



Certificate HK07/01191.00

The management system of

**ELITEGROUP COMPUTER
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ECS MANUFACTURING
(SHENZHEN) CO., LTD.**

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No.20 & No.26 (Except 1F, 2F&3F) Free Trade Zone, Shatoujiao,
Shenzhen City, Guangdong Province, China
has been assessed and certified as meeting the requirements of



ISO 9001:2000

For the following activities

**Design and Sales of Mainboards, Personal Computers,
Notebooks, and Peripheral Cards;
Design and Manufacturing of Mainboards and Peripheral Cards;**
Further clarifications regarding the scope of this certificate and the applicability of
ISO 9001:2000 requirements may be obtained by consulting the organization
This certificate is valid from 16 March 2007 until 15 March 2010
Issue 1. Certified with SGS since March 2007

Multiple certificates have been issued for this scope
The main certificate is numbered HK07/01191.00

Authorised by

P. Earl



SGS United Kingdom Ltd Systems & Services Certification
Rossmore Business Park Eresmore Port Cheshire CH65 3EN UK
t +44 (0)151 350-6666 f +44 (0)151 350-6600 www.sgs.com

Page 1 of 1





Certificate No.
PRC-HSPM-1172

Issued: July 10, 2007
Revision: N/A
Expiration: July 09, 2010

**IECQ Certificate of Hazardous Substance Process Management (HSPM)
applicable to the European Directive 2002/95/EC ("RoHS") requirements.**

The Supervising Inspectorate (SGS-CSTC Standards Technical Services Co., Ltd.), sponsored by the United States National Authorized Institution, ECCB certify that

ECS Manufacturing (Shenzhen) Co., Ltd.

No. 20 & 26 (except 1F, 2F & 3F),
Free Trade Zone, Shatoujiao,
Shenzhen, Guangdong Province, P.R. China

Has developed and implemented Hazardous Substances Process Management, procedures, and related processes in compliance with the applicable requirements for HSPM organization approval which is in accordance with the Basic Rules IECQ-01 and Rules of Procedure QC 001002-3 "IECQ Hazardous Substance Process Management" of the IEC Quality Assessment System for Electronic Components (IECQ), and with respect to the Specification QC 080000 IECQ HSPM.

This certification is applicable to all electronic components and related materials and processes for the

Design and manufacture of Mainboards and Peripheral Cards.

Issued by Certification Authorities:



Electronic Component Certification Board

Signed:

Stanley H. Salot Jr. - President, ECCB
ECCB
PO Box 9041
Midland, Texas 79708
Tel: (432) 697-9970 Fax: (866) 260-6181
Web Site: www.eccb.org



SGS-CSTC Standards Technical Services Co., Ltd
16F Century YuHui Mansion
73 Fucheng Road
Beijing, China
Web Site: www.sgs.com

The validity of this certificate is maintained through on-going surveillance inspections.

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Preface

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Version 1.0

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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 Motherboard	Describes features of the motherboard. 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

TABLE OF CONTENTS

Preface	i
Chapter 1	1
Introducing the Motherboard	1
Introduction.....	1
Feature.....	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>	<i>8</i>
<i>Checking Jumper Settings.....</i>	<i>9</i>
<i>Jumper Settings.....</i>	<i>9</i>
Installing Hardware.....	10
<i>Installing Memory Modules.....</i>	<i>10</i>
<i>Expansion Slots.....</i>	<i>12</i>
<i>Connecting Optional Devices.....</i>	<i>14</i>
<i>Installing a Hard Disk Drive/CD-ROM/SATA Hard Drive...18</i>	<i>18</i>
Connecting I/O Devices.....	20
Connecting Case Components.....	21
<i>Front Panel Header.....</i>	<i>23</i>
Chapter 3	25
Using BIOS	25
About the Setup Utility.....	25
<i>The Standard Configuration.....</i>	<i>25</i>
<i>Entering the Setup Utility.....</i>	<i>25</i>
Using BIOS.....	26
<i>Standard CMOS Setup.....</i>	<i>27</i>
<i>Advanced Setup.....</i>	<i>29</i>
<i>Advanced Chipset Setup.....</i>	<i>32</i>
<i>Integrated Peripherals.....</i>	<i>33</i>
<i>Power Management Setup.....</i>	<i>34</i>
<i>PCI/PnP Setup.....</i>	<i>36</i>
<i>PC Health Status.....</i>	<i>36</i>

Frequency/Voltage Control.....38
Load Default Settings.....39
Supervisor Password.....39
User Password.....40
Save & Exit Setup.....40
Exit Without Saving.....40
Updating the BIOS.....41

Chapter 4 **43**
Using the Motherboard Software **43**
 About the Software CD-ROM.....43
 Auto-installing under Windows Vista.....43
 Running Setup.....44
 Manual Installation.....48
 Utility Software Reference.....48

Chapter 1

Introducing the Motherboard

Introduction

Thank you for choosing 945GSED-ITX motherboard of great performance and with enhanced function. This motherboard has onboard Intel® Atom™ Processor N270 with a Mini-ITX form factor of 170 x 170 mm.

The motherboard incorporates the 945GSE Northbridge (NB) and ICH7-M Southbridge (SB) chipsets. The Northbridge supports a Front Side Bus (FSB) frequency of 533 MHz using a scalable FSB Vcc_CPU. The memory controller supports DDR2 memory DIMM frequencies of 533. It supports one DDR2 socket with up to maximum memory of 2 GB.

The ICH7-M Southbridge on this motherboard supports one PCI slot which is PCI v2.3 compliant. It implements an EHCI compliant interface that provides 480 Mb/s bandwidth for six USB 2.0 ports (four USB ports and one USB 2.0 headers support additional two USB ports). The Southbridge integrates a Serial ATA host controller, supporting two SATA ports with maximum transfer rate up to 3.0 Gb/s each.

The motherboard is equipped with advanced full set of I/O ports in the rear panel, including PS/2 mouse and keyboard connectors, one LPT port, one COM port, one VGA port, four USB ports, two LAN ports and audio jacks for microphone and line-out.

Feature

Processor

This motherboard uses onboard Intel® Atom™ Processor N270 that carries the following features:

- Onboard Intel® Atom™ Processor N270, on-die 512-kB, 8-way L2 cache
- Supports a system bus (FSB) of 533 MHz

Chipset

The 945GSE Northbridge (NB) and ICH7-M Southbridge (SB) chipsets are based on an innovative and scalable architecture with proven reliability and performance.

- 945GSE (NB)**
- Supports 32-bit downstream address
 - 2 GB/s (1 GB/s each direction) point-to-point interface to Intel 82801GBM (ICH7-M)
 - Supports 256-Mb, 512-Mb and 1-Gb DDR2 technologies for x8 and x16 devices
- ICH7-M (SB)**
- Enhanced DMA Controller, interrupt controller, and timer functions
 - Compliant with PCI v2.3 specification
 - Integrated SATA 3.0 Gb/s Host Controller
 - Integrated USB 2.0 Host Controller supporting up to eight USB 2.0 ports
 - Integrated IDE controller supports Ultra ATA 100/66/33

Memory

- Supports DDR2 533 DDR2 SDRAM with single channel architecture
- Accommodates one unbuffered DIMM
- Maximum memory size up to 2 GB

Audio

The onboard Audio provides the following features:

- 5.1 Channel High Definition Audio Codec
- ADCs support 44.1k/48k/96kHz sample rate
- Meets Microsoft WLP 3.08 Vista premium and mobile PCs audio requirements
- Direct Sound 3D™ compatible

Onboard LAN

The onboard LAN controller provides either of the following features:

- | |
|---|
| <ul style="list-style-type: none"> • Supports PCI Express™ 1.1 • Integrated 10/100 transceiver • Wake-on-LAN and remote wake-up support |
| <ul style="list-style-type: none"> • Supports PCI Express™ 1.1 • Integrated 10/100/1000 transceiver • Wake-on-LAN and remote wake-up support |

Introducing the Motherboard

Onboard LAN

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<ul style="list-style-type: none"> • Supports PCI Express™ 1.1 • Integrated 10/100/1000 transceiver • Wake-on-LAN and remote wake-up support

Expansion Options

The motherboard comes with the following expansion options:

- One 32-bit PCI v2.3 compliant slot
- One IDE connector that supports two IDE devices
- Two 7-pin SATA connectors

The motherboard supports UDMA bus mastering with transfer rates of 100/66/33 Mb/s.

Integrated I/O

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

- Two PS/2 ports for mouse and keyboard
- One parallel port
- One serial port
- One VGA port
- Four USB ports
- Two LAN ports
- Audio jacks for microphone and line-out

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

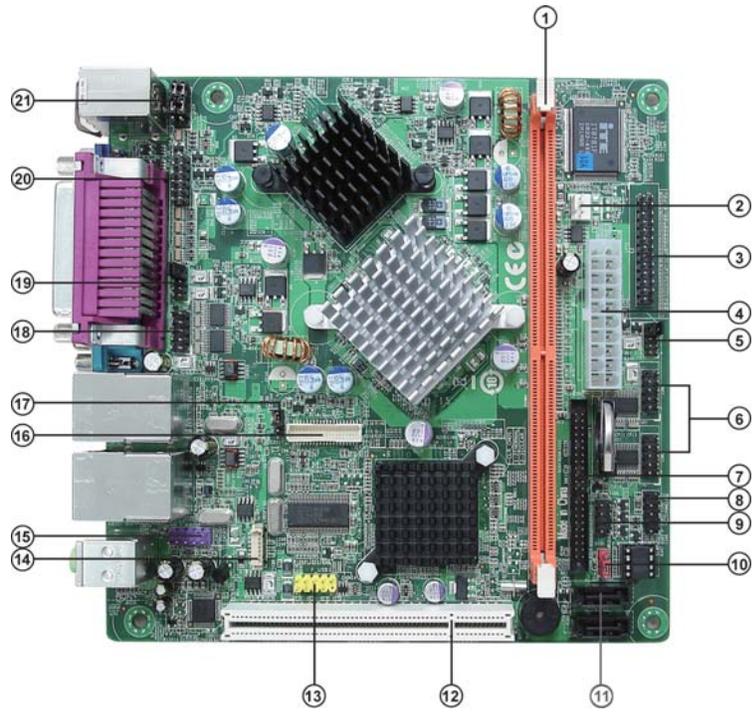
The firmware can also be used to set parameters for different processor clock speeds.



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.

Motherboard Components



Introducing the Motherboard

Table of Motherboard Components

LABEL	COMPONENTS
1. DIMM1	240-pin DDR2 SDRAM slots
2. SYS_FAN	System cooling fan connector
3. LPT2	Onboard parallel port header
4. ATX_POWER1	Standard 20-pin ATX power connector
5. JP2	COM3/COM4 Ring function selector
6. COM3~4	Serial port connectors
7. IDE1	Primary IDE connector
8. PANEL1	Front panel switch/LED header
9. DIO1	DIO header
10. CLR_CMOS1	Clear CMOS jumper
11. CON_SATA1~2	Serial ATA connectors
12. PCI1	32-bit add-on card slot
13. F_USB1	Front panel USB header
14. LVDS1	LVDS Inverter power connector
15. F_AUDIO1	Front panel Audio header
16. LVDS1	Low Voltage Differential Signaling Transmitter Interface
17. LVDS_PWR1	Low Voltage Differential power select jumper
18. COM2	Serial port connector
19. JP1	COM1/COM2 Ring function selector
20. VGA2	VGA header
21. CN1	Keyboard/Mouse header

* stands for optional components.

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

6

Memo

Introducing the Motherboard

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 Mini-ITX system case. First, 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. Secondly, this motherboard supports two enhanced IDE drives. Make sure that your case has sufficient power and space for all drives that you intend to install.

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 Mini-ITX form factor of 170 x 170 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 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**.

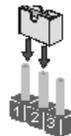


SHORT



OPEN

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



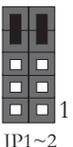
Installing the Motherboard

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 CMOS Before clearing the CMOS, make sure to turn the system off.	 CLR_CMOS1
LVDS_PWR1	3-pin	LVDS power voltage	1-2: VCC3 2-3: VCC5	 LVDS_PWR1
JP1~2	10-pin	Select +5V/ +12V/RI	1-3&2-4: +5V 3-5&4-6: +12V 7-9&8-10: RI	 JP1~2



To avoid the system instability after clearing CMOS, 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 Memory Modules

This motherboard accommodates one memory module. It can support one 240-pin DDR2 533. The total memory capacity is 2 GB.

DDR2 SDRAM memory module table

Memory module	Memory Bus
<i>DDR2 533</i>	<i>266 MHz</i>

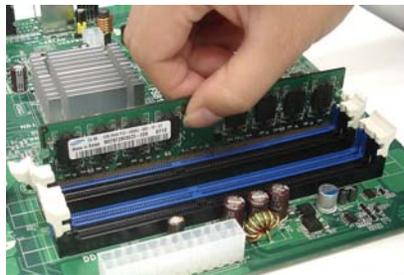


Do not remove any memory module from its antistatic packaging until you are ready to install it on the motherboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.

Installation Procedure

Refer to the following to install the memory modules.

- 1 This motherboard supports unbuffered DDR2 SDRAM .
- 2 Push the latches on each side of the DIMM slot down.
- 3 Align the memory module with the slot. The DIMM slots are keyed with notches and the DIMMs are keyed with cutouts so that they can only be installed correctly.
- 4 Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.
- 5 Install the DIMM module into the slot and press it firmly down until it seats correctly. The slot latches are levered upwards and latch on to the edges of the DIMM.



Installing the Motherboard

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

The following DDR2 800/667/533 memory modules have been tested and qualified for use with this motherboard.

Type	Size	Vendor	Module Name
DDR2 533	512 MB	Samsung	PC2-4200U-4444-10-B1
	1 GB	A-data	533/A-DATA/Vitesta/1GB/DS
		Kingmax	KLBD48F-A8KE4
DDR2 667	512 MB	Apacer	78.91G92.9K5
		Micron	MT4HTF6464AY-667E1
		PSC	AL6E8E63J-6E1
		Ramxel	RML1520M38D6F-667
		Samsung	PC2-5300U-555-12-D3
	1 GB	Apacer	1GB UNB PC2-5300 CL5
			78.01G90.9K5F
			AU01GE667C5KBGC
		Corsair	VS1GB667D2
		Hexon	HYNT7AUDR-30M48
		Kingston	KVR667D2N5
		Micron	MT8HTF12864AY-667E1
			AL7E8E63B-6E1T
			AL7E8F63J-6E1
		PSC	AL7E8F73C-6E1
	Samsung	Gold Bar M378T2863DZS 0742	
	2 GB	Aeon	AET860UD00-30DB08X
		Apacer	78.A1G90.9K4
		Hexon	HYNT8AUDR-30M88
		Hynix	HYMP125U64AP8-Y5 AB-A 0623
		Kingston	KVR667D2N5
LeadMax		PC2-5300U	
PSC		AL8E8F73C-6E1	
Qimonda		HY S64T256020EU-3S-C2	
4 GB	Aeon	AET960UD00-30D	

Type	Size	Vendor	Module Name	
DDR2 800	512 MB	Kingston	KVR800D2N5/512 1.8V 9905315-019.A02LF	
		Micron	MT8HTF6464AY-80ED4	
		Qimonda	HYS72T64000HU-2.5-B	
	1 GB	A-DATA	M2GVD6G3I41P0U1E5E	
		Aeneon	AET760UD00-25DC08X AET760UD00-30DB97X	
		Apacer	78.01GAO.9K5 AU01GE800C5KBGC	
		APOGEE	AU1G082-800P000	
		Geil	Geil Millenary Geil Platinum	
		Hexon	ELPT7AUDR-25M48	
		Infinity	04701G16CZ5U2G	
		Kingston	KHX6400D2ULK2/2G 9905315-078.A00LF KVR800D2N5/1G 1.8V 9905316-054.A01LF	
		OCZ	OCZ2VU8002GK	
		PSC	AL7E8F73C-8E1	
		Ram axel	RML1320EH38D7F-800	
		Samsung	Gold Bar M378T2953E Z3-CE70726	
		Silicon Power	SP001GBLRU800S01	
		Transcend	507301-1571	
		2 GB	A-DATA	A-DATA M2OMI6H3J4720L1C5Z
			Aeneon	AET860UD00-25DC08X
			Apacer	78.A1GAO.9K4
			CORSAIR	CM2X2048-6400C5
			Hexon	ELPT8AUDR-25M88
			Kingston	KVR800D2N5/2G KVR800D2N6/2G-SP
			Micron	MT16HTF25664AY-800E1
	PSC		AL8E8F73C-8E1	
	Qimonda		HYS64T256020EU-25F-C2	
	Samsung		M378T5663QZ3-CF7	
	Silicon Power		SP002GBLRU800S01	
	4 GB		Aeneon	AET960UD00-25D



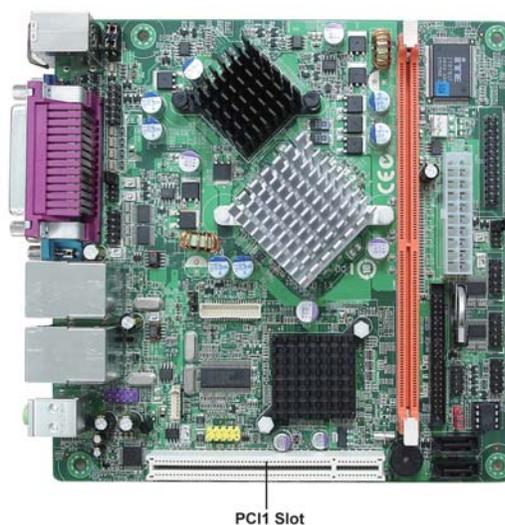
Due to the motherboard limitation, the memory controller only supports DDR2 memory DIMM frequency of 533 MHz.

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.



PCI1 Slot

This motherboard is equipped with one standard PCI slot. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which for the most part, is a supplement of the older ISA bus standard. The PCI slot on this board is PCI v2.3 compliant.



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.

Follow these instructions to install an add-on card:

- 1 Remove a blanking plate from the system case corresponding to the slot you are going to use.
- 2 Install the edge connector of the add-on card into the expansion slot. Ensure that the edge connector is correctly seated in the slot.
- 3 Secure the metal bracket of the card to the system case with a screw.

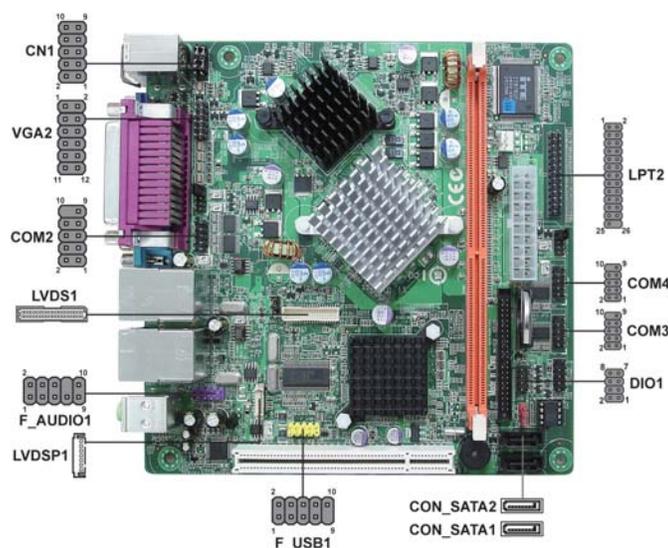


1. For some add-on cards, for example graphics adapters and network adapters, you have to install drivers and software before you can begin using the add-on card.

2. The onboard PCI interface does not support 64-bit SCSI cards.

Connecting Optional Devices

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



F_AUDIO1: Front Panel Audio header

This header allows the user to install auxiliary front-oriented microphone and line-out ports for easier access.

Pin	Signal Name	Pin	Signal Name
1	PORT 1L	2	AUD_GND
3	PORT 1R	4	PRESENCE#
5	PORT 2R	6	SENSE1_RETURN
7	SENSE_SEND	8	KEY
9	PORT 2L	10	SENSE2_RETURN

CON_SATA1~2: Serial ATA connector

This connector is used to support the new Serial ATA devices for the highest data transfer rates (3.0 Gb/s), simpler disk drive cabling and easier PC assembly. It eliminates limitations of the current Parallel ATA interface. But maintains register compatibility and software compatibility with Parallel ATA.

Pin	Signal Name	Pin	Signal Name
1	Ground	2	TX+
3	TX-	4	Ground
5	RX-	6	RX+
7	Ground	-	-

Installing the Motherboard

F_USB1: Front Panel USB header

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	Function
1	USBPWR	Front Panel USB Power
2	USBPWR	Front Panel USB Power
3	USB_FP_P0-	USB Port 0 Negative Signal
4	USB_FP_P1-	USB Port 1 Negative Signal
5	USB_FP_P0+	USB Port 0 Positive Signal
6	USB_FP_P1+	USB Port 1 Positive Signal
7	GND	Ground
8	GND	Ground
9	Key	No pin
10	USB_FP_OC0	Overcurrent signal



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.

DIO1: DIO header

Pin	Signal Name	Pin	Signal Name
1	GPIO 32	2	GPIO 36
3	GPIO 33	4	GPIO 37
5	GPIO 34	6	GPIO 38
7	GND	8	GND

LPT2: Onboard parallel port header

This is a header that can be used to connect to the printer, scanner or other devices.

Pin	Signal Name	Pin	Signal Name
1	STROBE	14	AFD
2	PD0	15	ERROR
3	PD1	16	INIT
4	PD2	17	SLCTIN
5	PD3	18	Ground
6	PD4	19	Ground
7	PD5	20	Ground
8	PD6	21	Ground
9	PD7	22	Ground
10	ACK	23	Ground
11	BUSK	24	Ground
12	PE	25	Ground
13	SLCT	26	Key

COM2-4: Onboard serial port connectors

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

Pin	Signal Name	Pin	Signal Name
1	NDCD	2	NSIN
3	NSOUT	4	NDTR
5	GND	6	NDSR
7	NRTS	8	NCTS
9	XNRI	10	KEY

CN1: PS/2 Keyboard & Mouse header

Pin	Signal Name	Pin	Signal Name
1	KBVCC	2	GND
3	KBC	4	KBD
5	E_KBC	6	E_KBD
7	PMC	8	PMD
9	E_PMC	10	E_PMD

LVDS1: LVDS Power connector

This motherboard supports an LVDS (Low Voltage Differential Signaling) Power connector that is used to connect the LCD (Liquid Crystal Display).

Pin	Signal Name	Pin	Signal Name
1	VCC12M1	2	VCC12M1
3	VCC	4	BLEN
5	GND	6	GND
7	GND	-	-

VGA2: VGA header

Pin	Signal Name	Pin	Signal Name
1	5VCLK	2	5VSDA
3	LVGA5V	4	3VSYNC
5	3HSYNC	6	GND
7	LRED	8	GND
9	LGREEN	10	GND
11	LBLUE	12	GND

LVDS1: LVDS connector

This motherboard supports an LVDS Header that is used to connect the LCD (Liquid Crystal Display). LVDS (Low Voltage Differential Signaling) provides robust signaling for high-speed data transmission between chassis, boards and peripherals using standard ribbon cables and IDC connectors.

Pin	Signal Name	Pin	Signal Name
1	LCD_VDD	2	LCD_VDD
3	LCD_VDD	4	LCD_VDD
5	LCD_VDD	6	LCD_VDD
7	LVDS_DAT	8	LVDS_CLK
9	GND	10	GND
11	LB_TX3N	12	LB_TX0N
13	LB_TX3P	14	LB_TX0P
15	GND	16	GND
17	LB_CLKN	18	LB_TX1N
19	LB_CLKP	20	LB_TX1P
21	GND	22	GND
23	LA_TX0N	24	LB_TX2N
25	LA_TX0P	26	LB_TX2P
27	GND	28	GND
29	LA_TX1N	30	LA_TX3N
31	LA_TX1P	32	LA_TX3P
33	GND	34	GND
35	LA_TX2N	36	LA_CLKN
37	LA_TX2P	38	LA_CLKP
39	GND	40	KEY

Installing a Hard Disk Drive/CD-ROM/SATA Hard Drive

This section describes how to install IDE devices such as a hard disk drive and a CD-ROM drive.

About IDE Devices

Your motherboard has one IDE channel interface. An IDE ribbon cable supporting two IDE devices is bundled with the motherboard.



You must orient the cable connector so that the pin1 (color) edge of the cable corresponds to the pin 1 of the I/O port connector.

IDE1: IDE Connector

This motherboard supports two high data transfer SATA ports with each runs up to 3.0 Gb/s. To get better system performance, we recommend users connect the CD-ROM to the IDE channel, and set up the hard drives on the SATA ports.



IDE devices enclose jumpers or switches used to set the IDE device as MASTER or SLAVE. Refer to the IDE device user's manual. Installing two IDE devices on one cable, ensure that one device is set to MASTER and the other device is set to SLAVE. The documentation of your IDE device explains how to do this.

About SATA Connectors

Your motherboard features two SATA connectors supporting a total of two drives. SATA refers to Serial ATA (Advanced Technology Attachment) is the standard interface for the IDE hard drives which are currently used in most PCs. These connectors are well designed and will only fit in one orientation. Locate the SATA connectors on the motherboard and follow the illustration below to install the SATA hard drives.

Installing Serial ATA Hard Drives

To install the Serial ATA (SATA) hard drives, use the SATA cable that supports the Serial ATA protocol. This SATA cable comes with one SATA power cable. You can connect either end of the SATA cable to the SATA hard drive or the connector on the motherboard.



SATA cable (optional)



SATA power cable (optional)

Installing the Motherboard

Refer to the illustration below for proper installation:

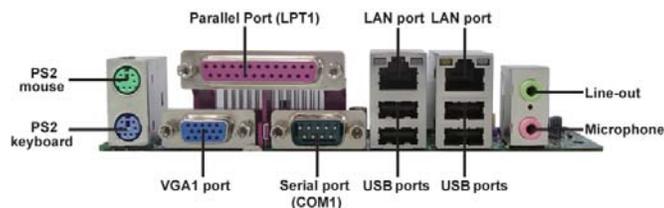
- 1 Attach either cable end to the connector on the motherboard.
- 2 Attach the other cable end to the SATA hard drive.
- 3 Attach the SATA power cable to the SATA hard drive and connect the other end to the power supply.



The SATA on this motherboard supports the “Hot-Plug” function.

Connecting I/O Devices

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

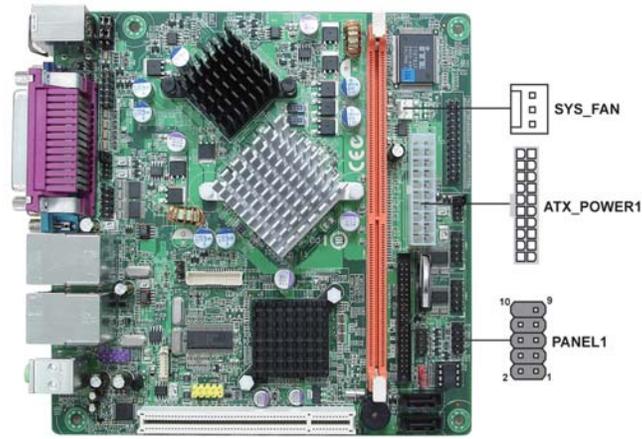


PS2 Mouse	Use the upper PS/2 port to connect a PS/2 pointing device.
PS2 Keyboard	Use the lower PS/2 port to connect a PS/2 keyboard.
Parallel Port (LPT1)	Use LPT1 to connect printers or other parallel communications devices.
Serial Port (COM1)	Use the COM1 port to connect serial devices such as mouse or fax/modems.
VGA1 Port	Connect your monitor to the VGA1 port.
USB Ports	Use the USB ports to connect USB devices.
LAN Ports	Connect RJ-45 jacks to the LAN ports to connect your computer to the Network.
Audio Ports	Use the two audio ports to connect audio devices. The first jack is for stereo line-out signal. The second jack is for microphone.

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_FAN**.
- 2 Connect the case switches and indicator LEDs to the **PANEL1**.
- 3 Connect the standard power supply connector to **ATX_POWER1**.



Connecting 20-pin power cable

The power 20-pin connector allows you to connect to ATX v2.x power supply.



20-pin power cable

Users please note that when installing 20-pin power cable, the latch of power cable falls on the left side of the ATX_POWER1 connector latch, just as the picture shows.

SYS_FAN: FAN Power Connector

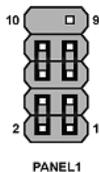
Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor

ATX_POWER1: ATX 20-pin Power Connector

Pin	Signal Name	Pin	Signal Name
1	+3.3V	11	+12V
2	+3.3V	12	-12V
3	GND	13	GND
4	+5V	14	Power On
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	Power Good	18	N.C.
9	+5VSB	19	+5V
10	+12V	20	+5V

Front Panel Header

The front panel header (PANEL1) provides a standard set of switch and LED headers commonly found on ATX or Micro ATX cases. Refer to the table below for information:



Pin	Signal	Function	Pin	Signal	Function
1	HD_LED_P	Hard disk LED(+)	2	FP PWR/SLP	*MSG LED(+)
3	HD_LED_N	Hard disk LED(-)	4	FP PWR/SLP	*MSG LED(-)
5	RST_SW_N	Reset Switch(-)	6	PWR_SW_P	Power Switch(+)
7	RST_SW_P	Reset Switch(+)	8	PWR_SW_N	Power Switch(-)
9	RSVD	Reserved	10	Key	No pin

* MSG LED (dual color or single color)

Hard Drive Activity LED

Connecting pins 1 and 3 to a front panel mounted LED provides visual indication that data is being read from or written to the hard drive. For the LED to function properly, an IDE drive should be connected to the onboard IDE interface. The LED will also show activity for devices connected to the SCSI (hard drive activity LED) connector.

Power/Sleep/Message waiting LED

Connecting pins 2 and 4 to a single or dual-color, front panel mounted LED provides power on/off, sleep, and message waiting indication.

Reset Switch

Supporting the reset function requires connecting pin 5 and 7 to a momentary-contact switch that is normally open. When the switch is closed, the board resets and runs POST.

Power Switch

Supporting the power on/off function requires connecting pins 6 and 8 to a momentary-contact switch that is normally open. The switch should maintain contact for at least 50 ms to signal the power supply to switch on or off. The time requirement is due to internal de-bounce circuitry. After receiving a power on/off signal, at least two seconds elapses before the power supply recognizes another on/off signal.

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

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 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

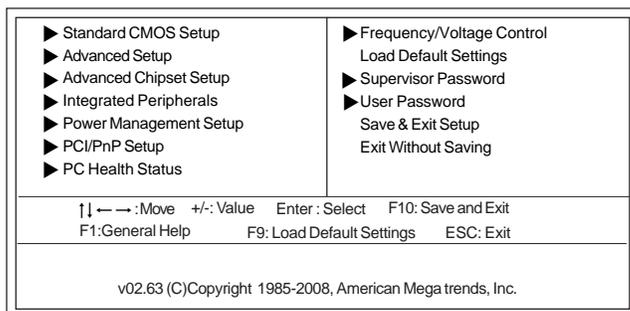
When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

Press DEL to enter SETUP

Using BIOS

Press the delete key to access the BIOS Setup Utility.

CMOS Setup Utility -- Copyright (C) 1985-2008, 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 apply for most conditions with optimum performance. We do not suggest users change the default values in the BIOS setup and take 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
+/-/PU/PD	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, we reserve the right to change the BIOS items presented in the manual. The BIOS setup screens shown in this chapter are for reference only. Please visit our website for updated manual.

Standard CMOS Setup

This option displays basic information about your system.

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

Date (www mm:dd:yy)	Tue 12/16/2008	Help Item
Time (hh:mm:ss)	00 : 00 : 30	
▶ SATA1	Not Detected	User [ENTER], [TAB] or [SHIFT-TAB] to select a field.
▶ SATA2	Not Detected	
▶ PATA IDE1	Not Detected	
IDE BusMaster	Enabled	Use [+] or [-] to configure system Date.

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

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.

► SATA1/2/PATA IDE1

Your computer has one IDE channel and each channel can be installed with one or two devices (Master and Slave). In addition, 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) 1985-2008, American Megatrends, Inc.
SATA1

SATA1		Help Item
Device	: Not Detected	Select the type of device connected to the system.
Type	<u>Auto</u>	
LBA/Large Mode	Auto	
Block (Multi-Sector Transfer)	Auto	
PIO Mode	Auto	
DMA Mode	Auto	
S.M.A.R.T	Auto	
32Bit Data Transfer	Disabled	

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

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 LAB/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 (Disabled)

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.

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

		Help Item
Thermal Management	Enabled	
TM Status	TM1/TM2	
Limit CPUID MaxVal	Disabled	
Intel XD Bit	Disabled	When disabled, force the XD feature flag to always return 0.
Intel EIST	Enabled	
Hyper-Threading Technology	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	
3rd Boot Device	Removable Dev.	
▶ Hard Disk Drives	Press Enter	
▶ Removable Drives	Press Enter	
▶ CD/DVD Drives	Press Enter	
Boot Other Device	Yes	

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

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 displays CPU Monitor status.

Limit CPUID MaxVal (Disabled)

Use this item to enable or disable the Max CPU ID value limit.

Intel XD Bit (Disabled)

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

Intel EIST (Enabled)

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

Hyper-Threading Technology (Enabled)

This item is only available when the items supports Hyper-Threading and you are using a Hyper-Threading CPU.

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.

Using BIOS

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 APCI (Advanced Programmable Interrupt Controller) mode. APIC provides symmetric multi-processing (SMP) for systems, allowing support for up to 60 processors.

1st/2nd/3rd Boot Device (Hard Drive/CD/DVD/Removable Dev.)

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) 1985-2008, American Megatrends, Inc.
Hard Disk Drives

Hard Disk Drives	Help Item
1st Drive Not Installed	Specifies the boot sequence from the available devices.

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

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

► Removable Drives (Press Enter)

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

CMOS Setup Utility - Copyright (C) 1985-2008, American Megatrends, Inc.
Removable Drives

Removable Drives	Help Item
1st Drive Not Installed	Specifies the boot sequence from the available devices.

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

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) 1985-2008, American Megatrends, Inc.
CD/DVD Drives

CD/DVD Drives	Help Item
1st Drive Not Installed	Specifies the boot sequence from the available devices.

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

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.

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	
DVMT Mode Select	DVMT Mode	Options
DVMT/FIXED Memory	128MB	
HPET	Enabled	Auto
Boot Display Device	CRT	400 MHz
Flat Panel Type	1024 x 768	533 MHz

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

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.

DVMT Mode Select (DVMT Mode)

This item allows you to select the DVMT operating mode.

DVMT/FIXED Memory (128MB)

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

HPET (Enabled)

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

Boot Display Device (CRT)

This item is to set the system display device during boot up and the value may be updated according to the setting of OS driver.

Flat Panel Type (1024 x 768)

This item allows you to select the Flat Panel Type. The numbers in the options mean the maximum resolution which the Panel can support.

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) 1985-2008, American Megatrends, Inc.
Integrated Peripherals

Onboard IDE Controller	Enabled	▲ ▼	Help Item
SATA Configuration	IDE		Options
Onboard Audio Function	Enabled		Disabled
Onboard 10/100M LAN	Enabled		Enabled
Onboard 10/100M Boot ROM	Disabled		
Onboard GbE LAN	Enabled		
Onboard GbE Boot ROM	Disabled		
Parallel Port Address	378		
Parallel Port Mode	Normal		
Parallel Port IRQ	IRQ7		
Serial Port1 Address	3F8		
Serial Port1 IRQ	4		
Serial Port2 Address	2F8		
Serial Port2 IRQ	3		
Serial Port3 Address	3E8		
Serial Port3 IRQ	4		
Serial Port4 Address	2E8		
Serial Port4 IRQ	3		
USB Functions	Enabled		

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

CMOS Setup Utility - Copyright (C) 1985-2008, American Megatrends, Inc.
Integrated Peripherals

Onboard Audio Function	Enabled	▲ ▼	Help Item
Onboard 10/100M LAN	Enabled		Use this item to enable or disable support for legacy USB devices.
Onboard 10/100M Boot ROM	Disabled		
Onboard GbE LAN	Enabled		
Onboard GbE Boot ROM	Disabled		
Parallel Port Address	378		
Parallel Port Mode	Normal		
Parallel Port IRQ	IRQ7		
Serial Port1 Address	3F8		
Serial Port1 IRQ	4		
Serial Port2 Address	2F8		
Serial Port2 IRQ	3		
Serial Port3 Address	3E8		
Serial Port3 IRQ	4		
Serial Port4 Address	2E8		
Serial Port4 IRQ	3		
USB Functions	Enabled		
Legacy USB Support	Disabled		

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

OnBoard IDE Controller (Enabled)

Use this item to enable or disable the onboard IDE interface.

SATA Configuration (IDE)

Use this item to show the Serial ATA Configuration options: IDE and AHCI.

Onboard AUDIO Function (Enabled)

Use this item to enable or disable the onboard audio device.

OnBoard 10/100M LAN (Enabled)

Use this item to enable or disable the OnBoard 10/100M LAN function.

Using BIOS

OnBoard 10/100M Boot ROM (Disabled)

Use this item to enable or disable the boot function using the onboard 10/100M LAN Boot ROM.

Onboard GbE LAN (Enabled)

Use this item to enable or disable the OnBoard GbE LAN function.

Onboard GbE Boot ROM (Disabled)

Use this item to enable or disable the boot function using the onboard GbE LAN Boot ROM.

Parallel Port Address (378)

Use this item to enable or disable the onboard Parallel port, and to assign a port address.

Parallel Port Mode (Normal)

Use this item to select the parallel port mode. You can select Normal (Standard Parallel Port), ECP (Extended Capabilities Port), EPP (Enhanced Parallel Port), or BPP (Bi-Directional Parallel Port).

Parallel Port IRQ (IRQ7)

Use this item to assign IRQ to the parallel port.

Serial Port1/2/3/4 Address (3F8/2F8/3E8/2E8)

Use this item to enable or disable the onboard serial port, and to assign a port address.

Serial Port1/2/3/4 IRQ (4/3/4/3)

Use this item to assign IRQ to the serial port.

USB Functions (Enabled)

Use this item to enable or disable the USB function.

Legacy USB Support (Enabled)

Use this item to enable or disable support for legacy USB devices. Setting to Auto allows the system to detect the presence of USB device at startup. If detected, the USB controller legacy mode is enabled. If no USB device is detected, the legacy USB support is disabled.

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) 1985-2008, American Megatrends, Inc.
Power Management Setup

ACPI Suspend Type	S3 (STR)	Help Item
Soft-off by PWR-BTTN	Instant Off	
PWRON After PWR-Fail	Former-Sts	Options
Resume By RING	Disabled	Power Off
Resume By PCI/PCI-E/Lan PME	Disabled	Power On
Resume By USB (S3)	Disabled	Former-Sts
Resume By PS2 KB (S3)	Disabled	
Resume By PS2 MS (S3)	Disabled	
Resume on RTC Alarm	Disabled	

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

Using BIOS

ACPI Suspend Type (S3 (STR))

Use this item to define how your system suspends. In the default, S3, the suspend mode is a suspend to RAM, i.e, the system shuts down with the exception of a refresh current to the system memory.

Soft-Off By PWR-BTTN (Instant Off)

Under ACPI (Advanced Configuration and Power management Interface) you can create a software power down. In a software power down, the system can be resumed by Wake Up Alarms. This item lets you install a software power down that is controlled by the power button on your system. 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 return to its operating status.

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 you to enable/disable the USB device wakeup function from S3/S4 mode.

Resume By PS2 KB (S3) (Disabled)

This item enable or disable you to allow keyboard activity to awaken the system from power saving mode.

Resume By PS2 MS (S3) (Disabled)

This item enable or disable you to allow mouse activity to awaken the system from power saving mode.

Resume on RTC Alarm (Disabled)

The system can be turned off with a software command. 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. You must use an ATX power supply in order to use this feature.

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

PCI / PnP Setup

This page sets up some parameters for devices installed on the PCI bus and those utilizing the system plug and play capability.

CMOS Setup Utility - Copyright (C) 1985-2008, American Megatrends, Inc.
PCI / PnP Setup

Init Display First	OnBoard	Help Item Select which graphics controller to use as the primary boot device.
--------------------	---------	---

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

Init Display First (OnBoard)

Use this item to select which graphics controller to use as the primary boot devices.

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) 1985-2008, American Megatrends, Inc.
PC Health Status

System Hardware Monitor Shutdown Temperature Disabled Warning Temperature Disabled CPU Temperature : 34°C/93°F System Temperature : 45°C/113°F System Fan Speed : N/A CPU Vcore : 1.024 V VDIMM : 1.776 V	Help Item Options Disabled 80°C/176°F 75°C/167°F 70°C/158°F
--	---

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

Shutdown Temperature (Disabled)

Enable 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
- System Fan 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) 1985-2008, American Megatrends, Inc.
Frequency/Voltage Control

Manufacturer	: Intel	Help Item
Ratio Actual Value	: 12	
CPU Frequency	: 133MHz	
Auto Detect DIMM/PCI Clk	Enabled	Options
Spread Spectrum	Enabled	Disabled
		Enabled

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

Manufacturer (Intel)

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

Ratio Actual Value (12)

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

CPU Frequency. (133MHz)

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

Auto Detect DIMM/PCI Clk (Enabled)

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

Spread Spectrum (Disabled)

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 that lets you install stability-oriented defaults for all appropriate items in the Setup Utility. Select <OK> and then press <Enter> to install the defaults. Select <Cancel> and then press <Enter> to not install the defaults.

Supervisor Password

This page helps you install or change a password.

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

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

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

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 +/-: Value Enter: Select F10: Save and Exit
F1: General Help F9: Load Default Settings ESC: Exit

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 install or change the user password. This item will show if the 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 "Discard Changes and Exit" 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. (You might need to run the Setup Utility and change the boot priority items on the Advanced BIOS Features Setup page, to force your computer to boot from the floppy diskette drive first.)
- 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 When the installation is complete, remove the floppy diskette from the diskette drive and restart your computer. 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.

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.

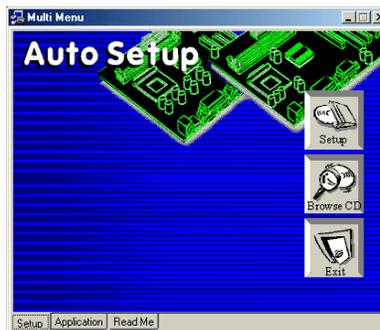
Auto-installing under Windows Vista

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, such as Windows Vista. Always go to the correct folder for the kind of OS you are using.</p> <p>In install 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:

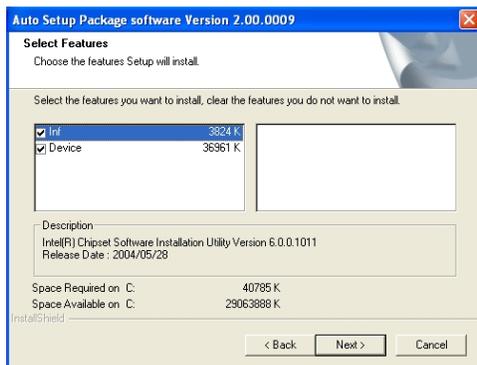


The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.

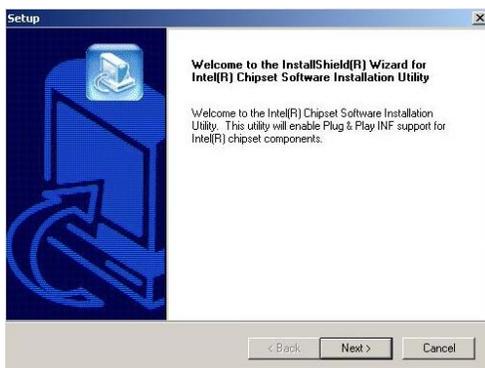
The motherboard identification is located in the upper left-hand corner.

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.

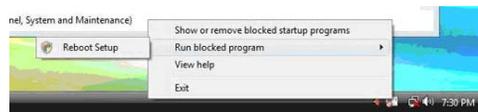


1. Drivers and software are automatically installed in sequence. Follow the onscreen instructions, confirm commands and allow the computer to restart a few times to complete the installation.
2. During the Windows Vista Driver Auto Setup Procedure, users should use one of the following two methods to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

Using the Motherboard Software

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.



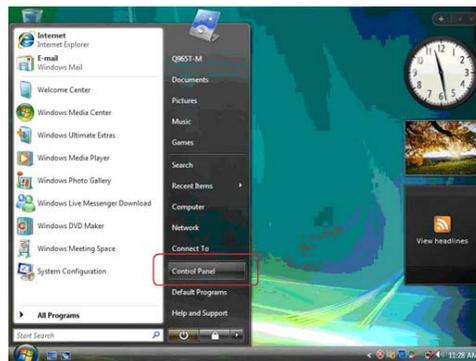
Method 2. Disable UAC (User Account Control)

* 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.

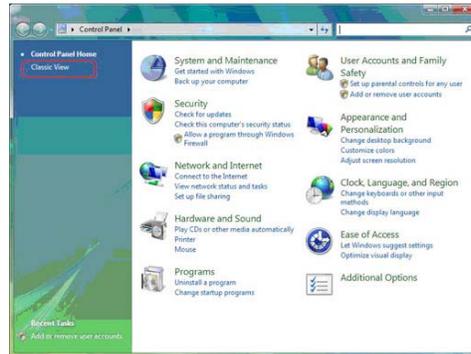
Follow these instructions to Disable Vista UAC function:

1. Go to **Control Panel**.

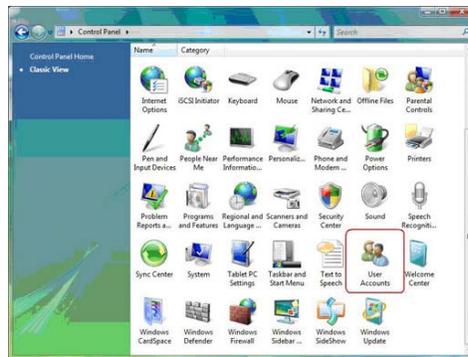


Using the Motherboard Software

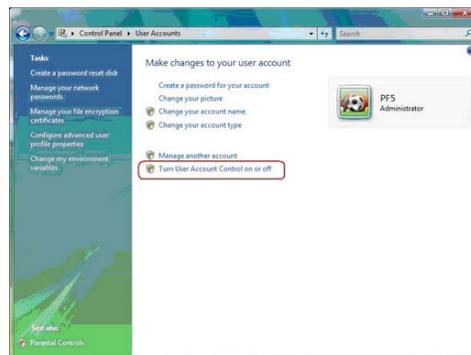
2. Select **Classic View**.



3. Set **User Account**.

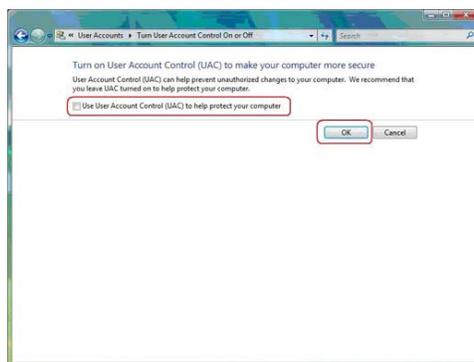


4. Select **Turn User Account Control on or off** and press **Continue**.



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.

This concludes Chapter 4.