Certificate HK07/01191.00

The management system of

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

2F, No.240, Sec.1, Nei Hu Road, Taipei, Taiwan 114, R.O.C
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 Ellesmere Port Cheshire CH65 3EN UK
t +44 (0)151 350-6666 f +44 (0)151 350-6600 www.sgs.com

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 001002-5 "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, ECCC
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 1.0A

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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 Réglement sur le matériel brouilieur 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 41

Chapter 5

Using the Intel® System Recovery Tool (Intel® SRT)

Describes the motherboard software

Go to ⇨ page 47

TABLE OF CONTENTS

Chapter 1
Introducing the Motherboard

Introduction

Thank you for choosing the ISRT 945GCT-M motherboard. This motherboard is a high performance, enhanced function motherboard designed to support the LGA775 socket Intel® Core™ 2 Duo/Pentium® Dual Core/Pentium® D/Pentium® 4/Celeron® D processors for high-end business or personal desktop markets.

The motherboard incorporates the 945GC Northbridge (NB) and ICH7 Southbridge (SB) chipsets. The Northbridge supports a Front Side Bus (FSB) frequency of 1066/ 800/533 MHz using a scalable FSB Vcc_CPU. The memory controller supports DDR2 memory DIMM frequencies of 667/533/400. It supports two DDR2 sockets with up to maximum memory of 2 GB. DDR2 Maximum memory bandwidth of 10.7 Gb/s in dual-channel interleaved mode using DDR2 667 MHz. High resolution graphics via two PCI Express slots, intended for Graphics Interface, are fully compliant to the PCI Express Base Specification revision 1.0a.

The ICH7 Southbridge supports two PCI slots which are PCI 2.3 compliant. It implements an EHCI compliant interface that provides 480 Mb/s bandwidth for eight USB 2.0 ports. One onboard IDE connector supports 2 IDE devices in Ultra ATA 100/66/33 mode. The Southbridge integrates a Serial ATA host controller that is SATA 1.0a compliant, supporting four 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, COM1, one VGA port, four USB ports, one LAN port and audio jacks for microphone, line-in and line-out.

Feature

Processor

The motherboard uses an LGA775 type of Intel® Core™ 2 Duo/Pentium® Dual Core/Pentium® D/Pentium® 4/Celeron® D that carries the following features:

- Accommodates Intel® Core™ 2 Duo/Pentium® Dual Core/Pentium® D/Pentium® 4/Celeron® D processors
- Supports a system bus (FSB) of 1066/800/533 MHz

Chipset

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

945GC (NB)

- Supports 32-bit host bus addressing, allowing the CPU to access the entire 2 GB of the memory address space
- 2 GB/s point-to-point Direct Media Interface (DMI) to ICH7 (1 Gb/s) each direction
- Supports one PCI Express x16 for Graphics Interface, fully compliant to the PCI Express Base Specification revision 1.0a.
- Supports 256-Mb, 512-Mb and 1-Gb DDR2 technologies for x8 and x16 devices
- Supports high quality 3D setup, Render Engine and high-quality texture engine

ICH7 (SB)

- Enhanced DMA Controller, interrupt controller, and timer functions
- Compliant with PCI Express Base Specification, Revision 1.0a
- Compliant with PCI 2.3 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 667/533/400 DDR SDRAM with Dual-channel architecture
- Accommodates two unbuffered DIMMs
- Up to 1 GB per DIMM with maximum memory size up to 2 GB

Audio

- 5.1 channel High Definition Audio Codec
- All DACs Support 192K/96K/48K/44.1KHz DAC sample rate
- Software selectable 2.5V/3.75V VREFOUT
- Meets Microsoft WHQL/WLP 2.x audio requirements
- Direct Sound 3D™ compatible

Onboard LAN (Optional)

The onboard LAN controller provides the following features:

• Integrated 10/100/1000 transceiver • Supports PCI v2.3, 32-bit, 33/66 MHz • Supports Wake-On-LAN (WOL) function and remote wake-up
• Supports 10/100 Mb/s N-Way Auto negotiation operation • Half/Full duplex capacity • Supports Wake-On-LAN (WOL) function and remote wake-up

Expansion Options

The motherboard comes with the following expansion options:

- Two PCI Express slots for Graphics Interface
- Two 32-bit PCI v2.3 compliant slots
- One IDE connector that supports two IDE devices
- One floppy disk drive interface
- Four 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 serial port
- One VGA port
- Four USB ports
- One LAN port
- Audio jacks for microphone, line-in and line-out

BIOS Firmware

This motherboard uses Insyde 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 ambiance between 0 and 50 ° C.

Motherboard Components

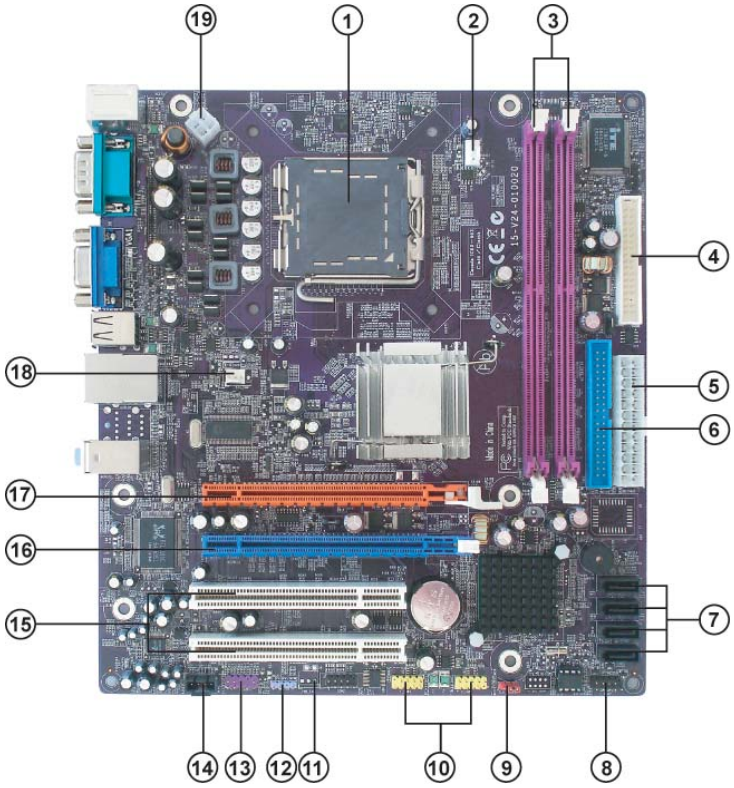


Table of Motherboard Components

LABEL	COMPONENTS
1. CPU Socket	LGA775 socket for Intel® Core™ 2 Duo/Pentium® Dual Core/Pentium® D/Pentium® 4/Celeron® D CPUs
2. CPU_FAN	CPU cooling fan connector
3. DIMM1/3	240-pin DDR2 SDRAM slots
4. FDD	Floppy disk drive connector
5. ATX1	Standard 24-pin ATX power connector
6. IDE1	Primary IDE connector
7. SATA1~4	Serial ATA connectors
8. F_PANEL	Front panel switch/LED header
9. CLR_CMOS1	Clear CMOS jumper
10. F_USB1~2	Front Panel USB headers
11. PWR_FAN*	Power cooling fan connector
12. SPDIFO	SPDIF out header
13. F_AUDIO	Front panel audio header
14. CD_IN	Analog audio input connector
15. PCI1~2	32-bit add-on card slots
16. PCIEX4	PCI Express Lite for graphics interface
17. PCIEX16	PCI Express slot for graphics interface
18. SYS_FAN	System cooling fan connector
19. ATX12V	Auxiliary 4-pin power connector

"*" stands for optional components.

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

Memo

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 Micro ATX 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 one floppy diskette drive and 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.

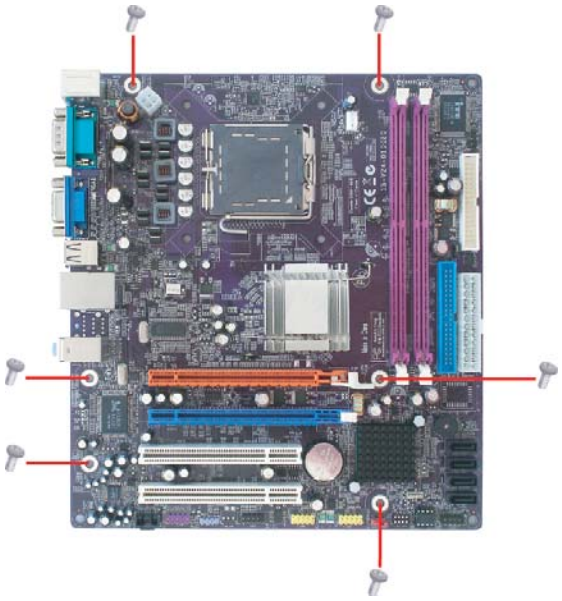
This motherboard carries a Micro ATX form factor of 244 x 220 mm. Choose a case that accommodates this form factor.

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.

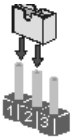
Setting Jumpers

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.

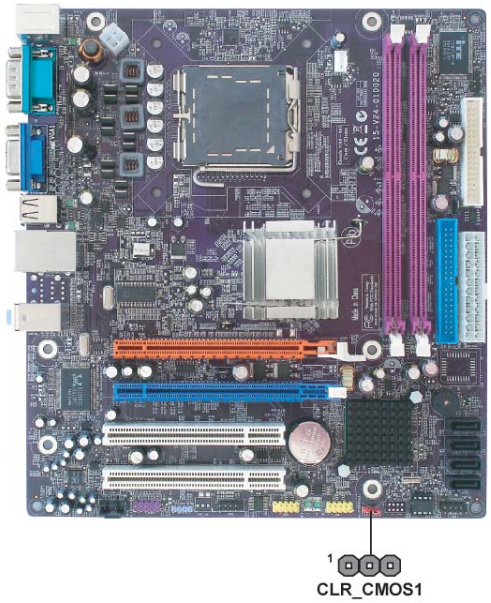
SHORT **OPEN**

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



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: Clear CMOS 2-3: Normal Before clearing the CMOS, make sure to turn off the system.	 1 CLR_CMOS1

To avoid the system instability after clearing CMOS, we recommend users to enter the main BIOS setting page to "Load Optimal Defaults" and then "Save Changes and Exit".

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 has a 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.

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.

Fail-Safe Procedures for Over-clocking

When end-users encounter failure after attempting over-clocking, please take the following steps to recover from it.

1. Shut down the computer.
2. Press and hold the “Page Up Key (PgUp)” of the keyboard, and then boot the PC up.
3. Two seconds after the PC boots up, release the “Page Up Key (PgUp)”.
4. The BIOS returns to the default setting by itself.

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 sup plied. 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 Memory Modules

This motherboard accommodates two memory modules. It can support two 240-pin DDR2 667/533/400. The total memory capacity is 2 GB.

DDR2 SDRAM memory module table

Memory module	Memory Bus
DDR2 400	***200 MHz***
DDR2 533	***266 MHz***
DDR2 667	***333 MHz***

You must install at least one module in any of the two slots. Each module can be installed with 256 MB to 1 GB of memory; total memory capacity is 2 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.

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.
6. Install any remaining DIMM modules.

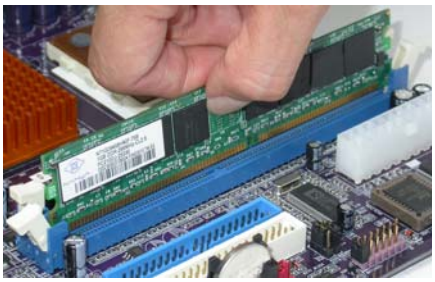


Table A: DDR2 (memory module) QVL (Qualified Vendor List)

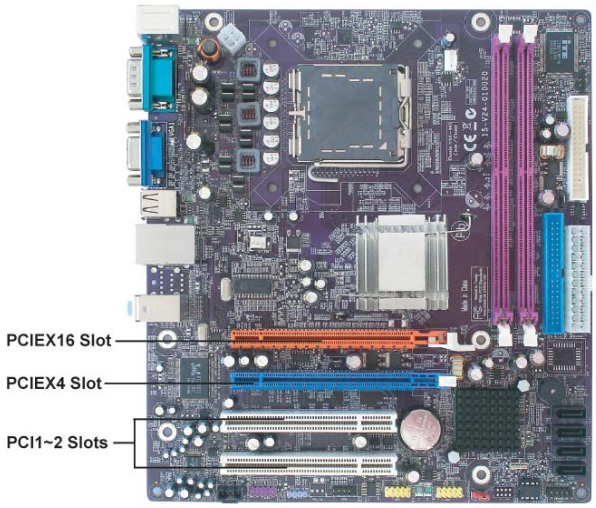
The following DDR2 667/533/400 memory modules have been tested and qualified for use with this motherboard.

Type	Size	Vendor	Module Name
DDR2 400	**512 MB**	TwinMos	msung K4T51083QB-GCCC
DDR2 533	**256 MB**	Corsair	Aeneon AET94F-370
		Corsair	VC256MB533D2 4PB11D9CHM
		Eipida	E2508AA-DF-E
		Hynix	HY5PS121621
		Kingston	Elpida E5116F-5C-E
		Kingmax	Hynix HY5PS121621
		Kingston	Infineon HYB18T512260AF-3.7
		Nanya	NT5TU32M16AG-37B
		Ramaxel	Elpida E5116AF-5C-E
		Ramaxel	5PB42 D9DCD
	512 MB	Aeneon	AET93F370
		Aeneon	AET94F370
		Corsair	Samsung K4T51083QB-ZCD5
		Eipida	04180WB01
		Hynix	HY5PS12821
		Infineon	HY818T512800AF37 33346778
		Kingston	Hynix HYB18T512800AF37
		Kingston	Hynix HY5PS12821
		PQI	PQI PQB2648D38R0701
		Ramaxel	PC2-4200U-444 LF 6AD11 D9GCT
		Ramaxel	5PB32 D9DCN
		Samsung	K4T51083QC
		Samsung	K4T51083QF-ZCD5
		Twinmos	Elpida E5108AB-5C-E
	1 GB	Apacer	Elpida E5108AB-5C-E
		Geil	A016E2864T2AG8AKT5H120001
		Infineon	HY818T512800AF37 33344539
		Kingmax	KKEA88E4AAKG-37
		PQI	PQI PQB2648D38R0651
		UMAX	U2S12D30TP-5C
DDR2 667	**256 MB**	Infineon	HYS64T325001HU-3-A HYB18T256
		Ramxel	5NB31 D9DCG
	512 MB	A-DATA	AD29608A88-3EG
		Corsair	Corsair K4T5108QC
		Corsair	VALUESELECT 32M8CEC
		GEIL	GEIL GL2L64M088BA30AW
		GEIL	GL2L64M088BA18W
		Ramxel	5LB31 D9DCL
		Samsung	K4T51083QC
		Sync	Max 04400WB01 R050008A
		Transcend	JetRam J12Q3AB-6
		Transcend	SEL520ZCE6 K4T51083QC
		Twinmos	TMM6208G8M30B
	1 GB	Apacer	Elpida AM4B5708GEWS7E-0637F
		Infineon	HYB18T51512800BF3S
		PQI	PQI PQB2648D38R0648
		Samsung	K4T51083QC
		UMAX	U2S12030TP-6E TBF614-L93G

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.



PCIEX16 Slot The PCI Express slot is used to install an external PCI Express graphics card that is fully compliant to the PCI Express Base Specification revision 1.0a.

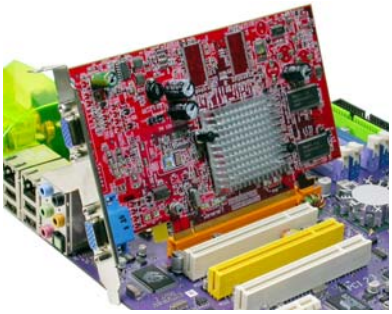
PCIEX4 Lite The PCI Express Lite is used to install an external PCI Express graphics card that is fully compliant to the PCI Express Base Specification revision 1.0a.

PCI 1~2 Slots This motherboard is equipped with two standard PCI slots. 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 slots on this board are 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.

Table B: Supported PCI Express VGA Card List for PCI Express Slot (PCI Express x4)

VGA Chip	Model Name
ATI	ASUS EAX1900XT 512MB
	ASUS EAX1950XTX 512MB
	ASUS X800XT 256MB
	ASUS X850XT PE 246MB
	ATI X1600XT 256M
	Colorful X300SE 128MB
	GIGABYTE X700PRO128MB
	MSI RX550 256MB
	MSI X1300 256MB
NVIDIA	Albatron 256MB7600GT 256M
	ASUS EN7600GS 512MB
	BITC 6200TC 16MB
	ELSA 6600GT 128MB
	GEFORCE 7300GS128MB
	GEFORCE 6600LE 256MB
	GIGABYTE GV-NX73TC512DL-RH GF7300GS 512MB
	GIGABYTE 6200 128MB
	Leadtek 6800 Ultra 256MB
	NVIDIA PVX5300 128MB
	NVIDIA PCX5750 128MB
	PixelView PV-N70GXE 256MB
	WinfastPX6500 128MB
	Winfast PX6600GT128MB
	Winfast 6800GS 256MB
	Winfast PX7900GT 256MB

Surround Display

Function	Init Display First	Onboard VGA	PCI-E x16	PCI-E x4	Test Result
Install WinXP	PCI-E Card	o	x	x	pass
	PCI-E Card	x	o	x	pass
	PCI-E Card	x	x	o	pass
	PCI-E Card	o	x	o	pass
	Onboard VGA	o	x	o	Not support
	PCI-E Card	x	o	o	Not support

1. When the driver of onboard VGA is installed first, the primary Graphics in Windows will be onboard VGA. However, if the driver of add-on PCI Express Graphics card is installed first, the primary Graphics in Windows will be add-on PCI Express Graphics card.

2. If you install the add-on PCI Express VGA card, BIOS setup will automatically disable the onboard VGA after loading optimal defaults. To enable the Surround Display function, make sure to manually enable onboard VGA in the BIOS setting.

3. When using surround display, please make sure that "Init Display First" in "CMOS Setup Utility" should be selected to "Onboard VGA".

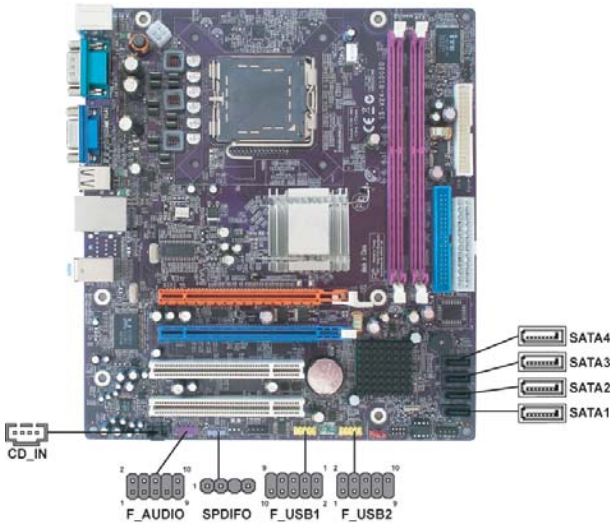
ADD2 Card Function

When you want to perform dual view (clone) function, only the following assemble supports.

Function	PCI-E x16	PCI-E x4	Test Result	Remark
Dual View (Clone)	o	x	pass	

Connecting Optional Devices

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



F_AUDIO: 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	Function
1	AUD_MIC	Front Panel Microphone input signal
2	AUD_GND	Ground used by Analog Audio Circuits
3	MIC_BIAS	Microphone Power
4	AUD_VCC	Filtered +5V used by Analog Audio Circuits
5	AUD_F_R	Right Channel audio signal to Front Panel
6	AUD_RET_R	Right Channel Audio signal to Return from Front Panel
7	REVD	Reserved
8	Key	No Pin
9	AUD_F_L	Left Channel Audio signal to Front Panel
10	AUD_RET_L	Left Channel Audio signal to Return from Front Panel

CD_IN: Analog Audio Input connector

Pin	Signal Name	Function
1	CD_L	CD In right channel
2	GND	Ground
3	GND	Ground
4	CD_R	CD In left channel

SATA1~4: Serial ATA connectors

These connectors are 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	-	-

F_USB1~2: Front Panel USB headers

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.

SPDIFO: SPDIF out header

This is an optional header that provides an SPDIFO (Sony/Philips Digital Interface) output to digital multimedia device through optical fiber or coaxial connector.

Pin	Signal Name
1	SPDIFOUT
2	+5V
3	Key
4	GND

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 four 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 dives 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 four SATA connectors supporting a total of four 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 an 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)

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.

This motherboard does not support the "Hot-Plug" function.

Installing a Floppy Diskette Drive

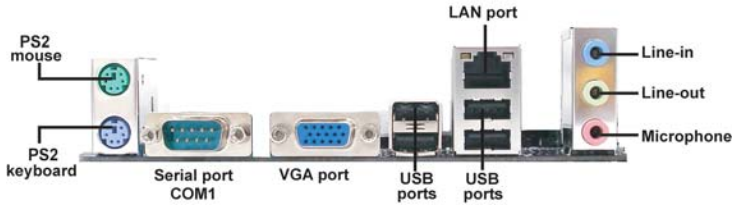
FDD: Floppy Disk Connector

Connect the single end of the of the floppy connector to the onboard floppy connector firstly, and then connect the remaining plugs on the other end to the floppy drives correspondingly.

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

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.
Serial Port (COM1)	Use the COM port to connect serial devices such as mice or fax/modems.
VGA Port	Connect your monitor to the VGA port.
LAN Port	Connect an RJ-45 jack to the LAN port to connect your computer to the Network.
USB Ports	Use the USB ports to connect USB devices.
Audio Ports	Use the three audio jacks to connect audio devices. The first jack is for stereo line-in signal. The second jack is for stero line-out signal. The third jack is for microphone.

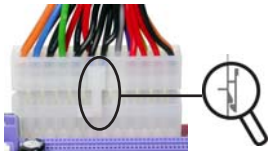
Connecting Case Components

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

1. Connect the CPU cooling fan cable to **CPU_FAN**.
2. Connect the system cooling fan connector to **SYS_FAN**.
3. Connect the case switches and indicator LEDs to the **F_PANEL**.
4. Connect the standard power supply connector to **ATX1**.
5. Connect the auxiliary case power supply connector to **ATX12V**.
6. Connect the power fan connector to **PWR_FAN (optional)**.

Connecting 24-pin power cable

The ATX 24-pin connector allows you to connect to ATX v2.x power supply.

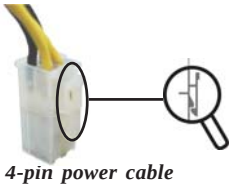


24-pin power cable

With ATX v2.x power supply, users please note that when installing 24-pin power cable, the latches of power cable and the ATX1 match perfectly.

Connecting 4-pin power cable

The ATX12V power connector is used to provide power to the CPU.



4-pin power cable

When installing 4-pin power cable, the latches of power cable and the ATX12V match perfectly.

CPU_FAN: FAN Power Connector

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

Users please note that the fan connector supports the CPU cooling fan of 1.1A ~ 2.2A (26.4W max) at +12V.

SYS_FAN: System Cooling FAN Power Connector

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

ATX1: ATX 24-pin Power Connector

Pin	Signal Name	Pin	Signal Name
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	Ground	15	Ground
4	+5V	16	PS_ON
5	Ground	17	Ground
6	+5V	18	Ground
7	Ground	19	Ground
8	PWRGD	20	-5V
9	+5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	Ground

ATX12V: ATX 12V Power Connector

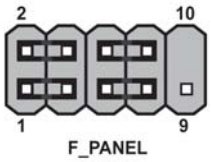
Pin	Signal Name
1	Ground
2	Ground
3	+12V
4	+12V

PWR_FAN: FAN Power Connector (optional)

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	NC	Not connect

Front Panel Header

The front panel header (F_PANEL) 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 pins 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.

Chapter 3

Using BIOS

About the Setup Utility

The computer uses the latest Insyde 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:

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

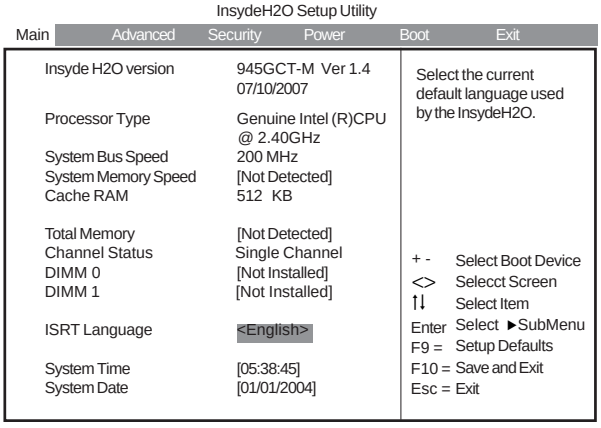
The BIOS navigation keys are listed below:

KEY	FUNCTION
<->	Select Screen
↑↓	Select Item
+ -	Change Field
Tab	Select Field
F1	General Help
F9	Setup Defaults
F10	Save and Exit
ESC	Exit

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.

Main Features

This option displays basic information about your system.



Insyde H2O version (945GCT-M Ver 1.4)

This item shows Insyde H2O version.

Processor Type

The item is automatically detected by the system at start up time. The Processor item shows the processor type and speed installed in your computer. This is display-only field.You cannot make changes to this field.

System Bus/Memory Speed

This item shows the speed of Bus and Memory.

Cache RAM (512 KB)

This item shows cache size of RAM.

Total Memory (Not Detected)

The item is automatically detected by the system at start up time. This is display-only field. You cannot make changes to this field.

Channel Status (Single Channel)

About the channel status, it will show “Single Channel” if memory slot plugs one memory DIMM. Otherwise, it will show “Dual Channel” if memory slot plugs two memory DIMMs.

DIMM 0/1 (Not Installed)

This item shows the memory capacity of DIMM.

ISRT Language (English)

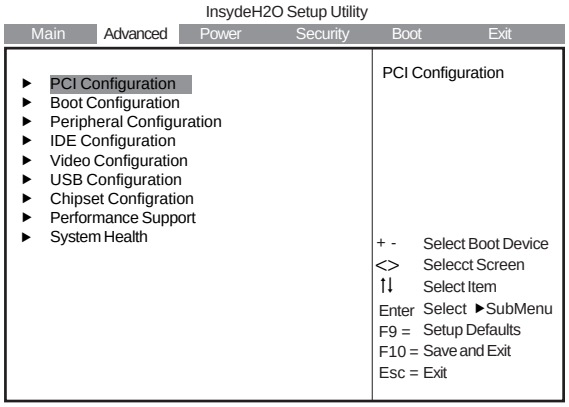
This item determines the Language version of the BIOS.

System Time and Date

The System Time and Date 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.

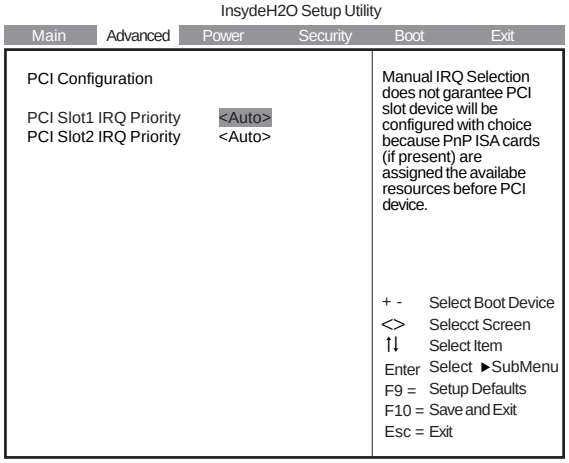
▸*Advanced Features*

This option defines advanced information about your system.



▸PCI Configuration (Press Enter)

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



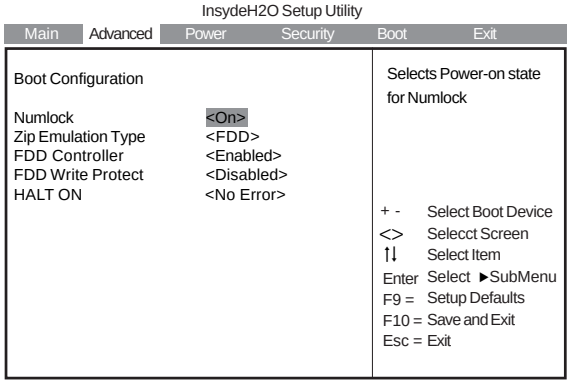
PCI Slots1/2 IRQ Priority (Auto)

Manual IRQ Selection does not guarantee PCI slot device will be configured with choice because PnP ISA cards (if present) are assigned the availabe resources before PCI device.

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

▸ Boot Configuration (Press Enter)

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



Numlock (On)

The item selects Power-on state for Numlock.

Zip Emulation Type (FDD)

The item shows the type of zip emulation.

FDD Controller (Enabled)

The item enables or disable the floppy disk drive interface.

FDD Write Protect (Disabled)

The item enables or disable the FDD write protect function.

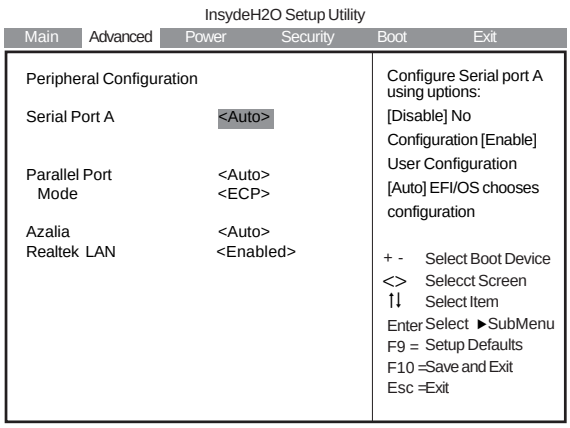
HALT ON (No Error)

This item defines the operation of the system POST(Power On Self Test) routine. You can use this item to select which types of errors in the POST are sufficient to halt system.

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

▸ Peripheral Configuration (Press Enter)

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



Serial Port A (Auto)

The item is used to assign the I/O address and interrupt request (IRQ) for onboard serial port 1 (COM1)

Parallel Port Mode (ECP)

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

Azalia (Auto)

This option allows you to control the onboard Azalia audio. Disable this item if you are going to install a PCI audio add-on card.

Realtek LAN (Enabled)

Use this item to enable or disable the Onboard LAN Device.

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

▶IDE Configuration (Press Enter)

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

InsydeH2O Setup Utility

Main	Advanced	Power	Security	Boot	Exit

IDE Configuration		DISABLED: disables both the PATA & SATA IDE controllers. BOTH: enables both the PATA & SATA IDE controllers.
IDE Controller	<Enabled>	
Compatible	<Enhanced Non-AHCI>	
▶Channel 1 Master	[Not Installed]	
▶Channel 1 Slave	[Not Installed]	
▶Channel 2 Master	[Not Installed]	
▶Channel 2 Slave	[Not Installed]	
▶Channel 3 Master	[Not Installed]	+ - Select Boot Device
▶Channel 3 Slave	[Not Installed]	<> Selecct Screen
▶Channel 4 Master	[Not Installed]	↑↓ Select Item
▶Channel 4 Slave	[ST3160812AS]	Enter Select ▶SubMenu
		F9 = Setup Defaults
		F10 =Save and Exit
		Esc =Exit

IDE Controller (Enabled)

Use this item to enable or disable either or both of the onboard Primary and Secondary IDE channels.

Compatible (Enhanced Non-AHCI)

When this item sets to Compatible mode, SATA and PATA drives are auto-detected and placed in Legacy mode. If it sets to Enhanced (non-AHCI) mode, SATA and PATA drives are auto-detected and placed in Native IDE mode.

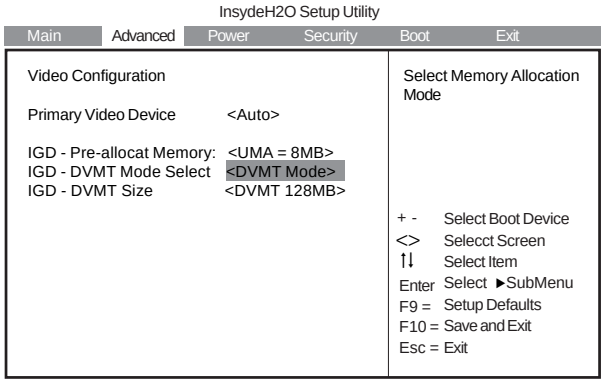
Channel 1/2/3/4 Master/Slave

Your computer has four IDE channels and each channel can be installed with one or two devices (Master and Slave). In addition, this motherboard supports four SATA channels and each channel allows one SATA device to be installed. Use these items to configure each device on the IDE channel.

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

▶Video Configuration (Press Enter)

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



Primary Video Device (Auto)

Use this item to set the primary video device.

IGD - pre-allocate Memory (UMA=8MB)

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

IGD - DVMT Mode Select (DVMT Mode)

This item allows you to select the DVMT operating mode.

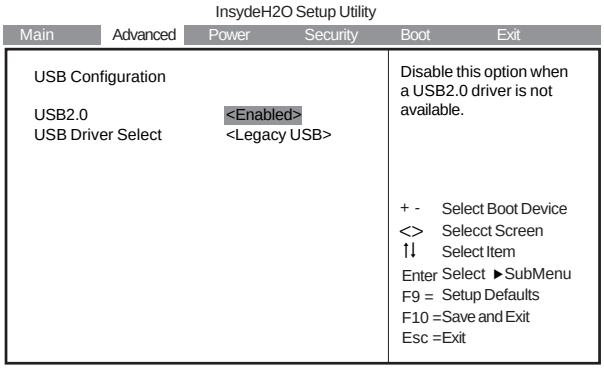
IGD - DVMT Size (DVMT 128MB)

When set to DVMT Mode, the graphics chip will dynamically allocate system memory as graphics memory, according to system and graphics requirements.

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

▶USB Configuration (Press Enter)

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



USB 2.0 (Enabled)

Use this item to enable or disable the USB 2.0 function.

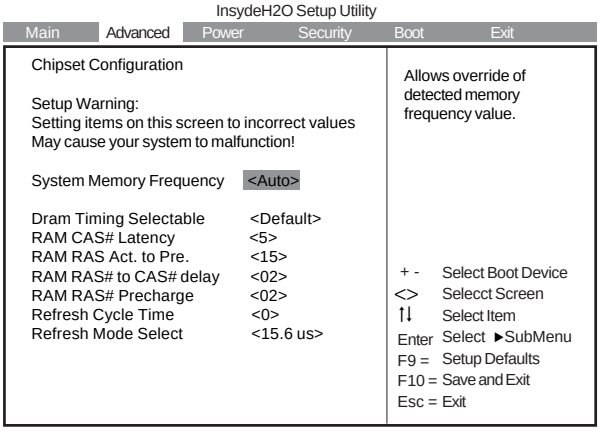
USB Driver Select (Legacy USB)

Use this item to enable or disable support for legacy USB devices.

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

▸Chipset Configuration (Press Enter)

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



System Memory Frequency (Auto)

Use this item to enable or disable the frequency of system memory.

Dram Timing Selectable (Default)

Use this option to determine if the memory timings should be read from SPD or set up manually.

RAM CAS# latency (5)

This item determines the operation of DDR RAM memory CAS (column address strobe). It is recommended that you leave this item at the default value.

RAM RAS Act. to Pre (15)

Depending on your SDRAM module structure, the 4-Way setting can offer the best performance. If you choose the wrong setting, the computer system will not run in a stable number.

RAM RAS# to CAS# delay (02)

This item specifies the RAS# to CAS# read write delay time to the same bank.

RAM RAS# Precharge (02)

This item specifies the RAS# precharge time.

Refresh Cycle Time (0)

This item means Refresh cycle time.

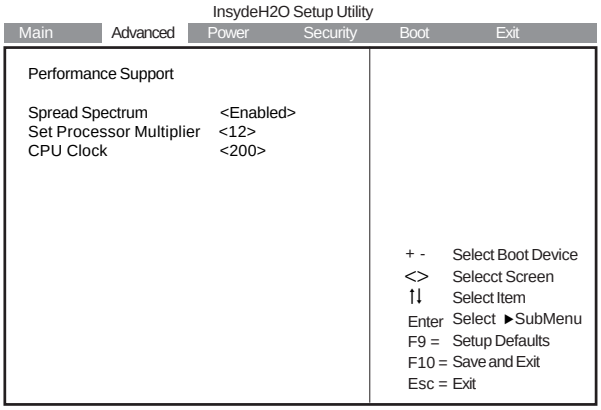
Refresh Mode Select (15.6 us)

This item is uesd to select refresh mode.

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

►Performance Support (Press Enter)

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



Spread Spectrum (Enabled)

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

Set Processor Multiplier (12)

This item is used to set processor multiplier.

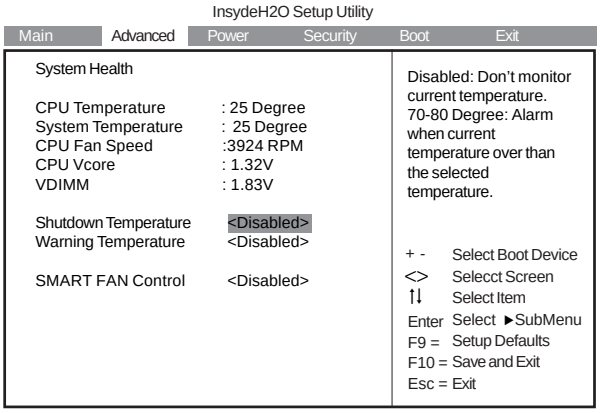
CPU Clock (200)

This item shows the frequency of the CPU installed in your system.

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

▸System Health (Press Enter)

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



System Component Characteristics

These fields provide you with information about the system's current operating status. You cannot make changes to these fields.

- CPU Temperature
- System Temperature
- CPU Fan Speed
- CPU Vcore
- VDIMM

Shutdown Temperature (Disabled)

Enable you to set the maximum temperature the system can reach before powering down.

Warning Temperature (Disabled)

This item allows you to manually set the warning temperature of the system.

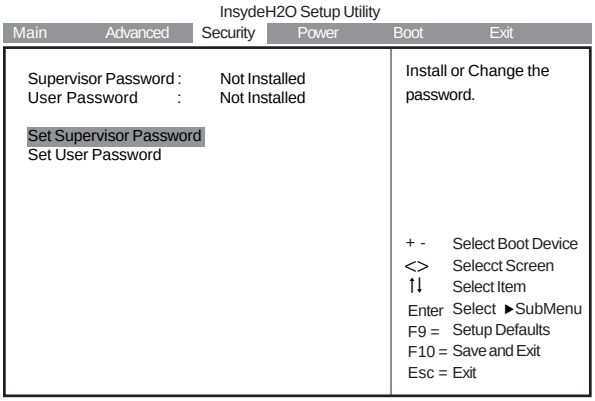
SMART FAN Control(Disabled)

This item allows users to enable or disable smart fan control function.

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

Security Features

This page helps you install or change a password.



Supervisor Password/User Password (Not Installed)

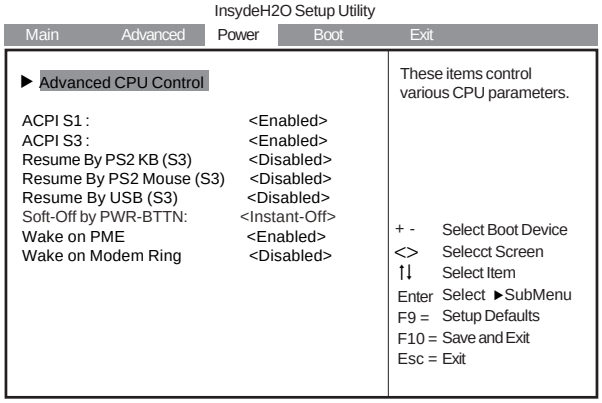
This item indicates whether a supervisor password/user password has been set. If the password has been installed, *Enabled* displays. If not, *Disabled* displays.

Set Supervisor Password/Set User Password

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

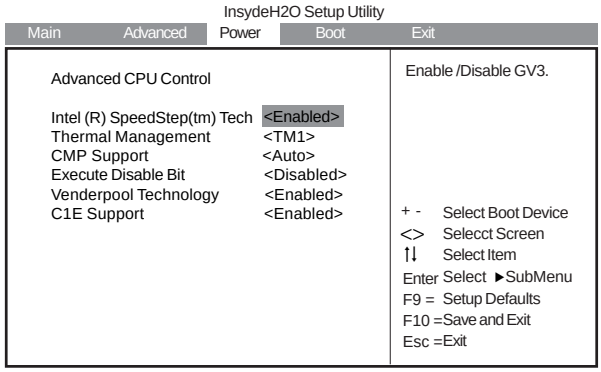
Power Features

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



▶ Advanced CPU Control (Press Enter)

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



Intel(R) SpeedStep(tm) Tech (Enabled)

This item enables or disables the Intel (R) SpeedStep (tm) technology. When enabled, allows enhance Intel SpeedStep Technology transitions.

Thermal Management (TM1)

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

CMP Support (Auto)

This item is used to control the Core Multi-Processing.

Execute Disabled Bit (Disasbled)

This item is a security feature that helps you protect your CPU and operating system against malicious software exrcuting code. it is available when CPU supports the feature.

Venderpool Technology (Enabled)

Use this item to enable or disable the Venderpool Technology, which is only for the CPU supporting the VT function.

C1E Support (Enabled)

Use this item to decrease the bus ratio reduces the consumption of CPU electricity and power.

Press <Esc> to return to the Power Features page.

ACPI S1/S3 (Enabled)

This item enable or disable ACPI S1/S3 function.

Resume By PS2 KB/Mouse (S3) (Disabled)

These items enable or disable you to allow keyboard/mouse activity to awaken the system from power saving mode.

Resume By USB (S3) (Disabled)

This item allows the activity of the USB devices (keyboard and mouse) to wake-up the system from S3 sleep state.

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 powerbutton down for four seconds to cause a software power down.

Wake on PME (Disabled)

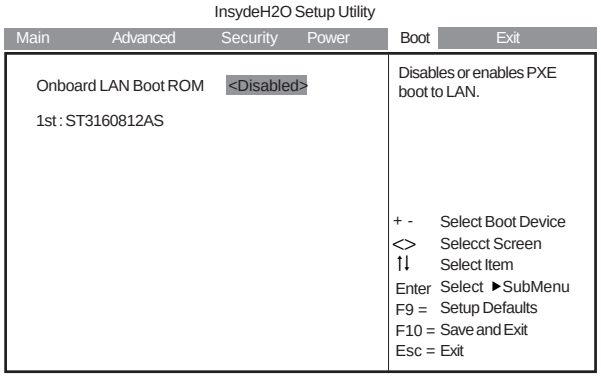
The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the PCI Modem or PCI LAN card.You must use an ATA power supply in order to use this feature. Use this item to do wake-up action if inserting the PCI card.

Wake on Modem Ring (Disabled)

The system can be turned off with a software command. If you enable this item, the systemcan automatically resume if there is an incoming call on the Modem. You must use an ATA power supply in order to use this feature.

Boot

This option defines advanced information about your system.

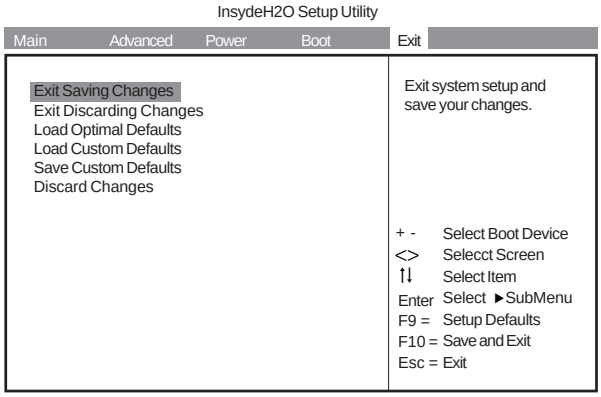


Onboard LAN Boot ROM (Disabled)

This item allows you to enable or disable the onboard LAN Boot ROM function.

▶ *Exit*

This option displays exit options about your system.



Exit Saving Changes

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, press <Yes> to save and exit, or press <No> to return to the main menu.

Exit discarding Changes

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, press <Yes> to discard changes and exit, or press <No> to return to the main menu.

Load Optimal Defaults

This option opens a dialog box that lets you install optimized defaults for all appropriate items in the Setup Utility. Press <Yes> and then <Enter> to install the defaults. Press <No> and then <Enter> to not install the defaults. If you only want to install setup defaults for a specific option, select and display that option, and then press <F9>.

Load Custom Defaults

If you saved your CMOS setting as custom defaults before the BIOS upgrade, then go to the Exit menu and choose the “Load Custom Defaults“ option to return it to your previous custom settings.

Save Custom Defaults

Highlight this item and press <Enter> to save the defaults as custom defaults. When the Save and Exit dialog box appears, press <Yes> to save and exit, or press <No> to return to the main menu.

Discard Changes

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility.

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 bootable device.
5. Turn off your computer and insert the bootable device in your computer. (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 bootable device first.)
6. At the C:\ or 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 bootable device from the computer 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.

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.

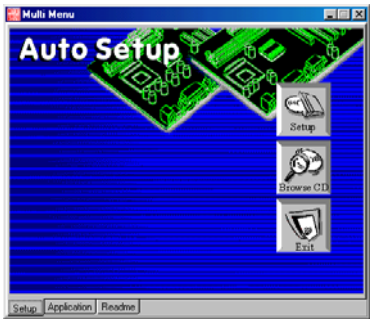
2.The notice of Intel HD audio installation (optional): The Intel High Definition audio functionality unexpectedly quits working in Windows Server 2003 Service Pack 1 or Windows XP Professional x64 Edition. Users need to download and install the update packages from the Microsoft Download Center "before" 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 2000/XP/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 2000/XP/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.

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	The **Browse CD** button is the standard Windows command that allows you to open Windows Explorer and show the contents of the support CD. 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. Some software is installed in separate folders for different operating systems, such as Windows 2000/XP/Vista. Always go to the correct folder for the kind of OS you are using. 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.
Exit	The **EXIT** button closes the Auto Setup window.

Application Tab

Lists the software utilities that are available on the CD.

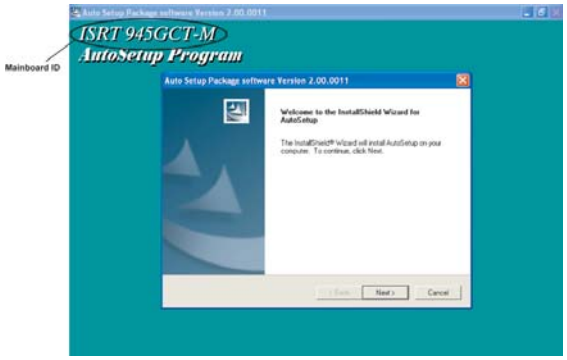
Read Me Tab

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:

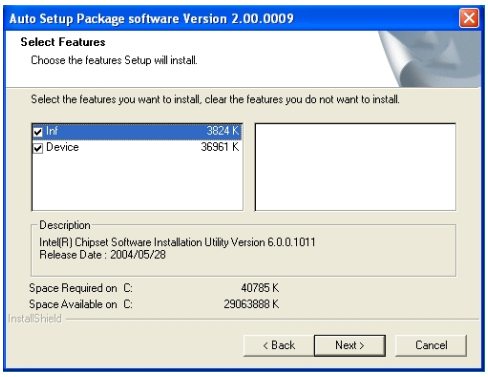
1. *Click **Setup.** The installation program begins:*



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

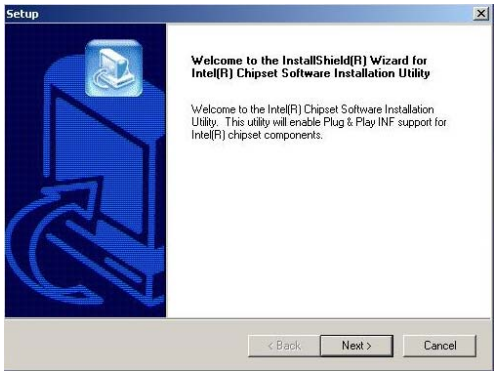
The motherboard identification is located in the upper left-hand corner.

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:*



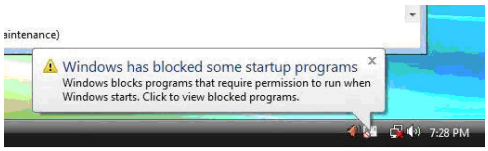
5. *Follow the instructions on the screen to install the items.*

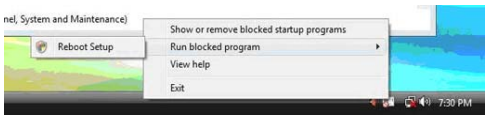
1. Drivers and software are automatically installed in sequence. Follow the onscreen instructions, confirm commands and allow the computer to restart a few times to complete the installation.

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.





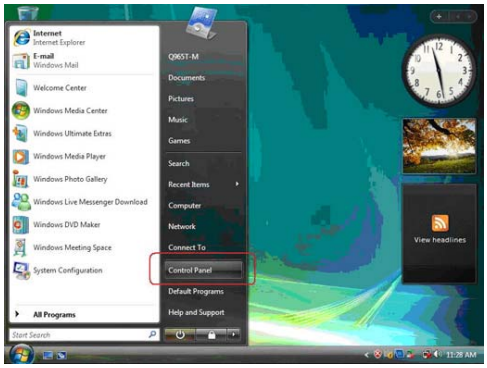
Method 2. Disable UAC (User Account Control)

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

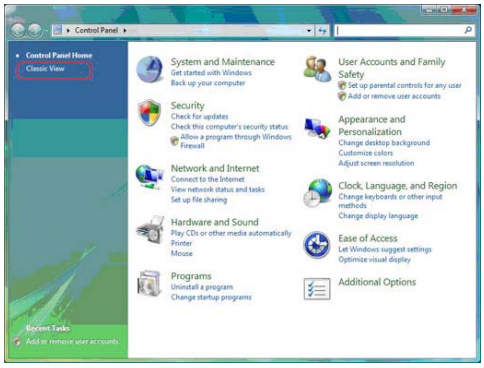
Disable Vista UAC function before installing drivers, then use CD driver to install drivers, it will continue to install drivers after system restart without running blocked programs.

Follow these instructions to Disable Vista UAC function:

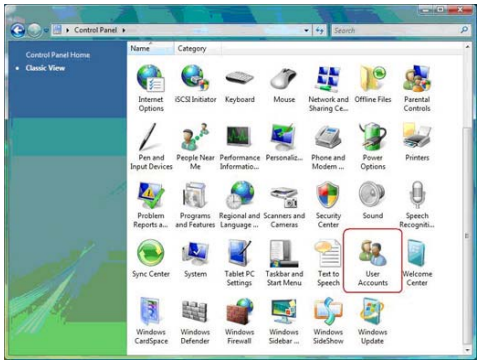
1. *Go to* ***Control Panel****.*



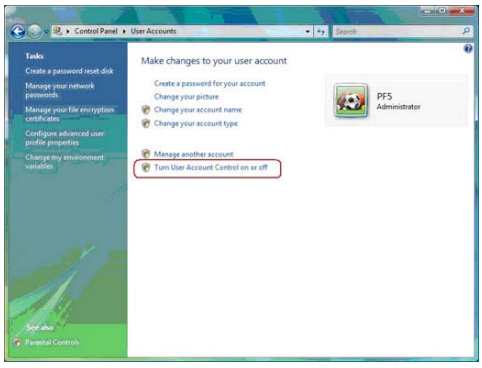
2. *Select* ***Classic View***.



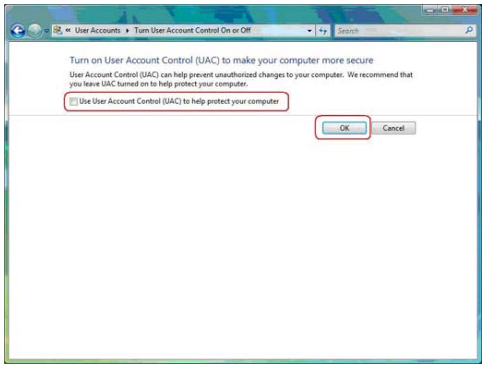
3. *Set* ***User Account***.



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



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.

Chapter 5

Using the Intel® System Recovery Tool (Intel® SRT)

About the Intel® System Recovery Tool

Intel® System Recovery Tool is a value-add "on-board" software product that provides easy-to-use solutions for data backup and recovery, aimed at individuals who want to protect their system and personal data and small businesses that want to conveniently create and deploy uniform software configurations on their business computers.

System Requirements

To enable Intel® System Recovery Tool, there are some system requirements as follows:

- **CPU:** Any CPU of processor family below:
  Intel (R) Core 2 Duo
  Intel (R) Pentium (R) Duo Core
  Intel (R) Pentium (R) D
  Intel (R) Pentium (R) 4
  Intel (R) Celeron (R) D
- **Motherboard:** ECS Desktop Board 945GCT-M *
- **Memory:** 512MB
- **NIC:** Bulit-in 100Mbps Network Interface Card

** 1. Other names and brands may be claimed as the property of others.*
2. At least 2 partitions are required on the hard disk.

Features

System backup	Back up the data on system partitions to image files
System restore	Restore the system from image files to an existing system partition, or to a new hard disk
Partition based data backup	Back up the data on specific partitions to image files
Partition based data restore	Restore data from image files to specific partitions
USB storage support (feature preview)	Partitions can be directly backed up to USB 2.0 hard disks.
Graphic UI triggered with one button	Intel® SRT UI can be triggered with one button (F3) during boot. The graphic UI provide a friendly user interface.

USB storage support in this version is only for feature preview. We may not support the compatibility issues of Intel® SRT with some USB devices. System backup/restore feature only supports Windows system installed on the first partion of the disk.

Installation Steps

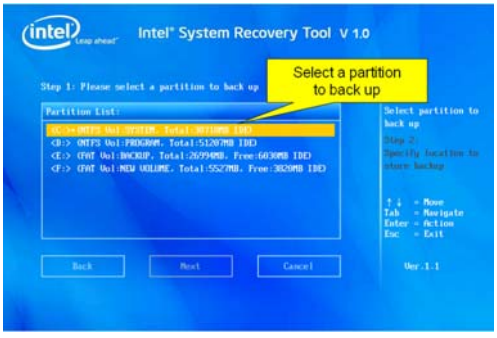
Press **F3** to enter the UI of Intel® System Recover Tool.

Backup Steps

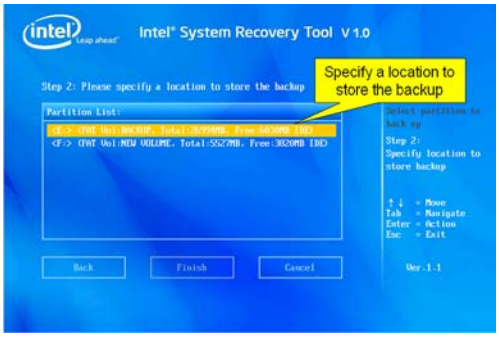
1. Press Enter to select Backup or Restore.

2. Enter this page after backup is selected:

   The partition selected shows gray, and press Enter to select Next.

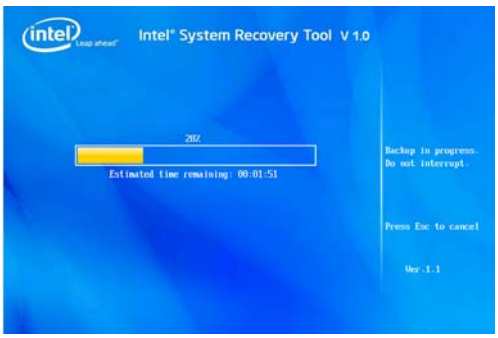


3. The backup file is stored in the ISRT folder located in the selected partition in this page by default.

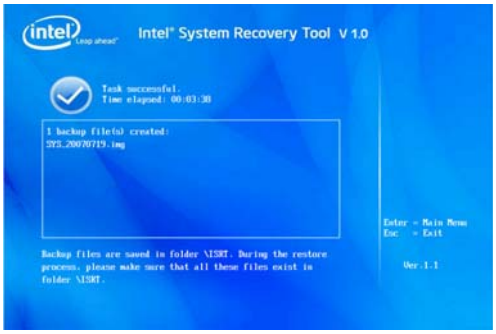


4. You can select New backup file or the existed backup file. The item selected shows gray; Then press Enter to select Finish and backup starts.

5. Backup is in progress...



6. When the backup is complete, UI will show Successful accordingly.

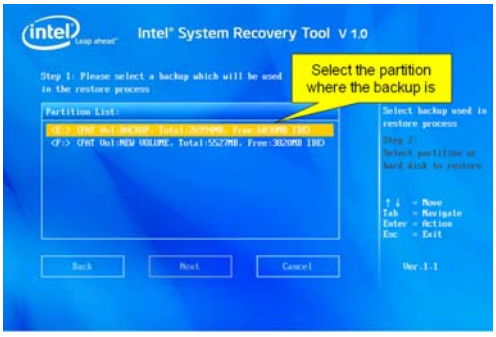


Restore Steps

1. Press Enter to select Restore.

Please make sure the size of the partition to be restored is not less than that of the partition from which the image file is generated.

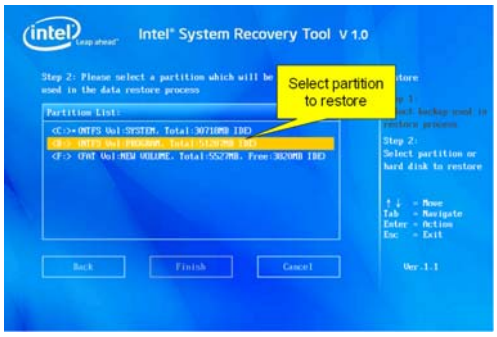
2. Enter this page after selecting Restore.



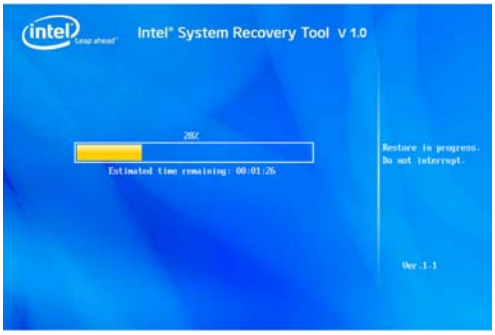
3. The item selected shows gray, and press Enter to select Next.

4. If system partition is to be restored, select the hard disk where the partition to be restored is in the list; After that, press Enter to select Finish. The restore starts.

5. If data partition is to be restored, select the partition in the list; After that, press Enter to select Finish. The restore starts.



6. Restore is in progress...



7. After the restore is complete, the UI will display Successul.

Feature Notes

There are the notes for product limitations in Intel® SRT:

1. In restoring systems, Intel® SRT will create a partition if there is no partition on the hard disk. However, the system backup/restore feature only supportsWindows systems installed on the first partition of the hard disk.

2. During the data restore process, Intel® SRT will not create partitions if there is no partition available. We suggest restore data to the original partition or manually create a new partition before the restore process. Please notice that system backup and restore do not have this limitation.

3. If the disk is converted to "Dynamic disk", the disk format will not be supported in Intel® SRT. And if system partition is restored to a "Dynamic disk",the system behavior will be abnormal.

4. Intel® SRT supports storing image files on NTFS partitions. However, some old version of NTFS partition or NTFS partition created by some 3rd party tool are mot supported. We suggest use Windows integrated tool to create NTFS partitions.

5. Intel® SRT does not support to create or retrieve image files in a folder which is compressed, encrypted or linked in NTFS partitions. Intel® SRT does not support to restore a partition from an image file which is compressed, encrypted or linked in NTFS partitions. We suggest disable these NTFS advanced features before using Intel® SRT or never use these NTFS advanced features on Intel® SRT related files or folders.

- **ISRT official web site**

You can find the possible solutions to solve your problems by accessing ISRT official web site via following link: http://platformadmintech.intel.com/srt
If upgrading the product version is needed, please download the up*grade* packpage via following link: http://platformadmintech.intel.com/srt/upgrade/

If you need to enable Intel® Platform Admimistration Technology on the board, please visit the website for detail information.

This concludes Chapter 5.

Memo