in this guide

To make sure that you perform certain tasks properly, take note of the following symbols used throughout this manual.



DANGER/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 help you complete a task.

Typography

Bold text

Indicates a menu or an item to select.

Italics

Used to emphasize a word or a phrase.

<Key>

Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key.

Example: <Enter> means that you must press the Enter or Return key.

<Key1+Key2+Key3>

If you must press two or more keys simultaneously, the key names are linked with a plus sign (+).

Example: <Ctrl+Alt+D>

Command

Means that you must type the command exactly as shown, then supply the required item or value enclosed in brackets.

Example: At the DOS prompt, type the command line:

```
afudos /i [filename]
```

```
afudos /iPSVDCTVM.ROM
```

P5VDC-TVM SE specifications summary

CPU	LGA775 socket for Intel® Pentium® D/Pentium® 4/Celeron CPU Compatible with Intel® 05A/04A processors Supports Intel® EM64T/Hyper-Threading Technology (Note: Due to chipset limitation, the Intel Enhanced Intel SpeedStep Technology, C1E, and TM2 are not supported in this model)
Chipset	Northbridge: VIA P4M890 Southbridge: VIA VT8237R+
Front Side Bus	1066/800/533 MHz
Memory	2 x 240-pin DIMM sockets support max. 2GB DDR2 533/400 non-ECC, unbuffered memory. 2 x 184-pin DIMM sockets support max. 2GB DDR 400/333/266 non-ECC, unbuffered memory (Note:DDR and DDR2 memory can not be used simultaneously)
Expansion slots	1 x PCI Express™ x16 1 x PCI Express™ x1 2 x PCI, PCI 2.2
VGA	Integrated VIA UniChrome Graphics, up to 64MB shared memory
Storage	South Bridge: VT8237R+ 2 x UltraDMA 133/100/66 2 x Serial ATA 1.5Gb/s with RAID 0, 1 & JBOD function
LAN	Realtek RTL8100C 10/100 LAN controller
Audio	Realtek ALC655 AC'97 6-channel Audio CODEC
Back panel I/O Ports	1 x Parallel port 1 x RJ-45 4 x USB 2.0 1 x VGA out 1 x Serial port 1 x PS/2 keyboard 1 x PS/2 mouse 1 x 6-Channel Audio I/O 1 x IEEE 1394a port (optional)
Firewire (optional)	T1 firewire 2 ports (1 on the rear panel,1 onboard)

(continued on the next page)

P5VDC-TVM SE specifications summary

BIOS	4 Mb Flash ROM, AWARD BIOS, PnP, WfM2.0, DMI2.0, SM BIOS 2.3
Manageability	WOL by PME, WOR by PME, PXE
USB	Max. 8 USB 2.0 ports
Internal I/O connectors	2 x USB 2.0/1.1 connector supports additional 4 USB ports 2 x SATA connector 2 x IDE connector CPU/Chassis fan connectors 24-pin EATX Power connector 4-pin ATX 12 V Power connector CD/AUX audio-in connector Chassis Intrusion (optional) 1 x Floppy disk drive connector 1 x S/PDIF out connector Front panel audio connector System panel connector 1 x IR connector 1 x Com port 1 x IEEE 1394a connector (optional)
Form Factor	mATX Form Factor, 9.6 in x 9.6 in (24.5 cm x 24.5 cm)

*Specifications are subject to change without notice.

This chapter describes the motherboard features and the new technologies it supports.

1 Product introduction

1.1 Special features



Latest processor technology

This motherboard comes with a 775-pin surface mount Land Grid Array (LGA) socket designed for the Intel® Pentium® 4 processor in the 775-land package. Supporting the Intel® Pentium® 4 processor with 1066 MHz Front Side Bus (FSB), this motherboard is equipped with Intel® Hyper-Threading Technology and is fully compatible with the Intel® 05A/04A processors. See page 1-6 for details.



64-bit CPU support

64-bit computing, the next generation technology to replace current 32-bit architecture, delivers advanced system performance, faster memory access and increased productivity. This motherboard provides excellent compatibility and flexibility by supporting either 64-bit or 32-bit architecture.



Dual-Core CPU

Enjoy the extraordinary CPU power from the latest dual-core CPU. The advanced processing technology contains two physical CPU cores with individually dedicated L2 cache to satisfy the rising demand for more powerful processing capability.

PCI Express™ interface

The motherboard fully supports PCI Express, the latest I/O interconnect technology that speeds up the PCI bus. PCI Express features point-to-point serial interconnections between devices and allows higher clocks speeds by carrying data in packets. This high speed interface is software compatible with existing PCI specifications. See page 1-19 for details.



Serial ATA I technology

The motherboard supports the Serial ATA I technology through the Serial ATA interfaces and the VIA VT8237R+ chipset. The SATA specification allows for thinner, more flexible cables with lower pin count, reduced voltage requirement, and up to 300 MB/s data transfer rate. See page 1-25 for details.

Onboard RAID solution

The onboard VIA VT8237R+ chipset allows RAID 0, RAID 1 and JBOD configuration for four SATA connectors.

USB 2.0 technology

The motherboard implements the Universal Serial Bus (USB) 2.0 specification, dramatically increasing the connection speed from the 12 Mbps bandwidth on USB 1.1 to a fast 480 Mbps on USB 2.0. USB 2.0 is backward compatible with USB 1.1. See page 1-23 and 1-28 for details.

AUDIO CODEC

The Realtek ALC655 is an AC⁹⁷ CODEC that allows 6-channel audio playback. The audio CODEC provides six DAC channels for 5.1 surround sound, AUX, and Line In stereo inputs.

1.2 Before you proceed

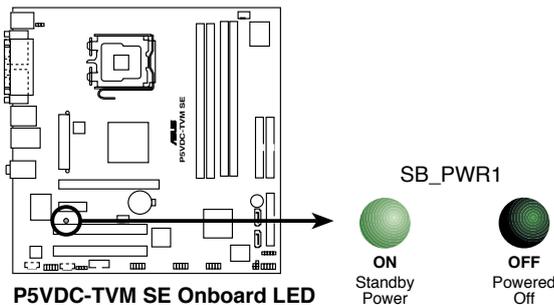
Take note of the following precautions before you install motherboard components or change any motherboard settings.



- Unplug the power cord from the wall socket before touching any component.
- Use a grounded wrist strap or touch a safely grounded object or to a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity
- Hold components by the edges to avoid touching the ICs on them.
- Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.
- Before you install or remove any component, ensure that the ATX power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.

Onboard LED

The motherboard comes with a standby power LED that lights up to indicate that the system is ON, in sleep mode, or in soft-off mode. This is a reminder that you should shut down the system and unplug the power cable before removing or plugging in any motherboard component. The illustration below shows the location of the onboard LED.



1.3 Motherboard overview

Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.



Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so can cause you physical injury and damage motherboard components.

1.3.1 Placement direction

When installing the motherboard, make sure that you place it into the chassis in the correct orientation. The edge with external ports goes to the rear part of the chassis as indicated in the image below.

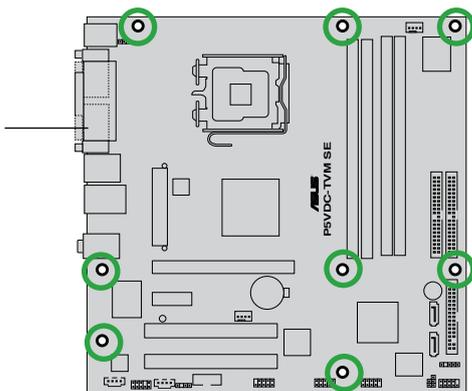
1.3.2 Screw holes

Place eight (8) screws into the holes indicated by circles to secure the motherboard to the chassis.

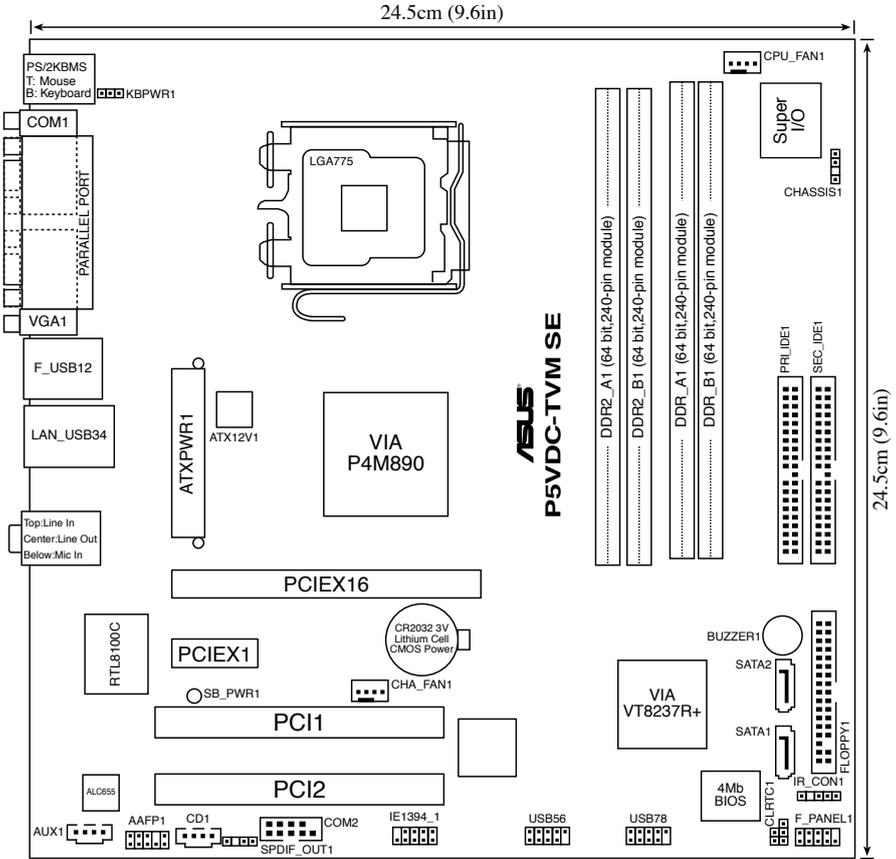


Do not overtighten the screws! Doing so can damage the motherboard.

Place this side towards
the rear of the chassis



1.3.3 Motherboard layout



1.4 Central Processing Unit (CPU)

The motherboard comes with a surface mount LGA775 socket designed for the Intel® Pentium® 4/Intel® Pentium® D processor in the 775-land package.



- Your boxed Intel® Pentium® 4 LGA775 processor package should come with installation instructions for the CPU, fan and heatsink assembly. If the instructions in this section do not match the CPU documentation, follow the latter.
- Upon purchase of the motherboard, make sure that the PnP cap is on the socket and the socket pins are not bent. Contact your retailer immediately if the PnP cap is missing, or if you see any damage to the PnP cap/socket pins/motherboard components. ASUS will shoulder the cost of repair only if the damage is shipment/transit-related.
- Keep the cap after installing the motherboard. ASUS will process Return Merchandise Authorization (RMA) requests only if the motherboard comes with the cap on the LGA775 socket.
- The product warranty does not cover damage to the socket pins resulting from incorrect CPU installation/removal, or misplacement/loss/incorrect removal of the PnP cap.

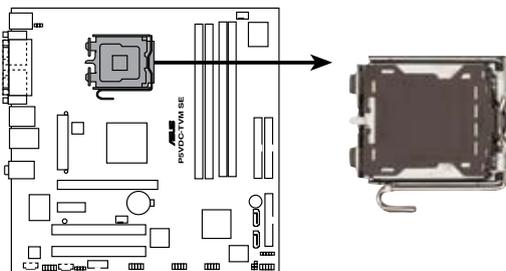


- Due to chipset limitation. The motherboard does not support Enhanced Intel SpeedStep technology, C1E and TM2 technology.
- This motherboard does not support Intel® Pentium® Processor Extreme Edition.

1.4.1 Installing the CPU

To install a CPU:

1. Locate the CPU socket on the motherboard.

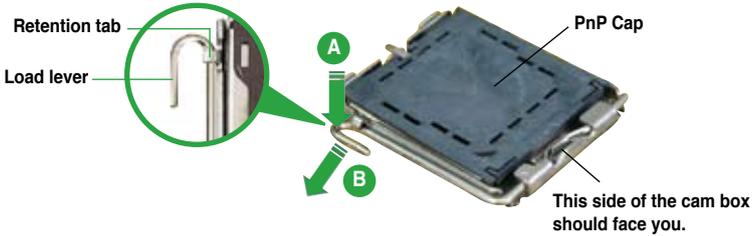


P5VDC-TVM SE CPU Socket 775



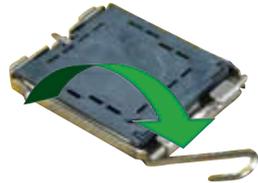
Before installing the CPU, make sure that the socket box is facing towards you and the load lever is on your left.

2. Press the load lever with your thumb (A) and move it to the left (B) until it is released from the retention tab.

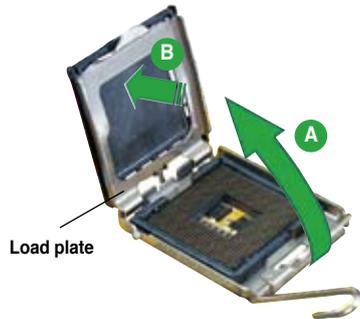


To prevent damage to the socket pins, do not remove the PnP cap unless you are installing a CPU.

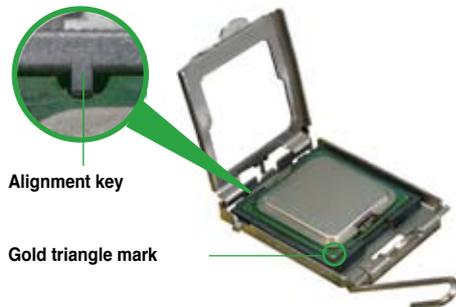
3. Lift the load lever in the direction of the arrow to a 135° angle.



4. Lift the load plate with your thumb and forefinger to a 100° angle (A), then push the PnP cap from the load plate window to remove (B).



5. Position the CPU over the socket, making sure that the gold triangle is on the bottom-left corner of the socket. The socket alignment key should fit into the CPU notch.



6. Close the load plate (A), then push the load lever (B) until it snaps into the retention tab.



The CPU fits in only one correct orientation. DO NOT force the CPU into the socket to prevent bending the connectors on the socket and damaging the CPU!

Notes on Intel® Hyper-Threading Technology



- This motherboard supports Intel® Pentium® 4 CPUs in the 775-land package with Hyper-Threading Technology.
 - Hyper-Threading Technology is supported under Windows® XP/2003 Server and Linux 1.7.x (kernel) and later versions only. Under Linux, use the Hyper-Threading compiler to compile the code. If you are using any other operating systems, disable the Hyper-Threading Technology item in the BIOS to ensure system stability and performance.
 - Installing Windows® XP Service Pack 1 or later version is recommended.
 - Make sure to enable the Hyper-Threading Technology item in BIOS before installing a supported operating system.
 - For more information on Hyper-Threading Technology, visit www.intel.com/info/hyperthreading.
-

To use the Hyper-Threading Technology on this motherboard:

1. Install an Intel® Pentium® 4 CPU in the 775-land package that supports Hyper-Threading Technology.
2. Power up the system and enter the BIOS Setup (see Chapter 2: BIOS setup). Under the Advanced Menu, make sure that the item Hyper-Threading Technology is set to Enabled. The item appears only if you installed a CPU that supports Hyper-Threading Technology.
3. Reboot the computer.

1.4.2 Installing the CPU heatsink and fan

The Intel® Pentium® 4/Pentium® D LGA775 processor requires a specially designed heatsink and fan assembly to ensure optimum thermal condition and performance.



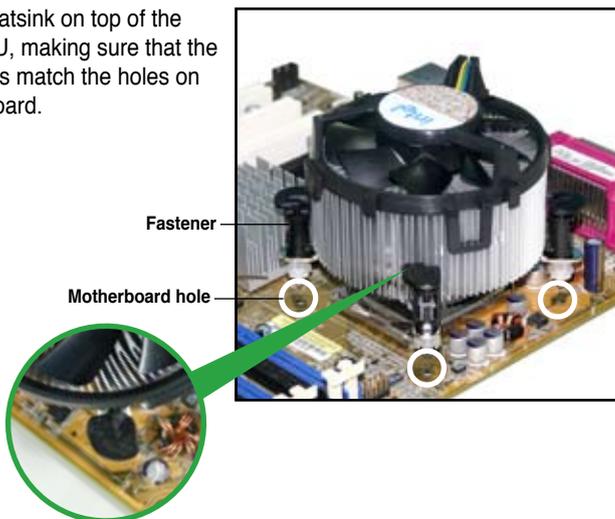
- Install the motherboard to the chassis before you install the CPU fan and heatsink assembly
- When you buy a boxed Intel® Pentium® 4 processor, the package includes the CPU fan and heatsink assembly. If you buy a CPU separately, make sure that you use only Intel®-certified multi-directional heatsink and fan.
- Your Intel® Pentium® 4 LGA775 heatsink and fan assembly comes in a push-pin design and requires no tool to install.



If you purchased a separate CPU heatsink and fan assembly, make sure that a Thermal Interface Material is properly applied to the CPU heatsink or CPU before you install the heatsink and fan assembly.

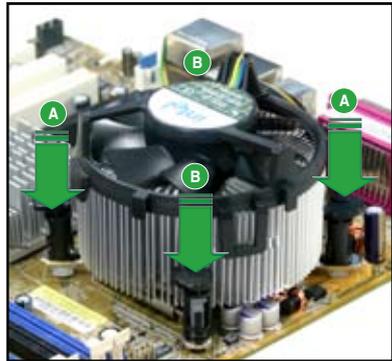
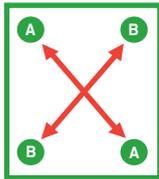
To install the CPU heatsink and fan:

1. Place the heatsink on top of the installed CPU, making sure that the four fasteners match the holes on the motherboard.

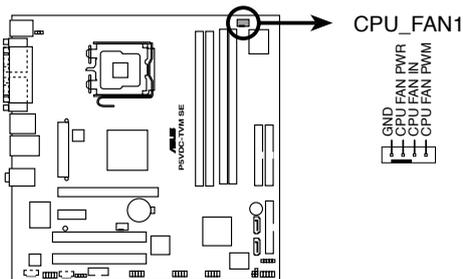


Make sure each fastener is oriented as shown, with the narrow groove directed outward.

2. Push down two fasteners at a time in a diagonal sequence to secure the heatsink and fan assembly in place.



3. When the fan and heatsink assembly is in place, connect the CPU fan cable to the connector on the motherboard labeled CPU_FAN1.



P5VDC-TVM SE CPU fan connector



Do not forget to connect the CPU fan connector! Hardware monitoring errors can occur if you fail to plug this connector.

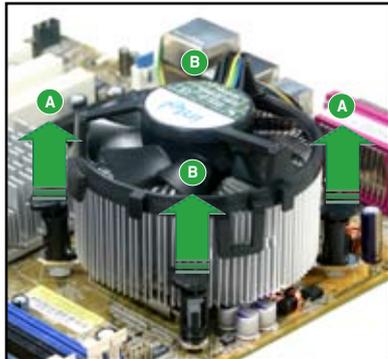
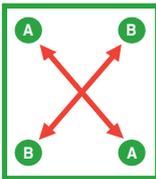
1.4.3 Uninstalling the CPU heatsink and fan

To uninstall the CPU heatsink and fan:

1. Disconnect the CPU fan cable from the connector on the motherboard labeled CPU_FAN.
2. Rotate each fastener counterclockwise.



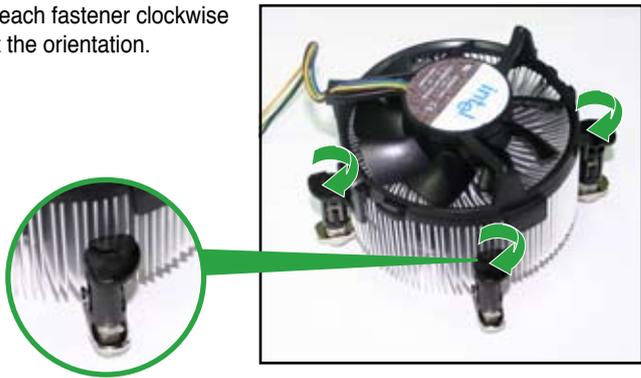
3. Pull up two fasteners at a time in a diagonal sequence to disengage the heatsink and fan assembly from the motherboard.



4. Remove the heatsink and fan assembly from the motherboard.



5. Rotate each fastener clockwise to reset the orientation.



Narrow end of the groove



The narrow end of the groove should point outward after resetting. (The photo shows the groove shaded for emphasis.)



1.5 System memory

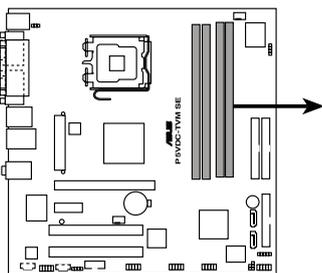
1.5.1 Overview

The motherboard comes with two 240-pin Double Data Rate (DDR2) and two 184-pin DDR Dual Inline Memory Modules (DIMM) sockets.

DDR2 DIMMS are notched differently to prevent installation on a DDR DIMM socket.

The following figure illustrates the location of the sockets:

Color	Sockets
Yellow	DDR2_A1 and DDR2_B1
Black	DDR_A1 and DDR_B1



P5VDC-TVM SE 240-pin DDR2 DIMM sockets



- To prevent damage to the motherboard, do not use DDR and DDR2 memory simultaneously.
- Due to chipset resource allocation, the system may detect less than 2 GB system memory when you installed two 1 GB DDR or DDR2 memory modules.

1.5.2 Memory Configurations

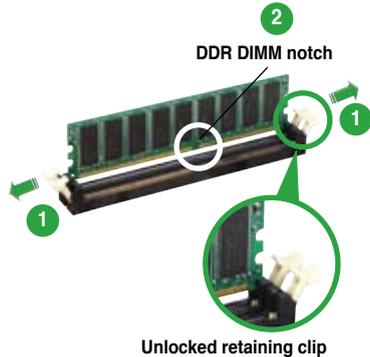
You may install 256MB, 512MB, and 1 GB unbuffered non-ECC DDR/DDR2 DIMMs into the DIMM sockets.

1.5.3 Installing a DDR DIMM (black slots)



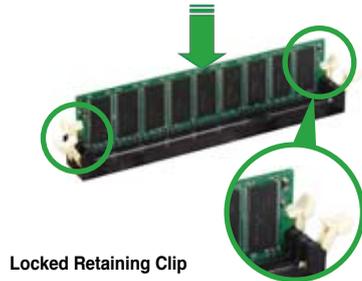
Make sure to unplug the power supply before adding or removing DIMMs or other system components. Failure to do so may cause severe damage to both the motherboard and the components.

1. Unlock a DIMM socket by pressing the retaining clips outward.
2. Align a DIMM on the socket such that the notch on the DIMM matches the break on the socket.



A DDR DIMM is keyed with a notch so that it fits in only one direction. DO NOT force a DIMM into a socket to avoid damaging the DIMM.

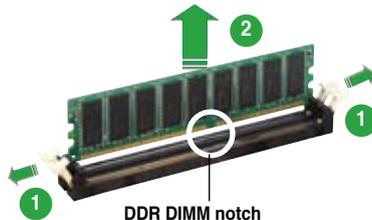
3. Firmly insert the DIMM into the socket until the retaining clips snap back in place and the DIMM is properly seated.



1.5.4 Removing a DDR DIMM

Follow these steps to remove a DIMM.

1. Simultaneously press the retaining clips outward to unlock the DIMM.



Support the DIMM lightly with your fingers when pressing the retaining clips. The DIMM might get damaged when it flips out with extra force.

2. Remove the DIMM from the socket.

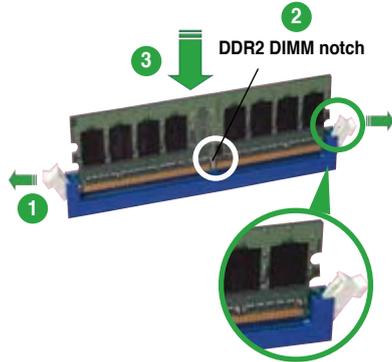
1.5.5 Installing a DDR2 DIMM (yellow slots)



Unplug the power supply before adding or removing DIMMs or other system components. Failure to do so can cause severe damage to both the motherboard and the components.

To install a DIMM:

1. Unlock a DIMM socket by pressing the retaining clips outward.
2. Align a DIMM on the socket such that the notch on the DIMM matches the break on the socket.
3. Firmly insert the DIMM into the socket until the retaining clips snap back in place and the DIMM is properly seated.



Unlocked retaining clip



- A DDR2 DIMM is keyed with a notch so that it fits in only one direction. Do not force a DIMM into a socket to avoid damaging the DIMM.
- The DDR2 DIMM sockets do not support DDR DIMMs. Do not install DDR DIMMs to the DDR2 DIMM sockets.

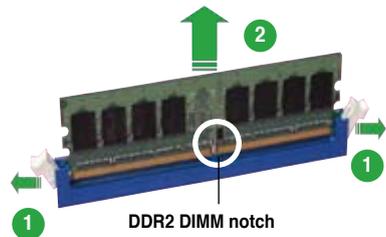
1.5.6 Removing a DDR2 DIMM

Follow these steps to remove a DIMM.

1. Simultaneously press the retaining clips outward to unlock the DIMM.



Support the DIMM lightly with your fingers when pressing the retaining clips. The DIMM might get damaged when it flips out with extra force.



2. Remove the DIMM from the socket.

1.6 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.

1.6.1 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.

1.6.2 Configuring an expansion card

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

1. Turn on the system and change the necessary BIOS settings, if any. See Chapter 2 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.

1.6.3 Interrupt assignments

Standard interrupt assignments

IRQ	Priority	Standard function
0	1	System Timer
1	2	Keyboard Controller
2	–	Redirect to IRQ#9
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	PCI-E x1
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

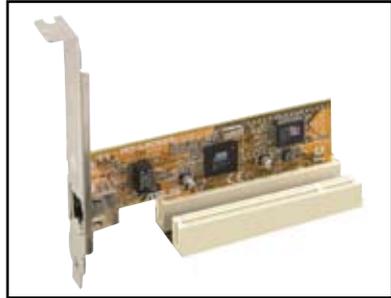
	A	B	C	D	E	F	G	H
PCI Slot 1	shared	-	-	-	-	-	-	-
PCI Slot 2	-	shared	-	-	-	-	-	-
Onboard Lan		-	-	-	shared	-	-	-
Onboard 1394	-	-	-	-	-	shared	-	-



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.

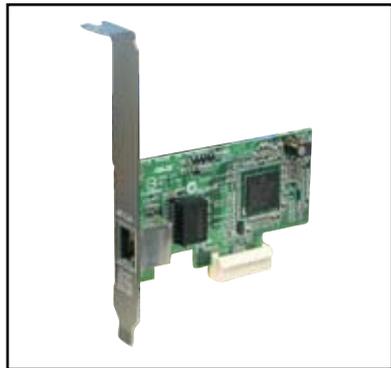
1.6.4 PCI slots

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.



1.6.5 PCI Express x1 slot

This motherboard supports PCI Express x1 network cards, SCSI cards and other cards that comply with the PCI Express specifications. The figure shows a network card installed on the PCI Express x1 slot.



1.6.6 PCI Express x16 slot

This motherboard has one PCI Express x16 slots that support PCI Express x16 graphic cards complying with the PCI Express specifications.



1.7 Jumpers

1. Clear RTC RAM (CLRRTC1)

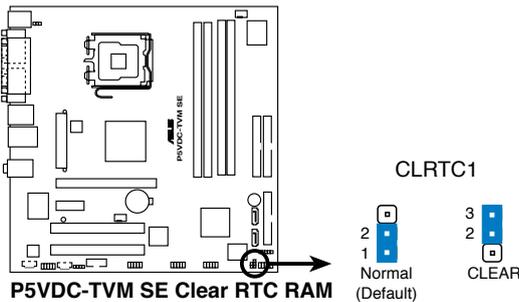
This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in CMOS, which include system setup information such as system passwords.

To erase the RTC RAM:

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



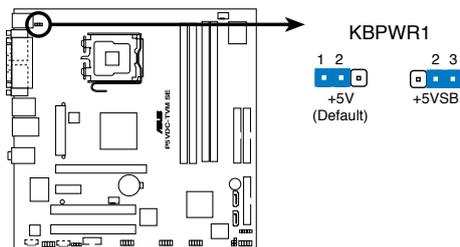
Except when clearing the RTC RAM, never remove the cap on CLRRTC1 jumper default position. Removing the cap will cause system boot failure!



You do not need to clear the RTC when the system hangs due to overclocking. For system failure due to overclocking, use the C.P.R. (CPU Parameter Recall) feature. Shut down and reboot the system so the BIOS can automatically reset parameter settings to default values.

2. Keyboard power (3-pin KBPWR1)

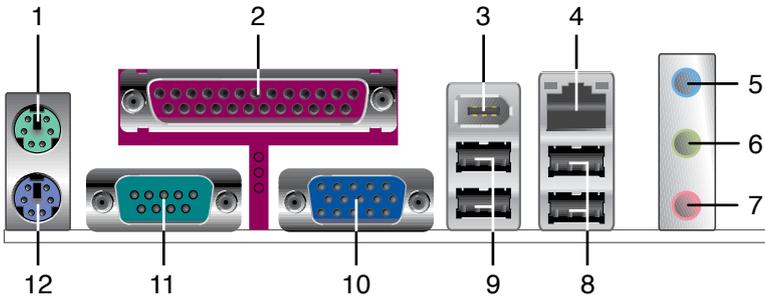
This jumper allows you to enable or disable the keyboard wake-up feature. Set this jumper to pins 2-3 (+5VSB) to wake up the computer when you press a key on the keyboard (the default is the Space Bar). This feature requires an ATX power supply that can supply at least 1A on the +5VSB lead, and a corresponding setting in the BIOS.



P5VDC-TVM SE Keyboard power setting

1.8 Connectors

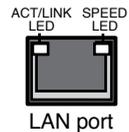
1.8.1 Rear panel connectors



1. **PS/2 mouse port (green).** This port is for a PS/2 mouse.
2. **Parallel port.** This 25-pin port connects a parallel printer, a scanner, or other devices.
3. **IEEE 1394a port (optional).** This 6-pin IEEE 1394a port provides high-speed connectivity for audio/video devices, storage peripherals, PCs, or portable devices.
4. **LAN (RJ-45) port.** This port allows connection to a Local Area Network (LAN) through a network hub.

LAN port LED indications

ACT/LINK LED		SPEED LED	
Status	Description	Status	Description
OFF	Idle	OFF	10 linked
BLINKING	Data activity	GREEN	100 linked



5. **Line In port (light blue).** This port connects a tape, CD, DVD player, or other audio sources. In 4-channel and 6-channel configuration, the function of this port becomes Rear Speaker Out.
6. **Line Out port (lime).** This port connects a headphone or a speaker. In 4-channel and 6-channel configuration, the function of this port becomes Front Speaker Out.
7. **Microphone port (pink).** This port connects a microphone. In a 6-channel configuration, the function of this port becomes Bass/Center Speaker.



Refer to the audio configuration table for the function of the audio ports in 2, 4, or 6-channel configuration.

Audio 2, 4, or 6-channel configuration

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

- USB 2.0 ports 3 and 4.** These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
- USB 2.0 ports 1 and 2.** These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
- VGA port.** This 15-pin VGA port connects to a VGA monitor.
- Serial connector.** This 9-pin COM port is for serial devices.
- PS/2 keyboard port (purple).** This port is for a PS/2 keyboard.

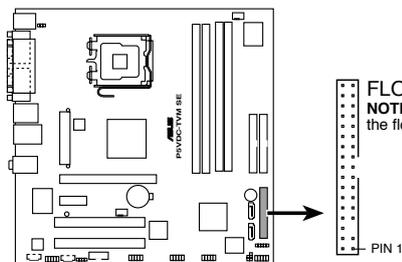
1.8.2 Internal connectors

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 an FDD cable with a covered Pin 5.



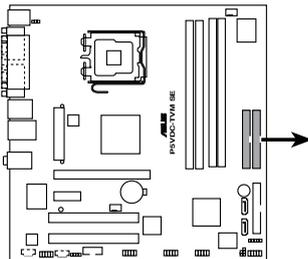
P5VDC-TVM SE Floppy disk drive connector

2. Primary/Secondary IDE connector (40-1 pin PRI_IDE1, SEC_IDE1)

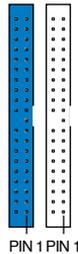
These connectors are for Ultra DMA 133/100/66 signal cables. The Ultra DMA 133/100/66 signal cable has three connectors: a blue connector for the primary IDE connector on the motherboard, a black connector for an Ultra DMA 100/66 IDE slave device (optical drive/hard disk drive), and a gray connector 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.



1. Follow the hard disk drive documentation when setting the device in master or slave mode.
2. Pin 20 on each IDE connector is removed to match the covered hole on the UltraATA cable connector. This prevents incorrect orientation when you connect the cables.
3. The hole near the blue connector on the UltraATA cable is intentional.



P5VDC-TVM SE IDE connectors



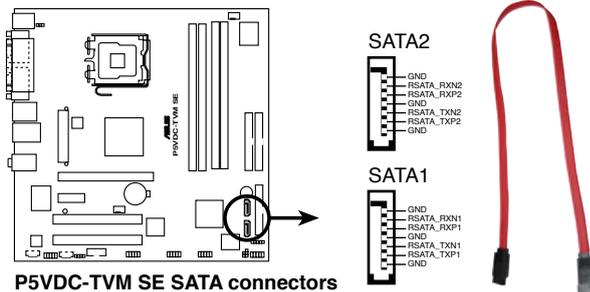
PRI_IDE1
SEC_IDE1

NOTE: Orient the red markings (usually zigzag) on the IDE ribbon cable to PIN 1.

3. Serial ATA connectors (7-pin SATA1 and SATA2)

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

If you installed Serial ATA hard disk drives, you can create a RAID 0, RAID 1, and JBOD configuration through the onboard VIA VT8237R+ RAID controller.



P5VDC-TVM SE SATA connectors

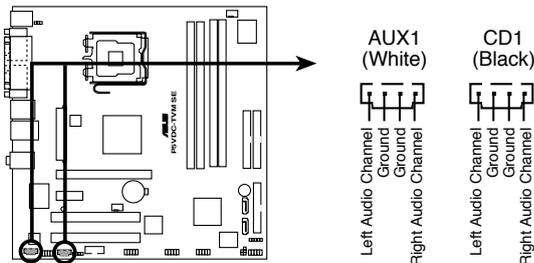


Important notes on Serial ATA

- The Serial ATA RAID feature (RAID 0, RAID 1, and JBOD) is available only if you are using Windows® 2000/2003 Server/XP operation system.
- The SATA ports couldn't be Book Disk under Windows® 98SE and ME.
- Install the Windows® 2000 Service Pack 4, the Windows® XP Service Pack1 or later version before using Serial ATA.

4. Internal audio connectors (4-pin AUX1, CD1)

These connectors allow you to receive stereo audio input from sound sources such as a CD-ROM, TV tuner, MPEG card or modem.



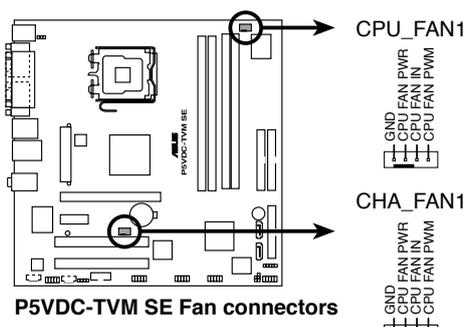
P5VDC-TVM SE Internal audio connectors

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

The fan connectors support cooling fans of 350mA~740mA (8.88W max.) or a total of 1A~2.22A (26.64W 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.

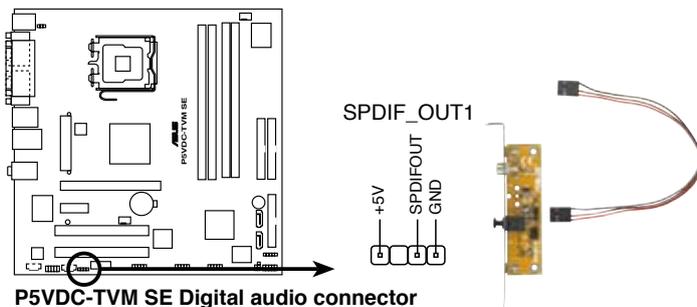


Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! DO NOT place jumper caps on the fan connectors.



6. Digital Audio connector (4-1 pin SPDIF_OUT1)

This connector is for the S/PDIF audio module to allow digital sound output. Connect one end of the S/PDIF audio cable to this connector and the other end to the S/PDIF module.



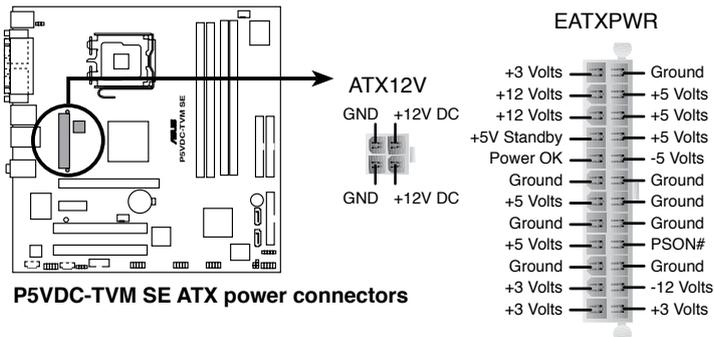
The S/PDIF out module is purchased separately.

7. ATX power connectors (24-pin EATXPWR, 4-pin ATX12V)

These connectors are for an ATX power supply. 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.



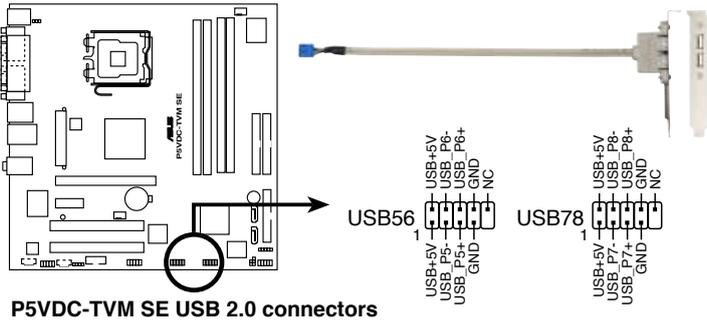
- Do not forget to connect the 4-pin ATX +12 V power plug; otherwise, the system will not boot up.
- When using an ATX 12 V PSU with 20-pin power plug, make sure that it can provide 8 A on the +12 V lead and at least 1A on the +5V standby lead (+5 VSB). The minimum recommended wattage is 300 W, or 350 W for a fully configured system. The system may become unstable or may not boot up if the power is inadequate.
- You must install a Power Supply Unit (PSU) with a higher power rating if you intend to install additional devices.



P5VDC-TVM SE ATX power connectors

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

These connectors are for USB 2.0 ports. Connect the optional 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.



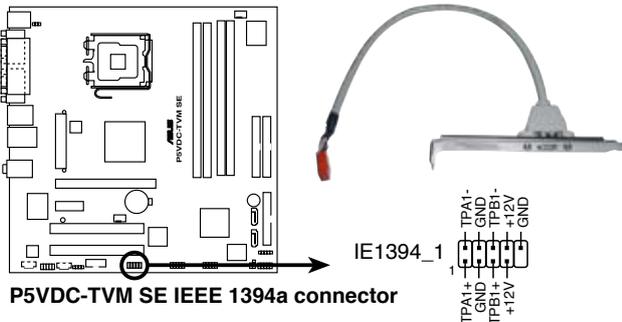
Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard!



The USB/GAME module is purchased separately.

9. IEEE 1394a port connector (10-1 pin IE1394_1) (Optional)

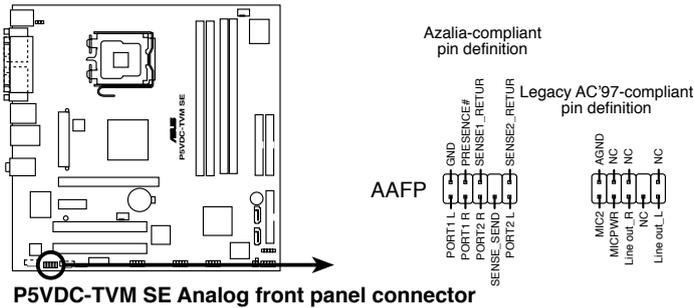
This connector is for a IEEE 1394a port. Connect the IEEE 1394a module cable to this connector, then install the module to a slot opening at the back of the system chassis.



Never connect a USB cable to the IEEE 1394a connector. Doing so will damage the motherboard!

10. Front panel audio connector (10-1 pin AAFP1)

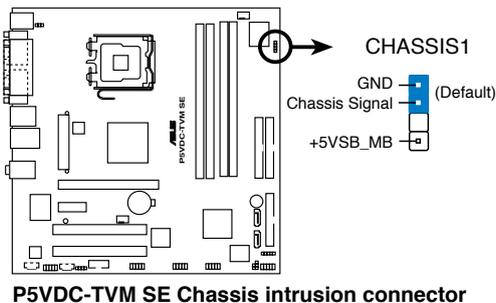
This connector is for a chassis-mounted front panel audio I/O module that supports either HD Audio or legacy AC'97 audio standard. Connect one end of the front panel audio I/O module cable to this connector.



11. Chassis intrusion connector (4-1 pin CHASSIS) (Optional)

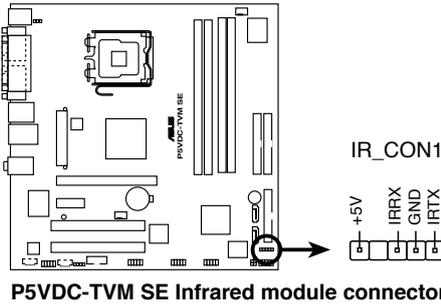
This connector is for a chassis-mounted intrusion detection sensor or switch. Connect one end of the chassis intrusion sensor or switch cable to this connector. The chassis intrusion sensor or switch sends a high-level signal to this connector when a chassis component is removed or replaced. The signal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

By default, the pin 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.



12. Infrared module connector (5-1 pin IR_CON1)

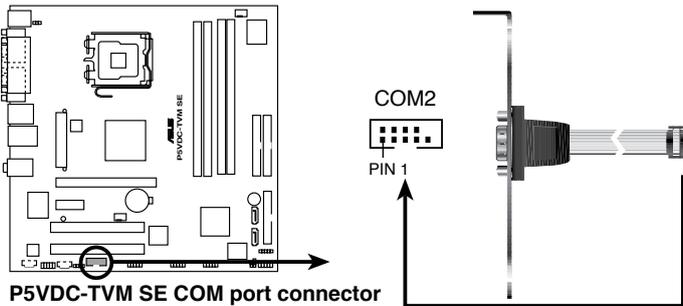
This connector supports an optional wireless transmitting and receiving infrared module. Use a ribbon cable to connect an IR module to this connector.



The IR module is purchased separately.

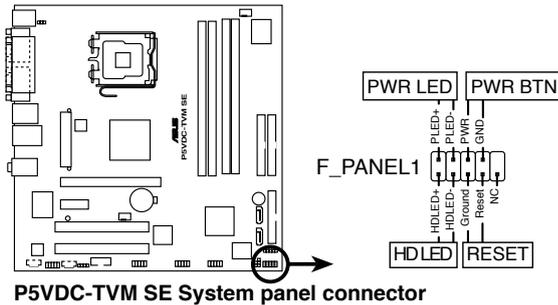
13. Serial port connector (10-1 pin COM2)

This connector is for a serial (COM) port. Connect the serial port module cable to this connector, then install the module to a slot opening at the back of the system chassis.



14 System panel connector (10-1 pin F_PANEL1)

This connector supports several chassis-mounted functions.



P5VDC-TVM SE System panel connector

- **System power LED (2-pin PLED)**

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

- **Hard disk drive activity LED (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 (2-pin PWR)**

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 (2-pin RESET)**

This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power.

This chapter tells how to change the system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

BIOS setup **2**

2.1 BIOS setup program

This motherboard supports a programmable firmware chip that you can update using the provided utility.

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 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 “Load Fail-Safe Defaults” in the opening BIOS menu screen.
 - 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.
-

2.2 BIOS menu screen

When you enter the BIOS, the following screen appears. The BIOS menu screen displays the items that allow you to make changes to the system configuration. To access the menu items, press the right or left arrow key on the keyboard until the desired item is highlighted.



2.2.1 Legend box

The keys in the legend bar allow you to navigate through the various setup menus.

Navigation Key	Function
<F1>	Displays the General Help screen
<Esc>	Exits the BIOS setup or returns to the main menu from a sub-menu
Left or Right arrow	Selects the menu item to the left or right
Up or Down arrow	Moves the highlight up or down between fields
<Enter>	Brings up a selection menu for the highlighted field
Page Down or - (minus)	Scrolls backward through the values for the highlighted field
Page Up or + (plus)	Scrolls forward through the values for the highlighted field
<F5>	Loads the previous values
<F6>	Loads the fail-safe defaults
<F9>	Loads the optimized defaults
<F10>	Saves changes and exit

2.2.2 List box

This box appears only in the opening screen. The box displays an initial list of configurable items in the menu you selected.

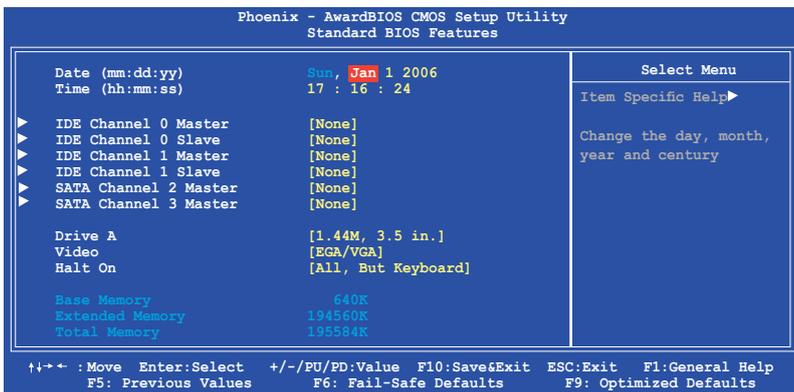
2.2.3 Sub-menu

Note that a right pointer symbol (▶) appears to the left of certain fields. This pointer indicates that you can display a sub-menu from this field. A sub-menu contains additional options for a field parameter. To display a sub-menu, move the highlight to the field and press <Enter>. The sub-menu appears. Use the legend keys to enter values and move from field to field within a sub-menu as you would within a menu. Use the <Esc> key to return to the main menu.

Take some time to familiarize yourself with the legend keys and their corresponding functions. Practice navigating through the various menus and sub-menus. If you accidentally make unwanted changes to any of the fields, press <F6> to load the fail-safe default values. While moving around through the Setup program, note that explanations appear in the Item Specific Help window located to the right of each menu. This window displays the help text for the currently highlighted field.

2.3 Standard BIOS Features

The Standard BIOS Features screen gives you an overview of the basic system information.



2.3.1 Date [Day, xx/xx/xxxx]

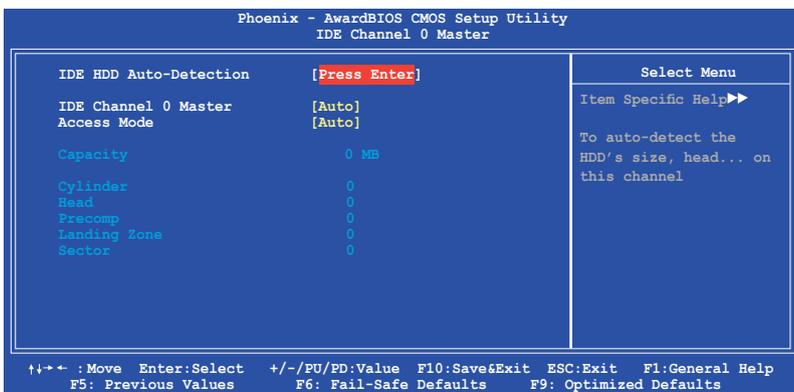
Allows you to set the system date.

2.3.2 Time [xx:xx:xxxx]

Allows you to set the system time.

2.3.3 IDE Channel 0/1 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.



IDE HDD Auto-Detection [Press Enter]

Allows auto-detection of the hard disk drive's specifications.

IDE Channel 0 Master [Auto]

Sets the selected channel as Master.

Configuration options: [None] [Auto] [Manual]

Access Mode [Auto]

This item allows the user to select the sector addressing mode. Normal mode supports 528 MB hard disks. LBA (logical block addressing) mode supports hard disks up to 128 GB in size. Large mode (also called extended CHS mode) supports hard disks above 528 MB in size, but does not support LBA mode.

Configuration options: [CHS] [LBA] [Large] [Auto]



Before attempting to configure a hard disk drive, make sure you have the correct configuration information supplied by the drive manufacturer. Incorrect settings may cause the system to fail to recognize the installed hard disk.

Capacity

Displays the auto-detected hard disk capacity. This item is not configurable.

Cylinder

Shows the number of the hard disk cylinders. This item is not configurable.

Head

Shows the number of the hard disk read/write heads. This item is not configurable.

Precomp

This item is not configurable.

Landing Zone

Shows the number of landing zone per track. This item is not configurable.

Sector

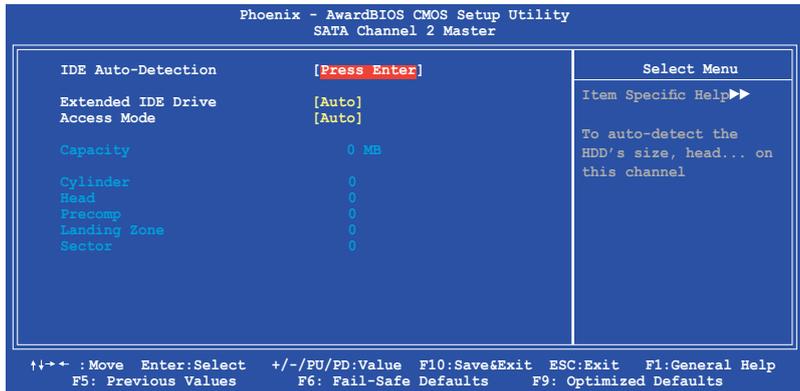
Shows the number of sectors per track. This item is not configurable.



After entering the IDE hard disk drive information into BIOS, use a disk utility, such as FDISK, to partition and format new IDE hard disk drives. This is necessary so that you can write or read data from the hard disk. Make sure to set the partition of the Primary IDE hard disk drives to active.

2.3.4 SATA Channel 2/3 Master

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.



IDE Auto-Detection [Press Enter]

Allows auto-detection of the hard disk drive's specifications.

Extended IDE Drive [Auto]

Sets the selected channel as Master.

Configuration options: [None] [Auto]

Access Mode [Auto]

Sets the sector addressing mode. Configuration options: [Large] [Auto]



Before attempting to configure a hard disk drive, make sure you have the correct configuration information supplied by the drive manufacturer. Incorrect settings may cause the system to fail to recognize the installed hard disk.

Capacity

Displays the auto-detected hard disk capacity. This item is not configurable.

Cylinder

Shows the number of the hard disk cylinders. This item is not configurable.

Head

Shows the number of the hard disk read/write heads. This item is not configurable.

Precomp

This item is not configurable.

Landing Zone

Shows the number of landing zone per track. This item is not configurable.

Sector

Shows the number of sectors per track. This item is not configurable.



After entering the IDE hard disk drive information into BIOS, use a disk utility, such as FDISK, to partition and format new IDE hard disk drives. This is necessary so that you can write or read data from the hard disk. Make sure to set the partition of the Primary IDE hard disk drives to active.

2.3.5 Drive A [1.44M, 3.5 in.]

Specifies the capacity and physical size of diskette drive A. Do not select [None] if you are using a floppy disk drive. Configuration options: [None] [360K, 5.25 in.] [1.2M, 5.25 in.] [720K, 3.5 in.] [1.44M, 3.5 in.]

2.3.6 Video [EGA/VGA]

Configuration options: [EGA/VGA] [CGA 40] [CGA 80] [MONO]

2.3.7 Halt On [All, But Keyboard]

Sets the system to halt on errors according to the system functions specified in each option. Configuration options: [All Errors] [No Errors] [All, But Keyboard] [All, But Diskette] [All, But Disk/Key]

2.3.8 Base Memory/Extended Memory/Total Memory [xxxK]

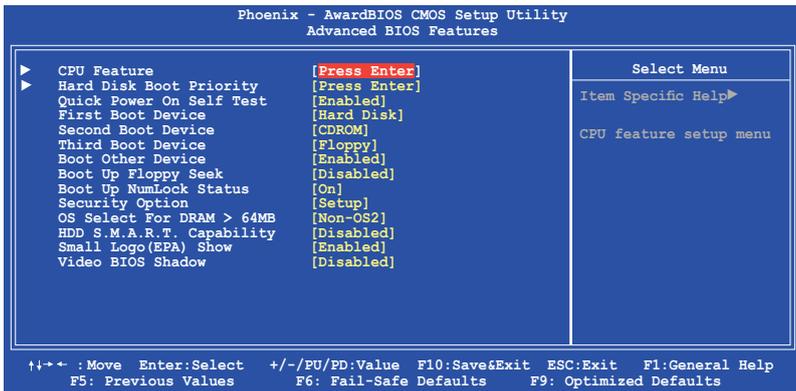
Shows the size of installed memory. These items are not configurable.

2.4 Advanced BIOS Features

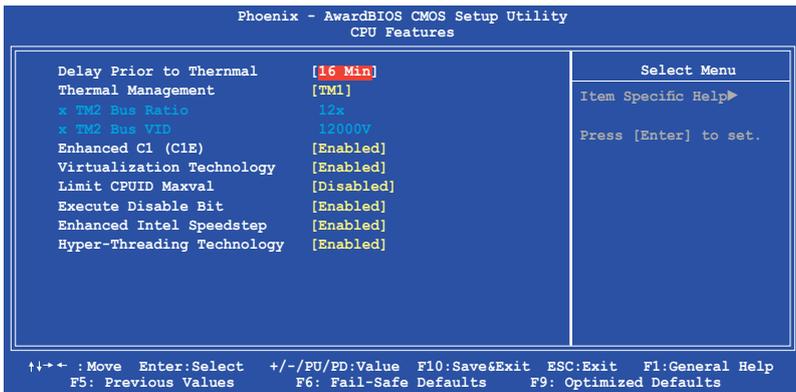
The Advanced BIOS Features menu items allow you to change the advanced BIOS settings.



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



2.4.1 CPU Feature [Press Enter]



Delay Prior to Thermal [16 Min]

Configuration options: [4 Min] [8 Min] [16 Min] [32 Min]

Thermal Management [TM1] [TM2]

Configuration options: [TM1] [TM2]

Enhanced C1 (C1E) [Enabled]

Configuration options: [Enabled] [Disabled]

Virtualization Technology [Enabled]

Configuration options: [Enabled] [Disabled]

Limit CPUID MaxVal [Disabled]

Enable this item to boot legacy operating systems that cannot support CPUs with extended CPUID functions. Set this item to [Disabled] under Windows® XP. Configuration options: [Disabled] [Enabled]

Execute Disable Bit [Enabled]

Configuration options: [Enabled] [Disabled]



The following item appears only when you installed an Intel® Pentium® 4 CPU that supports the Hyperthreading Technology and Enhanced Intel SpeedStep® Technology (EIST).

Enhanced Intel SpeedStep [Enabled]

Allows you to use the Enhanced Intel SpeedStep® Technology. When set to [Enabled], you can adjust the system power settings in the operating system to use the EIST feature. Set this item to [Disabled] if you do not want to use the EIST. Configuration options: [Enabled] [Disabled]

Hyper-Threading Technology [Enabled]

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

2.4.2 Hard Disk Boot Priority [Press Enter]

Allows you to select the hard disk boot device priority. The number of devices that appears on the screen depends on the number of devices installed in the system.

2.4.3 Quick Power On Self Test [Enabled]

Configuration options: [Disabled] [Enabled]

2.4.4 First/Second/Third Boot Device

Allows you to assign the boot device priority. Configuration options: [Floppy] [LS120] [Hard Disk] [CDROM] [ZIP] [USB-FDD] [USB-ZIP] [USB-CDROM] [LAN] [Disabled]

2.4.5 Boot Other Device [Enabled]

Configuration options: [Disabled] [Enabled]

2.4.6 Boot Up Floppy Seek [Disabled]

When [Enabled], the BIOS will seek the floppy disk drive to determine whether the drive has 40 or 80 tracks. Configuration options: [Disabled] [Enabled]

2.4.7 Boot Up NumLock Status [On]

Allows you to select the power-on state for the NumLock.

Configuration options: [Off] [On]

2.4.8 Security Option [Setup]

This field requires you to enter the password before entering the BIOS setup or the system. Select [Setup] to require the password before entering the BIOS Setup.

Select [System] to require the password before entering the system. Configuration options: [Setup] [System]

2.4.9 OS Select For DRAM > 64MB [Non-OS2]

Configuration options: [Non-OS2] [OS2]

2.4.10 HDD S.M.A.R.T. Capability [Disabled]

Enables or disables Hard Disk SMART capability support.

Configuration options: [Disabled] [Enabled]

2.4.11 Small Logo(EPA) Show [Enabled]

Configuration options: [Disabled] [Enabled]

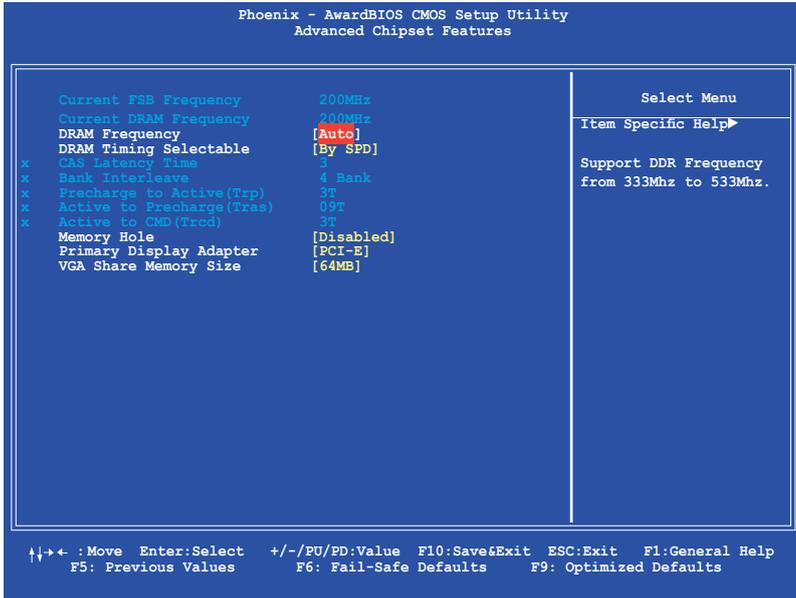
2.4.12 Video BIOS Shadow [Disabled]

Enables or disables copying of the video BIOS to shadow RAM.

Configuration options: [Disabled] [Enabled]

2.5 Advanced Chipset Features

The Advanced Chipset Features menu items allow you to change the advanced chipset settings.



2.5.1 Current FSB Frequency [200MHz]

This item is not configurable.

2.5.2 Current DRAM Frequency [200MHz]

This item is not configurable.

2.5.3 DRAM Frequency [Auto]

Sets the DDR/DDR2 operating frequency. Configuration options when installing DDR memory modules: [Auto] [333MHz] [400MHz]; Configuration options when installing DDR2 memory modules: [Auto] [400 MHz] [533MHz]

2.5.4 DRAM Timing Selectable [By SPD]

When this item is set to [By SPD], the DRAM timing parameters are set according to the DRAM SPD (Serial Presence Detect). When set to [Manual], you can manually set the DRAM timing parameters through the DRAM sub-items. The following sub-items appear when this item is set to [Manual]. Configuration options: [Manual] [By SPD]

CAS Latency Time [3]

Controls the latency between the DRAM read command and the time the data actually becomes available. Configuration options when installing DDR memory modules: [2] [2.5] [3]; Configuration options when installing DDR2 memory modules: [2] [3] [4] [5]

Bank Interleave [4 Bank]

Configuration options: [Disabled] [2 Bank] [4 Bank] [8 Bank]

Precharge to Active (Trp) [3T]

Configuration options: [2T] [3T] [4T] [5T]

Active to Precharge (Tras) [09T]

Configuration options: [05T] ~ [20T]

Active to CMD (Trcd) [3T]

Configuration options: [2T] [3T] [4T] [5T]

2.5.5 Memory Hole [Disabled]

Allows you to reserve an address for ISA expansion cards.
Configuration options: [Disabled] [15M-16M]

2.5.6 Primary Display Adapter [PCI-E]

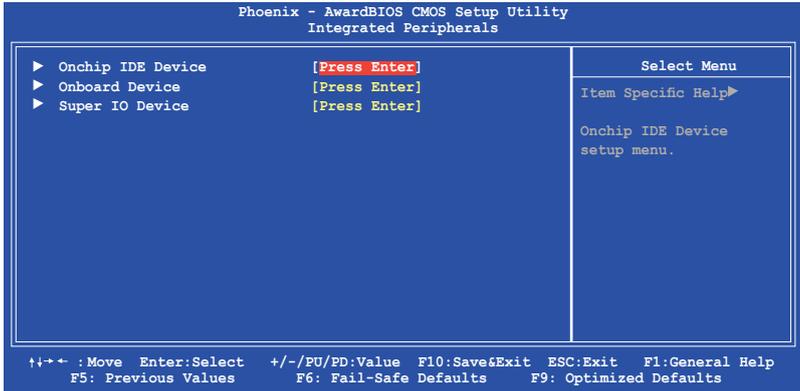
Configuration options: [PCI] [PCI-E]

2.5.7 VGA Share Memory Size [64MB]

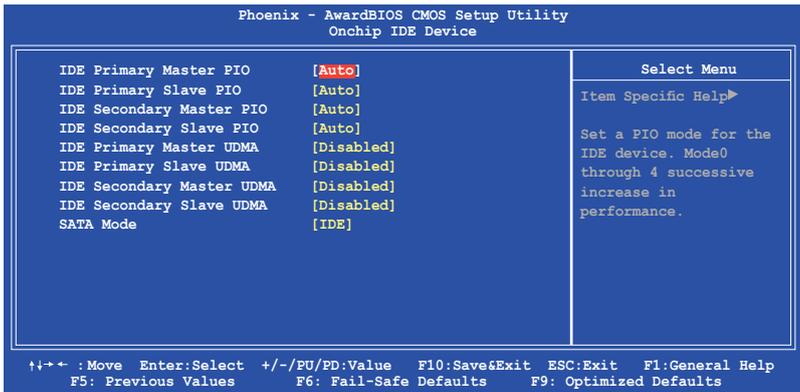
Allows you to select the size of VGA Share Memory.
Configuration options: [Disabled] [16MB] [32MB] [64MB]

2.6 Integrated Peripherals

The Integrated Peripherals menu items allow you to change the onboard devices configuration settings.



2.6.1 OnChip IDE Device [Press Enter]



IDE Primary/Secondary Master/Slave PIO [Auto]

This option lets you set a PIO (Programmed Input/Output) mode for the IDE device. Modes 0 through 4 provide successive increase in performance. Configuration options: [Auto] [Mode 0] [Mode 1] [Mode 2] [Mode 3] [Mode 4]

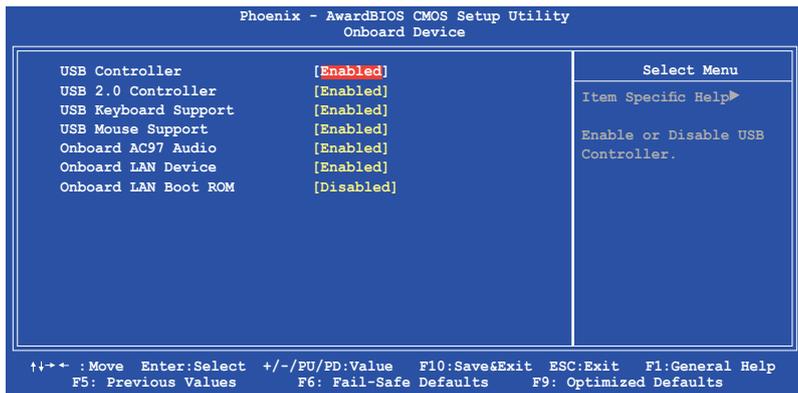
IDE Primary/Secondary Master/Slave UDMA [Disabled]

Ultra DMA capability allows improved transfer speeds and data integrity for compatible IDE devices. Set to [Disabled] to suppress Ultra DMA capability. Configuration options: [Disabled] [Auto]

SATA Mode [IDE]

Sets the configuration for the Serial ATA connectors supported by the Southbridge chip. The Advanced Host Controller Interface (AHCI) allows the onboard storage driver to enable advanced Serial ATA features that increase storage performance on random workloads by allowing the drive to internally optimize the order of commands. If you want to create a RAID 0 or RAID 1 configuration from the Serial ATA hard disk drives, set this item to [RAID]. If you want to use the Serial ATA hard disk drives as Parallel ATA physical storage devices, keep the default setting [IDE]. Configuration options: [IDE] [RAID]

2.6.2 Onboard Device [Press Enter]



USB Controller [Enabled]

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

USB 2.0 Controller [Enabled]

Allows you to enable or disable the EHCI controller. If the BIOS has built-in high speed USB support, this item will be enabled automatically when a high speed device is attached. Configuration options: [Enabled] [Disabled]

USB Keyboard Support [Enabled]

Allows you to enable or disable legacy USB device support. Configuration options: [Disabled] [Enabled]

USB Mouse Support [Enabled]

Allows you to enable or disable USB mouse support. Configuration options: [Disabled] [Enabled]

Onboard AC97 Audio [Enabled]

Allows you to enable or disable the onboard AC'97 Audio controller. Configuration options: [Enabled] [Disabled]

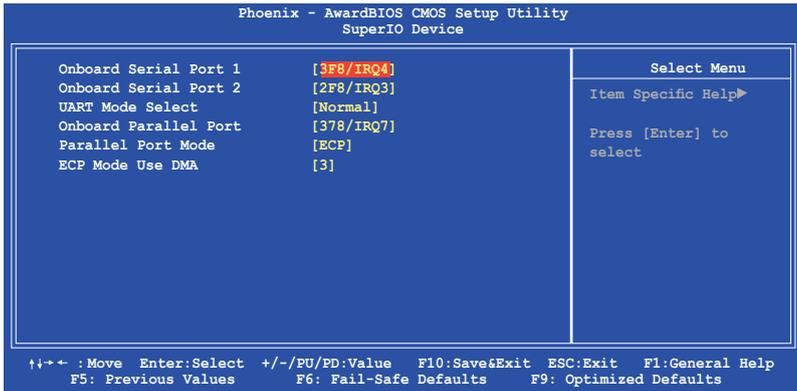
Onboard LAN Device [Enabled]

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

Onboard LAN Boot ROM [Disabled]

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

2.6.3 Super IO Device [Press Enter]



Onboard Serial Port 1 [3F8/IRQ4]

Allows you to set the Serial Port 1 base address. Configuration options: [Disabled] [3F8/IRQ4] [2F8/IRQ3] [3E8/IRQ4] [2E8/IRQ3] [Auto]

Onboard Serial Port 2 [2F8/IRQ3]

Allows you to set the Serial Port 1 base address. Configuration options: [Disabled] [3F8/IRQ4] [2F8/IRQ3] [3E8/IRQ4] [2E8/IRQ3] [Auto]

UART Mode Select [Normal]

Sets the operation mode of the UART. Configuration options: [Normal] [IrDA] [ASKIR]

Onboard Parallel Port [378/IRQ7]

Allows you to set the base address of the onboard parallel port connector.

Configuration options: [Disabled] [378/IRQ7] [278/IRQ5] [3BC/IRQ7]

Parallel Port Mode [ECP]

Allows you to set the operation mode of the parallel port.

Configuration options: [SPP] [EPP] [ECP] [ECP+EPP]

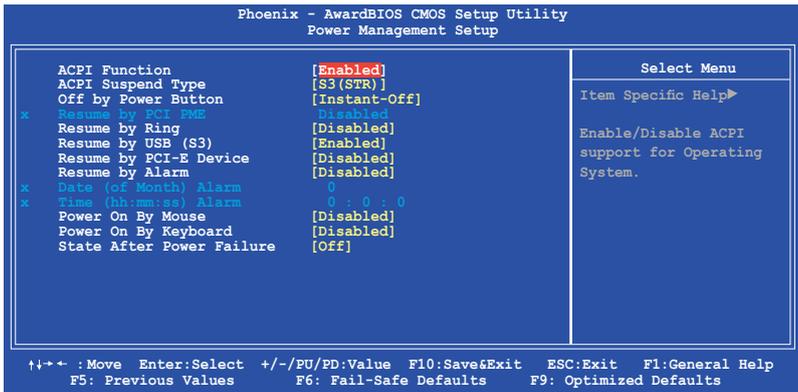
ECP Mode Use DMA [3]

Allows you to select the ECP Mode. This item becomes configurable only if the Parallel Port Mode is set to [ECP] or [ECP+EPP].

Configuration options: [1] [3]

2.7 Power Management Setup

The Power Management Setup menu items allow you to change the settings for the Advanced Power Management (APM) and Advanced Configuration and Power Interface (ACPI).



2.7.1 ACPI Function [Enabled]

Allows you to enable or disable ACPI support for operating system.

Configuration options: [Enabled] [Disabled]

2.7.2 ACPI Suspend Type [S3(STR)]

Allows you to select the ACPI state used for system suspend.

Configuration options: [S1(POS)] [S3(STR)]

2.7.3 Off by Power Button [Instant-Off]

When set to [Instant-Off], the system goes to soft-off when you press the power button for less than 4 seconds. When set to [Delay 4 Sec], press the power button for more than 4 seconds to power off the system. Configuration options: [Delay 4 Sec] [Instant-Off]

2.7.4 Resume by PCI PME [Disabled]

This item is not configurable.

2.7.5 Resume by Ring [Disabled]

Configuration options: [Disabled] [Enabled]

2.7.6 Resume by USB (S3) [Enabled]

Configuration options: [Disabled] [Enabled]

2.7.7 Resume by PCI-E Device [Disabled]

Configuration options: [Disabled] [Enabled]

2.7.8 Resume by Alarm [Disabled]

Allows you to enable or disable RTC to generate an event. When this item is enabled, you can set the date and time of alarm using the two following items.

Configuration options: [Disabled] [Enabled]



The following items become configurable only when the Resume by Alarm item is set to [Enabled].

2.7.9 Day (of Month) Alarm [0]

To set the day of alarm, highlight this item and press <Enter> to display a pop-up menu. Key in a value (Min=0, Max=31), then press <Enter>. Selecting [0] means the alarm will set off everyday.

2.7.10 Time (hh:mm:ss) Alarm [0 : 0 : 0]

To set the time of alarm:

1. Highlight this item and press <Enter> to display a pop-up menu for the hour field.
2. Key-in a value (Min=0, Max=23), then press <Enter>.
3. Press tab to move to the minutes field, then press <Enter>.
4. Key-in a minute value (Min=0, Max=59), then press <Enter>.
5. Press tab to move to the seconds field, then press <Enter>.
6. Key-in a value (Min=0, Max=59), then press <Enter>.

2.7.11 Power On By 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]

2.7.12 Power On By Keyboard [Disabled]

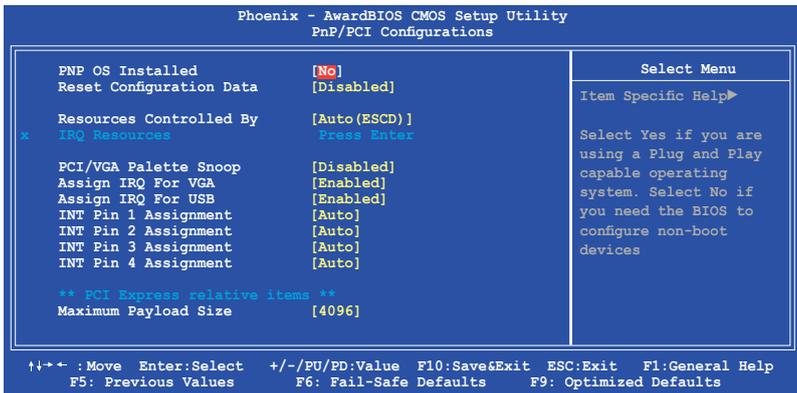
Allows you to use specific keys on the keyboard to turn on the system. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead. Configuration options: [Disabled] [Space Bar] [Ctrl-Esc] [Power Key]

2.7.13 State After Power Failure [Off]

Allows you to set whether or not to reboot the system after power interruptions. [Off] leaves your system off while [On] reboots the system. [Former-Sts] sets the system back to the state it was before the power interruption. Configuration options: [Off] [On] [Former-Sts]

2.8 PnP/PCI Configurations

The PnP/PCI Configurations menu items allow you to change the settings for PnP/PCI devices.



2.8.1 PNP OS Installed [No]

When set to [No], the 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]

2.8.2 Reset Configuration Data [Disabled]

If you installed an add-on device and the system reconfiguration caused a serious conflict such that the system cannot boot, set this item to [Enabled] to reset Extended System Configuration Data (ESCD) when you exit Setup.

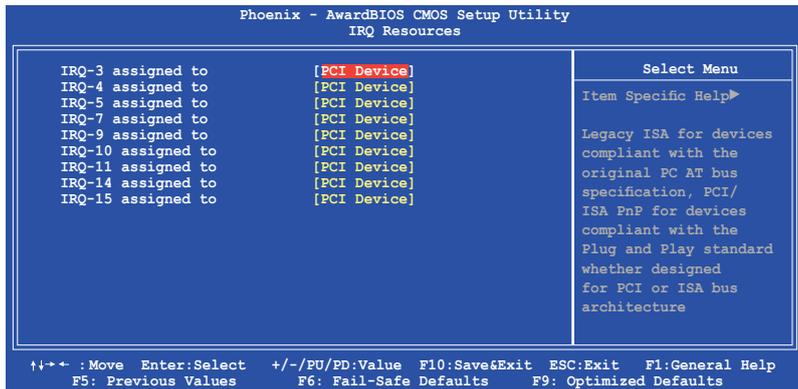
Configuration options: [Disabled] [Enabled]

2.8.3 Resources Controlled By [Auto(ESCD)]

Setting to [Auto] allows the BIOS to automatically configure all the boot and compatible Plug and Play devices. You cannot configure the IRQ DMA and memory base address fields if you set to [Auto] because the BIOS automatically assigns them. Configuration options: [Auto(ESCD)] [Manual]

2.8.4 IRQ Resources [Press Enter]

This item becomes configurable only if the Resources Controlled By item is set to [Manual]. This allows you to assign each system interrupt a type, depending on the device using the interrupt.



IRQ-xx assigned to [PCI Device]

When set to PCI device, 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: [PCI Device] [Reserved]

2.8.5 PCI/VGA Palette Snoop [Disabled]

Some non-standard VGA cards, like graphics accelerators or MPEG video cards, may not show colors properly. Setting this field to [Enabled] corrects this problem. If you are using standard VGA cards, leave this field to the default setting [Disabled]. Configuration options: [Disabled] [Enabled]

2.8.6 Assign IRQ For VGA [Enabled]

Configuration options: [Disabled] [Enabled]

2.8.7 Assign IRQ For USB [Enabled]

Configuration options: [Disabled] [Enabled]

2.8.8 INT Pin x Assignment [Auto]

Assigns INT assignment for specific devices.

Configuration options: [Auto] [3] [4] [5] [7] [9] [10] [11] [12] [14] [15]

2.8.9 PCI Express relative items

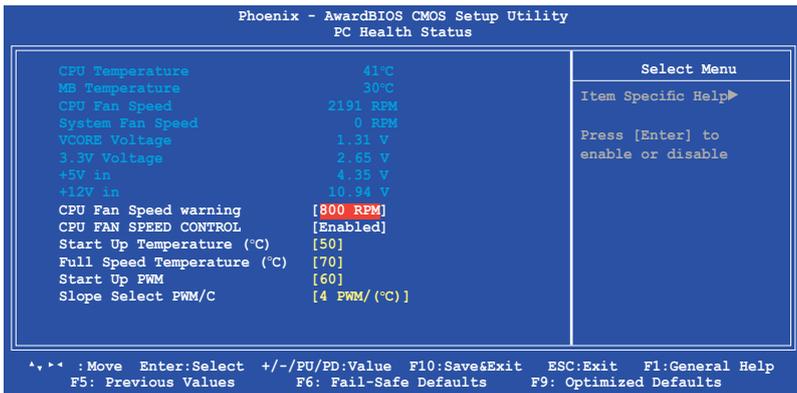
This item is not configurable.

2.8.10 Maximum Payload Size [4096]

Allows you to set maximum TLP payload size for the PCI Express devices. The unit is byte. Configuration options: [128] [256] [512] [1024] [2048] [4096]

2.9 PC Health Status

The PC Health Status screen shows the motherboard CPU and fan temperatures, and allows you to set threshold levels for efficient system operation.



2.9.1 CPU Temperature, MB Temperature

The onboard hardware monitor automatically detects and displays the motherboard and CPU temperatures. These items are not user-configurable.

2.9.2 CPU Fan Speed, System Fan Speed

The onboard hardware monitor automatically detects and displays the CPU fan speed and the system fan speed in rotations per minute (RPM). These items are not user-configurable.

2.9.3 VCORE Voltage, 3.3 Voltage, +5V in, +12V in

The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators. These items are not user-configurable.

2.9.4 CPU Fan Speed warning [800RPM]

Allows you to disable or set the CPU fan warning speed.

Configuration options: [Disabled] [800RPM] [1200RPM] [1600RPM]

2.9.5 CPU FAN SPEED CONTROL [Enabled]

Allows you to enable or disable the CPU fan speed controller.

Configuration options: [Disabled [Enabled]]

2.9.6 Start Up Temperature (°C) [50]

To set the start up temperature, highlight this item and press <Enter> to display a pop-up menu. Key in a value (Min=0, Max=100), then press <Enter>. The fan will start up when the temperature is over the value set.

2.9.7 Full Speed Temperature (°C) [70]

To set the full speed temperature, highlight this item and press <Enter> to display a pop-up menu. Key in a value (Min=0, Max=100), then press <Enter>. The fan will achieve full speed when the temperature is over the value set.

2.9.8 Start Up PWM [60]

To set the start up PWM, highlight this item and press <Enter> to display a pop-up menu. Key in a value (Min=0, Max=127), then press <Enter>.

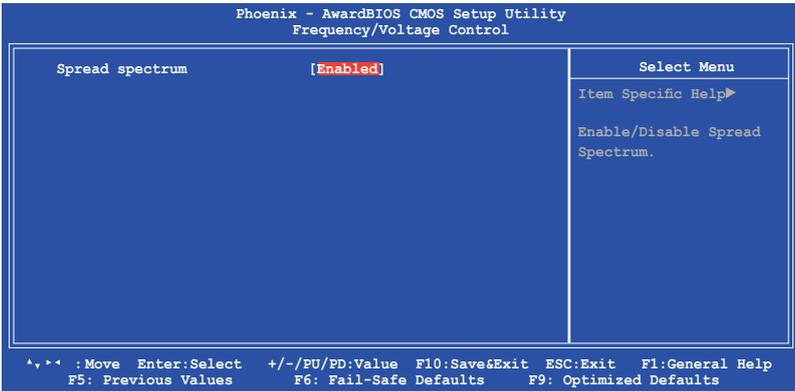
2.9.9 Slope Select PWM/°C [4 PWM/°C]

Allows you to set PWM increase value when the temperature is one degree higher.

Configuration options: [0 PWM/°C] [1 PWM/°C] [2 PWM/°C] [4 PWM/°C] [8 PWM/°C] [16 PWM/°C] [32 PWM/°C] [64 PWM/°C]

2.10 Frequency/Voltage Control

The Frequency/Voltage Control menu items allow you to change the CPU clock and voltage settings.



2.10.1 Spread Spectrum [Enabled]

Allows you to enable or disable the clock generator spread spectrum.
Configuration options: [Disabled] [Enabled]

2.11 Other items

2.11.1 Load Fail-Safe Defaults

Allows you to load the fail-safe defaults.

2.11.2 Load Optimized Defaults

Allows you to load the optimized defaults.

2.11.3 Set Supervisor Password

Allows you to set the supervisor password. To set a password, press <Enter>. Type in and confirm the password when prompted.

2.11.4 Set User Password

Allows you to set a user password for access to system after boot-up. This item is not configurable.

2.11.5 Save & Exit Setup

Once you are finished making your selections, choose this option to ensure that the values you selected are saved to the CMOS RAM. When you select this option, a confirmation window appears. Select Yes to save changes and exit.

2.11.6 Exit Without Saving

Select this option only if you do not want to save the changes that you made to the Setup program.

