

XP-P4I533E

Intel® Pentium® 4 Processor Motherboard

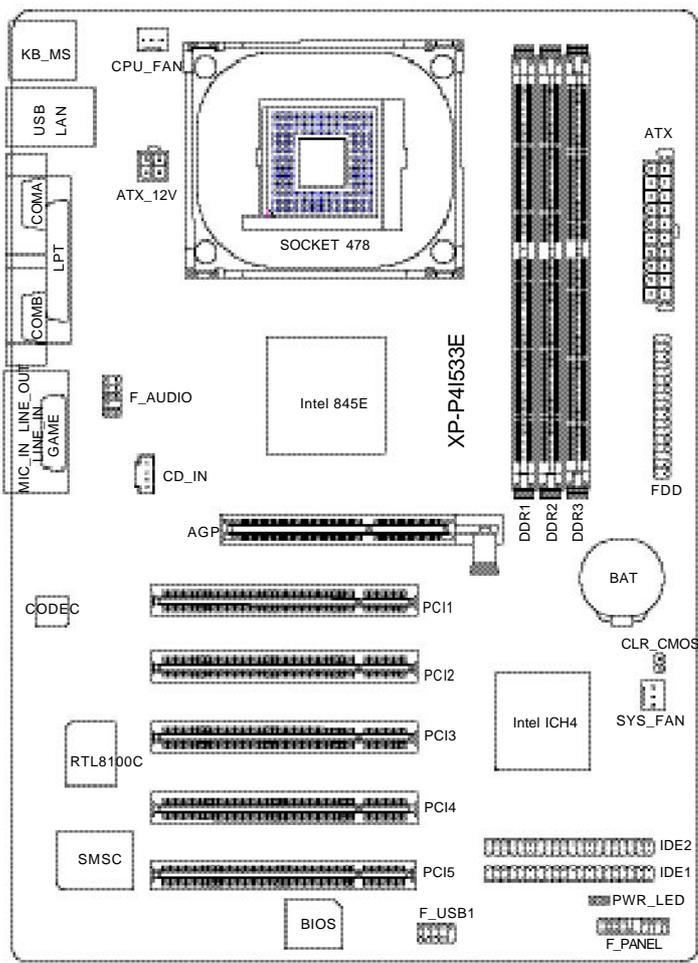
User's Manual

M-040602

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Motherboard Layout



1. Production Introduction

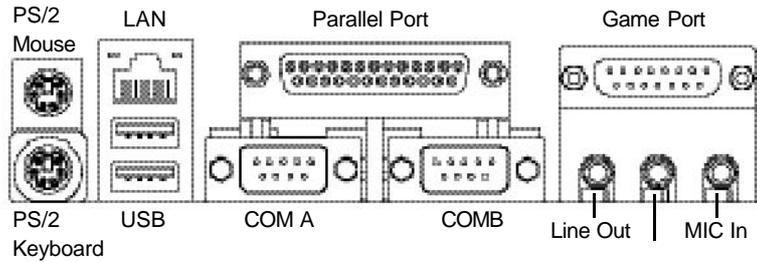
The user manual provides steps related to quick installation. If you wish to view complete product information, please select the "", Open User Manual button located on the driver CD or link to our website at <http://www.axper.com> to received the most up-to-date information.

1.1. Feature Summary

CPU	Socket 478 for Intel®Pentium®4 (Northwood) with HT Technology Intel®Pentium®4 400/533MHz FSB 2nd cache depends on CPU
Chipset	North Bridge: Intel® 845E South Bridge: Intel® ICH4
Memory	3 184-pin DDR DIMM sockets, supports up to 3GB DRAM (Max) Supports DDR200/DDR266 DIMM Supports only 2.5V DDR SDRAM
Slots	1 AGP slot device support 5 PCI slots support 33MHz & PCI 2.2 compliant
On-Board IDE	2 IDE controller provide IDE HDD/CD-ROM(IDE1, IDE2) with PIO, Bus Master (Ultra DMA33/ATA66/ATA100) operation modes Can connect up to 4 IDE devices
On-Board Floppy	1 Floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88M bytes
On-Board Peripherals	1 Parallel port supports Normal/EPP/ECP mode 2 Serial port (COMA, COMB) 4 USB 2.0/1.1 ports (2 x Rear, 2 x Front by cable) 1 Front Audio connector 1 PS/2 Keyboard 1 PS/2 Mouse
On-Board LAN	Built-in RTL8100C chipset 1 RJ45 port
On-Board Sound	C-Media 9761 CODEC Support 6 channel Line Out / Line In / Mic In CD In
BIOS	Licensed AWARD BIOS Supports BIOSNOW!
I/O Control	SMSC
Hardware Monitor	CPU Fan Revolution detect CPU temperature detect System Voltage detect
Form Factor	ATX size form factor, 29.5cm x 20.0cm

1.2. I/O Back Panel and Connectors&Jumper Setting

1.2.1. I/O Back Panel

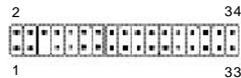


PS/2 Keyboard PS/2 Mouse connector	Connects PS/2 standard keyboard and PS/2 standard mouse
USB (Universal Serial Bus Port)	Prior to use, please make sure that your system as well as the connected attachments support the USB interface. If driver installation is required, please consult the USB section of the user manual.
LAN (RJ45 LAN Port)	Internet connection with speed of up to 10/100Mbps
Parallel port (LPT)	Connects to printer
COMA/COMB (Serial port)	Connects to serial-based mouse or data processing devices
LineOut	Connects to speakers or headphones
Line In	Connects to optical devices, CD players and other audio input devices
Mic In	Connects to microphone

1.2.2. Connectors&Jumper Setting

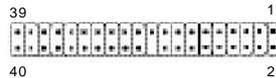
FDD (Floppy Disk Drive Connector)

The FDD connector is able to connect a single floppy disk drive via a FDD cable. Usually one edge of the FDD cable is marked in red, please attach this marked edge to position 1 on the connector.



IDE1 / IDE2 (IDE1 and IDE2 Connector)

The IDE connector is able to connect two IDE devices via an IDE cable and requires checking of the IDE jumper setting. It is recommended that the hard drive be connected to the first IDE connector while the optical drive be connected to the second IDE connector.



CPU_FAN (CPU Fan Power Connector); SYS_FAN (System Fan Power Connector)

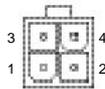
The CPU_Fan power connector provides the largest amount of power to the CPU fan at 600mA. You can connect the casing fan to the SYS_FAN connector to enhance system cooling.



PIN	SIGNAL
1	GND
2	+12V
3	Sense

ATX_12V (+12V Power Connector)

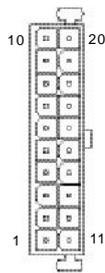
The ATX_12V power connector provides power to the CPU. If this connector is not Attached, the system will not start.



PIN	SIGNAL
1	GND
2	GND
3	+12V
4	+12V

ATX (ATX Power Connector)

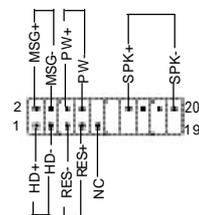
The ATX power connector provides power to the motherboard. Prior to connection, please make sure that the power supply is disconnected.



PIN	SIGNAL	PIN	SIGNAL
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	GND	13	GND
4	VCC	14	PS_ON (soft on/off)
5	GND	15	GND
6	VCC	16	GND
7	GND	17	GND
8	Power Good	18	-5V
9	5VSB (stand by +5V)	19	VCC
10	+12V	20	VCC

F_PANEL (Front Panel Control Connector)

The F_Panel Control Connector connects to certain connectors on the front panel of the system casing such as IDE Hard Disk Active LED, speaker, reset, and power on/off connectors. You can use the schematic diagram below as the basis for connection.



PIN	SIGNAL
HD	IDE Hard Disk Active LED
SPK	Speaker Connector
RES	Reset Switch
PW	Soft Power Connector
MSG	Message LED/Power/Sleep LED
NC	NC

PWR_LED

Connects to the system power LED indicator whereby the power is indicated as ON or OFF. However, the indicator will flash when the system is suspended.



PIN	SIGNAL
1	MPD+
2	MPD-
3	MPD-

CLR_CMOS (Clear CMOS)

You can clear the motherboard CMOS with the jumper to return your system to its initial status. To prevent improper usage, the jumper does not include the jumper plug. If you wish to use the Clear CMOS function, please short circuit the 1-2Pin.



Short : Clear CMOS



Open : Normal

F_AUDIO (Front Audio Connector)

Connects to the audio connector located on the front panel of the system casing (dependent on case design). When use of the front panel audio connector is required, please remove the 5-6 pin, 9-10pin jumper. Please note that use of only the front panel audio connector or the rear panel audio connector is permitted.



PIN	SIGNAL	PIN	SIGNAL
1	MIC	6	Rear Audio (R)
2	GND	7	Reserved
3	MIC_BIAS	8	NO PIN
4	POWER	9	Front Audio (L)
5	Front Audio (R)	10	Rear Audio (L)

CD_IN (Optical Drive Audio Connector)

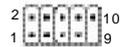
Connects CD-ROM or DVD-ROM audio connector.



PIN	SIGNAL
1	CD_L
2	GND
3	GND
4	CD_R

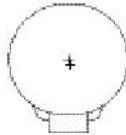
F_USB1 (Front USB Connector)

Connects to the USB connector located on the front panel of the system casing (dependent on case design). Note: Please make sure that each USB connection matches its designated position. If connections are made incorrectly, the result can lead to inability to use the function or even damage.



PIN	SIGNAL	PIN	SIGNAL
1	POWER	6	USB Dy+
2	POWER	7	GND
3	USB Dx-	8	GND
4	USB Dy-	9	NO PIN
5	USB Dx+	10	NC

BAT1(Battery)



The improper removal of the battery can result in harm. When replacing a battery, please make sure you use one that is of similar brand and model number.

For information related to battery specifications and precautions, please refer to the manufacturer instructions.

If you wish to delete the data stored in the CMOS, please follow the steps below:

1. Please turn off your computer and unplug the power.
2. Remove the battery from the motherboard.
3. Wait 30 seconds and then replace the battery onto the motherboard.
4. Plug in the power supply and turn on your system.

2. Hardware Installation

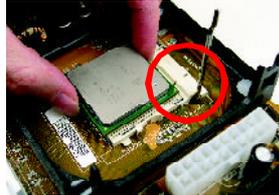


1. Please make sure that the CPU used is supported by your motherboard.
2. Please be aware of the placement position of the CPU. If the CPU does not insert properly, do not apply force but check the placement position.
3. Please make sure that an even layer of heat sink paste is added between the CPU and the fan sink.
4. Please do not turn on the power prior to installing the fan sink. Doing so can result in overheating and lead to permanent damage to the CPU.
5. Please follow the CPU specifications when setting the frequency. It is not recommended that system speed settings exceed that of hardware specifications. If you wish to set your system speed to exceed the recommended specifications, please check your hardware specifications eg: CPU, graphics card, memory, hard drive

The following must be supported to allow the use of Hyper-Threading Technology:

- an Intel Pentium 4 CPU with HT
- a motherboard supporting HT
- HT selection feature within BIOS
- an operating system supporting HT

2.1. Installation of a Pentium 4 CPU and Fan Sink



1

Note the small gold colored triangle on one corner of the CPU. Place the triangle in the corner closest to the metal lever and gently insert the CPU into its position.



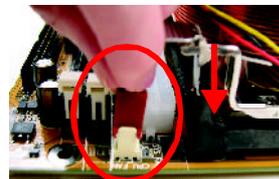
2

When the CPU is inserted into its position, gently press the metal lever downwards until a click is heard. Then add an even layer of heat sink paste between the CPU and fan sink for heat dissipation.



3

Position and attach the clips on one end of the fan sink firmly atop the CPU. Please do the same for the clips on the other end of the fan sink.



4

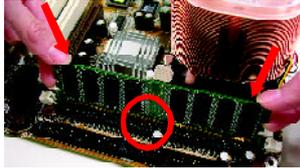
Connect the 3-pin cooler power connector to the CPU Fan connector located on the motherboard.

2.2. Installation of Memory

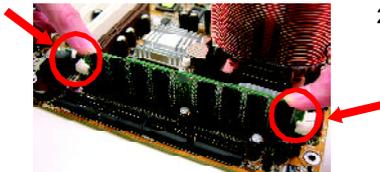


1. Before installing or removing memory, please make sure that the computer power is turned off to prevent hardware damage.
2. Please make sure that the memory used is supported by the motherboard.
3. Memory modules have a foolproof insertion design. The memory can be installed only when facing the correct position. If you cannot insert the module, please switch directions.
4. It is recommended that memory of similar capacity, specifications and brand be used.

The motherboard supports DIMM memory modules, whereby BIOS will automatically detect memory capacity and specifications. Memory modules are designed so that they can be inserted only in one direction.



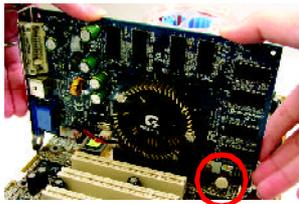
1. Unfasten the clips on each end of the memory slots. Correctly align the memory module in the slot and push downwards..



2. Once the memory module is correctly inserted, the clips will automatically refasten. If the memory module is positioned in the wrong direction, it will not insert. If this occurs, please switch directions.

2.3. Installation of the Graphics Card

1. Before installing the graphics card, please carefully read the accompanying user manual. As well, make sure the computer power is turned off.
2. When installing or removing the graphics card, first pull out the white AGU knob before insertion or removal. Releasing the AGU knob will hold the graphics card firmly in place.



3. BIOS Setup

BIOS (Basic Input and Output System) stores all the information of the motherboard settings that is needed for system initiation within the CMOS. The CMOS SETUP utility allows the user to make changes in BIOS configurations that are required or to activate certain features. The CMOS SETUP saves each item configuration in the CMOS SRAM of the motherboard. When the power is turned off, the battery on the motherboard supplies the required power to the CMOS SRAM.

When the power is turned on, pushing the button during the BIOS POST (Power-On Self Test) will bring up the CMOS SETUP screen. If you wish to enter the BIOS setup, please press "Ctrl + F1" at the BIOS setup screen.

When using BIOS setup for the first time, it is recommended that you save the present BIOS onto a disk in case you need to reset the BIOS back to its original settings. If you wish to update to a new BIOS, the "BIOSNOW!" can be used.

The user can select "BIOSNOW!" as a way to quickly and easily update or back up BIOS without entering the operating system.

3.1. Setup Screen Features (BIOS version:E5)

- × When you enter the CMOS SETUP screen, you will see the following screen and setting selections as shown below.

CMOS Setup Utility-Copyright (C) 1984-2004 Award Software	
<ul style="list-style-type: none"> ▶ Standard CMOS Features ▶ Advanced BIOS Features ▶ Integrated Peripherals ▶ Power Management Setup ▶ PnP/PCI Configurations ▶ PC Health Status ▶ Frequency/Voltage Control 	<ul style="list-style-type: none"> Top Performance Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password Set User Password Save & Exit Setup Exit Without Saving
ESC: Quit	↑↓→←: Select Item
F8: BIOSNOW!	F10: Save & Exit Setup
Time, Date, Hard Disk Type...	

Instructions

<↑, ↓, ←, →, Enter>	Movement in all four directions to highlight a desired option, pressing <Enter> will select the option and take you to its appropriate screen
<Page Up, Page Down>	Used to toggle up and down the available options for a particular item, whereby <Page Up> can also be used to increase value option and <Page Down> to decrease value option
<Esc>	Return to main setup screen or exit setup
<F1>	Gives the list of options available for each item
<F2>	Gives the list of options available for the current item
<F5>	Returns settings to previous values (not applicable to main setup screen)

■ Floppy 3 Mode Support

Allows user to configure a Japanese standard 3 Mode floppy drive.

Options: Disabled (No 3 Mode drive installed)
 Drive A (3 Mode Drive installed in A:)
 Drive B (3 Mode Drive installed in B:)
 Both (3 Mode Drive installed in A: and B:)

■ Halt on

Tells the BIOS specifically which types of errors will halt the computer during the power-on self test (POST) section of the boot.

Options: No Errors (Never halt when an error is detected)
 All Errors (Halt whenever an error is detected)
 All, But Keyboard (Halt whenever an error is detected with the exception of the keyboard)
 All, But Diskette (Halt whenever an error is detected with the exception of the diskette)
 All, But Disk/Key (Halt whenever an error is detected with the exception of the diskette and keyboard) (default:All, But Keyboard)

■ Memory

When BIOS is displayed during POST, memory capacity is also displayed as shown below:

Base Memory, Extended Memory, Total Memory (the user can verify the accuracy of these values)

3.4. Integrated Peripherals

- × This menu allows you to control the various ports of the computer such as IDE, SATA, USB, IEEE1394, COM port, LPT port, AC97 audio, etc.

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Integrated Peripherals		Item Help
On-Chip Primary PCI IDE	[Enabled]	
On-Chip Secondary PCI IDE	[Enabled]	Menu Level▶
IDE1 Conductor Cable	[Auto]	If a hard disk controller card is used, set at Disabled
IDE2 Conductor Cable	[Auto]	
USB Controller	[Enabled]	
USB Keyboard Support	[Disabled]	
USB Mouse Support	[Disabled]	[Enabled]
AC97 Audio	[Auto]	Enable onboard IDE PORT
Onboard H/W LAN	[Enabled]	
Onboard LAN Boot ROM	[Disabled]	
Onboard Serial Port 1	[3F8/IRQ4]	
Onboard Serial Port 2	[2F8/IRQ3]	
UART Mode Select	[Normal]	[Disabled]
x UR2 Duplex Mode	Half	Disable onboard IDE PORT
x TxD.RxD Polarity Active	Lo,Hi	
x Use IR Pins	IR-Rx2Tx2	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[SPP]	
x ECP Mode Use DMA	3	
Game Port Address	[201]	
Midi Port Address	[Disabled]	
x Midi Port IRQ	10	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
 F5: Previous Values F6: Fail-Save Default F7: Optimized Defaults

■ On-Chip Primary PCI IDE

Allows the user to enable or disable the first onboard IDE channel.
(default:Enabled)

■ On-Chip Secondary PCI IDE

Allows the user to enable or disable the second onboard IDE channel.
(default:Enabled)

■ IDE1 Conductor Cable

Allows user to select the type of IDE1 conductor cable. Prior to selecting the setting, please make sure that the IDE device and cables support the desired setting.
Options: Auto, ATA66/100, ATA33 (default:Auto)

■ IDE2 Conductor Cable

Allows user to select the type of IDE2 conductor cable. Prior to selecting the setting, please make sure that the IDE device and cables support the desired setting.
Options: Auto, ATA66/100, ATA33 (default:Auto)

■ USB Controller

Allows the user to enable or disable the onboard USB2.0 controller. (default:Enabled)

■ USB Keyboard Support

Allows user to use a USB-based keyboard (Enable if you are using a USB keyboard, otherwise Disable) (default:Disabled)

- **USB Mouse Support**
 Allows user to use a USB-based mouse (Enable if you are using a USB mouse, otherwise Disable) (default:Disabled)
- **AC97 Audio**
 Allows the user to use the onboard AC97 audio (default:Auto)
- **Onboard H/W LAN**
 Allows the user to enable or disable the onboard LAN (default:Enabled)
- **Onboard LAN Boot ROM**
 Allows user to enable or disable booting from a network drive. (default:Disabled)
- **Onboard Serial Port 1**
 Allows the user to enable or disable the first onboard serial port
 Options: Auto, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Disabled (default:3F8/IRQ4)
- **Onboard Serial Port 2**
 Allows the user to enable or disable the first onboard serial port
 Options: Auto, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Disabled (default:2F8/IRQ3)
- **UART Mode Select**
 This feature allows the user to select the onboard I/O chipset IR function.
 Options: Normal, IrDA, ASKIR (default:Normal)
- **UR2 Duplex Mode**
 This feature can be configured when Normal is not selected under "UART Mode Select" and allows the user to configure the method of IR transmission (duplex or single mode).
 Options: Half, Full (default:Half)
- **TxD, RxD Polarity Active**
 This feature can be configured when Normal is not selected under "UART Mode Select" and allows the user to configure RxD, TxD activity.(default: Lo,Hi)
- **Use IR Pins**
 This feature can be configured when Normal is not selected under "UART Mode Select" and allows the user to configure the IR Pins.
 Options: IR-Rx2Tx2, RxD2, TxD2 (default:IR-Rx2Tx2)
- **Onboard Parallel Port**
 Allows the user to enable or disable the onboard parallel port.
 Options: 378/IRQ7, 278/IRQ5, 3BC/IRQ7, Disabled (default:378/IRQ7)
- **Parallel Mode**
 Use this to select the operation mode for the parallel port.
 Options: PRINTER
 SPP (normal)
 EPP (Enhanced Parallel Port)
 ECP (Extended Capabilities Port)
 EEP1.9+ECP (both ECP and EPP)
 EEP1.9+SPP (both ECP and EPP)
 EEP1.7+ECP (both ECP and EPP)
 EEP1.9+SPP (both ECP and EPP) (default:SPP)

- **Game Port Address**

Allows the user to select the Game Port Address

Options: 201, 209, Disabled (default:201)

- **Midi Port Address**

Allows the user to select the Midi Port Address

Options: 300, 330, 290, Disabled (default:Disabled)

- **Midi Port IRQ**

This feature can be configured when "Midi Port Address" is not disabled.

Allows the user to select the Midi Port IRQ

Options: 5, 10 (default:10)

3.5. Power Management Setup

※ This is used to control the various power saving features of the PC.

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Power Management Setup

		Item Help
ACPI Suspend Type	[S1(POS)]	Menu Level▶
Power LED in S1 State	[Blinking]	[S1]
Soft-Off by PWR-BTTN	[Instant-Off]	Set suspend type to
AC Back Function	[Soft-Off]	Power On Suspend under
PME Event Wake Up	[Enabled]	ACPI OS
ModemRingOn	[Enabled]	
Resume by Alarm	[Disabled]	
x Date (of Month) Alarm	Everyday	[S3]
x Time (hh:mm:ss) Alarm	0 : 0 : 0	Set suspend type to
		Suspend to RAM under
		ACPI OS

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Save Default F7: Optimized Defaults

■ ACPI Suspend Type

Allows user to select the Advanced Configuration and Power Interface(ACPI) as S1/ POS (Power On Suspend) or S3/STR(Suspend To RAM) (default:S1/POS)

■ Power LED in S1 state

Allows user to select the system LED status in the S1 (POS - Power On Suspend) state.

Options: Blinking (LED will blink)
 Dual/OFF (When selecting this, the LED will turn off for a single-colored LED or change color for a dual-colored LED)(default:Blinking)

■ Soft-off by PWR-BTTN

Controls whether the PC shuts off immediately after hitting the power button or delaying a few seconds. (default:Instant-off)

Options: Instant-off (PC shuts off immediately)
 Delay 4 Sec. (PC shuts off after a 4sec. delay)

■ AC Back Function

Allows user to select system status when power is removed and returned.

Options: Memory (return prior to power removal)
 Full-On (return to full system power)
 Soft-Off (use of Soft PWR button to power on system)(default:Soft-Off)

■ PME Event Wake Up

Allows user to select the Power Management Event (PME) wake up function which requires the system to have a +5VSB power supply using a rate of 1A or less. (default:Enabled)

■ ModemRingOn

To use this feature, an Ethernet card supporting the PCI2.2 or newer standard must be used. (default:Enabled)

■ Resume by Alarm

If set to Enabled, the user can set the date and time for automatic system power-on. (default:Disabled)

Settings:

Date (of Month) Alarm : Everyday, 1~31

Time (hh: mm: ss) Alarm : (0~23) : (0~59) : (0~59)

■ POWER ON Function

Allows the use of the mouse or keyboard to power system.

Options: Disabled , Any Key , Mouse , Mouse/AnyKey(default:Disabled)

3.6. PnP/PCI Configuration

- × This menu allows you to configure your PCI slots. You can assign IRQ's for various PCI slots.

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PnP/PCI Configurations

PCI 1 /PCI 5	IRQ Assignment	[Auto]			Item Help
PCI 2	IRQ Assignment	[Auto]			Menu Level▶
PCI 3	IRQ Assignment	[Auto]			Device(s) using this
PCI 4	IRQ Assignment	[Auto]			INT:
					Display Cntrlr
					-Bus 1 Dev 5 Func 0
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Save Default F7: Optimized Defaults					

■ PCI 1 / PCI 5 IRQ Assignment

Allows you to assign an IRQ for the 1st / 5th PCI slot. Options: Auto,3,4,5,7,9,10,11,12,14, 15 (default:Auto)

■ PCI 2 IRQ Assignment

Allows you to assign an IRQ for the 2nd PCI slot. Options: Auto,3,4,5,7,9,10,11,12,14,15 (default:Auto)

■ PCI 3 IRQ Assignment

Allows you to assign an IRQ for the 3rd PCI slot. Options: Auto,3,4,5,7,9,10,11,12,14, 15 (default:Auto)

■ PCI 4 IRQ Assignment

Allows you to assign an IRQ for the 4th PCI slot. Options: Auto,3,4,5,7,9,10,11,12,14, 15 (default:Auto)

3.7. PC Health Status

※ This menu displays the current CPU temperature, the fan speeds, voltages etc.

CMOS Setup Utility-Copyright (C) 1984-2004 Award Software
PC Health Status

Current CPU Temperature	45°C	Item Help
Current SYSTEM Temperature	30°C	Menu Level▶
Vcore	1.78V	
+3.3V	3.36V	
+5V	5.14V	
+12V	11.84V	
+1.8V	1.80V	
Current CPU FAN Speed	4440 RPM	
Current SYSTEM FAN Speed	0 RPM	
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Save Default F7: Optimized Defaults		

- **Current CPU / SYSTEM Temperature**
Automatically checks CPU & SYSTEM temperature
- **Current Voltage(V) Vcore / +3.3V / +5V / +12V / +1.8V**
Automatically checks system voltage
- **Current CPU / SYSTEM FAN Speed (RPM)**
Automatically checks CPU/SYSTEM fan speed
- **CPU FAN Fail Warning**
Allows user to configure the CPU FAN fail warning feature. (default:Disabled)
- **SYSTEM FAN Fail Warning**
Allows user to configure the SYSTEM FAN fail warning feature. (default:Disabled)

3.8. Frequency/Voltage Control

- × This allows user to configure CPU frequency and voltage settings.

CMOS Setup Utility-Copyright (C) 1984-2004 Award Software
Frequency/Voltage Control

		Item Help
CPU Clock Ratio	[15X]	
CPU Host Clock Control	[Disabled]	Menu Level▶
× CPU Host Frequency (Mhz)	100	Set CPU Ratio if CPU Ratio is unlocked
PCI/AGP Fixed	33 / 66	
Host/DRAM Clock ratio	[Auto]	
Memory Frequency (Mhz)	266	
PCI/AGP Frequency (MHz)	33/66	
CPU OverVoltage Control	[Normal]	
DIMM OverVoltage Control	[Normal]	
AGP OverVoltage Control	[Normal]	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Save Default F7: Optimized Defaults

- × This section is very dangerous for inexperienced users, and therefore it is not recommended that these settings be altered. An incorrect setting can result in system instability, corrupt data, or permanent hardware damage.

■ CPU Clock Ratio

Allows user to set the CPU Clock Ratio.

If the CPU used locks this feature, then it will not be displayed or will not function. (based on CPU type)

For Willamette CPU: 8X~23X default: 14X

For C-Stepping P4: 8X,10X~24X default: 15X

For Northwood CPU: 12X~24X default: 16X

■ CPU Host Clock Control

Allows user to use CPU Host Clock Control (default:Disabled)

Please note that if your system is overclocked and cannot restart, please wait 20secs. for automatic system restart or clear the CMOS setup data and perform a safe restart.

■ CPU Host Frequency (MHz)

If you wish to use this feature, please set the "CPU Host Clock Control" to Enabled. If this feature is disabled, the currently CPU frequency will be displayed.

The CPU Host Clock can be input between 100MHz to 355MHz.

If you have a FSB400 Pentium 4 CPU, please set the "CPU Clock" to 100MHz.

If you have a FSB533 Pentium 4 CPU, please set the "CPU Clock" to 133MHz.

- **Fixed PCI/AGP Frequency**

This feature can be configured when the "CPU Host Frequency" is set to Enabled and allows the user to adjust the PCI/AGP Frequency without affecting the CPU Frequency.

- **Host/DRAM Clock Ratio**

Allows the user to set the Host/DRAM Clock Ratio.

If the FSB(Front Side Bus) is at 400MHz.

2.66 Memory Frequency = Host clock x 2.66.

Auto Automatically sets memory frequency. (default:Auto)

If the FSB(Front Side Bus) is at 533MHz.

2.0 Memory Frequency = Host clock x 2.0.

2.5 Memory Frequency = Host clock x 2.5.

Auto Automatically sets memory frequency. (default:Auto)

- **Memory Frequency (Mhz)**

The memory frequency is based on the CPU Host Frequency (Mhz) setting.

- **PCI/AGP Frequency(Mhz)**

This feature will affect either "CPU Host Frequency" or " Fixed PCI/AGP Frequency".

- **CPU OverVoltage Control**

Allows increase of CPU voltage. However, over increase of CPU voltage can cause damage to CPU.

Options: Normal, +5%, +7.5% , +10% (default:Normal)

- **AGP OverVoltage Control**

Allows increase of AGP voltage. However, over increase of AGP voltage can cause damage to AGP.

Options: Normal, +0.1V , +0.2V, +0.3V (default:Normal)

- **DIMM OverVoltage Control**

Allows increase of DIMM voltage. However, over increase of DIMM voltage can cause damage to DIMM.

Options: Normal, +0.1V , +0.2V, +0.3V (default:Normal)

3.9. Top Performance

- ※ "Top Performance" allows faster system start. However, the result may differ depending on system specifications (includes hardware and OS). For example, certain hardware may become unstable under Windows XP but work reliably under the Windows NT operating system. Thus, select Disabled under "Top Performance" if system hardware is affected.

3.10. Load Fail-Safe Defaults

- ※ Use this option to reset your BIOS settings to the system defaults. You should only use this if you are encountering serious problems.
Please select <Y> and <Enter> to load Fail-Safe defaults. Once this is loaded, your system may be slowed since this uses a minimal performance setting to allow stable system running.

3.11. Load Optimized Defaults

- ※ Like the Fail-Safe mode above, this option loads the BIOS default settings, but runs the system at optimal performance.
Please select <Y> and <Enter> to load optimized defaults.

3.12. Set User Password

- ※ Use this to set the password that is needed to either enter into the BIOS or to boot the system. Entering in a blank field will disable the password.
Please input an 8 character long password and then select Enter. You will be required to re-enter the password for confirmation. If you wish to remove the need for password entry, leave the entry blank and then select Enter. BIOS will then display "PASSWORD DISABLED". Once you have completed the password setting, you will need to go to "Advanced BIOS Features" and select "Password Check" for setup of password check.

3.13. Save & Exit Setup

- ※ To save any changes you made to the BIOS you must choose this option. The system will automatically exit setup and perform a system restart. Pushing <F10> will have the same effect.
Push <Y> and <Enter> to save and exit setup. If you do not wish to save, select <N> or <Esc> to return to the main menu.

3.14. Exit Without Saving

- ※ Use this option instead of the one above if you wish to exit the BIOS without saving the changes you have made. Pushing <ESC> will have the same effect.
Push <Y> and <Enter> to exit setup. You can return to the main menu by pushing <N> or <Esc>.

4. Driver Installation

Driver installation for the Windows 98/98SE/200/ME/XP operating systems is simple. Once you insert the provided driver disks into your optical drive, the AUTORUN screen will appear. If this screen does not appear, you can use "D:\setup.exe" (with "D" being the specified drive) to bring up the screen shown below. Just follow the screen instructions to easily complete driver installation.

