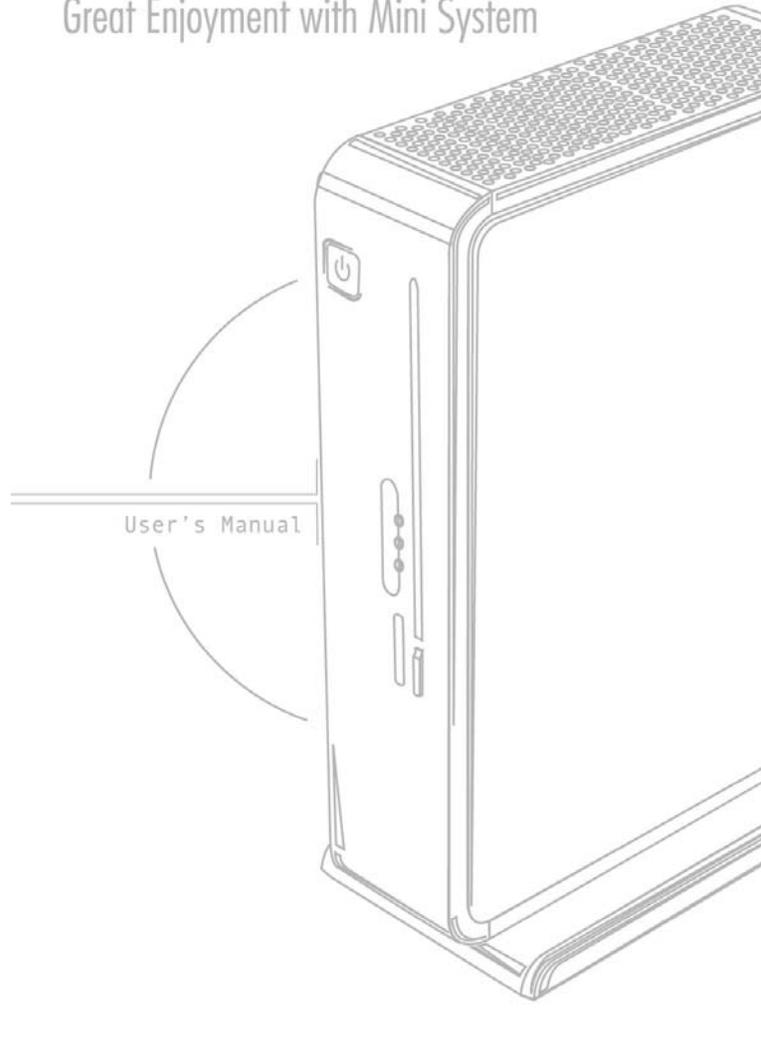


Great Enjoyment with Mini System



Preface

Copyright

This publication, including all photographs, illustrations and software, is protected under international copyright laws, with all rights reserved. Neither this manual, nor any of the material contained herein, may be reproduced without written consent of the author.

Version 1.0

Disclaimer

The information in this document is subject to change without notice. The manufacturer makes no representations or warranties with respect to the contents hereof and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose. The manufacturer reserves the right to revise this publication and to make changes from time to time in the content hereof without obligation of the manufacturer to notify any person of such revision or changes.

Trademark Recognition

Microsoft, MS-DOS and Windows are registered trademarks of Microsoft Corp.

MMX, Pentium, Pentium-II, Pentium-III, Celeron are registered trademarks of Intel Corporation.

Other product names used in this manual are the properties of their respective owners and are acknowledged.

Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

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

Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

About the Manual

The manual consists of the following:

Chapter 1 Introducing the 3L Small Form Factor	Describes features of the 3L Small Form Factor. Go to  page 1
Chapter 2 Installing the Motherboard	Describes installation of motherboard components. Go to  page 7
Chapter 3 Using BIOS	Provides information on using the BIOS Setup Utility. Go to  page 25
Chapter 4 Using the Motherboard Software	Describes the motherboard software. Go to  page 43
Chapter 5 Intel® Remote Wake Technology	Describes the Intel® Remote Wake Technology. Go to  page 53

TABLE OF CONTENTS

Preface	i
Chapter 1	1
Introducing the 3L Small Form Factor	1
Introducing the 3L Small Form Factor.....	1
Feature of the motherboard.....	2
Motherboard Components.....	4
Chapter 2	7
Installing the Motherboard	7
Safety Precautions.....	7
Choosing a Computer Case.....	7
Installing the Motherboard in a Case.....	7
Checking Jumper Settings.....	8
<i>Setting Jumpers</i>	8
<i>Checking Jumper Settings</i>	9
<i>Jumper Settings</i>	9
Installing Hardware.....	10
<i>Installing the Processor</i>	10
<i>Installing Memory Modules</i>	12
<i>Expansion Slots</i>	16
<i>Connecting Optional Devices</i>	17
<i>Installing SATA_HDD/SATA_ODD</i>	20
Connecting I/O Devices.....	21
Connecting Case Components.....	22
<i>IR1/LED1~3</i>	23
Chapter 3	25
Using BIOS	25
About the Setup Utility.....	25
<i>The Standard Configuration</i>	25
<i>Entering the Setup Utility</i>	25
Using BIOS.....	26
<i>Standard CMOS Setup</i>	27
<i>Advanced Setup</i>	29
<i>Advanced Chipset Setup</i>	32

<i>Integrated Peripherals</i>	34
<i>Power Management Setup</i>	35
<i>PC Health Status</i>	36
<i>Frequency/Voltage Control</i>	38
<i>Load Default Settings</i>	39
<i>Supervisor Password</i>	39
<i>User Password</i>	40
<i>Save & Exit Setup</i>	40
<i>Exit Without Saving</i>	40
<i>Updating the BIOS</i>	41
Chapter 4	43
Using the Motherboard Software	43
About the Software CD-ROM.....	43
Auto-installing under Windows Vista.....	43
<i>Running Setup</i>	44
Manual Installation.....	48
Utility Software Reference.....	48
HDMI Audio setting SOP.....	49
Chapter 5	53
Intel® Remote Wake Technology	53
About the Intel® Remote Wake Technology.....	53
IRWT Installation and Setup.....	54
<i>Driver and Software Installation</i>	54
<i>Getting Ready for Remote Wake</i>	55
<i>Put Your Computer to Sleep Mode</i>	57

Chapter 1

Introducing the 3L Small Form Factor

Introducing the 3L Small Form Factor

Thank you for choosing 3L Small Form Factor of great performance and with stylish and flexible design.

With Intel® Core™ 2 Duo/Celeron® processors inside and a dimension of 270mm (H)* 200mm (D)* 60mm (W) (3 Liter), 3L Small Form Factor provides the features of low power consumption (working with a 65Watt power adaptor), low noise (<28dB) and space saving. It incorporates the G43 Northbridge (NB) and ICH10 Southbridge (SB) chipsets, supporting up to 4 GB of system memory with DDR2 memory SODIMM frequencies of 800/667 MHz, 3.5" SATA II HDD, Slim DVD Supermulti Slot-in type ODD, and Built in Intel® GMA X4500 Graphics.

3L Small Form Factor is equipped with four USB 2.0 ports, two audio ports, one 1394a port (optional) in the front panel and advanced full set of I/O ports in the rear panel, including J4, one VGA port, one HDMI port, four USB ports, one ESATA port, one LAN port, one optical SPDIF port, and audio jacks for microphone, line-in and 8-ch line-out.



Introducing the 3L Small Form Factor

Feature of the motherboard

Processor

The motherboard uses an LGA775 type of Intel® Core™ 2 Duo/Celeron® processors that carries the following features:

- Accommodates Intel® Core™ 2 Duo/Celeron® processors
- Supports a system bus (FSB) of 1333/1066/800 MHz
- Supports “Hyper-Threading” technology CPU

“Hyper-Threading” technology enables the operating system into thinking it’s hooked up to two processors, allowing two threads to be run in parallel, both on separate “logical” processors within the same physical processor.

Chipset

The Intel® G43 Northbridge (NB) and Intel® ICH10 Southbridge (SB) chipsets are based on an innovative and scalable architecture with proven reliability and performance.

- | | |
|-----------------------|---|
| G43
(NB) | <ul style="list-style-type: none"> • Supports 36-bit host bus addressing, allowing the CPU to access the entire 64 GB of the memory address space • Chip-to-chip connection interface to Intel ICH10 • 2 GB/s point-to-point Direct Media Interface (DMI) to ICH10 (1 GB/s each direction) • Supports 2-Gb, 1-Gb and 512-Mb DDR2 DRAM technologies for x8 and x16 devices • An integrated graphics device (IGD) delivering cost competitive 3D, 2D and video capabilities • Two MINI PCI Express ports intended for external devices attach |
| ICH10
(SB) | <ul style="list-style-type: none"> • Enhanced DMA Controller, Timer/Counter functions, and Interrupt Controller • Integrated SATA 3.0 Gb/s Host Controller • Integrated USB 2.0 Host Controller supporting up to eight USB 2.0 ports • Integrated Gigabit LAN Controller |

Memory

- Supports DDR2 800/667 DDR2 SDRAM with Dual-channel architecture
- Accommodates two unbuffered SO-DIMMs
- Up to 2 GB per DIMM with maximum memory size up to 4 GB

Audio

- All DACs support 192K/96K/48K/44.1KHz DAC sample rate
- High-quality analog differential CD input
- Software selectable 2.5V/3.75V VREFOUT
- Meets Microsoft WLP 3.08 audio requirements
- Direct Sound 3D™ compatible

Introducing the 3L Small Form Factor

Onboard LAN

- Integrated Intel Gigabit Ethernet Controller for PCI Express™ Applications
- Integrated 10/100/1000 transceiver
- Wake-on-LAN and remote wake-up support

1394a FireWire (optional)

- Compliant with single chip host controller for IEEE Std 1394-1995 and IEEE 1394a-2000
- Integrated 400 Mb/s 2-Port PHY for the PCI BUS
- 3.3V Power supply with 5V Tolerant Inputs

Expansion Options

The motherboard comes with the following expansion options:

- Two SCN slots (MINI PCI Express slots)
- One SATA_HDD1 connector
- One SATA_ODD1 connector
- One TV1 header

Integrated I/O

The motherboard has a full set of I/O ports and connectors:

- One J4 port (DC Jack)
- One VGA port
- One HDMI port
- Four USB ports
- One ESATA port
- One LAN port
- One optical SPDIF port
- Audio jacks for microphone, line-in and 8-ch High Definition Audio output

BIOS Firmware

This motherboard uses AMI BIOS that enables users to configure many system features including the following:

- Power management
- Wake-up alarms
- CPU parameters
- CPU and memory timing

The firmware can also be used to set parameters for different processor clock speeds.

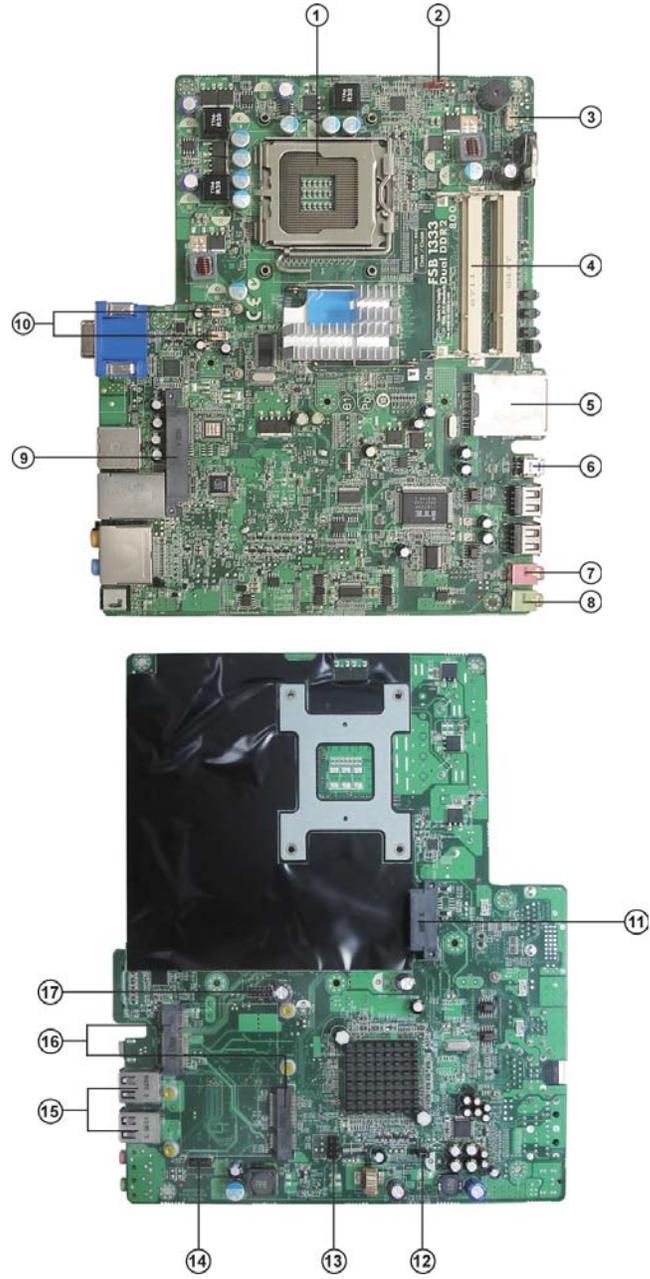


1. Some hardware specifications and software items are subject to change without prior notice.

2. Due to chipset limitation, we recommend that motherboard be operated in the ambience between 0 and 50 ° C.

Introducing the 3L Small Form Factor

Motherboard Components



Introducing the 3L Small Form Factor

Table of Motherboard Components

LABEL	COMPONENTS
1. CPU Socket	Intel® Core™ 2 Duo/Celeron™ processors
2. CLR_CMOS1	Clear CMOS jumper
3. J3	SATA HDD power connector
4. CN1~2	Two 200-pin DDR2 SDRAM SO-DIMMs
5. CN7*	Reader Card
6.1394A1*	Onboard 1394a connector
7. JMIC1	Front MIC
8. JPHOME1	Front LINE IN
9. SATA_HDD1	SATA HDD connector
10. SYS_FAN1~2	System cooling fan connectors
11. SATA_ODD1	SATA ODD connector
12. MED1	ME Disable jumper
13. SPI_ROM1	SPI ROM header
14. COM1	Onboard serial port header
15. F_USB1~4	Front panel USB ports
16. SCN1~2	MINI PCI Express slots
17. TV1*	External S-VIDEO header

* Stands for optional components

This concludes Chapter 1. The next chapter explains how to install the motherboard.

6

Memo

Introducing the 3L Small Form Factor

Chapter 2

Installing the Motherboard

Safety Precautions

- Follow these safety precautions when installing the motherboard
- Wear a grounding strap attached to a grounded device to avoid damage from static electricity
- Discharge static electricity by touching the metal case of a safely grounded object before working on the motherboard
- Leave components in the static-proof bags they came in
- Hold all circuit boards by the edges. Do not bend circuit boards

Choosing a Computer Case

There are many types of computer cases on the market. The motherboard complies with the specifications for the small system case. Some features on the motherboard are implemented by cabling connectors on the motherboard to indicators and switches on the system case. Make sure that your case supports all the features required.

Most cases have a choice of I/O templates in the rear panel. Make sure that the I/O template in the case matches the I/O ports installed on the rear edge of the motherboard.

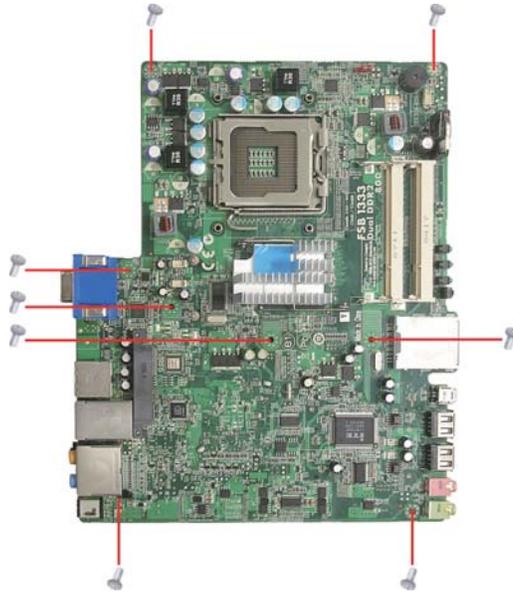
This motherboard carries a small form factor of 236 x 195 mm. Choose a case that accommodates this form factor.

Installing the Motherboard in a Case

Refer to the following illustration and instructions for installing the motherboard in a case.

Most system cases have mounting brackets installed in the case, which correspond to the holes in the motherboard. Place the motherboard over the mounting brackets and secure the motherboard onto the mounting brackets with screws.

Ensure that your case has an I/O template that supports the I/O ports and expansion slots on your motherboard.



Do not over-tighten the screws as this can stress the motherboard.

Checking Jumper Settings

This section explains how to set jumpers for correct configuration of the motherboard.

Setting Jumpers

Use the motherboard jumpers to set system configuration options. Jumpers with more than one pin are numbered. When setting the jumpers, ensure that the jumper caps are placed on the correct pins.

The illustrations show a 2-pin jumper. When the jumper cap is placed on both pins, the jumper is **SHORT**. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is **OPEN**.

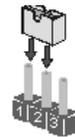


SHORT



OPEN

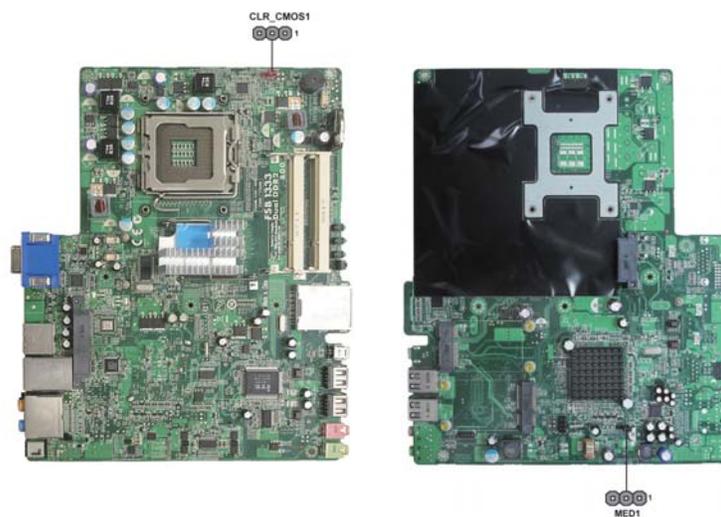
This illustration shows a 3-pin jumper. Pins 1 and 2 are **SHORT**.



Installing the Motherboard

Checking Jumper Settings

The following illustration shows the location of the motherboard jumpers. Pin 1 is labeled.



Jumper Settings

Jumper	Type	Description	Setting (default)	
CLR_CMOS1	3-pin	CLEAR CMOS	1-2: NORMAL 2-3: CLEAR Before clearing the CMOS, make sure to turn off the system.	 1 CLR_CMOS1
MED1	3-pin	ME Disable	1-2: ENABLE 2-3: DISABLE	 1 MED1



To avoid the system instability after clearing CMOS1, we recommend users to enter the main BIOS setting page to “Load Default Settings” and then “Save & Exit Setup”.

Installing the Motherboard

Installing Hardware

Installing the Processor



*Caution: When installing a CPU heatsink and cooling fan make sure that you **DO NOT** scratch the motherboard or any of the surface-mount resistors with the clip of the cooling fan. If the clip of the cooling fan scrapes across the motherboard, you may cause serious damage to the motherboard or its components.*

On most motherboards, there are small surface-mount resistors near the processor socket, which may be damaged if the cooling fan is carelessly installed.

Avoid using cooling fans with sharp edges on the fan casing and the clips. Also, install the cooling fan in a well-lit work area so that you can clearly see the motherboard and processor socket.

Before installing the Processor

This motherboard automatically determines the CPU clock frequency and system bus frequency for the processor. You may be able to change the settings in the system Setup Utility. We strongly recommend that you do not over-clock processors or other components to run faster than their rated speed.



Warning:

1. Over-clocking components can adversely affect the reliability of the system and introduce errors into your system. Over-clocking can permanently damage the motherboard by generating excess heat in components that are run beyond the rated limits.

2. Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.

This motherboard has an LGA775 socket. When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory.

CPU Installation Procedure

The following illustration shows CPU installation components.

- A. Read and follow the instructions shown on the sticker on the CPU cap.
- B. Unload the cap
 - Use thumb & forefinger to hold the lifting tab of the cap.
 - Lift the cap up and remove the cap completely from the socket.
- C. Open the load plate
 - Use thumb & forefinger to hold the hook of the lever, pushing down and pulling aside unlock it.
 - Lift up the lever.
 - Use thumb to open the load plate. Be careful not to touch the contacts.
- D. Install the CPU on the socket
 - Orientate CPU package to the socket. Make sure you match triangle marker to pin 1 location.
- E. Close the load plate
 - Slightly push down the load plate onto the tongue side, and hook the lever.
 - CPU is locked completely.
- F. Apply thermal grease on top of the CPU.
- G. Fasten the cooling fan supporting base onto the CPU socket on the motherboard.
- H. Make sure the CPU fan is plugged to the CPU fan connector. Please refer to the CPU cooling fan user's manual for more detail installation procedure.



1. To achieve better airflow rates and heat dissipation, we suggest that you use a high quality fan with 3800 rpm at least. CPU fan and heatsink installation procedures may vary with the type of CPU fan/heatsink supplied. The form and size of fan/heatsink may also vary.
2. DO NOT remove the CPU cap from the socket before installing a CPU.
3. Return Material Authorization (RMA) requests will be accepted only if the motherboard comes with the cap on the LGA775 socket.

Installing the Motherboard

Installing Memory Modules

This motherboard accommodates two memory modules. It can support two 200-pin DDR2 800/667. The total memory capacity is 4 GB.

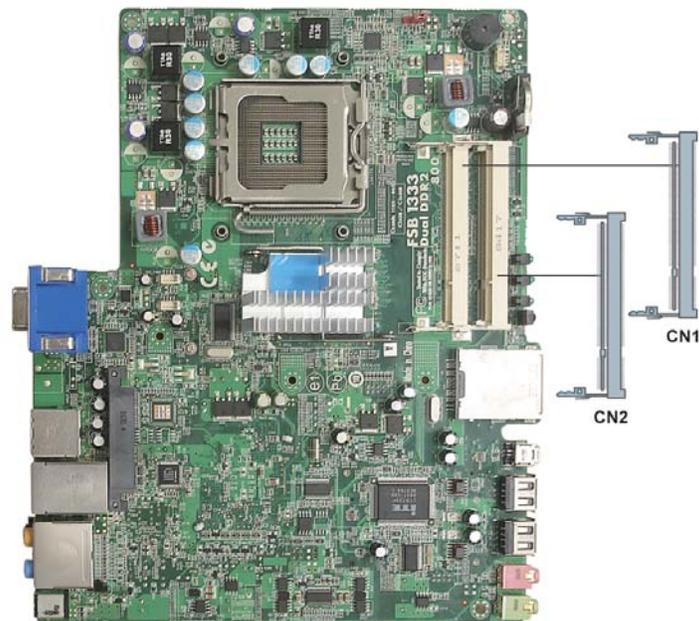
DDR2 SDRAM memory module table

Memory module	Memory Bus
<i>DDR2 667</i>	<i>333 MHz</i>
<i>DDR2 800</i>	<i>400 MHz</i>

You must install at least one module in any of the two slots. Each module can be installed with 2 GB of memory; total memory capacity is 4 GB.



Do not remove any memory module from its antistatic packaging until you are ready to install it on the motherboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.



Installing the Motherboard

Memory Module Installation Procedure

These modules can be installed with up to 4 GB system memory. Refer to the following to install the memory module.

1. Align the memory module with the DIMM slot. There is a notch on the DIMM slot that you can install the DIMM module in the correct direction. Match the cutout on the DIMM module with the notch on the DIMM socket.
2. Insert the memory module to the slot and press it down until it seats correctly.
3. Make sure the slot latches cling to the edge of the DIMM module.



Table A: DDR2 (memory module) QVL (Qualified Vendor List)

The following DDR2 800/667 memory modules and combination have been tested and qualified for use with this motherboard.

Type	Size	Vendor	Module Name		
DDR2 667	256 MB	Samsung	M470T3354CZ3		
		Micron	MT4HTF6464HY-667E1		
	512 MB	Ramaxel		RMN1150MD38D6F	
				RMN1150MD38D6F-667	
				RMN1150HC38D6F-667	
		Sharetronic		SM221N516EAF	
	1 GB	A-data		M2OAD5G3144B01C53	
				78.02G72.9K2	
		Elixir		M2N1G64TUH8D4F-3C 0809.TW	
		Infinity		14701G16CX5D2A	
		Kingston		Nanya KV R667D2S5	
		Micron		MT8HTF12864HDY-667E1	
		NCP		ELPT7ASDR-30M48 NC 03389	
		Qimonda		HYS64T128021EDL-3S Y3E81226	
		Ramaxel		RMN1270ME56D7F	
				RMN1150HC48D7F-667	
				RMN1150HC48D7F	
		Winchip		NEJA2450.A8ECW	
		2 GB	Apacer		78.A2G72.9K5
			Kingston		KV R667D2S5
	Qimonda			HYS64T256020EDL-3S-C2 Z2S81023004	
	Winchip			NEJB4850.B8PDW	

Type	Size	Vendor	Module Name
DDR2 800	512 MB	Kingston	KVR800D2S5
		Micron	MT4HTF6464HY-800E1 200737 BZADXDB001
	1 GB	Apacer	78.02G75.9K2
		G.SKILL	F2-6400CL5D-2GBSA
		Infinity	14701G16CZ5D2A
		Kingston	Nanya KVR800D2S6
			Hynix KVR800D2S6
			KVR800D2S5
			KVR800D2S6
		NCP	ELPT7ASDR-25M48NC 03388
		PNY	NEKA450.A8ECP
		PSC	AS7E8F63J-8E
		Qimonda	HYS64T128021EDL-2.5B2 Y3E81027
		Samsung	M470T2864QZ3-CF7
		Transcend	216401-CL5
			DYnamic M0-U0 E150630 94V-0
			202410-0001[96]
		Unifosa	GU331G0ALEPR612C6CE
	Winchip	NEKA2450.A8ECW	
	2 GB	Apacer	78.A2G75.9K5
		Elixir	M2N2G64TU8HD4B-AC 0805.TW
		Kingston	KVR800D2S6
		Micron	MT16HTF25664HY-800E1
		PNY	NEKB4850.B8PFP
		PSC	A S8E8F73C-8E1
		Qimonda	HYS64T256020EDL-2.5C2 Z2S81225022
		Samsung	GOLD BAR M470T5663RZ3-CF7 0819
		Unifosa	GU332G0ALEPR8H2C6CE
		Winchip	NEKB4850.B8PDW

Installing the Motherboard

Expansion Slots

Installing Add-on Cards

The slots on this motherboard are designed to hold expansion cards and connect them to the system bus. Expansion slots are a means of adding or enhancing the motherboard's features and capabilities. With these efficient facilities, you can increase the motherboard's capabilities by adding hardware that performs tasks that are not part of the basic system.



SCN1~2 Slots The SCN1~2 slots are used to install external PCI Express graphics cards.



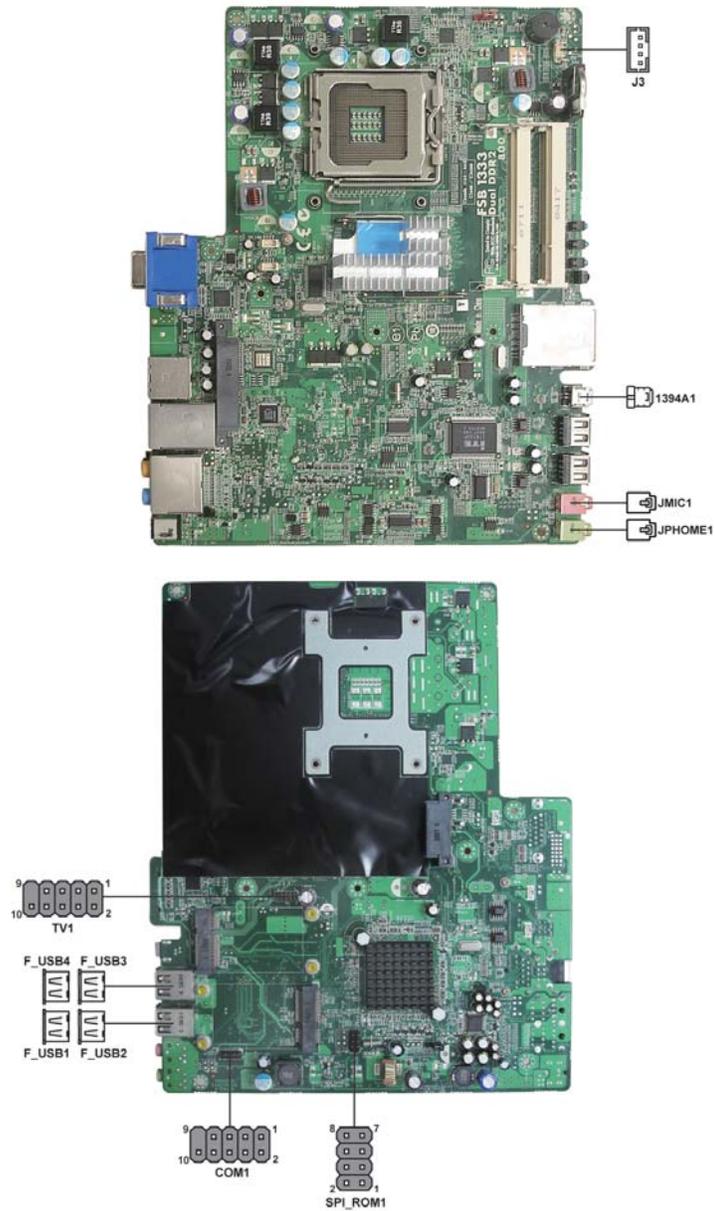
Before installing an add-on card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.

Table B: Supported Wireless LAN Card List for SCN1~2 Slots

Vendor	Module Name
Gemtek	WPEB-109N
LITEON	WN6500M

Connecting Optional Devices

Refer to the following for information on connecting the motherboard's optional devices:



Installing the Motherboard

J3: SATA HDD power connector

Pin	Signal Name	Function
1	12V	12V power
2	GND	Ground
3	VCC3	J3 power
4	5V	5V power

1394A1: IEEE 1394a connector (optional)

It can be used to connect any device with IEEE 1394a interface.

Pin	Signal
1	TPB-
2	TPB+
3	TPA-
4	TPA+

JMIC1: Front Audio Microphone Jack

Pin	Signal Name	Pin	Signal Name
1	GND	2	MIC2_L
3	MIC2_R	4	MIC2_JD
5	GND	6	N/C

JPHOME1: Front Audio Line-out Jack

Pin	Signal Name	Pin	Signal Name
1	GND	2	LINE2_L
3	LINE2_R	4	LINE2_JD
5	GND	6	N/C

SPI_ROM1: SPI ROM header

This 8 Mb ROM contains the programmable BIOS program.

Pin	Signal Name	Function
1	CHIPSELECT	Select chip
2	VCC	VCC
3	DATAOUTPUT	data output
4	HOLD	hold
5	WRITE PROTECT	BIOS write protect
6	CLOCK	clock
7	CND	CND
8	DATAINPUT	data input

COM1: Onboard serial port header

Connect a serial port extension bracket to this header to add a second serial port to your system.

Pin	Signal Name	Function
1	DCDB	Data Carrier Detect
2	DSRB	Data Set Ready
3	SINB	Serial Input
4	RTSB	RART B Request to Send
5	SOUTB	UART B Serial Output
6	CTSB	Clear to Send
7	DTRB	UART B Data Terminal Ready
8	RI	Ring Indicator
9	Key	No pin
10	GND	Ground

TV1: External S-VIDEO Header (optional)

Pin	Signal Name
1	S_VIDEO_Y
2	S_VIDEO_C
3	AUDIO_R_IN
4	GND
5	AUDIO_L_IN
6	AV_IN
7	GND
8	GND
9	Key
10	GND

FUSB1~4: Front Panel USB Ports

The motherboard has four USB ports installed on the rear edge I/O port array. Additionally, some computer cases have USB ports at the front of the case. If you have this kind of case, use auxiliary USB connector to connect the front-mounted ports to the motherboard.

Pin	Signal Name	Pin	Signal Name
1	VCC	2	data-
3	data+	4	gnd
5	vcc	6	data-
7	data+	8	gnd



Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

Installing the Motherboard

Installing SATA_HDD/SATA_ODD

About SATA_HDD1 Connector

This motherboard features one SATA HDD1 connector supporting one drive, and you can connect a hard disk drive to the SATA_HDD1 port.



About SATA_ODD1 Connector

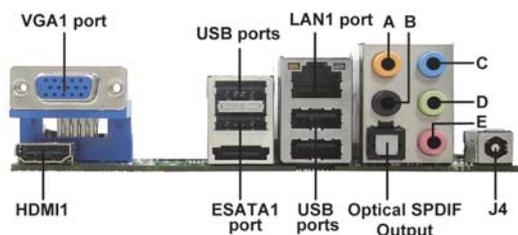
This motherboard features one SATA ODD1 connector supporting one drive, and you can connect a hard disk drive to the SATA_ODD1 port.



Installing the Motherboard

Connecting I/O Devices

The backplane of the motherboard has the following I/O ports:



- VGA1 Port** Connect your monitor to the VGA port.
- HDMI Port** Connect the HDMI port to the HDMI devices.
- USB Ports** Use the USB ports to connect USB devices.
- ESATA1 Port** Use this port to connect to an external SATA box or a Serial ATA port multiplier.
-  *It is suggested that users use the eSATA hard disk with external power.*
- LAN1 Port** Connect an RJ-45 jack to the LAN port to connect your computer to the network.
- J4** Connect a DC-in jack to J4.
- Optical SPDIF Output** This jack connects to external optical digital audio output devices.
- Audio Ports** Use the audio jacks to connect audio devices. The C port is for stereo line-in signal, while the E port is for microphone in signal. This motherboard supports audio devices that correspond to the A, B and D port respectively. In addition, all of the 3 ports, B, and D provide users with both right & left channels individually. Users please refer to the following note for specific port function definition.



A : Center & Woofer	D : Front Out
B : Back Surround	E : Mic_in Rear
C : Line-in	-

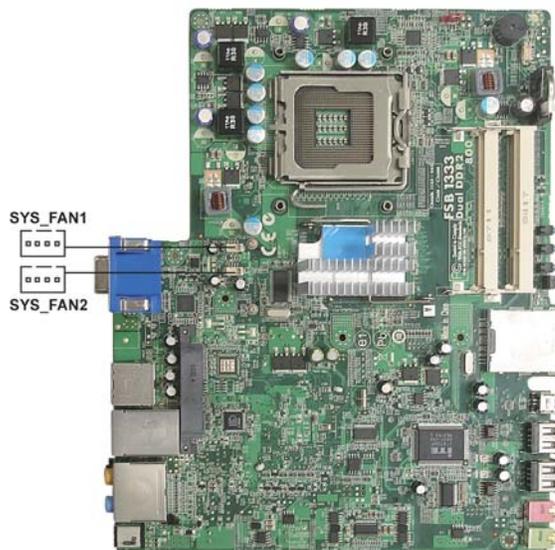
The above port definition can be changed to audio input or audio output by changing the driver utility setting.

Installing the Motherboard

Connecting Case Components

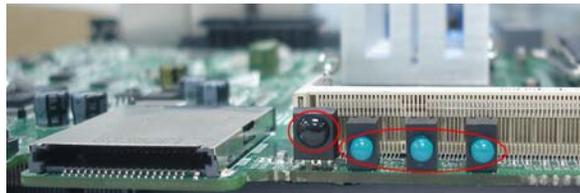
After you have installed the motherboard into a case, you can begin connecting the motherboard components. Refer to the following:

- 1 Connect the system cooling fan connector to **SYS_FAN1/2**.



SYS_FAN1~2: System Cooling FAN Power Connectors

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor
4	PWM	CPU FAN control

IR1/LED1~3**IR1 (Infrared Receiver)**

The IR1 can be used to receive remote control signal.

Pin	Signal Name
1	IR_RX
2	GND
3	VCC

LED1 (CARD READER LED)

The LED1 can be used to indicate CARD READER status. The LED keeps blinking when the CARD READER is in Active state.

System Status	LED
Active	Blinking

LED2 (LAN LED)

The LED2 can be used to indicate LAN status. The LED keeps blinking when the LAN is in Active state.

System Status	LED
Active	Blinking

LED3 (HDD LED)

The LED3 can be used to indicate HDD status. The LED keeps blinking when the HDD is in Active state.

System Status	LED
Active	Blinking

This concludes Chapter 2. The next chapter covers the BIOS.

Memo

Installing the Motherboard

Chapter 3

Using BIOS

About the Setup Utility

The computer uses the latest “American Megatrends Inc.” BIOS with support for Windows Plug and Play. The CMOS chip on the motherboard contains the ROM setup instructions for configuring the motherboard BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays the system’s configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power Management features

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

The Standard Configuration

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:

- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security Setup

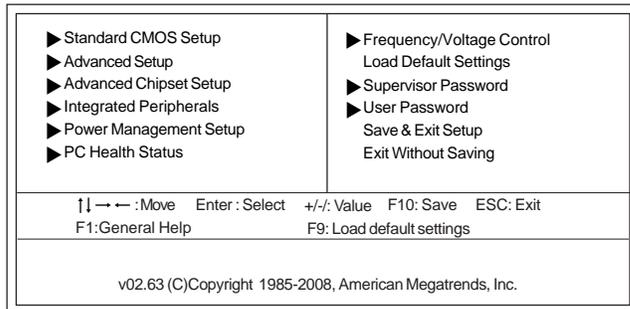
Entering the Setup Utility

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

Press DEL to enter SETUP

Press the delete key to access the BIOS Setup Utility.

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.



Using BIOS

When you start the Setup Utility, the main menu appears. The main menu of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a triangle ►) lead to submenus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the submenu.

In this manual, default values are enclosed in parenthesis. Submenu items are denoted by a triangle ►.



The default BIOS setting for this motherboard applies for most conditions with optimum performance. It is not suggested to change the default values in the BIOS setup and the manufacture takes no responsibility to any damage caused by changing the BIOS settings.

BIOS Navigation Keys

The BIOS navigation keys are listed below:

KEY	FUNCTION
ESC	Exits the current menu
↑↓←→	Scrolls through the items on a menu
+/-/	Modifies the selected field's values
Enter	Select
F9	Loads an optimized setting for better performance
F10	Saves the current configuration and exits setup
F1	Displays a screen that describes all key functions

Using BIOS



For the purpose of better product maintenance, the manufacture reserves the right to change the BIOS items presented in this manual. The BIOS setup screens shown in this chapter are for reference only and may differ from the actual BIOS. Please visit the manufacture's website for updated manual.

Standard CMOS Setup

This option displays basic information about your system.

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Standard CMOS Setup

Date		Wed 11/05/2008	Help Item
Time		23:55:03	Use [ENTER], [TAB] or [SHIFT-TAB] to select a field. Use [+] or [-] to configure system Time.
▶ SATA 1	Hard Disk		
▶ SATA 2	ATAPI CDROM		
▶ ESATA	Not Detected		
IDE BusMaster	Enabled		

↑↓ → ←: Move Enter: Select +/-: Value F10: Save ESC: Exit
F1: General Help F9: Load default settings

Date & Time

The Date and Time items show the current date and time on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

▶ SATA Devices

This motherboard supports two SATA channels and each channel allows one SATA device to be installed. Use these items to configure each device on the SATA channel.

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
SATA1

SATA1		Help Item
Device	: Hard Disk	Select the type of device connected to the system.
Vendor	: HTS541060G9SA00	
Size	: 60.0GB	
LBA Mode	: Supported	
Block Mode	: 16Sectors	
PIO Mode	: 4	
Async DMA	: MultiWord DMA-2	
Ultra DMA	: Ultra DMA-5	
S.M.A.R.T.	: Supported	
Type	: Auto	
LBA/Large Mode	: Auto	
Block (Multi-Sector Transfer)	: Auto	
PIO Mode	: Auto	
DMA Mode	: Auto	
S.M.A.R.T.	: Auto	
32Bit Data Transfer	: Enabled	

↑↓ → ←: Move Enter: Select +/-: Value F10: Save ESC: Exit
F1: General Help F9: Load default settings

Using BIOS

Type (Auto)

Use this item to configure the type of the IDE device that you specify. If the feature is enabled, it will enhance hard disk performance by reading or writing more data during each transfer.

LBA/Large Mode (Auto)

Use this item to set the LBA/Large mode to enhance hard disk performance by optimizing the area the hard disk is visited each time.

Block (Multi-Sector Transfer) (Auto)

If the feature is enabled, it will enhance hard disk performance by reading or writing more data during each transfer.

PIO Mode (Auto)

Use this item to set the PIO mode to enhance hard disk performance by optimizing the hard disk timing.

DMA Mode (Auto)

DMA capability allows user to improve the transfer-speed and data-integrity for compatible IDE devices.

S.M.A.R.T. (Auto)

The S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) system is a diagnostics technology that monitors and predicts device performance. S.M.A.R.T. software resides on both the disk drive and the host computer.

32Bit Data Transfer (Enabled)

Use this item to enable or disable 32Bit Data Transfer.

Press <Esc> to return to the Standard CMOS Setup page.

IDE BusMaster (Enabled)

This item enables or disables the DMA under DOS mode. We recommend you to leave this item at the default value.

Press <Esc> to return to the main menu setting page.

Advanced Setup

This page sets up more advanced information about your system. Handle this page with caution. Any changes can affect the operation of your computer.

Please be noted that there are two pictures of the Advanced Setup page. Move the scroll bar up and down to scan all the items.

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Advanced Setup

Thermal Management	Enabled	▲ ▬ ▼	Help Item
TM Status	TM1/TM2		Include ACPI APIC table pointer to RSDT pointer list.
Limit CPUID MaxVal	Disabled		
Enhanced Halt (C1E)	Enabled		
Intel EIST	Enabled		
Quick Power on Self Test	Enabled		
Boot Up Numlock Status	On		
APIC Mode	Enabled		
1st Boot Device	Hard Drive		
2nd Boot Device	CD/DVD		
▶ Hard Disk Drives	Press Enter		
▶ CD/DVD Drives	Press Enter		
Boot Other Device	Yes		
TCG/TPM SUPPORT	Yes		
Execute TPM Command	Don't change		
Clearing the TPM	Press Enter		
TPM Enable/Disable Status	Enabled		
TPM Owner Status	UnOwned		

↑↓ → ← : Move Enter: Select +/-: Value F10: Save ESC: Exit
F1: General Help F9: Load default settings

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Advanced Setup

Intel EIST	Enabled	▲ ▬ ▼	Help Item
Quick Power on Self Test	Enabled		When disabled, force the XD feature flag to always return 0.
Boot Up Numlock Status	On		
APIC Mode	Enabled		
1st Boot Device	Hard Drive		
2nd Boot Device	CD/DVD		
▶ Hard Disk Drives	Press Enter		
▶ CD/DVD Drives	Press Enter		
Boot Other Device	Yes		
TCG/TPM SUPPORT	Yes		
Execute TPM Command	Don't change		
Clearing the TPM	Press Enter		
TPM Enable/Disable Status	Enabled		
TPM Owner Status	UnOwned		
Intel XD Bit	Disabled		
Intel Virtualization Technol	Enabled		
Intel AMT	Enabled		
ASF	Enabled		

↑↓ → ← : Move Enter: Select +/-: Value F10: Save ESC: Exit
F1: General Help F9: Load default settings

Thermal Management (Enabled)

This item displays CPU's temperature and enables you to set a safe temperature to Prescott CPU.

TM Status (TM1/TM2)

This item shows TM function status if CPU can support TM function.

Limit CPUID MaxVal (Disabled)

Use this item to enable or disable the Max CPU ID value limit. When supports Prescott and LGA775 CPUs, enables this to prevent the system from "rebooting" when trying to install Windows NT 4.0.

Enhanced Halt (C1E) (Enabled)

This item enables or disables enhanced halt (C1E).

Intel EIST (Enabled)

This item allows users to enable or disable the EIST (Enhanced Intel SpeedStep technology).

Quick Power on Self Test (Enabled)

Enable this item to shorten the power on testing (POST) and have your system start up faster. You might like to enable this item after you are confident that your system hardware is operating smoothly.

Boot Up Numlock Status (On)

This item defines if the keyboard Num Lock key is active when your system is started.

APIC Mode (Enabled)

This item allows you to enable or disable the APIC (Advanced Programmable Interrupt Controller) mode. APIC provides symmetric multi-processing (SMP) for systems, allowing support for up to 60 processors.

1st/2nd Boot Device (Hard Drive/CD/DVD)

Use this item to determine the device order the computer used to look for an operating system to load at start-up time. The devices showed here will be different depending on the exact devices installed on your motherboard.

► Hard Disk Drives (Press Enter)

Scroll to this item and press <Enter> to view the following screen:

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Hard Disk Drives

Hard Disk Drives	Help Item
1st Drive SATA: PM-HTS541060G9	Specifies the boot sequence from the available devices.

↑↓ → ← : Move Enter : Select +/- : Value F10: Save ESC: Exit
F1: General Help F9: Load default settings

Press <Esc> to return to the Advanced Setup page.

► CD/DVD Drives (Press Enter)

Scroll to this item and press <Enter> to view the following screen:

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
CD/DVD Drives

CD/DVD Drives	Help Item
1st Drive CD/DVD: SM-Optiarc D	Specifies the boot sequence from the available devices.

↑↓ → ← : Move Enter : Select +/- : Value F10: Save ESC: Exit
F1: General Help F9: Load default settings

Press <Esc> to return to the Advanced Setup page.

Boot Other Device (Yes)

When enabled, the system searches all other possible locations for an operating system if it fails to find one in the devices specified under the First, Second and Third boot devices.

TCG/TPM SUPPORT (Yes)

This item is set to support the TCG (Trusted Computing Group) and TPM (Trusted Platform Module) function.

Execute TPM Command (Don't change)

This item is set to execute TPM command, and it is strongly recommended that you leave it as default value.

Clearing the TPM (Press Enter)

When TPM is enabled, the item can clear TPM.

TPM Enable/Disable Status (Enabled)

This item displays the TPM status to be enable/disable.

TPM Owner Status (UnOwned)

This item displays the TPM to be owned or not.

Intel XD Bit (Disabled)

This item allows users to enable or disable the Intel XD bit.

Intel Virtualization Technol (Enabled)

Hardware Virtualization Technology enables processor feature for running multiple simultaneous Virtual Machines allowing specialized software applications to run in full isolation of each other.

Intel AMT (Enabled)

This item enables or disables Intel AMT (Active Management Technology) support.

ASF (Enabled)

This item enables or disables ASF (Alert Standard Format) management controller.

Press <Esc> to return to the main menu setting page.

Advanced Chipset Setup

This page sets up more advanced information about your system. Handle this page with caution. Any changes can affect the operation of your computer.

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Advanced Chipset Setup

DRAM Frequency	Auto	Help Item
Configure DRAM Timing by SPD	Enabled	
Share Memory Size	64MB	Options
DVMT/FIXED Memory	256MB	
Memory Remap Feature	Enabled	Auto
HPET	Enabled	667 MHz
▶ME Subsystem Configuration	Press Enter	800 MHz

↑↓ → ←: Move Enter: Select +/-: Value F10: Save ESC: Exit
F1: General Help F9: Load default settings

DRAM Frequency (Auto)

This item enables users to adjust the DRAM frequency. The default setting is auto and we recommend users leave the setting unchanged. Modify it at will may cause the system to be unstable.

Configure DRAM Timing by SPD (Enabled)

When this item is set to enable, the DDR timing is configured using SPD. SPD (Serial Presence Detect) is located on the memory modules, BIOS reads information coded in SPD during system boot up.

Using BIOS

Share Memory Size (64MB)

This item lets you allocate a portion of the main memory for the onboard VGA display application.

DVMT/FIXED Memory (256MB)

When set to Fixed Mode, the graphics driver will reserve a fixed portion of the system memory as graphics memory. When set to DVMT Mode, the graphics chip will dynamically allocate system memory as graphics memory, according to system and graphics requirements.

Memory Remap Feature (Enabled)

This item allows you to remap the overlapped PCI memory above the total physical memory if you have a 64 bit OS and 8 GB of RAM.

HPET (Enabled)

This item enables or disables HPET (High Precision Event Timer) support.

► ME Subsystem Configuration (Press Enter)

This page sets up some parameters for ME use.

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.

ME Subsystem Configuration

ME Subsystem Configuration		Help Item
BootBlock HECI Message	Enabled	Options Disabled Enabled
HECI Message	Enabled	
End Of Post S5 HECI Message	Enabled	
ME HECI Configuration		
ME-HECI	Enabled	
ME-IDER	Disabled	
ME-KT	Disabled	

↑↓ → ←: Move Enter: Select +/-: Value F10: Save ESC: Exit
F1: General Help F9: Load default settings

BootBlock HECI Message (Enabled)

Use this item to enable or disable bootblock HECI (Host Manageability Engine Communication Interface) message.

HECI Message (Enabled)

This item allows you to enable or disable HECI (Host Manageability Engine Communication Interface) message.

End Of Post S5 HECI Message (Enabled)

This item allows users to enable or disable end of post S5 HECI (Host Manageability Engine Communication Interface) Message.

ME-HECI (Enabled)

Use this item to enable or disable ME-HECI (Management Engine-Host Management Engine Communication Interface). HECI provides an interface for host software and ME firmware communication.

ME-IDER (Disabled)

Use this item to enable or disable ME-IDER (Management Engine-IDE redirection).

ME-KT (Disabled)

Use this item to enable or disable ME-KT (Management Engine-Keyboard Text Redirection).

Press <Esc> to return to the main menu setting page.

Integrated Peripherals

This page sets up some parameters for peripheral devices connected to the system.

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Integrated Peripherals

Onboard SATA Controller	Enabled	Help Item
Onboard SATA Mode	IDE	
Onboard LAN Function	Enabled	Options
Onboard LAN Boot ROM	Disabled	
Onboard AUDIO function	Enabled	Disabled
Onboard 1394 Function	Enabled	Enabled

↑↓←→: Move Enter: Select +/-: Value F10: Save ESC: Exit
F1: General Help F9: Load default settings

Onboard SATA Controller (Enabled)

This item allows you to enable or disable the onboard SATA controller.

Onboard SATA Mode (IDE)

Use this item to select the mode of the Serial ATA.

Onboard LAN Function (Enabled)

Use this item to enable or disable the onboard LAN function.

Onboard LAN Boot ROM (Disabled)

Use this item to enable or disable the booting from the onboard LAN with a remote boot.

Onboard AUDIO function (Enabled)

Use this item to enable or disable the onboard Audio function.

Onboard 1394 Function (Enabled)

Use this item to enable or disable the onboard 1394 function.

Press <Esc> to return to the main menu setting page.

Power Management Setup

This page sets up some parameters for system power management operation.

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Power Management Setup

	S3	Help Item
ACPI Suspend Type	Instant Off	Select the ACPI state used for System Suspend.
Soft-off by PWR-BTTN	Power Off	
PWRON After PWR-Fail	Disabled	
Resume by RING	Disabled	
Resume By PCI/PCI-E/Lan PME	Disabled	
Resume By USB (S3)	Disabled	
Resume on RTC Alarm	Disabled	

↑↓ → ←: Move Enter: Select +/-: Value F10: Save ESC: Exit
F1: General Help F9: Load default settings

ACPI Suspend Type (S3)

Use this item to define how your system suspends. In the default, S3, the suspend mode is a suspend to RAM.

Soft-off by PWR-BTTN (Instant Off)

If the item is set to Instant-Off, then the power button causes a software power down. If the item is set to Delay 4 Sec, then you have to hold the power button down for four seconds to cause a software power down.

PWRON After PWR-Fail (Power Off)

This item enables your computer to automatically restart or not after system power off by AC power lose.

Resume by RING (Disabled)

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

Resume By PCI/PCI-E/Lan PME (Disabled)

These items specify whether the system will be awakened from power saving modes when activity or input signal of the specified hardware peripheral or component is detected.

Resume By USB (S3) (Disabled)

This item allows users to enable or disable the USB device Walk-up from S3 mode.

Resume on RTC Alarm (Disabled)

If you enable this item, the system can automatically resume at a fixed time based on the system's RTC (realtime clock). Use the items below this one to set the date and time of the wake-up alarm.

Press <Esc> to return to the main menu setting page.

PC Health Status

On motherboards support hardware monitoring, this item lets you monitor the parameters for critical voltages, temperatures and fan speeds.

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
PC Health Status

-- System Hardware Monitor --		Help Item
▶ Smart Fan Function	Press Enter	
Smart Fan	Enabled	
Shutdown Temperature	Disabled	
Warning Temperature	Disabled	
CPU Temperature	: 40°C/104°F	
System Temperature	: 29°C/84°F	
SYS_FAN1 Speed	: 1901 RPM	
SYS_FAN2 Speed	: 2070 RPM	
CPU VCore	: 1.296 V	
VDIMM	: 1.845 V	

↑↓ → ←: Move Enter: Select +/-: Value F10: Save ESC: Exit
F1: General Help F9: Load default settings

▶ Smart Fan Function (Press Enter)

Scroll to this item and press <Enter> to view the following screen:

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Smart Fan Function

		Help Item
SMART Fan start PWM value	58	
SMART Fan start TEMP. (°C)	55	
CPU DeltaT	+3	
SMART Fan Slope PWM value	4PWM value/°C	

↑↓ → ←: Move Enter: Select +/-: Value F10: Save ESC: Exit
F1: General Help F9: Load default settings

SMART Fan start PWM value (58)

This item is used to set the start PWM value of the smart fan.

SMART Fan start TEMP. (°C) (55)

This item is used to set the start temperature of the smart fan.

CPU DeltaT (+3)

This item specifies the range that controls CPU temperature and keeps it from going so high or so low when smart fan works.

SMART Fan Slope PWM value (4 PWM value/°C)

This item is used to set the Slope Select PWM of the smart fan.

Press <Esc> to return to the PC Health Status page.



This motherboard supports the latest PECI host technology. While using Core™ 2 Duo or Celeron™ CPU, the original images of the BIOS item “PC Health Status” and “Smart FAN Function” will be replaced by PECI mode and negative number. (The max data from PECI is -1.)

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
PC Health Status

-- System Hardware Monitor--		Help Item
▶ Smart Fan Function	Press Enter	
Smart Fan	Enabled	
System Temperature	: 36°C/96°F	
SYS_FAN1 Speed	: 2020 RPM	
SYS_FAN2 Speed	: 2170 RPM	
CPU VCore	: 1.200 V	
VDIMM	: 1.845 V	
-- PECI Mode--		
Offset to TCC Activation Temp.:	-51	

↑↓ → ←: Move Enter: Select +/-: Value F10: Save ESC: Exit
F1: General Help F9: Load default settings

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Smart Fan Function

		Help Item
SMART Fan start PWM value	60	
SMART Fan start Offset (-)	-30	
CPU DeltaT	+3	
Fan1 Slope PWM value/1 Unit	4	

↑↓ → ←: Move Enter: Select +/-: Value F10: Save ESC: Exit
F1: General Help F9: Load default settings

Press <Esc> to return to the PC Health Status page.

Using BIOS

Smart Fan (Enabled)

If enable, fan speed will speed-up or slow-down according the temperature.

Shutdown Temperature (Disabled)

This item enables you to set the maximum temperature the system can reach before powering down.

Warning Temperature (Disabled)

This item enables or disables the warning temperature.

System Component Characteristics

These items display the monitoring of the overall inboard hardware health events, such as System & CPU temperature, CPU & DIMM voltage, CPU & system fan speed,...etc.

- CPU Temperature
- System Temperature
- SYS_FAN1/2 Speed
- CPU VCore
- VDIMM

Press <Esc> to return to the main menu setting page.

Frequency/Voltage Control

This page enables you to set the clock speed and system bus for your system. The clock speed and system bus are determined by the kind of processor you have installed in your system.

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Frequency/Voltage Control

Manufacturer : Intel Ratio Actual Value: 8 CPU Frequency Setting : 333MHz Auto Detect DIMM/PCI Clock Enabled Spread Spectrum Enabled	Help Item Options Disabled Enabled
--	---

↑↓←→: Move Enter: Select +/-: Value F10: Save ESC: Exit
F1: General Help F9: Load default settings

Manufacturer (Intel)

This item displays the information of current manufacturer of the CPU installed in your computer.

Ratio Actual Value (8)

This item shows the actual ratio of the CPU installed in your System.

CPU Frequency Setting (333MHz)

This item indicates the current CPU frequency. Users can not make any change to this item. Please note that the frequency will be varied with different CPU.

Auto Detect DIMM/PCI Clock (Enabled)

When this item is enabled, BIOS will disable the clock signal of free DIMM/PCI slots.

Spread Spectrum (Enabled)

If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system.

Press <Esc> to return to the main menu setting page.

Load Default Settings

This option opens a dialog box to ask if you are sure to install optimized defaults or not. You select [OK], and then <Enter>, the Setup Utility loads all default values; or select [Cancel], and then <Enter>, the Setup Utility does not load default values.

Supervisor Password

This page helps you install or change a password.

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Supervisor Password

Supervisor Password : Not Installed	Help Item
Change Supervisor Password Press Enter	Install or Change the password.

↑↓ → ←: Move Enter: Select +/-: Value F10: Save ESC: Exit
F1: General Help F9: Load default settings

Supervisor Password (Not Installed)

This item indicates whether a supervisor password has been set. If the password has been installed, *Installed* displays. If not, *Not Installed* displays.

Change Supervisor Password (Press Enter)

You can select this option and press <Enter> to access the sub menu. You can use the sub menu to change the supervisor password.

Press <Esc> to return to the main menu setting page.

User Password

This page helps you install or change a password.

CMOS Setup Utility - Copyright (C) 1985-2008, American Megatrends, Inc.
User Password

User Password : Not Installed	Help Item
Change User Password Press Enter	Install or Change the password.

↑↓←→: Move Enter: Select +/-: Value F10: Save ESC: Exit
F1: General Help F9: Load Default Settings

User Password (Not Installed)

This item indicates whether a user password has been set. If the password has been installed, *Installed* displays. If not, *Not Installed* displays.

Change User Password (Press Enter)

You can select this option and press <Enter> to access the sub menu. You can use the sub menu to change the supervisor password. This item will show if Supervisor Password is set.

Press <Esc> to return to the main menu setting page.

Save & Exit Setup

Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility. When the Save and Exit dialog box appears, select [OK] to save and exit, or select [Cancel] to return to the main menu.

Exit Without Saving

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility. When the Exit Without Saving dialog box appears, select [OK] to discard changes and exit, or select [Cancel] to return to the main menu.



If you have made settings that you do not want to save, use the “Exit Without Saving” item and select [OK] to discard any changes you have made.

Updating the BIOS

You can download and install updated BIOS for this motherboard from the manufacturer's Web site. New BIOS provides support for new peripherals, improvements in performance, or fixes for known bugs. Install new BIOS as follows:

- 1 If your motherboard has a BIOS protection jumper, change the setting to allow BIOS flashing.
- 2 If your motherboard has an item called Firmware Write Protect in Advanced BIOS features, disable it. (Firmware Write Protect prevents BIOS from being overwritten.)
- 3 Create a bootable system disk. (Refer to Windows online help for information on creating a bootable system disk.)
- 4 Download the Flash Utility and new BIOS file from the manufacturer's Web site. Copy these files to the system diskette you created in Step 3.
- 5 Turn off your computer and insert the system diskette in your computer's diskette drive.
- 6 At the A:\ prompt, type the Flash Utility program name and the file name of the new bios and then press <Enter>. Example: AMINF340.EXE 040706.ROM
- 7 Restart your computer when the installation is complete. If your motherboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten. The computer will restart automatically.
- 8 You also can follow readme.txt or execute bath file directly to do a simple BIOS flash.

This concludes Chapter 3. Refer to the next chapter for information on the software supplied with the motherboard.

Memo

Using BIOS

Chapter 4

Using the Motherboard Software

About the Software CD-ROM

The support software CD-ROM that is included in the motherboard package contains all the drivers and utility programs needed to properly run the bundled products. Below you can find a brief description of each software program, and the location for your motherboard version. More information on some programs is available in a README file, located in the same directory as the software. Before installing any software, always inspect the folder for files named README.TXT, INSTALL.TXT, or something similar. These files may contain important information that is not included in this manual.



1. *Never try to install all software from folder that is not specified for use with your motherboard.*
2. *The notice of Intel HD audio installation (optional): The Intel High Definition audio functionality unexpectedly quits working in Windows Server 2003 Service Pack 1 or Windows XP Professional x64 Edition. Users need to download and install the update packages from the Microsoft Download Center “before” installing HD audio driver bundled in the Driver CD. Please log on to <http://support.microsoft.com/default.aspx?scid=kb;en-us;901105#appliesto> for more information.*

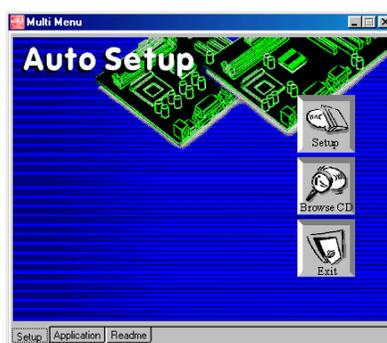
Auto-installing under Windows Vista

The Auto-install CD-ROM makes it easy for you to install the drivers and software for your motherboard.



If the Auto-install CD-ROM does not work on your system, you can still install drivers through the file manager for your OS (for example, Windows Explorer). Refer to the Utility Folder Installation Notes later in this chapter.

The support software CD-ROM disc loads automatically under Windows Vista. When you insert the CD-ROM disc in the CD-ROM drive, the autorun feature will automatically bring up the install screen. The screen has three buttons on it, Setup, Browse CD and Exit.



If the opening screen does not appear; double-click the file “setup.exe” in the root directory.

Using the Motherboard Software

Setup Tab

Setup	Click the Setup button to run the software installation program. Select from the menu which software you want to install.
Browse CD	<p>The Browse CD button is the standard Windows command that allows you to open Windows Explorer and show the contents of the support CD.</p> <p>Before installing the software from Windows Explorer, look for a file named README.TXT, INSTALL.TXT or something similar. This file may contain important information to help you install the software correctly.</p> <p>Some software is installed in separate folders for different operating systems.</p> <p>In installing the software, execute a file named SETUP.EXE or INSTALL.EXE by double-clicking the file and then following the instructions on the screen.</p>
Exit	The Exit button closes the Auto Setup window.

Application Tab

Lists the software utilities that are available on the CD.

Read Me Tab

Displays the path for all software and drivers available on the CD.

Running Setup

Follow these instructions to install device drivers and software for the motherboard:

1. Click **Setup**. The installation program begins:

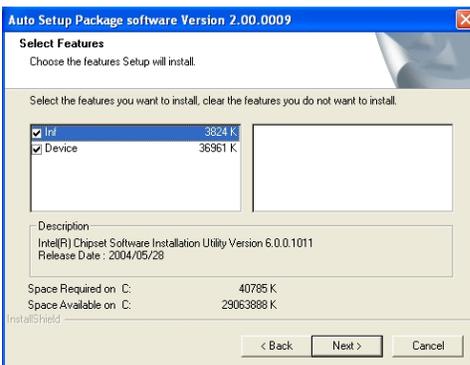


The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.

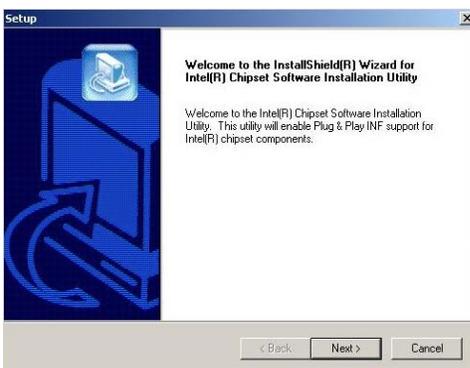
The motherboard identification is located in the upper left-hand corner.

Using the Motherboard Software

2. Click **Next**. The following screen appears:



3. Check the box next to the items you want to install. The default options are recommended.
4. Click **Next** run the Installation Wizard. An item installation screen appears:



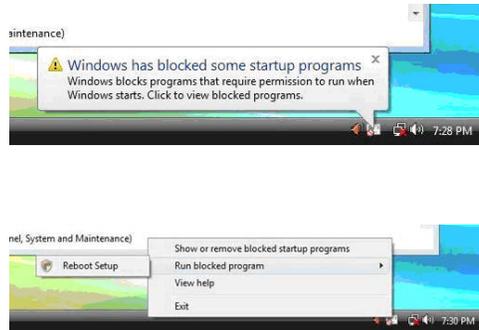
5. Follow the instructions on the screen to install the items.



1. Drivers and software are automatically installed in sequence. Follow the onscreen instructions, confirm commands and allow the computer to restart a few times to complete the installation.
2. During the Windows Vista Driver Auto Setup Procedure, users should use one of the following two methods to install the driver after the system restart.

Method 1. Run Reboot Setup

Windows Vista will block startup programs by default when installing drivers after the system restart. You must select taskbar icon **Run Blocked Program** and run **Reboot Setup** to install the next driver, until you finish all drivers installation.



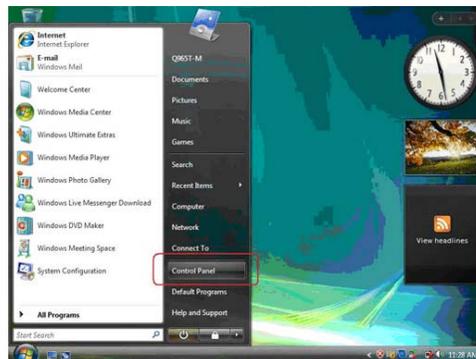
Method 2. Disable UAC (User Account Control)

* For administrator account only. Standard user account can only use Method 1.

Disable Vista UAC function before installing drivers, then use CD driver to install drivers, it will continue to install drivers after system restart without running blocked programs.

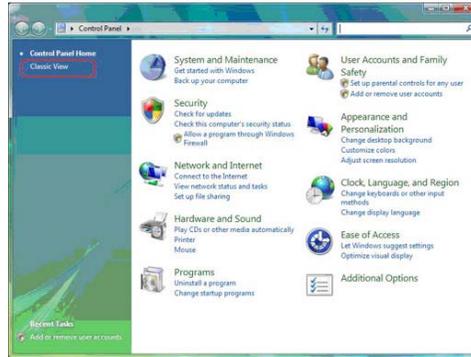
Follow these instructions to Disable Vista UAC function:

1. Go to **Control Panel**.

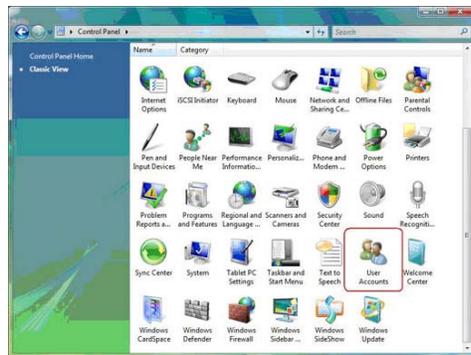


Using the Motherboard Software

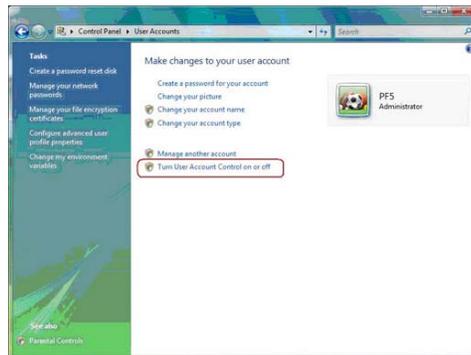
2. Select **Classic View**.



3. Set **User Account**.

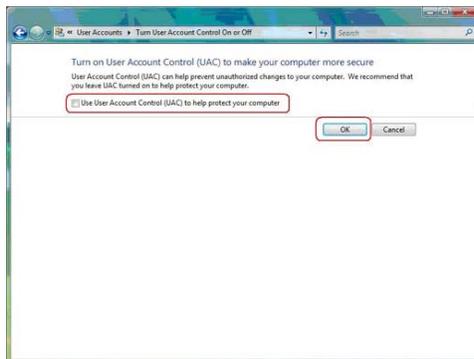


4. Select **Turn User Account Control on or off** and press **Continue**.



Using the Motherboard Software

5. Disable **User Account Control (UAC) to help protect your computer** item and press **OK**, then press **Restart Now**. Then you can restart your computer and continue to install drivers without running blocked programs.



Manual Installation

Insert the CD in the CD-ROM drive and locate the PATH.DOC file in the root directory. This file contains the information needed to locate the drivers for your motherboard.

Look for the chipset and motherboard model; then browse to the directory and path to begin installing the drivers. Most drivers have a setup program (SETUP.EXE) that automatically detects your operating system before installation. Other drivers have the setup program located in the operating system subfolder.

If the driver you want to install does not have a setup program, browse to the operating system subfolder and locate the readme text file (README.TXT or README.DOC) for information on installing the driver or software for your operating system.

Utility Software Reference

All the utility software available from this page is Windows compliant. They are provided only for the convenience of the customer. The following software is furnished under license and may only be used or copied in accordance with the terms of the license.

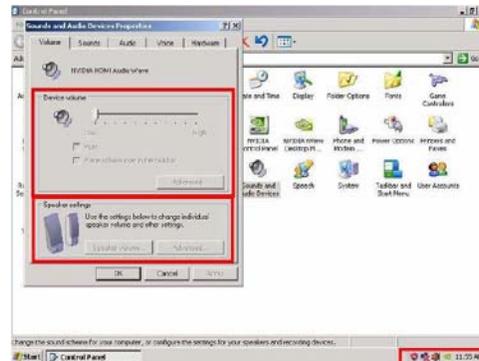


These software(s) are subject to change at anytime without prior notice. Please refer to the support CD for available software.

HDMI Audio setting SOP

OS: XP system

1. Control Panel-->Sound and Audio Device Properties



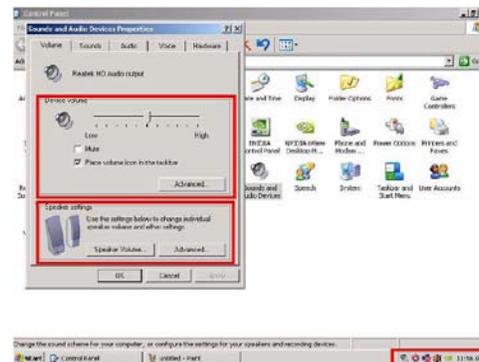
2. a. Audio--> Sound playback--> Default device--> HD Audio Output

b. Audio--> Sound playback--> Default device--> HDMI Audio Output



3. a. User Playback Audio speaker function working

b. User Playback HDMI speaker function working



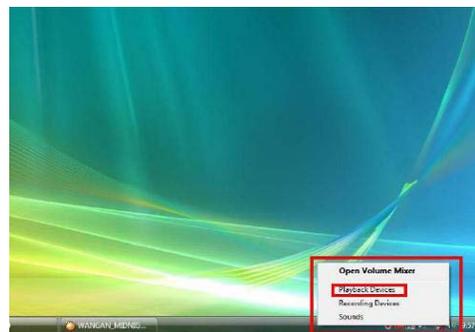
Using the Motherboard Software

OS: Vista system

Control Panel--> Sound--> Digital Output Device (HDMI) --> Set Default



1. Volume --> Playback



2. Digital Output Device (HDMI) --> Set Default --> OK

User HDMI Playback function working



Using the Motherboard Software

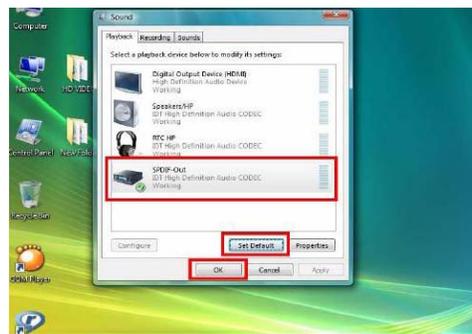
3. Speaker --> Set Default --> OK

User Speaker Palyback function working



4. SPDIF-Out --> Set Default --> OK

User SPDIF-Out Playback function working



This concludes chapter 4.

Using the Motherboard Software

Memo

Chapter 5

Intel® Remote Wake Technology

About the Intel® Remote Wake Technology

Intel® Remote Wake Technology enables remote wake up of your home computer from energy efficient sleep mode by enabled programs over the Internet.

While outside your home, with an Intel Remote Wake Technology (IRWT) enabled program, you can wake up your computer from sleep mode. Upon the PC awakening, you can access photos, music, movies, and documents through third party enabled programs. These enabled programs can also wake your computer for backup or tune up services, VoIP calls as well as a variety of other uses.

With Intel® Remote Wake Technology users will be able to reduce wasted energy, by keeping their home PCs in energy-efficient sleep mode rather than fully powered on, all the while still able to remotely access their PCs while on the road.

Intel Remote Wake Technology requires:

- Windows Vista Premium or Vista Ultimate (32-bit/64-bit)
- home PC to be in “Standby” (S3) or fully on mode,
- always-on internet connection. Works with existing/standard home network router
- Intel LAN onboard
- 3rd party IRWT enabled program and services (Cyberlink, ORB, Jajah)



Note: The following pages assumes Cyberlink Live, available from Cyberlink Corp., as an example of 3rd party IRWT enabled programs. Users are advised to refer to the user manual for the 3rd party enabled programs for detail installation and setup.

IRWT Installation and Setup

Driver and Software Installation

1. Install IRWT driver from bundled CD. When complete, an IRWT applet will appear in the Control Panel. Click **Start --> Control Panel**, you will find the Intel Remote Wake Technology applet.



2. Connect to internet and install Cyberlink Live. You will be required to create a member account that you can use to remotely wake up this PC over the internet. Follow the step-by-step installation process shown on the screen till complete.

3. After installation, you can find the Cyberlink icon in the taskbar.

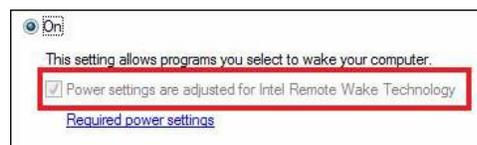


Getting Ready for Remote Wake

1. Verify that Intel Remote Wake Technology is turned on:
 - a. Click **Start --> Control Panel --> Network and Internet**.
 - b. Double-click the **Intel Remote Wake Technology** applet.
 - c. On the **General** tab, select **On**, then click **OK**.



- d. Ensure also the item **Power setting are adjusted for Intel Remote Technology** is checked. This item is grayed when condition is normal.

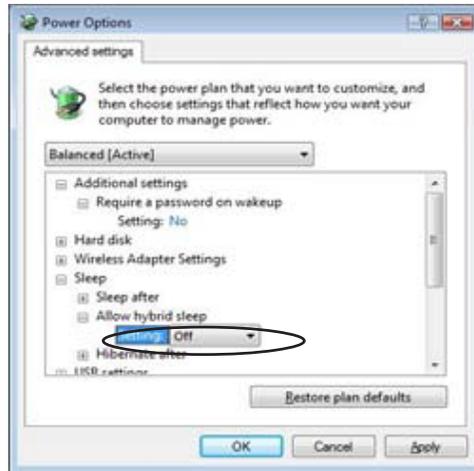


- e. Click on the **Programs** tab and verify that **Cyberlink Live** is checked.



Intel® Remote Wake Technology

2. Verify that Hybrid Sleep is disabled in Windows Vista.
 - a. Click **Start --> Control Panel --> Power Options**
 - b. Set **Allow hybrid sleep** to **Off**. This will allow Windows Vista to enter pure Sleep mode.



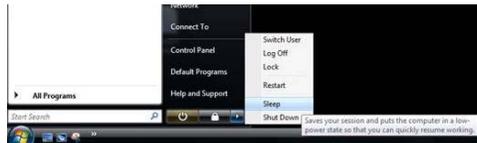
3. Verify that your computer has a wired Internet connection. IRWT requires an always on wired Internet connection while your computer is in sleep mode. Your computer must be configured to obtain an IP (Internet Protocol) address automatically using DHCP (Dynamic Host Configuration Protocol). To configure your network settings for Intel Remote Wake Technology:
 - a. Click **Start --> Control Panel --> Network and Internet**.
 - b. Click **Network and Sharing Center**.
 - c. Select your network connection and click **View status**.
 - d. Click **Properties**.
 - e. Select **Internet Protocol Version 4 (TCP/IPv4)**, and then click **Properties**.
 - f. Confirm that **Obtain an IP address automatically** is selected.

4. Verify that Cyberlink Live is ready for IRWT.
 - a. Connect to internet and ensure the Cyberlink Live icon is ready.
 - b. Click on the Cyberlink Live icon in the taskbar to start the application.
 - c. Select **Remote Wake Setting** and check **Enable Intel Remote Wake Technology for Cyberlink Live**.
 - d. Click **Apply** to continue.



Put Your Computer to Sleep Mode

1. Keep the Internet connection to your computer.
2. Put your computer to **Sleep Mode**. Click **Start**, click the arrow next to the **Lock** button, and then select **Sleep**.



Note: Your computer must be in sleep mode--not hibernation or Shut-down mode.

Your PC is now ready for remote wake up from internet.

This concludes Chapter 5.

Intel® Remote Wake Technology

Memo

