
USER'S MANUAL
of
Intel 945GM/945GME Express Chipset
&
Intel FW82801GBM ICH Chipset
Based
M/B For Socket479 Mobile Processor

NO. G03-9F2-F

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Trademark:

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Environmental Protection Announcement

Do not dispose this electronic device into the trash while discarding. To minimize pollution and ensure environment protection of mother earth, please recycle.



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Manual Revision Information

Reversion	Revision History	Date
8.0	Eighth Edition	June. 2008

Item Checklist

- Intel 945GM/945GME Express Chipset Based Motherboard
- Cable for IDE and Serial ATA2 IDE Port
- Space-support holders and screws
- CD for motherboard utilities
- Cable for IEEE1394 and USB2.0 (Option)
- Cable for HDTV-Out (Option)
- Cable for PS / 2 Keyboard & Mouse(Option)
- Active thermal kit (Option)
- Intel 945GM/945GME Express Chipset Based Motherboard User's Manual

Intel Mobility Processor Family Cooling Solutions

As processor technology pushes to faster speeds and higher performance, thermal management becomes increasingly crucial when building computer systems. Maintaining the proper thermal environment is key to reliable, long-term system operation. The overall goal in providing the proper thermal environment is keeping the processor below its specified maximum case temperature. Heat sinks induce improved processor heat dissipation through increased surface area and concentrated airflow from attached fans. In addition, interface materials allow effective transfers of heat from the processor to the heatsink. For optimum heat transfer, Intel recommends the use of thermal grease and mounting clips to attach the heatsink to the processor.

When selecting a thermal solution for your system, please refer to the website below for collection of heat sinks evaluated and recommended by Intel for use with Intel processors. Note, those heat sinks are recommended for maintaining the specified Maximum T case requirement. In addition, this collection is not intended to be a comprehensive listing of all heat sinks that support Intel processors.

For vendor list of heatsink and fan, please visit:
<http://developer.intel.com/products/processor/core2duo/index.htm>

Chapter 1

Introduction of Intel 945GM/945GME Express Chipset Motherboards

1-1 Feature of motherboard

The Intel 945GM/945GME chipset motherboard series are based on the latest Intel 945GM/945GME Express Chipset and Intel FW82801GBM ICH Chipset technology which supports the socket 479m compatible innovative 65nm Core 2 Duo and Core Solo series, 90nm Dual-Core Intel® Core Duo series and Intel® Celeron M Processor with Intel® Hyper-Threading Technology. The motherboard is optimized to deliver innovative features and professional desktop platform solution with the advantages of the new generation dual core processor for those who demand the best experience of personal computing.

The Intel 945GM/945GME Express chipset motherboard series for Intel® Core 2 Duo® Mobile Processor are absolutely the cost-effective solution for industrial computing applications, and it also meets the demanding usage of computing of multimedia entertainment and business applications. Moreover, the Intel 945GM/945GME express chipset incorporates Intel Graphics Media Accelerator 950 which supports the Microsoft* DirectX* 9.0c, Vertex Shader 3.0 and Transform and Lighting provides incredible visual quality, faster graphics performance and flexible display options without the need for a separate graphics card.

The motherboards implement Intel 945GM/945GME Express Chipset which supports Front Side Bus 667/533 MHz of data transferring and offers with 333 / 266 MHz memory clock frequency for Dual channel DDR2 667 / 533 MHz memory DIMMs which are expandable to 2.0GB to double the performance of memory access. The motherboard is embedded with ICH7M chipset of providing one parallel Ultra ATA 100 interface for two IDE drives and two serial ATA2 interface of 3.0Gb / s data transfer rate for two serial ATA devices.

The motherboards offer one 32-bit PCI and one Mini-PCI slots guarantee the rich connectivity for the I/O of peripherals. One optional Mini-PCI Express x1 I/O slot offers 512Mbyte/sec concurrently bandwidth which is over 3.5 times than 32-bit PCI at 133Mbyte/sec; the motherboards are designed of tackling the future requirements of industrial computing.

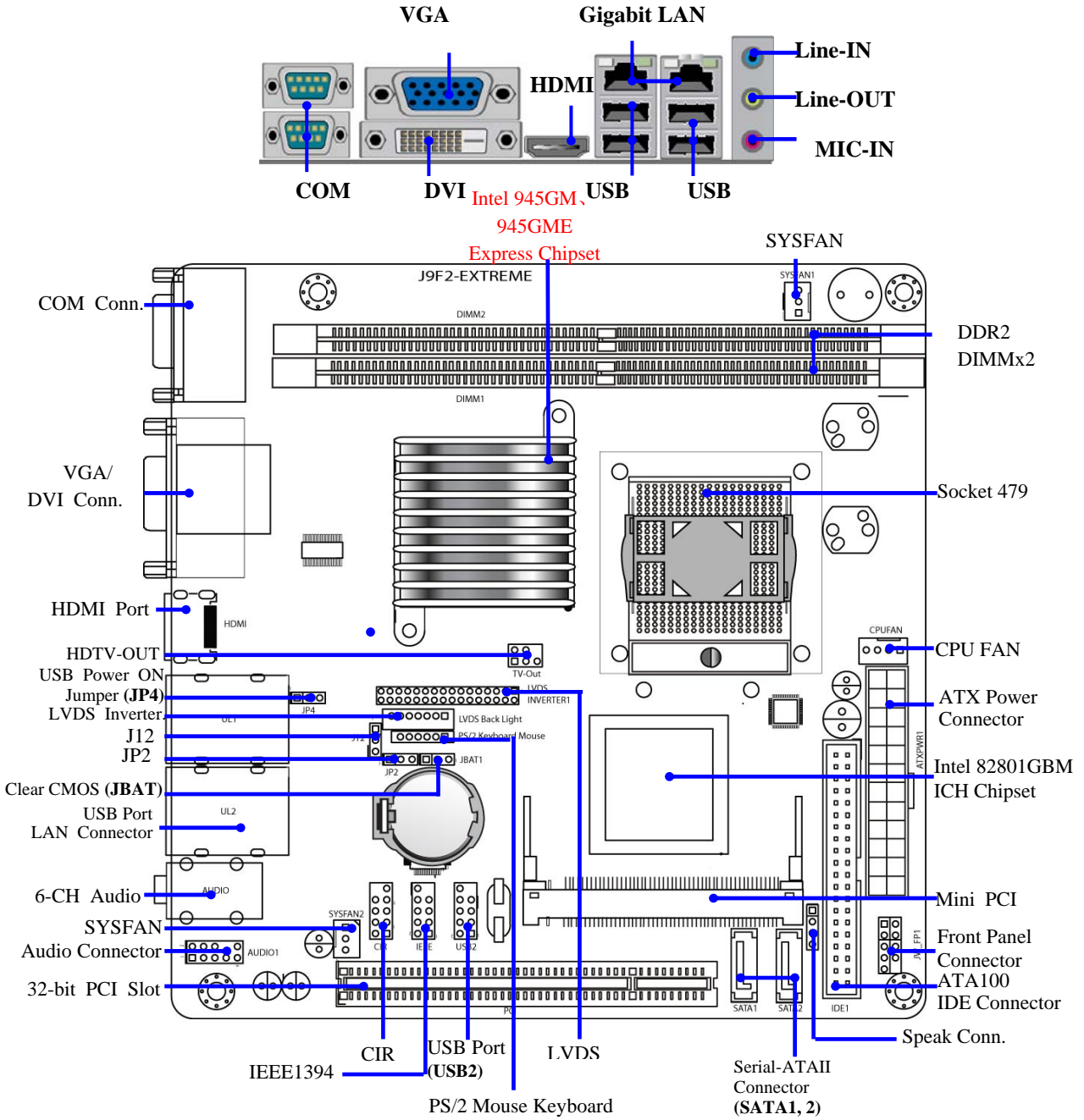
The motherboards provide dual 10 / 100 / 1000 Ethernet compatible LAN function by using the **optional Realtek RTL8111B/ RTL8111C** Gigabit LAN NIC which supports 10M / 100M / 1000M data transfer rate. The motherboard series also have an integrated 6-channel High Definition Audio Codec on board which is fully compatible with Sound Blaster Pro® that gives you the best sound quality and compatibility.

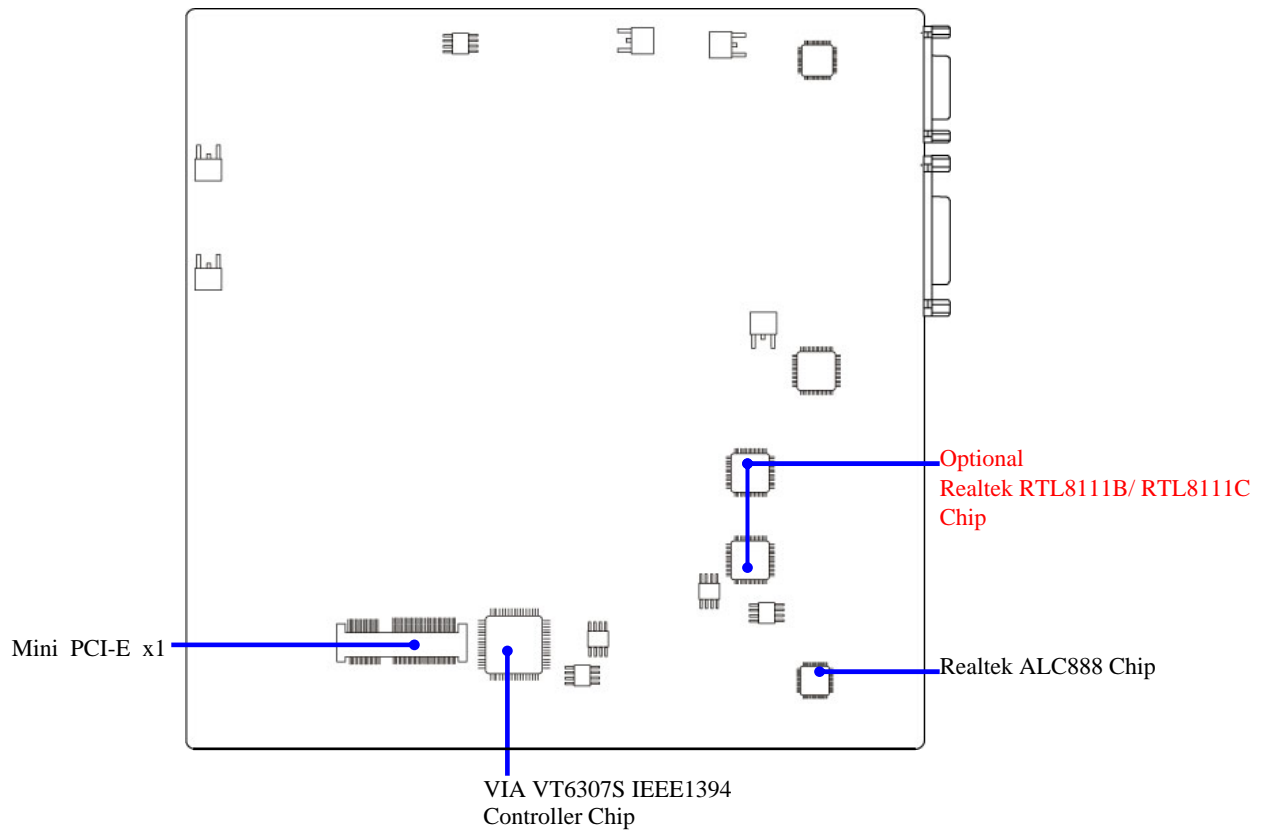
Embedded USB and optional VIA 6307 IEEE1394 controllers as well as capability of expanding to 6 of USB 2.0 functional ports and 1 of IEEE1394 9-pin block delivering 480Mb/s and 400 Mb/s bandwidth of rich connectivity, these motherboards meet the future USB demands which are also equipped with hardware monitor function on system to monitor and protect your system and maintain your non-stop business computing.

1-2 Specification

Spec	Description
Design	* Mini ITX form factor 6 layers PCB size: 17.0x17.0cm
Chipset	* Intel 945GM/945GME Memory Controller Hub (MCH) Chipset * Intel 82801GBM I/O Controller Hub (ICH7M) Chipset
CPU Socket (Socket 479)	* Support Intel Core 2 Duo ,Core Duo , Core Solo, Celeron M Mobile Socket 479m Processors * Support FSB Frequency 667 / 533MHz
Memory Socket	* 240-pin DDR2 RAM module socket x 2 * Support Dual channel DDR2 667 / 533 MHz RAM Module and which is expandable to 2.0GB.
Integrated VGA	* Integrated Graphic Media Accelerator 950 * 256-bit graphics core running at 400MHz * 1.6 GPixels/sec and 1.6 GTexels/sec fill rate * Up to 224 MB maximum video memory
Expansion Slots	* 32-bit PCI slot x 1pcs * 32-bit Mini PCI slot x 1pcs * Optional Mini PCI-E x1 slot deliver up to 512MB/s concurrent bandwidth
Integrate IDE and Serial ATA2	* One PCI IDE controller that supports PCI Bus Mastering, ATA PIO/DMA and the ULTRA DMA 33/66/100 functions that deliver the data transfer rate up to 100 MB/s; two Serial ATA2 ports provide 3.0 Gb /sec data transfer rate.
LAN	* Integrated optional Realtek RTL8111B/RTL 8111C PCI-E 10 / 100 / 1000 LAN. * Support Fast Ethernet LAN function of providing 10Mb/100Mb/1000 Mb/s data transfer rate
Audio	* Realtek ALC888 High Definition Audio Codec integrated * Audio driver and utility included
BIOS	* Award 4MB SPI Flash ROM
Multi I/O	* DVI port x1 * HDMI port x1 * Serial port x2 * D-Sub 15-pin VGA Conn.x1 * LVDS connector x1 * CIR(Consumer IR) header x1 (Option)(Need to purchase Optional IR receiver and Remote control) * HDTV-OUT header x1 * 6-Pin PS2 Keyboard/Mouse header * USB 2.0 connector x 4, headers x1 (connecting cable option) * 6-channel Audio connector (Line-in, Line-out, MIC-In/ 6CH Audio)
IEEE1394	* Integrated VIA VT6307S 1394 controller * Compliant with IEEE 1394a-2000 standard, support 400Mbit/s data transfer rate.

1-3 Layout Diagram





Jumper

Jumper	Name	Description	Page
JP4	USB Power On Function Setting	3-pin Block	p.5
JBAT	CMOS RAM Clear Function Setting	3-pin Block	p.6
JP2/ J12	LVDS Function Setting	3-pin Block	p.6

Connectors

Connector	Name	Description	Page
ATXPWR	ATX Power Connector	24-pin Block	p.10
UL1/UL2	USB/ LAN Port Connector	RJ45 + 2 USB	p.10
COM1/COM2	Serial Port Connector	9-pin Female	p.10
VGA	VGA Port Connector	15-pin Female	p.12
DVI	Digital Video Interface Connector	24-pin Connector	p.11
HDMI	High Definition Media Interface Connector	Connector	p.12
Line-In/Out, MIC-In	Line-Out/Line-In/MIC-In Audio Connector	Phone Jack	p.11
IDE1	Primary Connector	40-pin Block	p.12
SATA1/2	Serial ATA IDE Connector	7-pin Connector	p.12

Headers

Header	Name	Description	Page
AUDIO	Line-Out/MIC output Header	4-pin Block	p.12
USB2	USB2.0 Port Headers	9-pin Block	p.12
IEEE1394	1394 Port Headers	9-pin Block	p.13
HD_LED	Hard Disk LED connector	3-pin Block	p.13
RESET	Reset switch lead	2-pin Block	p.13
SPEAK	Speaker connector	4-pin Block	p.13
PWR LED	Power LED Headers	2-pin Block	p.13
PWR BTN	Power Button Headers	2-pin Block	p.14
CPUFAN, SYSFAN1/2	FAN Speed Headers	3-pin Block	p.14
CIR (Option)	Consumer IR header	9-pin Block	p.15
LVDS	LVDS Connector	32-pin Block	p.145
HDTV-OUT	HDTV-OUT header	5-pin Block	p.14
PS2KB/MS	PS/2 Mouse & PS/2 Keyboard Connector	6-pin Block	P.13
LVDS Inverter	LVDS Inverter Connector	30-pin Block	p.15

Expansion Sockets

Socket/Slot	Name	Description	Page
DDR2	DDR2 SDRAM Module Socket	240-pin DDR2 SDRAM Module Expansion Socket	p.9
PCI1	PCI Slot	32-bit PCI Local Bus Expansion slots	p.9
Mini PCI	Mini PCI Slot	32-bit PCI Local Bus Expansion slots	p.9
Mini PCI-E 1X	Mini PCI-E x1 Slot	PCI-E x1 Local Bus Expansion slots	p.9

Chapter 2

Hardware installation

2-1 Hardware installation Steps

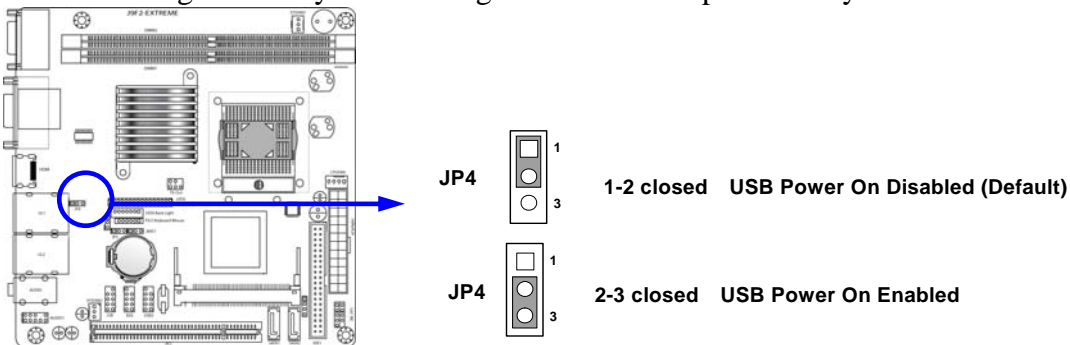
Before using your computer, you had better complete the following steps:

1. Check motherboard jumper setting
2. Install CPU and Fan
3. Install System Memory (DIMM)
4. Install Expansion cards
5. Connect IDE and Floppy cables, Front Panel /Back Panel cable
6. Connect ATX Power cable
7. Power-On and Load Standard Default
8. Reboot
9. Install Operating System
10. Install Driver and Utility

2-2 Checking Motherboard's Jumper Setting

(1) USB Power On function Enabled/Disabled (3-pin): JP4

When setting Enabled you can using USB Device to power on system.



(2) CMOS RAM Clear (3-pin): JBAT

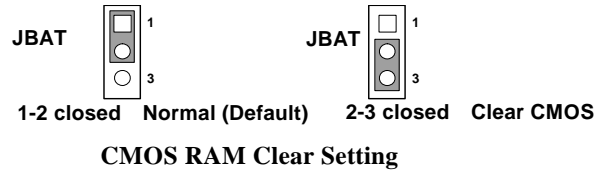
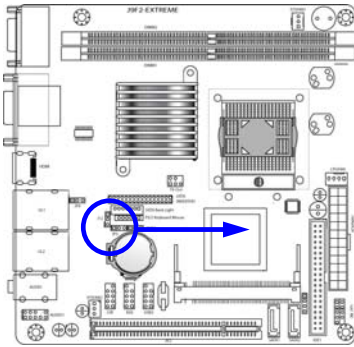
A battery must be used to retain the motherboard configuration in CMOS RAM short 1-2 pins of JPAT to store the CMOS data.

To clear the CMOS, follow the procedure below:

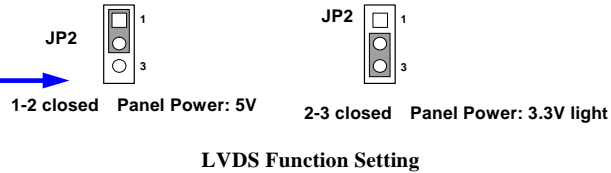
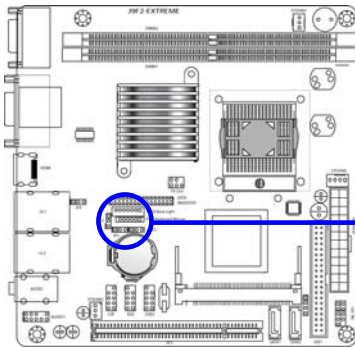
1. Turn off the system and unplug the AC power
2. Remove ATX power cable from ATX power connector
3. Locate JBAT and short pins 2-3 for a few seconds
4. Return JBAT to its normal setting by shorting pins 1-2
5. Connect ATX power cable back to ATX power connector

Note: When should clear CMOS

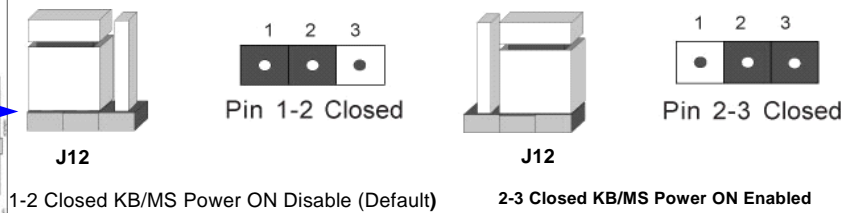
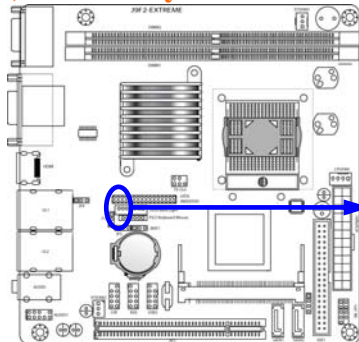
1. *Troubleshooting*
2. *Forget password*
3. *After over clocking system boot fail*



(3) LVDS Function setting (3-pin): JP2



(4) PSII Keyboard/Mouse function Enabled/Disabled: J12



Keyboard&Mouse Power On Setting

2-3 Glossary

Chipset (core logic) - two or more integrated circuits which control the interfaces between the system processor, RAM, I/O devices, and adapter cards.

Processor socket - the socket used to mount the system processor on the motherboard.

Slot (AGP, PCI, ISA, RAM) - the slots used to mount adapter cards and system RAM.

PCI - Peripheral Component Interconnect - a high speed interface for video cards, sound cards, network interface cards, and modems; runs at 33MHz.

Serial Port - a low speed interface typically used for mouse and external modems.

Parallel Port - a low speed interface typically used for printers.

PS/2 - a low speed interface used for mouse and keyboards.

USB - Universal Serial Bus - a medium speed interface typically used for mouse, keyboards, scanners, and some digital cameras.

Sound (interface) - the interface between the sound card or integrated sound connectors and speakers, MIC, game controllers, and MIDI sound devices.

BIOS (Basic Input/Output System) - the program logic used to boot up a computer and establish the relationship between the various components.

Driver - software, which defines the characteristics of a device for use by another device or other software.

Processor - the "Central Processing Unit" (CPU); the principal integrated circuit used for doing the "computing" in "personal computer"

Front Side Bus Frequency - The working frequency of the motherboard, which is generated by the clock generator for CPU, DRAM and PCI BUS.

CPU L2 Cache - The flash memory inside the CPU, normally Pentium III CPU has 256K or above, while Celeron CPU will have 128K.

2-3-1 Setting CPU Bus Clock & Memory Clock Jumper

Setting the front side bus frequency and SDRAM frequency

The motherboard uses jumper less function for the front side bus frequency and SDRAM frequency users don't need setting any jumper when plug the CPU in motherboard

For experience user looking for over clocking possibility, please refer to sec 2-3-2.

2-4 Install Memory

This motherboard provides two 240-pin DDR DUAL INLINE MEMORY MODULES (DIMM) sides for DDR memory expansion available from minimum memory size of 64MB to maximum memory size of 2.0GB DDR SDRAM.

Valid Memory Configurations

Bank	240-pin DDR DIMM	PCS	Total Memory
Bank 0, 1 (DDR1)	DDRII667/DDRII 533 DDR DRAM Module	X1	64MB~1.0GB
Bank 2, 3 (DDR2)	DDRII667/DDRII553 DDR DRAM Module	X1	64MB~1.0GB
Total	System Memory (Max. 2.0GB)	X2	64MB~2.0GB

Generally, installing DDR SDRAM modules to your motherboard is very easy, you can refer to figure 2-4 to see what a 240-pin DDR SDRAM module looks like.

****If only one memory MODULE is used, you should install it in the DIMM2 .**

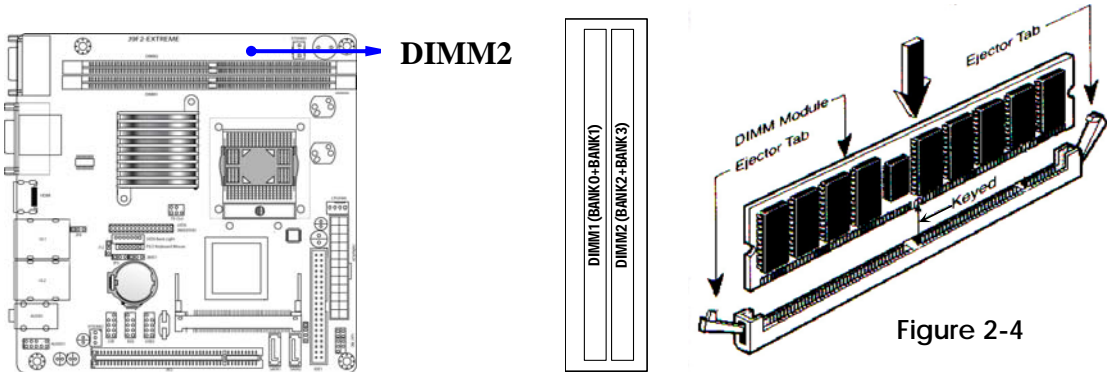


Figure 2-4

NOTE! When you install DIMM module fully into the DIMM socket the eject tab should be locked into the DIMM module very firmly and fit into its indentation on both sides.

WARNING! Due to the DDR SDRAM CLOCK is set at 266 / 333MHz that uses only DDR2 667/533- compliant DDR Modules. When this motherboard operate at 166Mhz, most system will not even boot if non-compliant modules are used because of the strict timing issues, if your DDR Modules are not DDR2 667 / 533-compliant, set the SDRAM clock to 333MHz to ensure system stability.

2-5 Expansion Cards

WARNING! Turn off your power when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both your motherboard and expansion cards.

2-5-1 Procedure For Expansion Card Installation

1. Read the documentation for your expansion card and make any necessary hardware or software setting for your expansion card such as jumpers.
2. Remove your computer's cover and the bracket plate on the slot you intend to use.
3. Align the card's connectors and press firmly.
4. Secure the card on the slot with the screen you remove above.
5. Replace the computer system's cover.
6. Set up the BIOS if necessary.
7. Install the necessary software driver for your expansion card.

2-6 Connectors, Headers

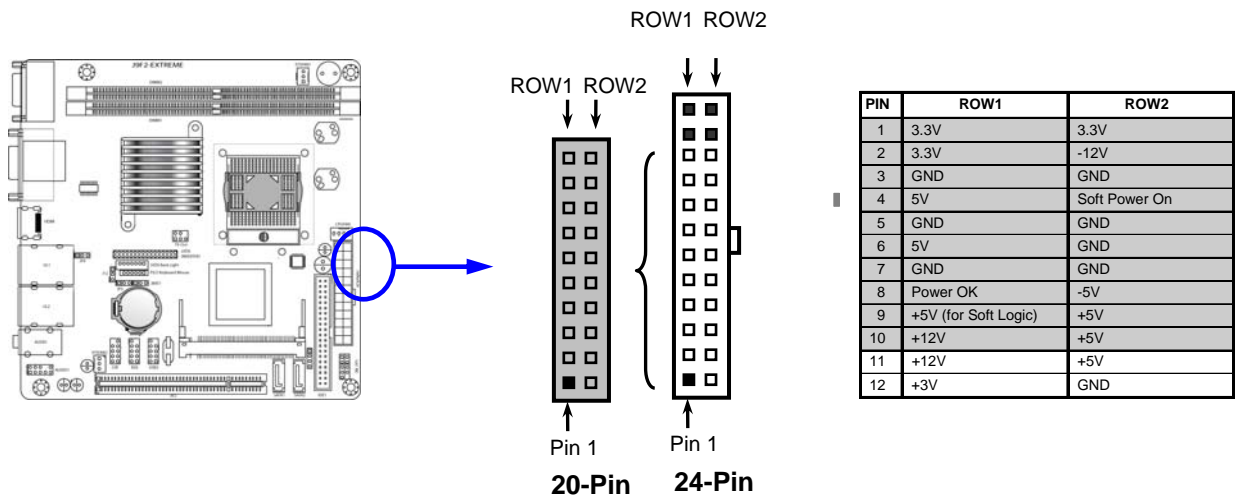
2-6-1 Connectors

(1) Power Connector (24-pin block) : ATXPWR

ATX Power Supply connector: This is a new defined 24-pins connector that usually comes with ATX case. The ATX Power Supply allows using soft power on momentary switch that connect from the front panel switch to 2-pins Power On jumper pole on the motherboard. When the power switch on the back of the ATX power supply turned on, the full power will not come into the system board until the front panel switch is momentarily pressed. Press this switch again will turn off the power to the system board.

** We recommend that you use an ATX 12V Specification 2.0-compliant power supply unit (PSU). This type has 24-pin and 4-pin power plugs.

** If you intend to use a PSU with 20-pin and 4-pin power plugs, make sure that the 20-pin power plug can provide at least 6.6A on +12V.



(2) USB Port connector: UL1/UL2

The connectors are 4-pins connector that connect USB devices to the system board, and standard RJ45 connector for Network supports 10/100/1000 BASE-T transfer rate.

(3) Serial Port Connector (9-pin female): COM1/COM2

Serial Port connector is a 9-pin D-Subminiature connector. The On-board Serial Port can be disabled through the BIOS SETUP. Please refer to Chapter 3 “INTEGRATED PERIPHERALS SETUP” section for more detail information.

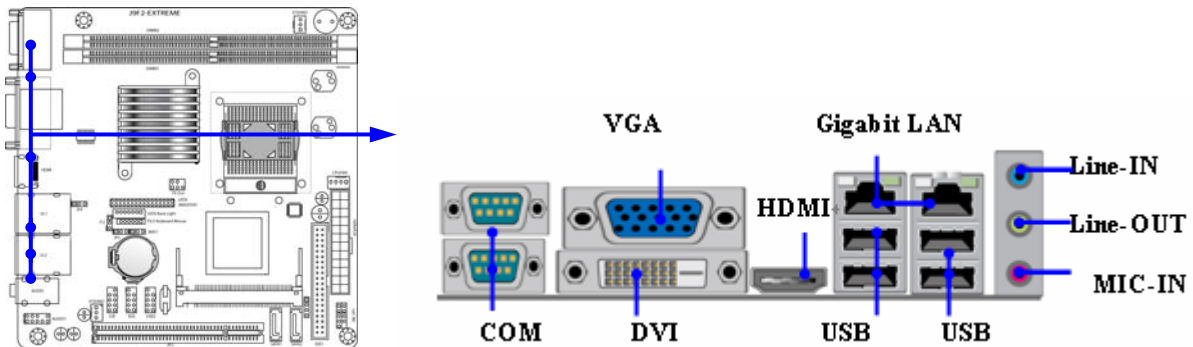
(5) VGA Connector (15-pin female): VGA

VGA Connector is a 15-pin D-Subminiature Receptacle connector. This connector is for connection Monitor and System to display.

(6) Audio Connector: (Line-Out/ Line-IN/ MIC-In)

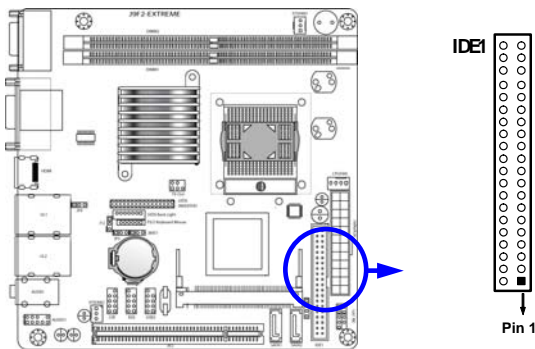
This Connector are 3 phone Jack for LINE-OUT/ LINE-IN/ MIC.

- Line-out :** Audio output to speaker
- Line-In :** Audio input to Audio controller
- MIC-In :** Microphone Connector



(7) Primary IDE Connector (40-pin block): IDE1

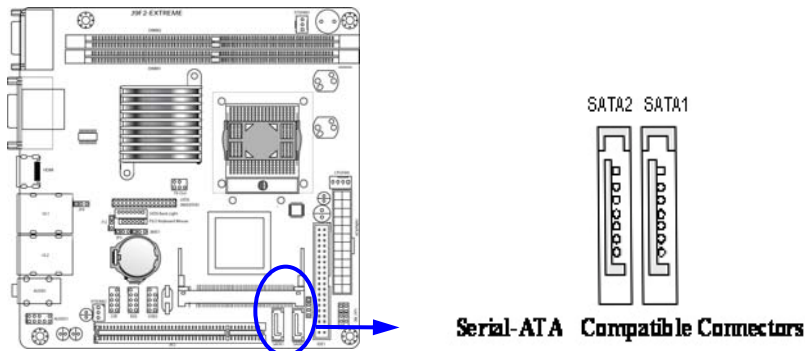
This connector supports the provided IDE hard disk ribbon cable. After connecting the single plug end to motherboard, connect the two plugs at other end to your hard disk(s). If you install two hard disks, you must configure the second drive to Slave mode by setting its jumpers accordingly. Please refer to the documentation of your hard disk for the jumper settings.



- Two hard disks can be connected to each connector. The first HDD is referred to as the “Master” and the second HDD is referred to as the “Slave”.
- For performance issues, we strongly suggest you don’t install a CD-ROM or DVD-ROM drive on the same IDE channel as a hard disk. Otherwise, the system performance on this channel maybe low.

(8) Serial-ATA Port connector: SATA1 / SATA2

This connector supports the provided Serial ATA IDE hard disk cable to connecting the motherboard and serial ATA hard disk.



(9) **DVI: Digital Visual Interface**

This interface standard designed to maximize the visual quality of digital display devices such as flat panel LCD computer displays and digital projectors.

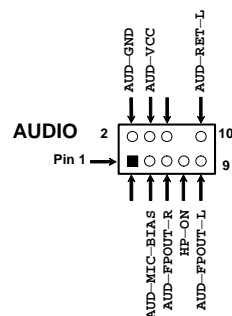
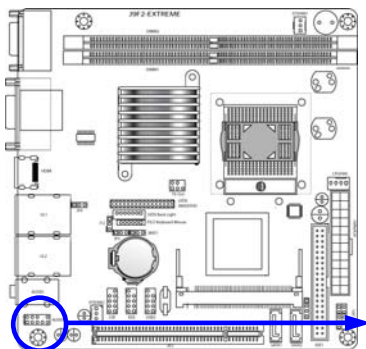
(10) **HDMI: High-Definition Multimedia Interface**

This point-to-point interface is for audio and video signals designed as a single-cable solution for home theater and consumer electronics equipment.

2-6-2 Headers

(1) **Line-Out, MIC-In Header (9-pin): AUDIO**

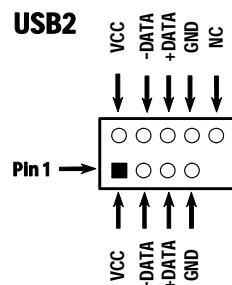
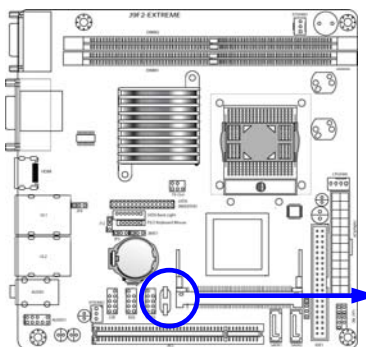
This header connects to Front Panel Line-out, MIC-In connector with cable.



Line-Out, MIC Headers

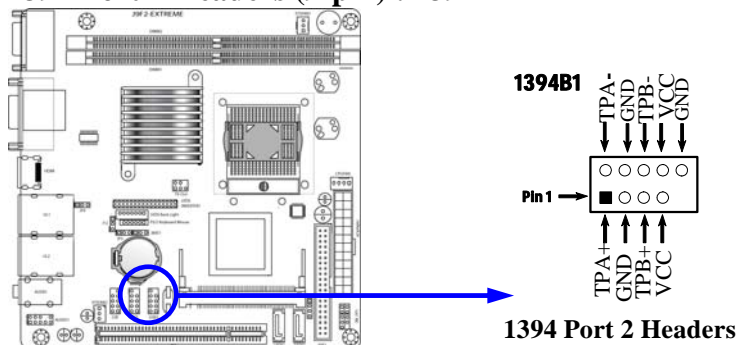
(2) **USB Port Headers (9-pin) : USB2**

These headers are used for connecting the additional USB port plug. By attaching an option USB cable, your can be provided with two additional USB plugs affixed to the back panel.



USB Port Headers

(3) 1394 Port 2 Headers (9-pin) : 1394B1



(4) IDE Activity LED: HD_LED

This connector connects to the hard disk activity indicator light on the case.

(5) Reset switch lead: RESET

This 2-pin connector connects to the case-mounted reset switch for rebooting your computer without having to turn off your power switch. This is a preferred method of rebooting in order to prolong the life of the system's power supply. See the figure below.

(6) Speaker connector: SPEAK

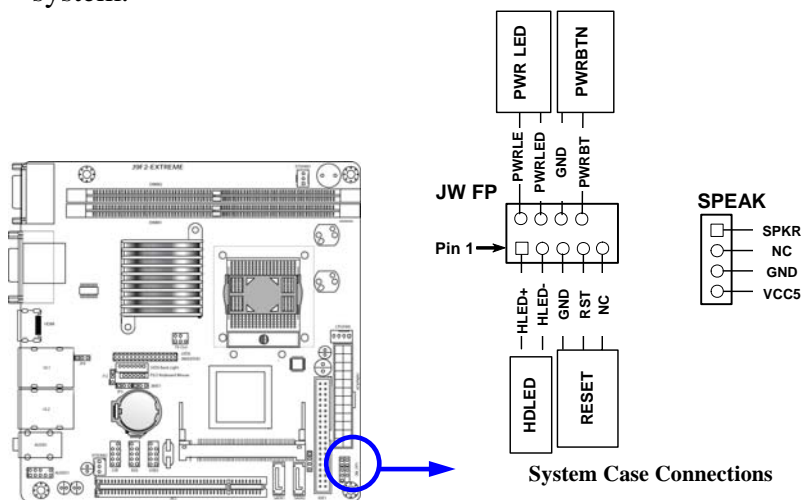
This 4-pin connector connects to the case-mounted speaker. See the figure below.

(7) Power LED: PWR LED

The Power LED is light on while the system power is on. Connect the Power LED from the system case to this pin.

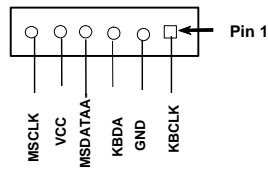
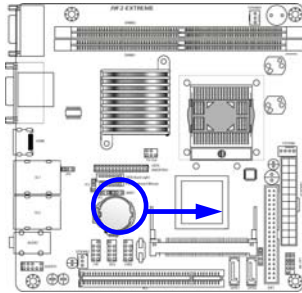
(8) Power switch: PWR BTN

This 2-pin connector connects to the case-mounted power switch to power ON/OFF the system.



(9) PS/2 Mouse & PS/2 Keyboard Connector: PS2KBMS

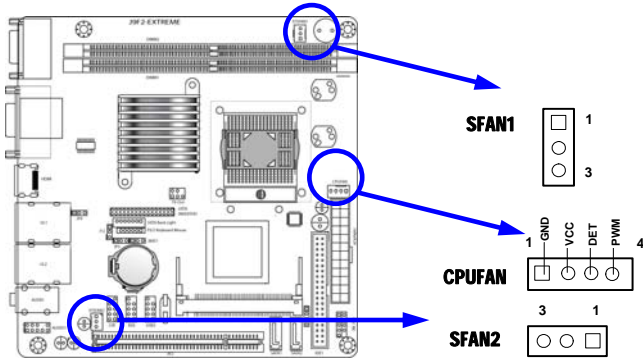
The connectors are for PS/2 keyboard and PS/2 Mouse input devices.



PS/2 Keyboard Mouse Headers

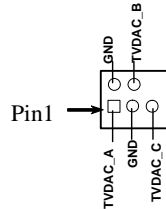
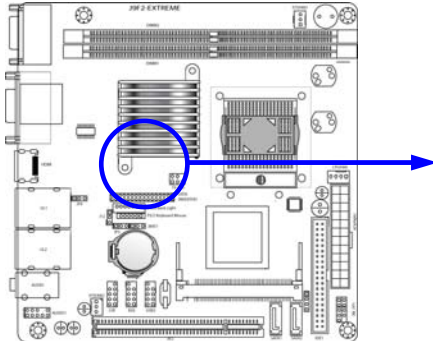
(10) FAN Speed Headers (3-pin) : CPUFAN, SFAN1/SFAN2

These connectors support cooling fans of 350mA (4.2 Watts) or less, depending on the fan manufacturer, the wire and plug may be different. The red wire should be positive, while the black should be ground. Connect the fan's plug to the board taking into consideration the polarity of connector.



(11) HDTV-OUT Header

HDTV-OUT is the 5-pin block pin-header. HDTV-out is commonly used to label the connector of equipment offering an analog video signal that is acceptable for a HD television AV input.

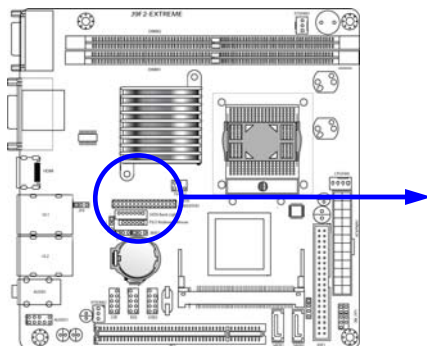


HDTV-OUT Conn. 5-pin Block

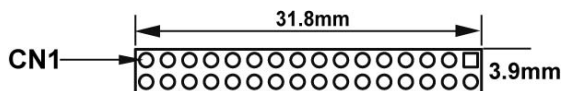
PIN No.	Symbol	PIN NO.	Symbol
1	NC	2	NC
3	CK2IN-	4	CK2IN+
5	R2IN2-	6	R2IN2+
7	R2IN1-	8	R2IN1+
9	R2IN0-	10	R2IN0+
11	LVDS_DDC_DATA	12	LVDS_DDC-CLK
13	GND	14	GND
15	GND	16	GND
17	NC	18	NC
19	CK1IN-	20	CK1IN+
21	R1IN2+	22	R1IN2-
23	R1IN1+	24	R1IN1-
25	R1IN0+	26	R1IN0-
27	VDD	28	VDD
29	VDD	30	VDD
31	GND	32	GND

(12) LVDS Pin-Headers: LVDS

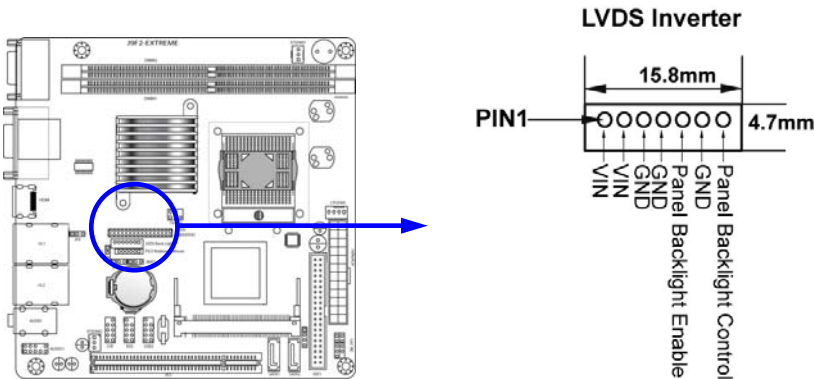
These Headers can connect with the LVDS devices.



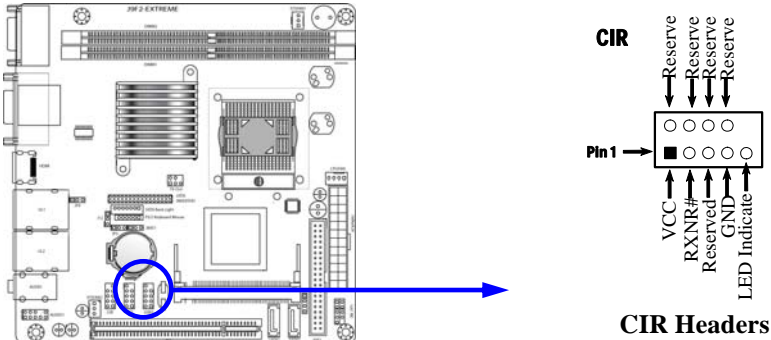
LVDS Headers



(13) Pin-headers of LVDS Inverter: LVDS



(14) Optional CIR Headers (9-pin) : Consumer IR-compliance pin-headers



2-7 Starting Up Your Computer

1. After all connections are made, close your computer case cover.
2. Be sure all the switch are off, and check that the power supply input voltage is set to proper position, usually in-put voltage is 220V~240V or 110V~120V depending on your country's voltage used.
3. Connect the power supply cord into the power supply located on the back of your system case according to your system user's manual.
4. Turn on your peripheral as following order:
 - a. Your monitor.
 - b. Other external peripheral (Printer, Scanner, External Modem etc...)
 - c. Your system power. For ATX power supplies, you need to turn on the power supply and press the ATX power switch on the front side of the case.
5. The power LED on the front panel of the system case will light. The LED on the monitor may light up or switch between orange and green after the system is on. If it complies with green standards or if it is has a power standby feature. The system will then run power-on test. While the test is running, the BIOS will alarm beeps or additional message will appear on the screen.

If you do not see any thing within 30 seconds from the time you turn on the power. The system may have failed on power-on test. Recheck your jumper settings and connections or call your retailer for assistance.

Beep	Meaning
One short beep when displaying logo	No error during POST
Long beeps in an endless loop	No DRAM install or detected
One long beep followed by three short beeps	Video card not found or video card memory bad
High frequency beeps when system is working	CPU overheated System running at a lower frequency

6. During power-on, press <Delete> key to enter BIOS setup. Follow the instructions in BIOS SETUP.
7. **Power off your computer:** You must first exit or shut down your operating system before switch off the power switch. For ATX power supply, you can press ATX power switching after exiting or shutting down your operating system. If you use Windows 9X, click "**Start**" button, click "**Shut down**" and then click "**Shut down the computer?**" The power supply should turn off after windows shut down.

Chapter 3

Introducing BIOS

The BIOS is a program located on a Flash Memory on the motherboard. This program is a bridge between motherboard and operating system. When you start the computer, the BIOS program will gain control. The BIOS first operates an auto-diagnostic test called POST (power on self test) for all the necessary hardware, it detects the entire hardware device and configures the parameters of the hardware synchronization. Only when these tasks are completed done it gives up control of the computer to operating system (OS). Since the BIOS is the only channel for hardware and software to communicate, it is the key factor for system stability, and in ensuring that your system performance as its best.

In the BIOS Setup main menu of Figure 3-1, you can see several options. We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here:

- Press <Esc> to quit the BIOS Setup.
- Press ↑↓←→ (up, down, left, right) to choose, in the main menu, the option you want to confirm or to modify.
- Press <F10> when you have completed the setup of BIOS parameters to save these parameters and to exit the BIOS Setup menu.
- Press Page Up/Page Down or +/- keys when you want to modify the BIOS parameters for the active option.

3-1 Entering Setup

Power on the computer and by pressing immediately allows you to enter Setup.

If the message disappears before your respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the “RESET” button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to

Press <F1> to continue, <Ctrl-Alt-Esc> or to enter Setup

3-2 Getting Help

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu/Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <Esc>.

3-3 The Main Menu

Once you enter Award® BIOS CMOS Setup Utility, the Main Menu (Figure 3-1) will appear on the screen. The Main Menu allows you to select from fourteen setup functions and two

Set Supervisor/User Password

Use this menu to set User and Supervisor Passwords.

Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

3-4 Standard CMOS Features

The items in Standard CMOS Setup Menu are divided into several categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

Phoenix - AwardBIOS CMOS Setup Utility
Standard CMOS Features

Date (mm:dd:yy)	Mon, Feb, 13 2006	Item Help
Time (hh:mm:ss)	11 : 02 : 35	
> IDE Channel 0 Master	None	Menu Level >
> IDE Channel 0 Slave	None	
> IDE Channel 1 Master	None	Change the day, month, year and century
> IDE Channel 1 Slave	None	
Video	EGA/VGA	
Halt On	All Errors	
Base Memory	640K	
Extended Memory	56320K	
Total Memory	57344K	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Date

The date format is <day><month><date><year>.

Day Day of the week, from Sun to Sat, determined by BIOS. Read-only.

Month The month from Jan. through Dec.

Date The date from 1 to 31 can be keyed by numeric function keys.

Year The year depends on the year of the BIOS.

Time

The time format is <hour><minute><second>.

IDE Channel 0 Master /Slave

IDE Channel 1 Master / Channel 1 Slave

SATA Channel 1, 2

Press PgUp/<+> or PgDn/<-> to select Manual, None, Auto type. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If the type of hard disk drives is not matched or listed, you can use Manual to define your own drive type manually.

If you select Manual, related information is asked to be entered to the following items. Enter the information directly from the keyboard. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

If the controller of HDD interface is SCSI, the selection shall be “None”.
 If the controller of HDD interface is CD-ROM, the selection shall be “None”

- Access Mode** The settings are Auto Normal, Large, and LBA.
- Cylinder** number of cylinders
- Head** number of heads
- Precomp** write precomp
- Landing Zone** landing zone
- Sector** number of sectors

3-5 Advanced BIOS Features

Phoenix - AwardBIOS CMOS Setup Utility

Advanced BIOS Features

CPU Feature	Press Enter	Item Help
Hard Disk Boot Priority	Press Enter	
Virus Warning	Disabled	Menu Level >
CPU L1 & L2 Cache	Enabled	
CPU L3 Cache	Enabled	
Quick Power On Self Test	Enabled	
First Boot Device	Floppy	
Second Boot Device	Hard Disk	
Third Boot Device	CDROM	
Boot other Device	Enabled	
Boot Up NumLock Status	On	
Gate A20 Option	Fast	
Typematic Rate Setting	Disabled	
Typematic Rate (Chars/Sec)	6	
Typematic Delay (Msec)	250	
Security Option	Setup	
APIC Mode	Enabled	
MPS Version Control For OS	1.4	
OS Select For DRAM > 64MB	Non-OS2	
HDD S.M.A.R.T Capability	Disabled	
Small logo (EPA)show	Disabled	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Virus Warning

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.

Disabled (default) No warning message to appear when anything attempts to access the boot sector or hard disk partition table.

Enabled Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector of hard disk partition table.

CPU L1&L2 Cache

The default value is Enabled.

Enabled (default) Enable cache

Disabled Disable cache

Note: *The L1&L2 cache is built in the processor.*

Hard Disk Boot Priority

The selection is for you to choose the hard disk drives priorities to boot from.

Quick Power On Self Test

This category speeds up Power On Self Test (POST) after you power on the computer. If this is set to Enabled. BIOS will shorten or skip some check items during POST.

Enabled (default) Enable quick POST

Disabled Normal POST

First/Second/Third Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items. The settings are Removable, Hard Disk, Legacy LAN, CDROM and Disabled.

Boot Up Floppy Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 760K, 1.2M and 1.44M are all 80 tracks.

Boot Up NumLock Status

The default value is On.

On (default) Keypad is numeric keys.

Off Keypad is arrow keys.

Gate A20 Option

Normal The A20 signal is controlled by keyboard controller or chipset hardware.

Fast (default) The A20 signal is controlled by port 92 or chipset specific method.

Typematic Rate Setting

Keystrokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected. The settings are: Enabled/Disabled.

Typematic Rate (Chars/Sec)

Sets the number of times a second to repeat a keystroke when you hold the key down. The settings are: 6, 8, 10, 12, 15, 20, 24, and 30.

Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke. The settings are 250, 500, 750, and 1000.

Security Option

This category allows you to limit access to the system and Setup, or just to Setup.

System The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.

Setup (default) The system will boot, but access to Setup will be denied if the correct password is not entered prompt.

APIC MODE

This field is used to enable or disable the APIC(Advanced Programmable Interrupt Controller). Due to compliance with PC2004 design guide, the system is able to run in APIC mode. Enabling APIC mode will expand available IRQ resources for the system. Settings:[Enabled] and [disabled].

MPS Version Control For OS

This field allows you to select which MPS(Multi-Processor Specification) version to be used for the operating system. You need to select the MPS version supported by your operating system. To find out which version to use, Consult the vendor of your operating system.
Settings:[1.4],[1.1].

OS Select For DRAM > 64MB

Allows OS2® to be used with >64MB or DRAM. Settings are Non-OS/2 (default) and OS2. Set to OS/2 if using more than 64MB and running OS/2.

Small Logo (EPA) Show

The selection is for you to choose the EPA small logo to show or not.

3-6 Advanced Chipset Features

The Advanced Chipset Features Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer.

Phoenix - AwardBIOS CMOS Setup Utility

Advanced Chipset Features

Item	Value	Item Help
DRAM Timing Selectable	By SPD	
CAS Latency Time	Auto	
DRAM RAS to CAS Delay	Auto	
DRAM RAS Precharge	Auto	
Precharge Delay(tRAS)	Auto	
System memory Frequency	Auto	
SLP_S4# Assertion Width	4 to 5 Sec.	
System BIOS Cacheable	Disabled	
Video BIOS Cacheable	Disabled	
Memory Hole at 15M-16M	Disabled	
> PCI Express Root Port Function	Press Enter	
LVDS Support	Enabled	
** VGA Setting **		
PEG/Onchip VGA Control	Auto	
On-Chip Frame Buffer Size	8MB	
DVMT Mode	DVMT	
DVMT/FLXED Memory Size	128MB	
Boot Display	Auto	
Panel Number	1024x768	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

PCI Express Root Port Function

Please refer to section 3-6-1

System BIOS Cacheable

Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result. The settings are: Enabled and Disabled.

Video BIOS Cacheable

Select Enabled allows caching of the video BIOS, resulting in better system performance. However, if any program writes to this memory area, a system error may result. The settings are: Enabled and Disabled.

Memory Hole At 15M-16M

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements. The settings are: Enabled and Disabled.

CAS # Latency

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.

RAS-to-CAS Delay

This field let's you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

RAS Precharge Time

If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

LVDS Support

The settings are Enabled and Disabled. User can select enabled to support the LVDS function.

3-6-1 PCI Express Root Port Function

Phoenix - AwardBIOS CMOS Setup Utility

PCI Express Root Port Function

PCI Express Port 1	Auto	Item Help
PCI Express Port 2	Auto	
PCI Express Port 3	Auto	Menu Level >>
PCI Express Port 4	Auto	
PCI Express Port 5	Auto	
PCI Express Port 6	Auto	
PCI Express Compliancy Mode	v1.0a	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

3-7 Integrated Peripherals

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Integrated Peripherals

> Onboard IDE Function	Press Enter	Item Help
> Onboard Device Function	Press Enter	
> Onboard Super IO Function	Press Enter	Menu Level >
Onboard LAN Boot ROM	Disabled	

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

Onboard IDE Function

Please refer to section 3-7-1

Onboard Device Function

Please refer to section 3-7-2

Onboard Super IO Function

Please refer to section 3-7-3

3-7-1 Onboard IDE Function

Phoenix - AwardBIOS CMOS Setup Utility

Onboard IDE Function

IDE HDD Block Mode	Enabled	Item Help	
IDE DMA Transfer Access	Enabled		
On-Chip Primary PCI IDE	Enabled	Menu Level >>	
IDE Primary Master PIO	Auto		
IDE Primary Slave PIO	Auto		
IDE Primary Master UDMA	Auto		
IDE Primary Slave UDMA	Auto		
IDE Secondary Master PIO	Auto		
IDE Secondary Slave PIO	Auto		
IDE Secondary Master UDMA	Auto		
IDE Secondary Slave UDMA	Auto		
*** On-Chip Serial ATA Setting ****			
*SATA Mode IDE			
On-Chip Serial ATA	Auto		
SATA PORT Speed Settings	Disabled		
PATA IDE Mode	Primary		
SATA Port	P2, P4 is Secondary		
<p>↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults</p>			

OnChip Primary/Secondary PCI IDE

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select *Enabled* to activate each channel separately. The settings are: Enabled and Disabled.

IDE Primary/Secondary Master/Slave PIO

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device. The settings are: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

IDE Primary/Secondary Master/Slave UDMA

Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33 and Ultra DMA/66, select Auto to enable BIOS support. The settings are: Auto, Disabled.

IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic

detection of the optimal number of block read/writes per sector the drive can support. The settings are: Enabled, Disabled.

SATA Mode

The settings are IDE Mode and AHCI Mode. The AHCI mode could only be activated when On chip Serial ATA is set as : SATA only.

The Advanced Host Controller Interface (AHCI) specification describes the register-level interface for a Host Controller for Serial ATA. The specification includes a description of the hardware/software interface between system software and the host controller hardware. This specification is intended for hardware component designers, system builders and device driver (software) developers.

3-7-2 Onboard Device Function

Phoenix - AwardBIOS CMOS Setup Utility
Onboard Device Function

USB Controller	Enabled	Item Help
USB2.0 Function	Enabled	
USB Keyboard Support	Disabled	Menu Level >>
Azalia/Ac97' Audio Select	Auto	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

USB Host Controller

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB peripherals. The settings are: Enabled, Disabled.

USB 2.0 Function

This setting allows you to enable/disable the onboard USB controller. Selecting [Enabled] enables the system to support USB 2.0 spec. setting options:[Disabled],[Enabled].

USB Keyboard Support

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard. The settings are: Enabled, Disabled.

Azalia/AC97' Audio Select

The selection for you to choose the embedded Audio function or 3rd party audio interface installed. The settings are: Enabled and Disabled.

3-7-3 Onboard Super IO Function

Phoenix - AwardBIOS CMOS Setup Utility
Onboard Super IO Function

PWROW After PWR-Fail	[Off]	Item Help
Onboard Serial Port 1	3F8	
Onboard Serial Port 1 USE IRQ	IRQ3	Menu Level >>
Onboard Serial Port 2	2F8	
Onboard Serial Port 2 USE IRQ	IRQ4	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

Onboard Serial Port 1 / 2

Select an address and corresponding interrupt for the serial ports. The settings are: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, and Auto.

3-8 Power Management Setup

The Power Management Setup allows you to configure your system to most effectively save energy saving while operating in a manner consistent with your own style of computer use.

Phoenix - AwardBIOS CMOS Setup Utility
Power Management Setup

ACPI Function	Enabled	Item Help
ACPI Suspend Type	Enabled	
RUN VGA BIOS If S3 Resume	User Define	Menu Level >
Video off Method	V/H SYNC+Blank	
Video Off In Suspend	Yes	
Suspend Type	Stop Grant	
Suspend Mode	Disabled	
HDD Power Down	Disabled	
Soft-off by PWR-BTTN	Instant-off	
Wake-Up by PCI card	Disabled	
USB KB Wakeup S3	Disabled	
Resume by Alarm	Disabled	
X Date (of Month)Alarm	0	
X Time (hh:mm:ss)Alarm	0 : 0 :0	
> PM Timer Reload Events	Press Enter	
P Reload Global Timer Events		
Primary IDE 0	Disabled	
Primary IDE 1	Disabled	
Primary IDE 0	Disabled	
Primary IDE 1	Disabled	
FDD,COM,LPT Port	Disabled	
PCI PIRQ[A-D]#	Disabled,	
HPET Support	Enabled	
HPET Mode	62-bit Mode	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

ACPI Function

This item allows you to Enabled/Disabled the Advanced Configuration and Power Management (ACPI). The settings are Enabled and Disabled.

Video Off in Suspend

This determines the manner in which the monitor is blanked. The choice are Yes → Video will off, and No → Video always On.

Video Off Method

This determines the manner in which the monitor is blanked.

- DPMS (default)** Initial display power management signaling.
- Blank Screen** This option only writes blanks to the video buffer.
- V/H SYNC+Blank** This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.

Soft-off by PWR-BTTN

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state. The settings are: Delay 4 Sec, Instant-Off.

Power On by Ring

During Disabled, the system will ignore any incoming call from the modem. During Enabled, the system will boot up if there's an incoming call from modem.

Date(of month) Alarm

You can choose which month the system will boot up. Set to 0, to boot every day.

Time(hh:mm:ss) Alarm

You can choose what hour, minute and second the system will boot up.

Note:If you have change the setting, you must let the system boot up until it goes to the operating system, before this function will work

HPET Support

High Precision Event Timers (HPET) Specification. This specification provides register and programming interface definitions for event timer hardware which can be used on Intel® architecture-based personal computers. This specification outlines new timer hardware for system software when generating interrupts for thread schedulers, kernels, and multimedia timer servers.

The Settings are: Enabled, Disabled. Select Enabled to activate the HPET Mode.

HPET Mode

The settings are: 32-bit mode and 64-bit mode.

3-9 PnP/PCI Configuration Setup

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

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PnP/PCI Configurations

Init Display First	PCI Slot	Item Help
Reset Configuration Data	Disablseed	
Speed Spectrum Mode	Disabled	
Resource Controlled by	[Auto(ESCD)]	
x IRQ Resources	Press Enter	Menu Level >
PCI/VGA Palette Snoop	Disabled	
INT Pin 1 assignment	Auto	
INT Pin 2 assignment	Auto	
INT Pin 3 assignment	Auto	
INT Pin 4 assignment	Auto	
INT Pin 5 assignment	Auto	
INT Pin 6 assignment	Auto	
INT Pin 7 assignment	Auto	
INT Pin 8 assignment	Auto	
** PCI Express relative items**		
Maximum Payload Size	4096	

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

IRQ Resources

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

Please refer to section 3-9-1

PCI/VGA Palette Snoop

Leave this field at *Disabled*. The settings are Enabled, Disabled.

3-10 PC Health Status

This section shows the Status of you CPU, Fan, Warning for overall system status. This is only available if there is Hardware Monitor onboard.

Phoenix - AwardBIOS CMOS Setup Utility

PC Health Status

CPU FAN Smart Mode	Disabled	Item Help
SYS FAN1 Smart Mode	Disabled	
SYS FAN2 Smart Mode	Disabled	Menu Level >
CPU temperature	31°C	
System temperature	47°C	
CPU FAN Speed	6329RPM	
SYS FAN1 Speed	0	
SYS FAN2 Speed	0	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Optimized Defaults F7:Standard Defaults		

CPU/System Temperature

CPU/SYS FAN1/SYS FAN2 Speed

This will show the System temperature and FAN Speed.

3-11 Load Standard/Optimized Defaults

Load Standard Defaults

When you press <Enter> on this item, you get confirmation dialog box with a message similar to:

Load Standard Defaults (Y/N)? N

Pressing <Y> loads the BIOS default values for the most stable, minimal-performance system operations.

Load Optimized Defaults

When you press <Enter> on this item, you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N)? N

Pressing <Y> loads the default values that are factory settings for optimal performance system operations.

3-12 Set Supervisor/User Password

You can set either supervisor or user password, or both of them. The differences are:

Supervisor password: Can enter and change the options of the setup menus.

User password: Can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD:

Type the password, up to eight characters in length, and press <Enter>. The password typed

now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm that the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option. If the Security option is set to “System”, the password will be required both at boot and at entry to Setup. If set to “Setup”, prompting only occurs when trying to enter Setup.

Chapter 4

DRIVER & FREE PROGRAM INSTALLATION

Check your package and there is A MAGIC INSTALL CD included. This CD consists of all DRIVERS you need and some free application programs and utility programs. In addition, this CD also include an auto detect software which can tell you which hardware is installed, and which DRIVERS needed so that your system can function properly. We call this auto detect software MAGIC INSTALL.

MAGIC INSTALL Supports WINDOWS 2000/XP

Insert CD into your CD-ROM drive and the MAGIC INSTALL Menu should appear as below. If the menu does not appear, double-click MY COMPUTER / double-click CD-ROM drive or click START / click RUN / type X:\SETUP.EXE (assuming X is your CD-ROM drive).

The Intel 945GM/945GME Express Chipset driver only of Windows 2000 & Windows XP



From MAGIC INSTALL MENU you may make 10 selections:

1. INF install Intel 945 chipset system driver
2. VGA install Intel 945GM/845GME VGA driver
3. SOUND install Realtek ALC888 Codec Audio Driver
4. LAN install **optional** Realtek RTL8111B/8111C Ethernet NIC Driver
5. USB2.0 install USB 2.0 driver
6. PC-CILLIN install PC-CILLIN 2007-Anti-Virus Program
7. CIR install CIR Driver

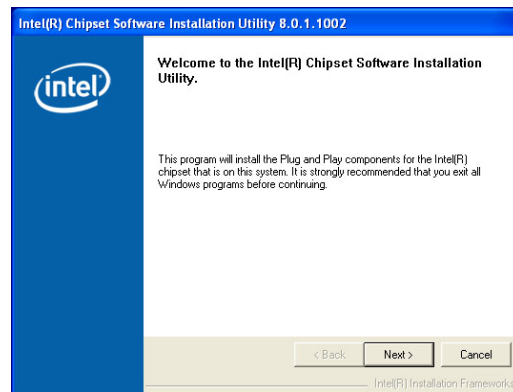
- 8. HDMI install Intel HDMI Audio Driver
- 9. BROWSE CD to browse the contents of the CD
- 10. EXIT to exit from MAGIC INSTALL menu

** Please ignore the installation of 945GM/945GME chipset INF file under Microsoft Vista Operation System.

4-1 INF Install Intel 945GM/945GME chipset system driver



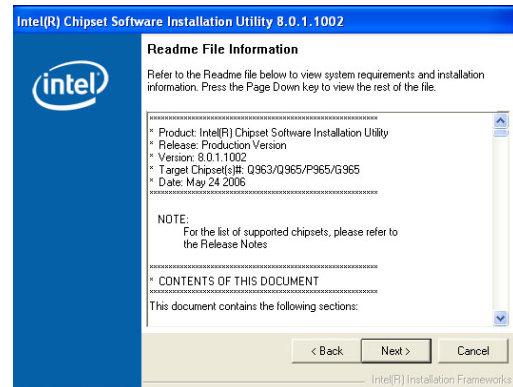
1. Click INF of the MAGIC INSTALL MENU



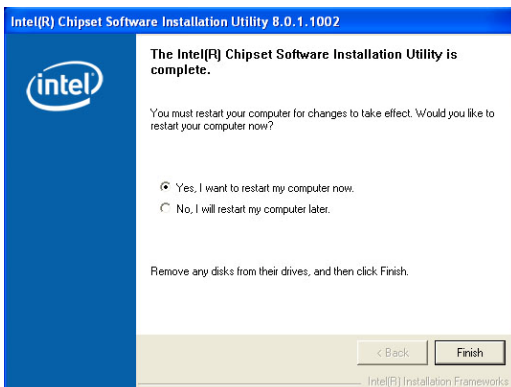
2. Click NEXT when Chipset Software Install Utility appears



3. This license agreement appear, click Yes, the readme information appear, click Next



4. Choose Next to continue the installation.

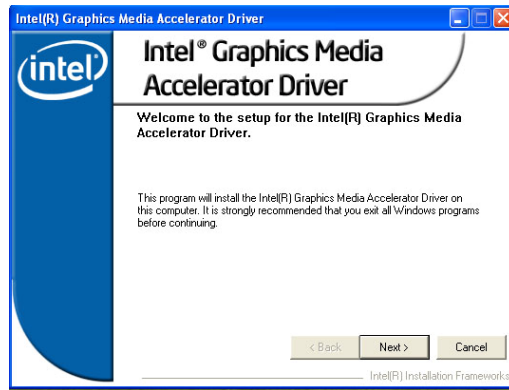


5. Select if you want computer re-started click Finish

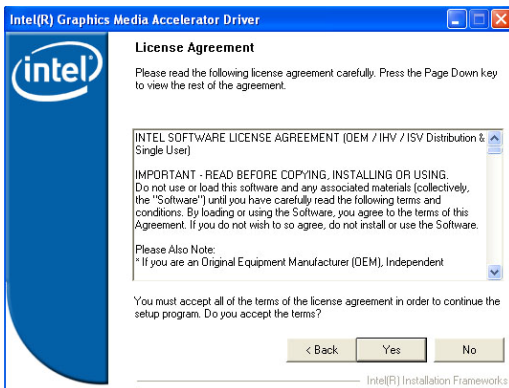
4-2 VGA Install Intel 945GM/945GME VGA Driver



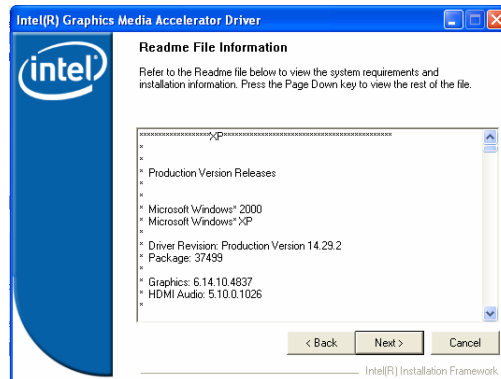
1. Click VGA when MAGIC INSTALL MENU appears



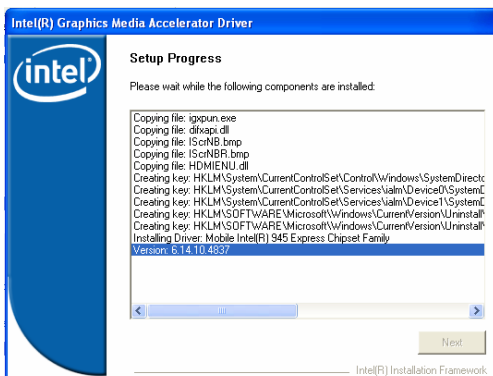
2. Click NEXT When Intel (R) Graphics Media Accelerator Driver Software Setup appear



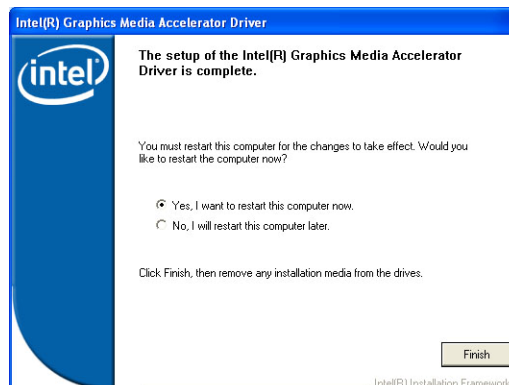
3. Click "YES" for Copy Right Announcement



4. Choose Next to continue the installation.



5. Setup progress.

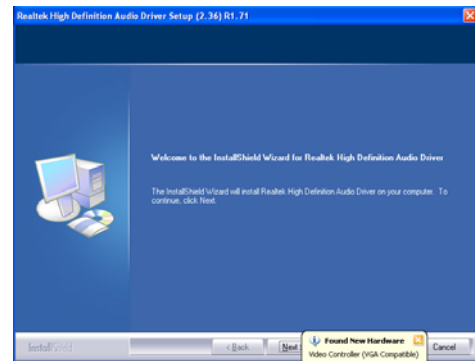


6. Click "FINISH" to reboot your PC

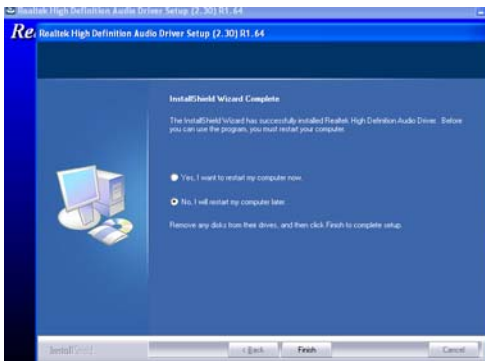
4-3 SOUND Install REALTEK ALC888 Codec Audio Driver



1. Click SOUND when MAGIC INSTALL MENU appears



2. Click NEXT When Realtek High Definition Audio driver windows appear



3. Click FINISH and restart your computer



4. Manual Sound Effect Setting



5. Speaker configuration setting



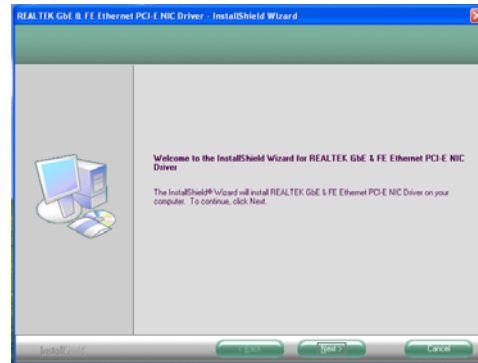
6. SPDIF out setting

NOTE: Please upgrade your Windows XP to Service Pack 1 / Windows 2000 to Service Pack 4 or later before you the HD Audio CODEC driver.

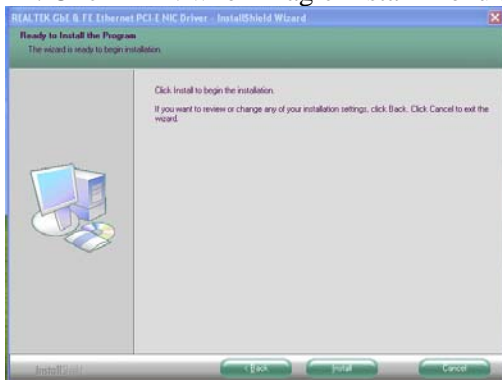
4-4 LAN Install **optional** Realtek RTL8111B/8111C Ethernet NIC Driver



1. Click LAN when Magic Install Menu appear



2. Click Next to install Realtek LAN driver



3. Please Accept the license agreement and read the "Readme" file for detailed information , then click Next to proceed.



4. Click Install to install driver and Click Finish end the installation

4-5 USB2.0 Install Intel USB2.0 DRIVER

Windows 2000 OS

Please install Windows 2000 service pack 4 or later .

Windows XP OS

Please install Windows XP service pack 1 or later .

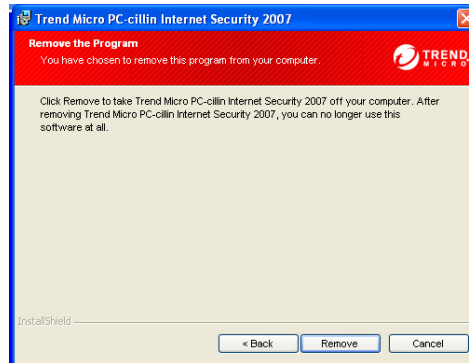
4-6 PC-CILLIN Install PC-CILLIN 2007 Anti-virus program



1. Click PC-CILLIN when MAGIC INSTALL MENU appears

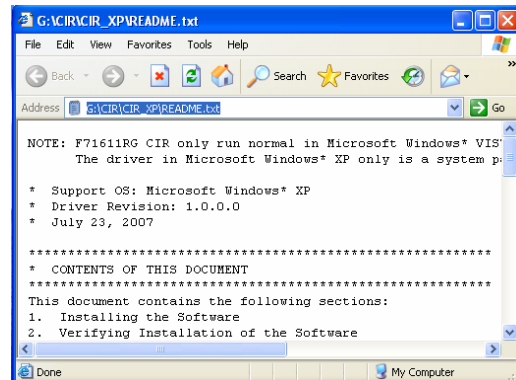


2. Select "Install program" when the "Trend Micro internet security" windows appears



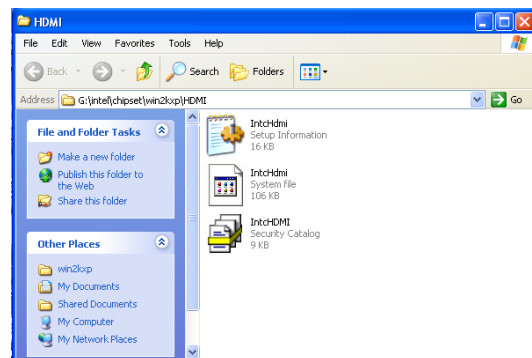
3. Click Next to install the PC-Cillin driver.
 4. Setup Complete and click FINISH
- Note : Please install ACROBAT READER for reading PC-CILLIN 2007 User Manual which locates at the path “X:\acrobat\adberdr6_enu_full.exe”.**

4-7 CIR Install CIR for WindowsXP



1. Click CIR when MAGIC INSTALL MENU appears
2. Read the Text and follow as your installation guide.

4-8 HDMI Install HDMI Audio Driver



1. Click HDMI when MAGIC INSTALL MENU appears
2. Browse the files you will install.

4-9 HOW TO UPDATE BIOS

****Make sure the BIOS upgrade utility of Rev.8.80 or above employed for updating your BIOS.**

STEP 1. Prepare a boot disc. (You may make one by click START click RUN type SYS A:

click OK)

STEP 2. Copy the utility program to your boot disc. You may copy from DRIVER CD X:\FLASH\AWDFLASH.EXE or download from our web site.

STEP 3. Copy the latest BIOS for 945GM/945GME from our web site to your boot disc.

STEP 4. Insert your boot disc into A:

Start the computer, type “Awdflash A:\945GM\945GME.BIN /SN/PY/”
945GM/945GMEX Axxx.BIN is the file name of latest BIOS it can be
945GM/945GMEXX A03.BIN or 945GM/945GMEXX CPB02.BIN

SN means don't save existing BIOS data

PY means renew existing BIOS data

CC means clear existing CMOS data

R means restart computer

STEP 5. Press ENTER and the BIOS will be updated, computer will be restarted automatically.

4-10 Pro Magic Plus Function Introduction

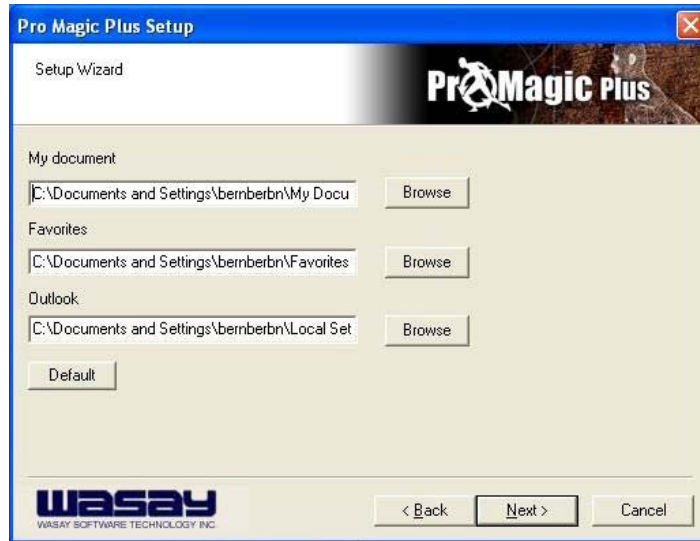
What's Pro Magic Plus?

Tired with reinstall OS each time when it doesn't work? Does your computer often crash down or unable to work after installed new software? Have you had great loses and troubles because of computer problems? Still using time-consuming backup software that occupies lots of HD space?

Pro Magic Plus- an instant system recovery software tailored to solve these problems for you. It combines various application tools (e.g. anti-virus, backup software, uninstall software, multi-boot software) to satisfy your needs of all sorts of system protections.

What functions does Pro Magic Plus have?

1. **Instant System Restoration** – Regardless of mis-operation or system crash, install Pro Magic Plus beforehand would allow you to instantly restore your system back by simply reboot your computer.
2. **Easy-to-use** – Auto installation from CD ROM; Supports Mouse
3. **System Uninstall** – Pro Magic provides a protection mode, which allows user to freely test any software. If user does not want to keep the software, just reboot the computer to restore back to the previous state, and Pro Magic will remove it completely from you computer.
4. **Password Security** – Pro Magic provides double password protection, including user password for entering each OS and manager password for managing 'Pro Magic', which can effectively prevent others from using your computer without permission or data from being stolen. (disable item for OEM version)
5. **Complete Protection** – Pro Magic not only protects the system disk, but also can protect your data disk, and does not require to reboot when backup or restore data disk.
6. **Multipoint Save/Restore** – You can backup your system whenever you need and restore them back to anytime you wish, 1 hour, 1 day or 1 month ago. Restore points are unlimited. (disable item for OEM version)
7. **Data Disk Protection** – Pro Magic Plus now comes with data disk protection, provides complete protection for your computer! (disable item for OEM version)
8. **You can choose to change the default path of 'My Document', 'My Favorite' and 'Outlook Express'**, so that when you are restoring the system, data in these folders will not be restored as well. (This is optional, you can leave it as it is).



graph 4

NOTE: Functions of each version will differ from each other, and will be based on the function descriptions of each version.

System Requirements

- ◇ First OS must be Windows 98 SE/ME/2000/XP
- ◇ Support Only Windows OS (No Linux)
- ◇ Windows server OS and Windows NT not supported
- ◇ Minimum of Intel 486 or above, 16MB of memory or above
- ◇ Minimum of 500MB free/usable space or above
- ◇ Support for SCSI & SATA Hard disk

Pro Magic Plus only supports SCSI hard disk with Windows 2000 or OS above

Notice Before Installation

1. Before install Pro Magic Plus, turn off all anti-virus software. (Include BIOS anti-virus function)
2. Pro Magic Plus does not support multiple PRI partitions. If you have multiple PRI partitions, please repartition your HD before installation.
3. If your HDD is not fully partitioned (with un-partitioned/unused space at end of HDD), please repartition the HDD before install Pro Magic Plus.

4-11 The Installation of CPU and Active Thermal Kit

This board provides Socket 479m for Intel mobility processor and offer optional active thermal kit of copper made to prevent CPU overheating problems. According to the following guide will ensure your installation correctly.



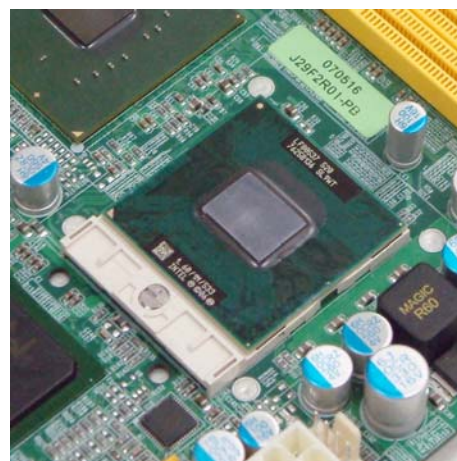
1. Remove the socket protection shield and prepare for the CPU installation.



2. Install the Socket 479m compatible processor gently and carefully.



3. Revolve the screw with the screwdriver.



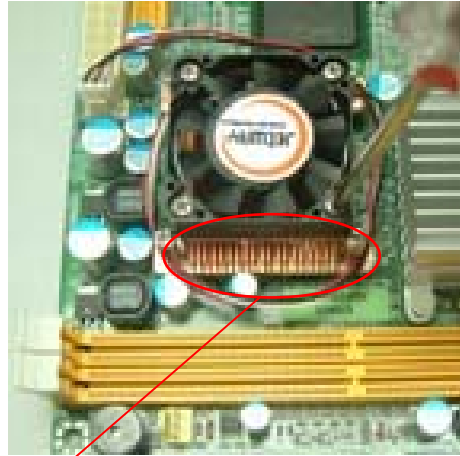
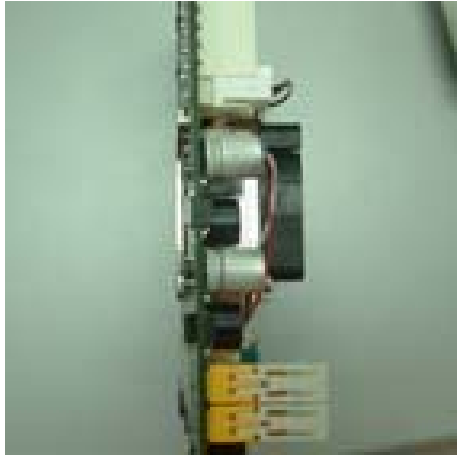
4. Make sure the installation is right on position.



5. Install the back-plant of the thermal kit.



6. Put the thermo kit directly to the back-plant.



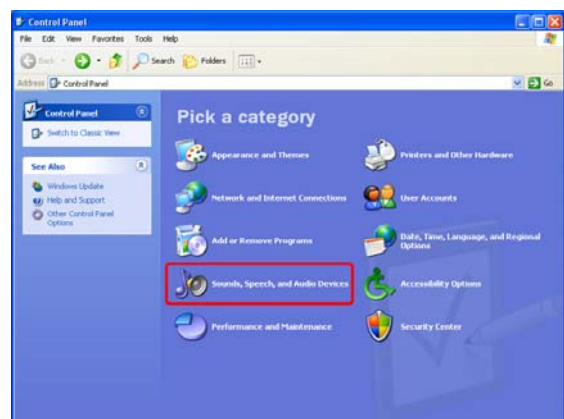
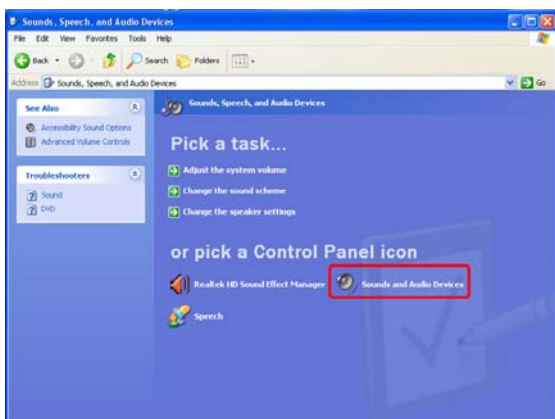
7. Make sure the double-side of thermal kit is tight on the point.

8. Make sure four screws are fastened with sound of click. Then it's done.

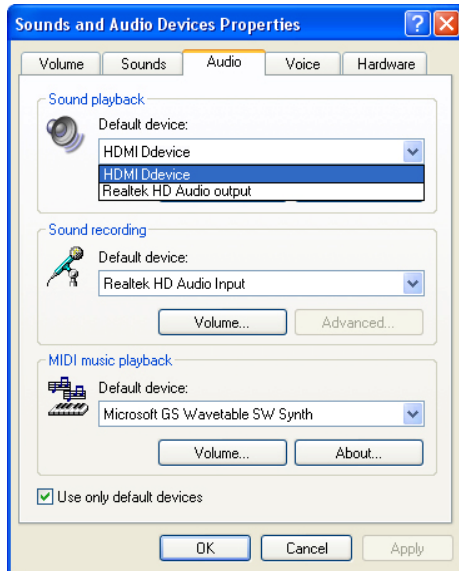
**Make sure that the side of copper-fin towards to the Memory DIMMs to avoid the interference between the active thermo kit and components of motherboards.

***The Intel mobility processor will be embedded with boxed thermal kit in some retail packages. This motherboard may not be compatible with all kinds of active thermo kit. Please contact with your dealer for advanced information.

4-12 How to set up HDMI audio output



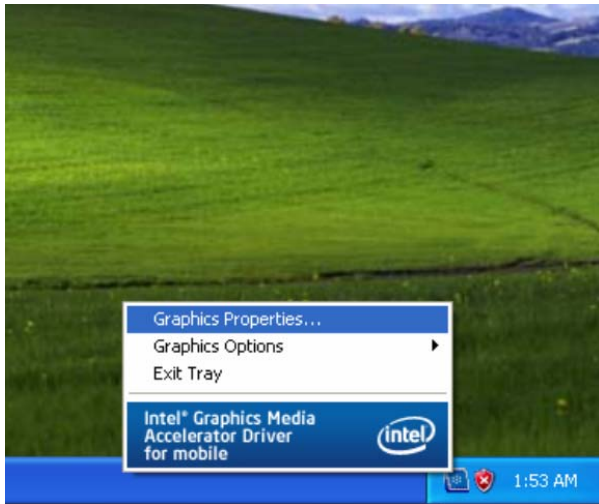
-
-
1. Press ‘Start’, then get into “Control Panel” and choose the selection, “Sounds, Speech, and Audio Devices”
 2. Press “Sounds and Audio Devices”



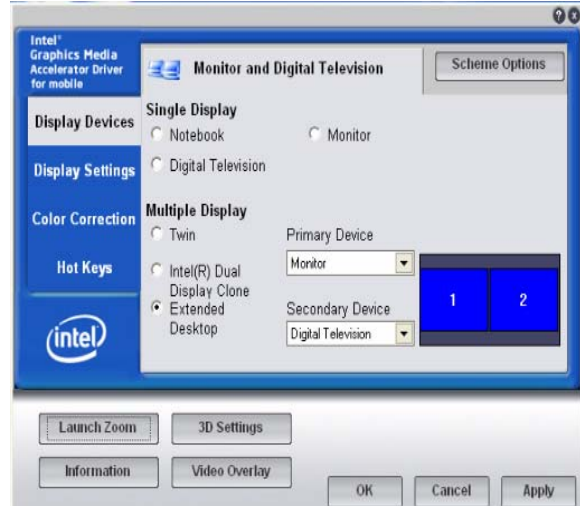
3. Select “Voice” and choose “HDMI Device” as your “Default devices”.

4-13 The Installation of HDTV & HDMI Signal Outputs

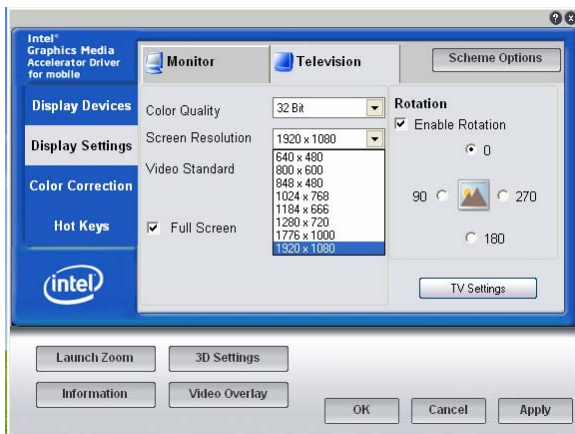
Choose the appropriate Screen Resolution for the high definition films. Follow the instructions to play.



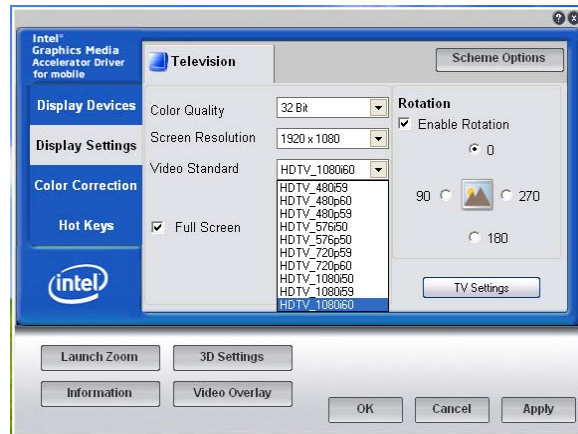
1. Click the “Graphics Properties” on the icon in the taskbar.



2. Select “Display Devices”



3. Choose appropriate resolution of the “Display Devices” you just selected.



4. Select “Video Standard” for the high definition films you want to play.

4-14 The motherboard Installation of Standard Chassis

Before you install the motherboard into the chassis, you should install the CPU and its active thermo kit and Mini-PCI Express Card first if it’s necessary. And prepare with the screws and space-support holders (P/N: G09-FIX9F2-F).



1. Choose the adequate chassis.



2. Set the F04-137-F I/O shield to the side of the chassis.



3. Put the space-support holders on the four pillars.



4. Make sure to fasten the screws through the motherboard to the pillars.

**The space-support holder is only for standard chassis; please do not use it to double-side components mounted compatible chassis. Or it may cause interference of some components of this motherboard.

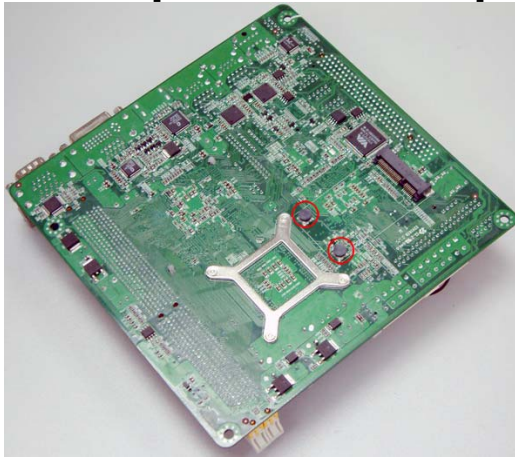
***The board (17 cm x 17 cm) is designed to be compatible with genetic micro-ATX chassis or a SFF chassis. This motherboard will ship with optional active thermo kit and IGP chipset thermal solutions assembled.

The minimum thermal requirement for genetic Micro-ATX chassis is to ensure adequate motherboard/component-level cooling by equipping the chassis with at least a real fan exhausting airflow out of chassis.

The optional active thermo kit and IGP chipset thermal solutions were designed and validated based on a worse-case (cheapest with minimum feature) micro-ATX chassis (thus we need not specify minimum airflow requirement for system fan). Additional inputs on chassis requirements are in next section. The thermal analysis is based on a worse-case configuration chassis with no side /front venting and one rear fan. This configuration should be sufficient to cover the envelope of available micro-ATX chassis in the market.

Additional chassis features, such as ACG1.1 (or side-venting), front-fan and front-venting, can be included for better system thermal. These are recommended but not mandatory.

4-15 Optional PCI Express Card Installation Guide



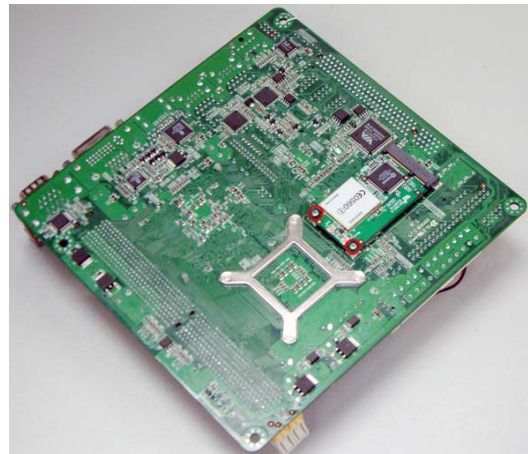
1. Loose two screws in the two rivets.



2. Ready to fasten the screws after installed Mini-PCI Express x1 compatible card.



3. Plug in the Mini-PCI Express Interface Card at the angle of 45-degree.



4. Press down the Card and make sure fasten the screw well.

16 How to test with the HDTV and HDMI compatible high definition movies?

I. HDTV

- A. Choose 720p / 1080i / 1080p displaying compatible LCD TV.
- B. Prepare with 720p / 1080i / 1080p demo films to play
- C. Press “Ctrl” + “Alt” + “F4” to activate the Intel Graphics Program.
- D. To select the adequate resolution for playing the films of 720p / 1080i / 1080p
- E. Then play films in full screen mode. The film will play smoothly.

II. HDMI

- A. Choose 720p / 1080i / 1080p displaying compatible LCD TV with HDCP Certificate Key and HDMI connector.
- B. Prepare with 720p / 1080i / 1080p demo films to play.
- C. Press “Ctrl” + “Alt” + “F4” to activate the Intel Graphics Program. And Set up the HDMI

Audio as your Default Sound devices.

D. To select the adequate resolution for playing the films of 720p / 1080i /1080p.

E. Then play films in fu screen mode. The film will play smoothly.

Hot Keys for switching D-sub or DVI embedded display to HDMI compatible display is “Ctrl”+”Alt”+”F4” while your HDMI compatible display shows no video signals input. Some other display switching Hot Keys are as below:

VGA

Enable Monitor	Ctrl+Alt+F1
Enable Notebook	Ctrl+Alt+F3
Enable/Disable Panel Fitting	Ctrl+Alt+F11
Open Graphic Property Application	Ctrl+Alt+F12
Rotate to Normal	Ctrl+Alt+UP
Static Device Defecting	Ctrl+Alt+F8

DVI

Enable Notebook	Ctrl+Alt+F3
Enable Digital TV	Ctrl+Alt+F4
Enable/Disable Panel Fitting	Ctrl+Alt+F11
Open Graphic Property Application	Ctrl+Alt+F12
Rotate to Normal	Ctrl+Alt+UP
Rotate 90 degrees	Ctrl+Alt+LEFT
Rotate 180 degrees	Ctrl+Alt+DOWN
Rotate 270 degrees	Ctrl+Alt+RIGHT

HDMI

Enable Digital TV	Ctrl+Alt+F4
Enable/Disable Panel Application	Ctrl+Alt+F11
Rotate to Normal	Ctrl+Alt+UP
Rotate 90 degrees	Ctrl+Alt+LEFT
Rotate 180 degrees	Ctrl+Alt+DOWN
Rotate 270 degrees	Ctrl+Alt+RIGHT

HDTV

Enable Monitor	Ctrl+Alt+F1
Enable TV	Ctrl+Alt+F2
Enable Notebook	Ctrl+Alt+F3
Enable/Disable Panel Application	Ctrl+Alt+F11
Open Graphic Property Application	Ctrl+Alt+F12
Rotate to Normal	Ctrl+Alt+UP
Rotate 90 degrees	Ctrl+Alt+LEFT
Rotate 180 degrees	Ctrl+Alt+DOWN
Rotate 270 degrees	Ctrl+Alt+RIGHT
Static Device Defecting	Ctrl+Alt+F8

***For more information about the Intel Graphics Property Application, please come to visit

[HTTP://www.jetway.com.tw](http://www.jetway.com.tw)