Preface

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Version 3.0

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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	Describes features of the
Introducing the Motherboard	motherboard.
	Go to ⇨ page 1

Chapter 2	Describes installation of
Installing the Motherboard	motherboard components.
	Go to ⇨ page 7

Chapter 3	Provides information on us-
Using BIOS	ing the BIOS Setup Utility.
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Chapter 4	Describes the motherboard
Using the Motherboard Software	software
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Chapter 5	Provides basic trouble
Trouble Shooting	shooting tips
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Chapter 1
Introducing the Motherboard

Introduction

Thank you for choosing the HDC-I2 motherboard of high performance, enhanced function. This motherboard has onboard FT1 CPU (AMD dual core E-450 APU/ AMD dual core E-350(D) APU/AMD dual core E-300 APU/AMD single core E-240 APU/AMD dual core C-60/AMD dual core C-50 APU/AMD single core C-30 APU)*1 with a Mini-ITX form factor of 170 x 170 mm.

The motherboard incorporates the AMD Hudson D1 FCH chipset. The HDC-I2 supports one PCI slot which full compliant with PCI rev 2.3 specification at 33 MHz. This motherboard supports up to 8 GB of system memory with single channel DDR3 1066/800*2 MHz. It implements an EHCI compliant interface that provides twelve USB 2.0 ports (eight USB 2.0 ports and two USB 2.0 headers support additional four USB 2.0 ports).

The motherboard is equipped with advanced full set of I/O ports in the rear panel, including one DVI port (optiona HDMI port), one VGA port, eight USB 2.0 ports, one LAN port, and audio jacks for microphone, line-in and line-out.

*1*The onboard CPU is optional, please take the actual motherboard as the standard.*

*2*The CPU E450 supports single channel DDR3 up to 1333 MHz.*

Feature

Processor

The motherboard uses onboard AMD FT1 CPU that carries the following features:

- The AMD FT1 processor combines the central processing unit (CPU) with the graphics processing unit (GPU) in a single-chip Accelerated Processing Unit (APU) package.
- The APU connects to the Fusion Controller Hub (FCH) through the Unified Media Interface (UMI) to provide connections to the different system devices.

Chipset

The AMD Hudson D1 FCH Chipset is a single-chip with proven reliability and performance.

- PCI slot compliants with PCI Rev 2.3 interface at 33 MHz
- Integrated SATA 3.0 Gb/s Host Controller
- Twelve USB 2.0 ports supported
- Supports Unified Media interface(UMI), SMBus controller, and High Definition Audio
- Supports Serial Peripheral Interface (SPI)
- Enhanced DMA Controller, power management, hardware monitoring, interrupt controller, and clock function.

Memory

- Supports DDR3 1066/800* SDRAM with single-channel architecture
- Accommodates two unbuffered DIMMs
- Up to 4GB per DIMM with maximum memory size up to 8GB

*The CPU E450 supports single channel DDR3 up to 1333 MHz.

Onboard LAN (optional)

• Supports PCI Express™ 1.1 • Integrated 10/100/1000 transceiver • Integrated Switching Regulator • Wake-on-LAN and remote wake-up support
• Supports PCI Express™ 1.1 • Integrated 10/100 transceiver • Integrated Linear Regulator • Wake-on-LAN and remote wake-up support

Audio

This motherboard may support the following Audio chipset:

- 5.1 Channel High Definition Audio Codec
- Exceeds Microsoft Windows Logo Program (WLP) Requirements
- ADCs support 44.1k/48k/88.2K/96K/192KHz sample rate
- Power Support: Digital: 3.3V; Analog: 5.0V

Expansion Options

The motherboard comes with the following expansion options:
- One PCI slot
- Two 7-pin SATA connectors

Integrated I/O

The motherboard has a full set of I/O ports and connectors:
- One DVI port (optional HDMI port)
- One VGA port
- Eight USB 2.0 ports
- One LAN port
- Audio jacks for microphone, line-in 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 ambiance between 0 and 50° C.

Specifications

CPU	•	Onboard AMD FT1 CPU(AMD dual core E-450 APU/AMD dual core E-350(D) APU/AMD dual core E-300 APU/AMD single core E-240 APU/AMD dual core C-60/AMD dual core C-50 APU/AMD single core C-30 APU*[1]
Chipset	•	AMD Hudson D1 chipset
Memory	• • •	Single-channel DDR3 memory architecture 2 x 240-pin DDR3 DIMM sockets support up to 8 GB Supports 1066/800*[2] DDR3 SDRAM
Expansion Slot	•	1 x PCI slot
Storage	• •	Supported by AMD Hudson D1 chipset 2 x Serial ATA 3.0 Gb/s devices
Audio	•	VIA VT1705
LAN	•	AR8151 GigaLAN (optional 10/100 LAN AR8152)
Rear Panel I/O	• • • • •	1 x DVI port (optional HDMI port) 1 x VGA port 8 x USB 2.0 ports 1 x RJ45 LAN connector 1 x Audio port (Line in, microphone in, line out)
Internal I/O Connectors & Headers	• • • • • • • • • •	1 x 24-pin ATX Power Supply connector 1 x 4-pin CPU_FAN connector 1 x 3-pin SYS_FAN connector 2 x USB 2.0 headers 1 x Front panel audio header 1 x Speaker header 1 x LVDS header (optional) 1 x CASE open header 1 x 10-pin Front panel switch/LED header 2 x SATA 3Gb/s connectors
System BIOS	• • • • •	AMI BIOS with 16Mb SPI Flash ROM Supports ACPI & DMI Supports Plug and Play, STR(S3)/STD(S4), Hardware monitor, Audio, LAN, can be disabled in BIOS Supports Dual Display (optional)
Form Factor	•	Mini-ITX 170mm x 170mm

*[1]The onboard CPU is optional, please take the actual motherboard as the standard.

*[2]The CPU E450 supports single channel DDR3 up to 1333 MHz.

Motherboard Components
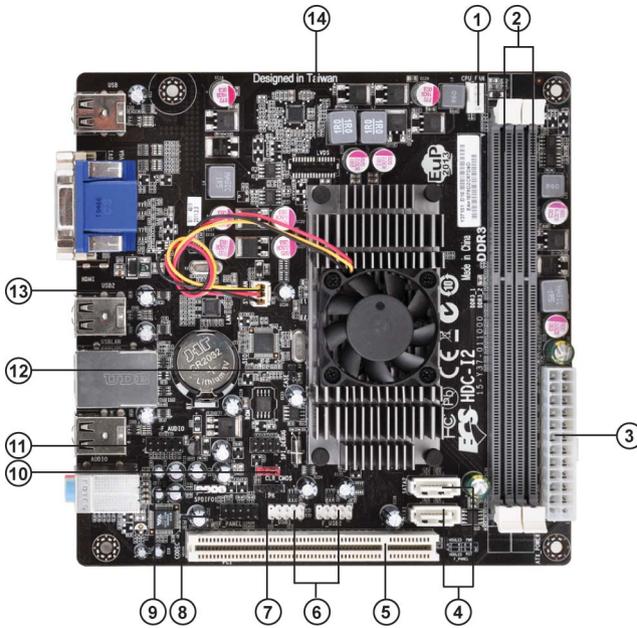
Table of Motherboard Components

LABEL	COMPONENTS
1. CPU_FAN	CPU cooling fan connector
2. DDR3_1~2	240-pin DDR3 SDRAM slots
3. ATX_POWER	Standard 24-pin ATX power connector
4. SATA1~2	Serial ATA connectors
5. PCI	32-bit add-on card slot
6. F_USB1~2	Front panel USB headers
7. SPK	Internal speaker header
8. F_PANEL	Front panel switch/LED header
9. SPDIFO	SPDIF out header
10. CLR_CMOS	Clear CMOS jumper
11. F_AUDIO1	Front panel audio header
12. CASE	CASE open header
13. SYS_FAN	System cooling fan connector
14. LVDS（optional）	Low Voltage Differential Signaling Transmitter Interfaces

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

Introducing the Motherboard

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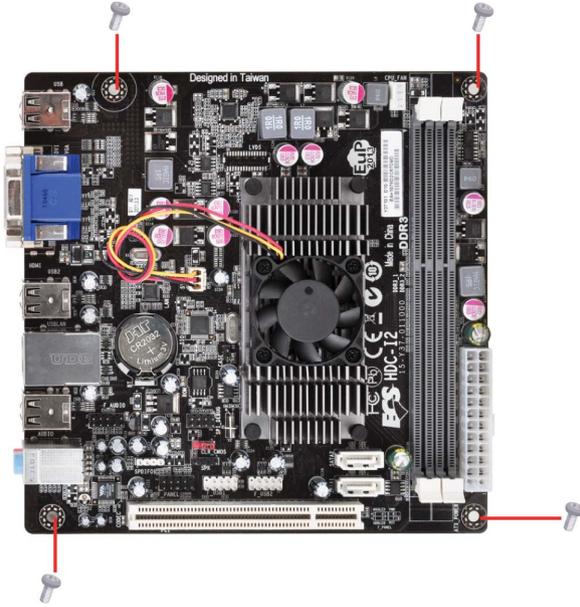
Do not over-tighten the screws as this can stress the motherboard.

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.
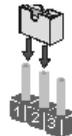
Checking Jumper Settings

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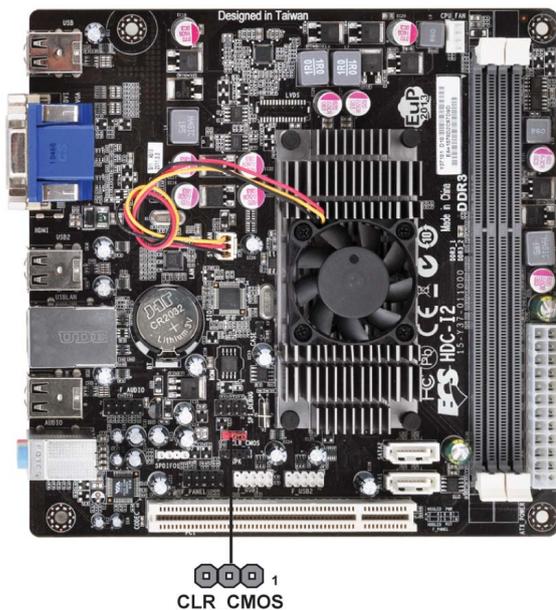
Jumper Settings

Jumper	Type	Description	Setting (default)	
CLR_CMOS	3-pin	CLEAR CMOS	1-2: NORMAL 2-3: CLEAR Before clearing the CMOS, make sure to turn the system off.	**CLR_CMOS** 1

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 Hardware

Installing Memory Modules

This motherboard accommodates two memory module. It can support two 240-pin DDR3 1066/800*. The total memory capacity is 8 GB.

DDR3 SDRAM memory module table

Memory module	Memory Bus
DDR3 800	*400 MHz*
DDR3 1066	*533 MHz*
*DDR3 1333**	*667 MHz*

You must install at least one module in any of the two slots. Total memory capacity is 8 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.

*The CPU E450 supports single channel DDR3 up to 1333 MHz.

Installation Procedure

Refer to the following to install the memory modules.

1   This motherboard supports unbuffered DDR3 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.
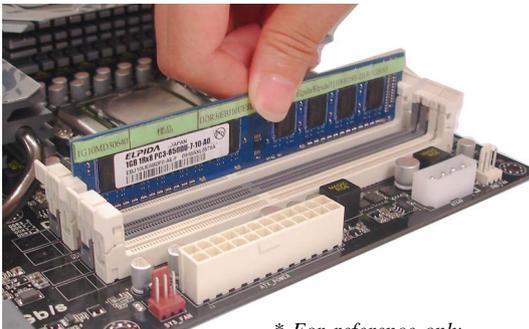
* For reference only

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.
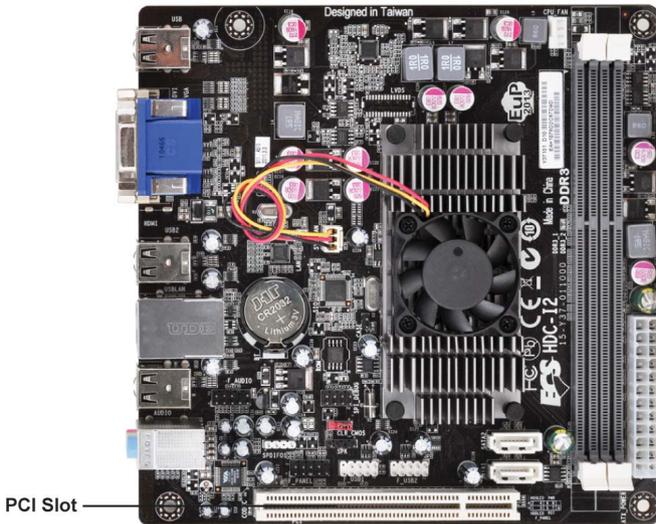
PCI Slot

PCI 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 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.

Installing the Motherboard

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.

* For reference only

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.

Connecting Optional Devices

Refer to the following for information on connecting the motherboard's optional devices:
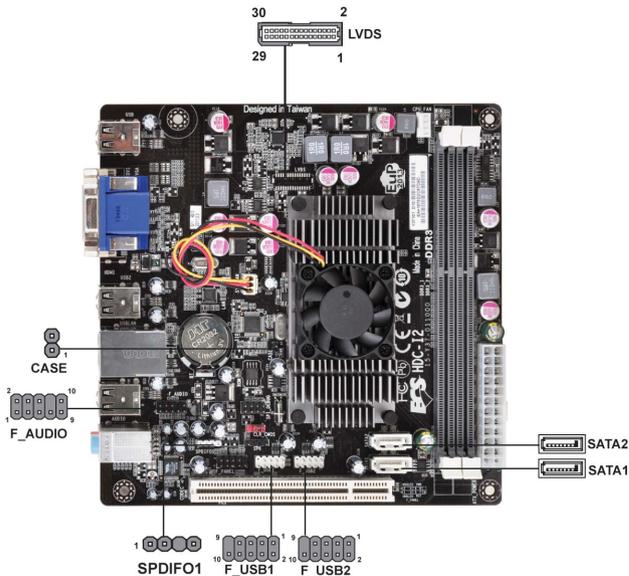
F_AUDIO: Front Panel Audio header

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

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

SATA1~2: Serial ATA connectors

These connectors are use to support the new Serial ATA devices for the date 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	-	-

CASE: Chassis Intrusion Detect Header

Pin 1-2	Function
Short	Case Open
Open	Case Close

F_USB1~2: Front Panel USB headers

The motherboard has eight USB 2.0 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 S/PDIF (Sony/Philips Digital Interface) output to digital multimedia device through optical fiber or coaxial connector.

Pin	Signal Name	Function
1	SPDIF	SPDIF digital output
2	+5VA	5V analog Power
3	Key	No pin
4	GND	Ground

LVDS: LVDS connector (optional)

Pin	Signal Name	Pin	Signal Name
1	VDD	2	VDD
3	GND	4	USB_GND
5	V_LED	6	V_LED
7	GND	8	GND
9	PWM_LED	10	EN_LED
11	USB_VCC	12	USB_D-
13	USB_D+	14	USB_GND
15	V_EDID	16	GND
17	RXIN0-	18	RXIN0+
19	GND	20	RXIN1-
21	RXIN1+	22	GND
23	RXIN2-	24	RXIN2+
25	GND	26	RXCLK+
27	RXCLK-	28	GND
29	DATA-EDID	30	CLK-EDID

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 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)**

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.
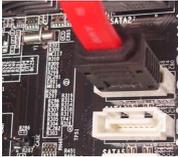
This motherboard supports the "Hot-Plug" function.

Connecting I/O Devices

The backplane of the motherboard has the following I/O ports:
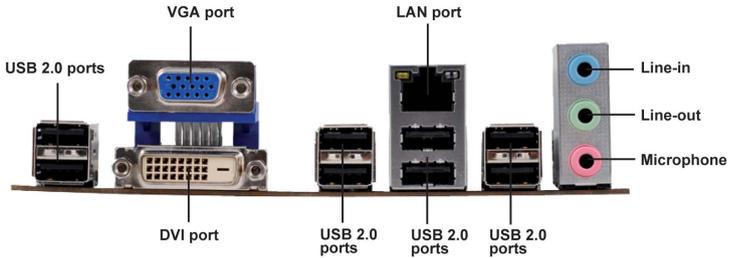
DVI Port		Connect the DVI port to the monitor.
VGA Port		Connect your monitor to the VGA port.
USB 2.0 Ports		Use the USB 2.0 ports to connect USB 2.0 devices.
LAN Port		Connect an RJ-45 jack to the LAN port to connect your computer to the Network.
Audio Ports		Use the three audio ports to connect audio devices. The first jack is for stereo line-in signal. The second jack is for stereo 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 **ATX_POWER**.
5   Connect the case speaker cable to **SPK**.
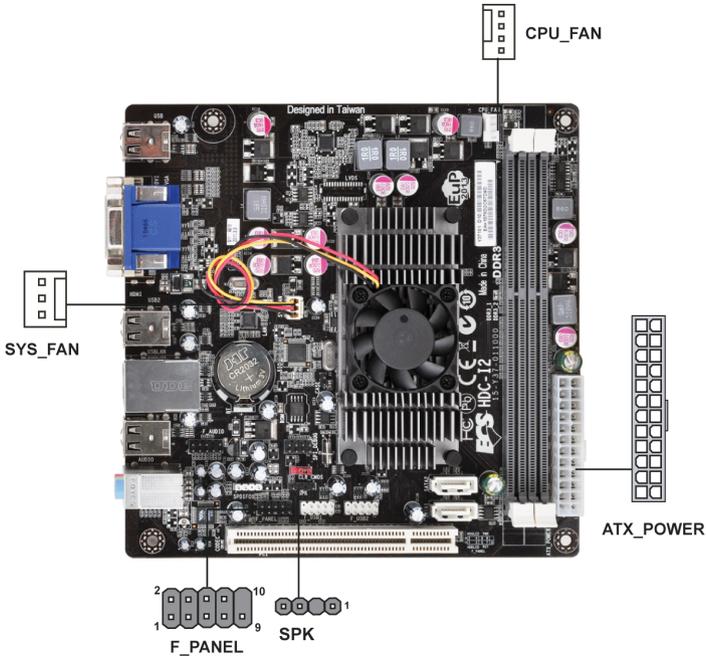
Connecting 24-pin power cable

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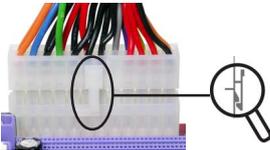
With ATX v2.x power supply, users please note that when installing 24-pin power cable, the latches of power cable and the ATX1 match perfectly.

24-pin power cable

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.

ATX_POWER: 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

SPK: Internal speaker

Pin	Signal Name
1	VCC
2	Key
3	NC
4	Signal

SYS_FAN: System Cooling FAN Power Connector

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

Installing the Motherboard

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:

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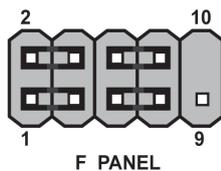
Pin	Signal	Function	Pin	Signal	Function
1	HD_LED_P	Hard disk LED(+)	2	FP PWR/SLP	*MSG LED(+)
3	HD_LED_N	Hard disk LED(-)	4	FP PWR/SLP	*MSG LED(-)
5	RST_SW_N	Reset Switch(-)	6	PWR_SW_P	Power Switch(+)
7	RST_SW_P	Reset Switch(+)	8	PWR_SW_N	Power Switch(-)
9	RSVD	Reserved	10	Key	No pin

* 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.

Chapter 3
Using BIOS

About the Setup Utility

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

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

The BIOS Setup Utility enables you to configure:

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

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

This chapter provides explanations for Setup Utility options.

The Standard Configuration

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

This Setup Utility should be used:

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

Entering the Setup Utility

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

Press DEL to enter SETUP

Press the delete key to access BIOS Setup Utility.

Note: The image above is for reference only, please refer to the actual image for details.

Resetting the Default CMOS Values

When powering on for the first time, the POST screen may show a "CMOS Settings Wrong" message. This standard message will appear following a clear CMOS data at factory by the manufacturer. You simply need to Load Default Settings to reset the default CMOS values.

Note: Changes to system hardware such as different CPU, memories, etc. may also trigger this message.

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 an icon ▷) 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.

Using BIOS

In this manual, default values are enclosed in parenthesis. Submenu items are denoted by an icon ▷.

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
+/-	Change Opt.
Enter	Select
F1	General Help
F2	Previous Value
F3	Optimized Defaults
F4	Save & Exit

1. 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.
2. In this Gui BIOS, you can operate by mouse or keyboard. Click : select item; Double click: enter; Right click: exit.

Language

Select the language icon and press <Enter> or double click the left key of the mouse to display the screen. Then you can choose the language: English, Traditional Chinese, Simple Chinese, Russian, Korean, German, Spanish, Italian, Portuguese, Japanese.

Default

Select the default icon and press <Enter> or double click the left key of the mouse to display the following screen. Then you can load optimized defaults or not.

Boot

Select the boot icon and press <Enter> or double click the left key of the mouse to display the following screen. Then you can choose the boot device.

Advanced

Select the advanced icon and press <Enter> or double click the left key of the mouse to display the following screen.

Main Menu

This menu shows the information of BIOS and enables you to set the system language, date and time.
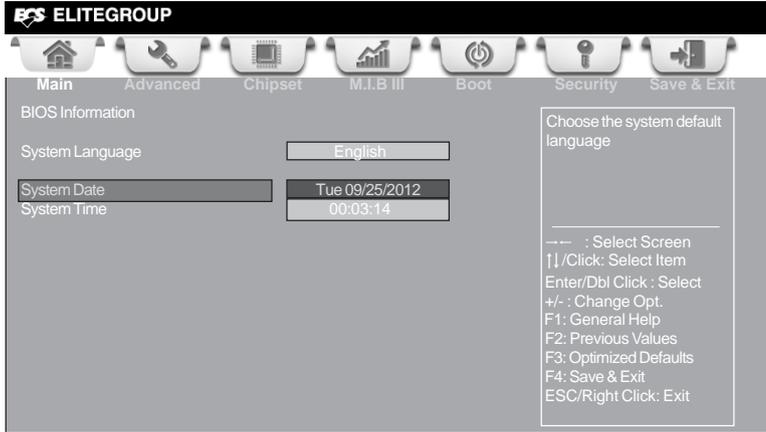
System Language (English)

This item is used to set system language.

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.

Advanced Menu

The Advanced menu items allow you to change the settings for the CPU and other system.
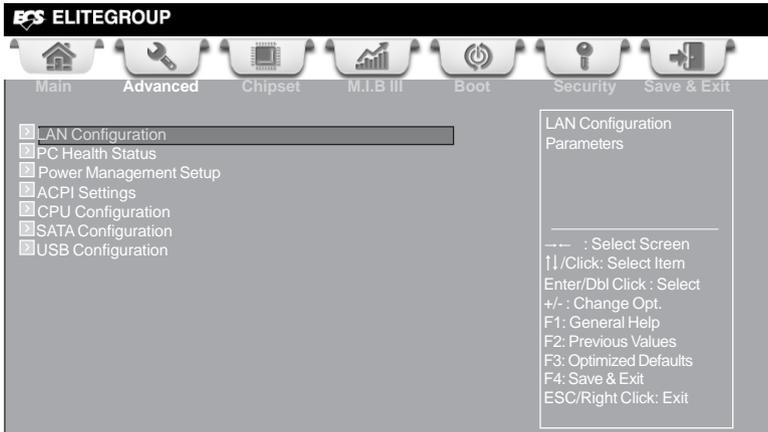
LAN Configuration

The item in the menu shows the LAN-related information that the BIOS automatically detects.

Onboard LAN Controller (Enabled)
Use this item to enable or disable the Onboard LAN.

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

Using BIOS

PC Health Status

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

ECS ELITEGROUP

| Main | **Advanced** | Chipset | M.I.B III | Boot | Security | Save & Exit |

Smart Fan Function

CPU Tct1	:	+65
System temperature(°C)	:	+32°C
CPU FAN	:	3157 RPM
SYS FAN	:	N/A
VDIMM	:	+1.547 V

→←— : Select Screen
↑↓ /Click: Select Item
Enter/Dbl Click : Select
+/- : Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC/Right Click: Exit
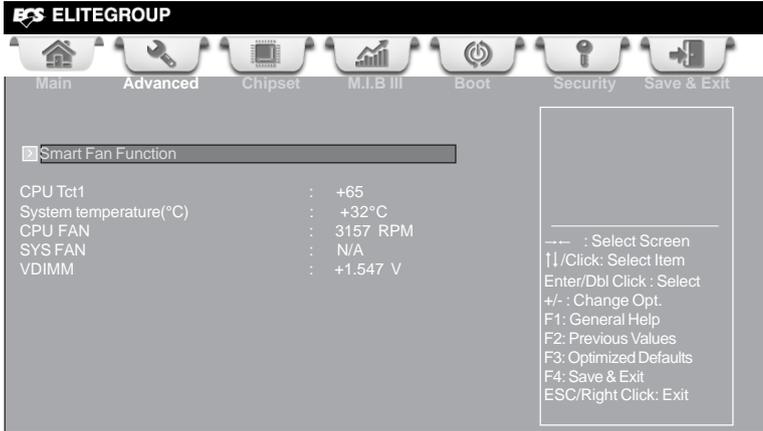
▶ **Smart Fan Function**

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

ECS ELITEGROUP

| Main | **Advanced** | Chipset | M.I.B III | Boot | Security | Save & Exit |

Smart Fan Function
CPU Smart Fan Control	Enabled
Smart Fan Mode	Normal
High Limit Temperature	60
Low Limit Temperature	37
High Limit PWM	200
Low Limit PWM	56
SYS Smart Fan Control	Enabled
Smart Fan Mode	Normal
High Limit Temperature	60
Low Limit Temperature	37
High Limit PWM	200
Low Limit PWM	56

→←— : Select Screen
↑↓ /Click: Select Item
Enter/Dbl Click : Select
+/- : Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC/Right Click: Exit

CPU Smart FAN Control (Enabled)

This item allows you to enable/disable the control of the CPU fan speed by changing the fan voltage.

Smart Fan Mode (Normal)

This item allows you to select the fan mode (Normal, Quiet, Silent, or Manual) for a better operation environment. If you choose Normal mode, the fan speed will be auto adjusted depending on the CPU temperature. If you choose Quite mode, the fan speed will be auto minimized for quiet environment. If you choose Silent mode, the fan speed will be auto restricted to make system more quietly. If you choose Manual mode, the fan speed will be adjust depending on users' parameters.

Using BIOS

SYS Smart Fan Control (Enabled)

This item enables you to define the System temperature by smartly adjusting the System Fan. When it is set at certain temperature, the SYS Fan PWM value will change accordingly.

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

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 Tct1
- System temperature(° c)
- CPU FAN
- DIMM Voltage
- DIMM Voltage

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

Power Management Setup

This page sets up some parameters for system power management operation.
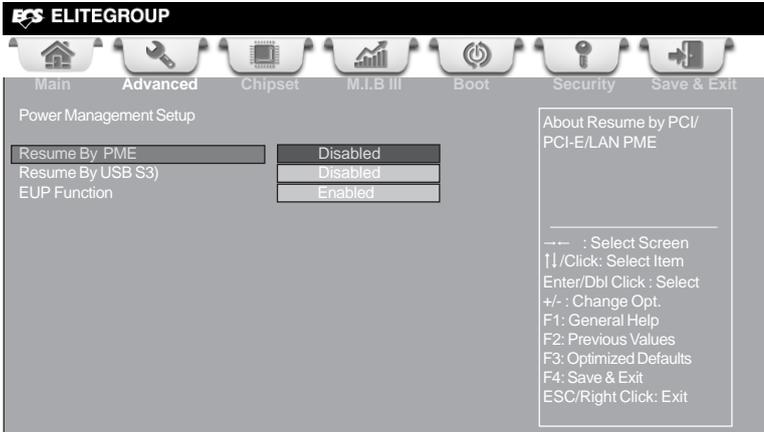
Resume By PME (Disabled)

This item specifies 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 2.0 device wakeup function from S3 mode.

EUP Function (Enabled)

This item allows user to enable or disable EUP function.

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

Using BIOS

ACPI Configuration

The item in the menu shows the highest ACPI sleep state when the system enters suspend.

ECS ELITEGROUP

| Main | **Advanced** | Chipset | M.I.B III | Boot | Security | Save & Exit |

ACPI Configuration

ACPI Sleep State   S3 (Suspend to RAM)

Select the highest ACPI sleep state the system will enter when the Suspend button is pressed.

————————————
→← : Select Screen
↑↓/Click: Select Item
Enter/Dbl Click : Select
+/- : Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC/Right Click: Exit
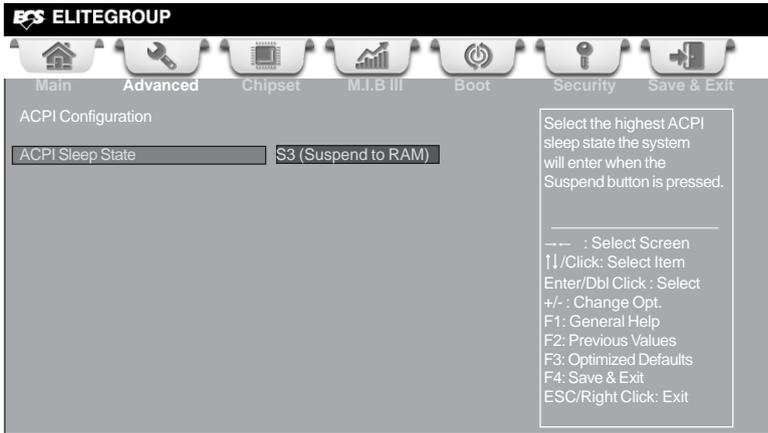
ACPI Sleep State (S3(Suspend to RAM))

This item allows user to enter the ACPI S3 (Suspend to RAM) Sleep State(default).

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

CPU Configuration

The item in the menu shows the CPU.
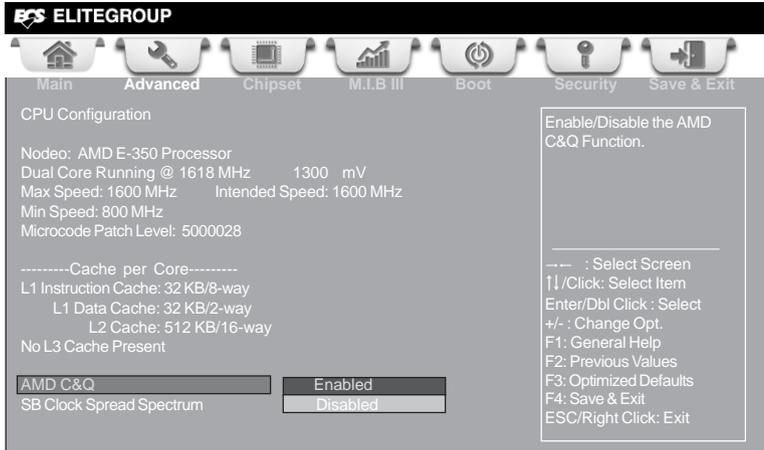
Dual Core Running @ 1618 MHz   1300   mV

This item shows the information of the current CPU Frequency & Voltage.

Max Speed (1600 MHz)   Intended Speed (1600 MHz)

This item shows the maximum & intended speed of the CPU.

Min Speed (800 MHz)

This item shows the minimum speed of the CPU.

Microcode Patch Level (5000028)

This item shows the Microcode revision.

Information de cachette par noyau

This item shows the CPU cache.

L1 Instruction Cache (32 KB/8-way)

This item shows CPU L1 Instruction Cache.

L1 Data Cache (32 KB/2-way)

This item shows CPU L1 Data Cache.

L2 Cache (512 KB/16-way)

This item shows CPU L2 Cache.

No L3 Cache Present

This item shows CPU L3 Cache.

AMD C&Q (Enabled)

This item enables or disables the CPU C&Q Function.

SB Clock Spread Spectrum (Disabled)

This item enables or disables the SB Clock Spread Spectrum.

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

Using BIOS

SATA Configuration

Use this item to show the mode of serial-ATA configuration options.
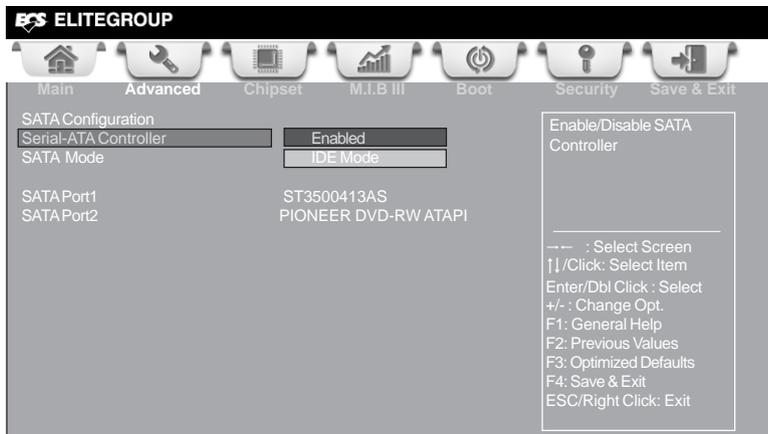
Serial-ATA Controller (Enabled)

Use this item to enable or disable the serial-ATA controller.

SATA Mode (IDE Mode)

Use this item to select SATA mode.

SATA Port1~2 (ST3500413AS/PIONEER DVD RW ATAPI)

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, and each channel allows one SATA device to be installed. Use these items to configure each device on the SATA channel.

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

USB Configuration

Use this item to show the information of USB configuration.

ECS ELITEGROUP

| Main | **Advanced** | Chipset | M.I.B III | Boot | Security | Save & Exit |

USB Configuration

| All USB Devices | Enabled |
| Legacy USB Support | Enabled |

→← : Select Screen
↑↓ /Click: Select Item
Enter/Dbl Click : Select
+/- : Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC/Right Click: Exit
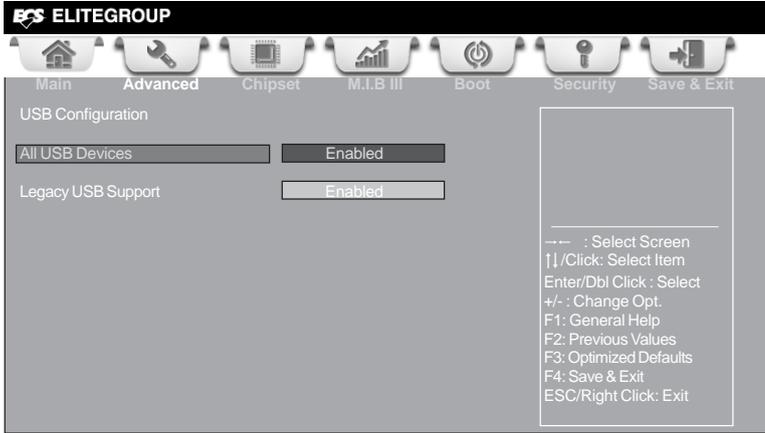
All USB Devices (Enabled)

Use this item to enable or disable all USB devices.

Legacy USB Support (Enabled)

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

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

Using BIOS

Chipset Menu

The chipset menu items allow you to change the settings for the North Bridge chipset, South Bridge chipset and other system.
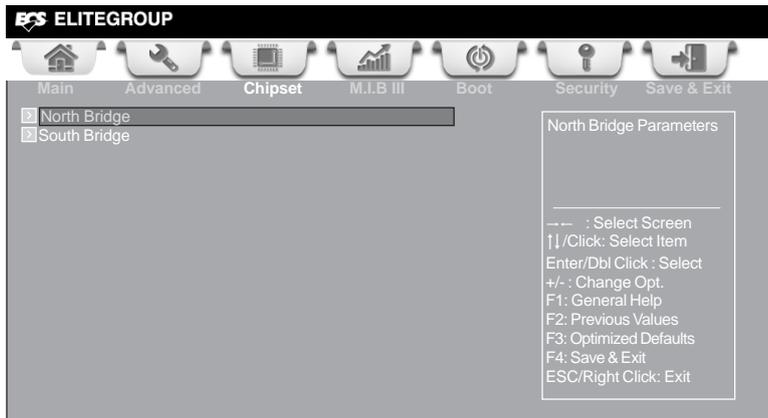
▶ **North Bridge**

Scroll to this item and press <Enter> and view the following screen:
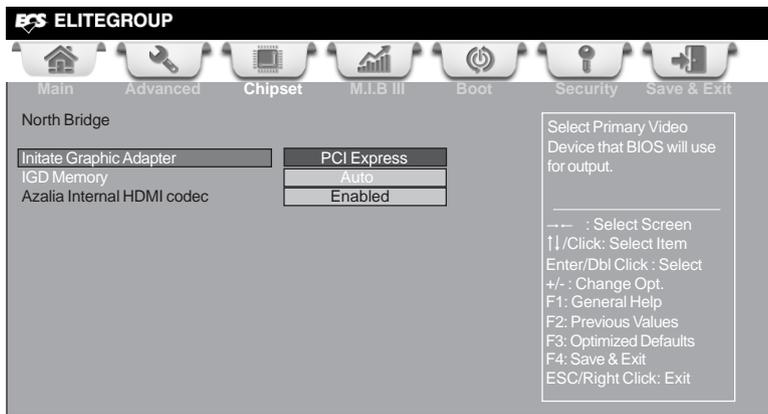
Initate Graphic Adapter (PCI Express)

This item allows you to select graphics controller to use as the primary boot device.

IGD Memory (Auto)

This item shows the information of the IGD(Internal Graphics device) memory.

Azalia Internal HDMI codec (Enabled)

This item allows you to enable or disable the Azalia Internal HDMI codec.

Press <Esc> to return to the chipset menu page.

Using BIOS

▶ **South Bridge**

Scroll to this item and press <Enter> to view the following screen.
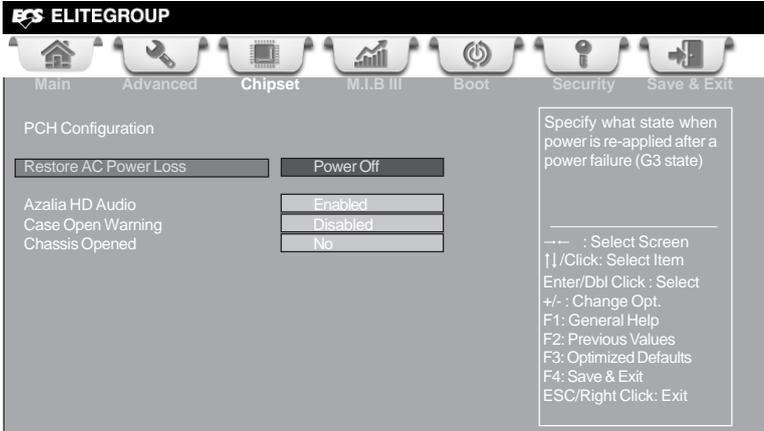
Restore AC Power Loss (Power off)

This item specifies what state to go to when power is re-applied after a power failure (G3 state).

Audio Configuration

This item shows the information of the audio configuration.

Azalia HD Audio (Enabled)

This item enables or disables Azalia HD audio.

Case Open Warning (Disabled)

This item enables or disables the warning if the case is opened up, and the item below indicates the current status of the case.

Chassis Opened (No)

This item indicates whether the case has been opened.

Press <Esc> to return to the chipset menu page.

M.I.B III (MB Intelligent BIOS III) Menu

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.

ECS ELITEGROUP

Main	Advanced	Chipset	M.I.B III	Boot	Security	Save & Exit

```
Memory Timing Configuration
Memory Clock                           Auto
Memory Clock DCT is:                   (DDR3-1333/667Mhz)
Memory Timing                          Auto
Command Rate                           2T
CAS# Latency (tCL)                     8
RAS# to CAS# Delay (tRCD)              8
Row Precharge Time (tRP)               8
RAS# Active Time (tRAS)                24
Read CAS# Precharge (tRTP)            5
Row Cycle Time (tRC)                   32
Write Recovery Time (tWR)              12
Active to Active Delay (tRRD)          4
Write too Read Delay (tWTR)            5
Four Active Windows Delay (tFAW)       20
Row Refresh Cycle Time (tRFC)          110
```

This Option Allows User to select different Memory Clock. Default value is 400Mhz.

→← : Select Screen
↑↓/Click: Select Item
Enter/Dbl Click : Select
+/- : Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC/Right Click: Exit

Memory Clock (Auto)

This item is used to set the memory clock.

Memory Clock DTC is: (DDR3-1333/667Mhz)

This item shows the current memory clock.

Memory Timing (Auto)

This item allows you to set the Memory Timing.

Command Rate (2T)

This item shows the command rate.

CAS#Latency(tcl) (8)

This item determines the operation of DDR SDRAM memory CAS(column address strobe). It is recommanded that you leave this item at the default value. The 2T setting requires faster memory that specifically supports this mode.

RAS# to CAS# Delay(tRCD) (8)

This item specifies the RAS# to CAS# delay to Rd/Wr command to the same bank.

Row Precharge Time(tRP) (8)

This item specifies Row precharge to Active or Auto-Refresh of the same bank.

RAS# Active Time(tRAS) (24)

This item specifies the number of clock cycles taken between a bank active command and issuing the precharge command.

Read CAS# Precharge(tRTP) (5)

This item specifies internal read to precharge command delay time.

Row Cycle Time(tRC) (32)

Use this item to specify the Row Cycle Time of the same bank.

Write Recovery Time(tWR) (12)

This item specifies the number of clock cycles taken between writing data and issuing the precharge command.

Active to Active Delay(tRRD) (4)

This item specifies the minimum time interval between successive ACTIVE commands to the different bank.

Write to Read Delay(tWTR) (5)

This item specifies the number of clock cycles that must occur between last valid write operation and the next read command to the same internal bank.

Four Active Windows Delay(tFAW) (20)

This item specifies completion time of four internal actions.

Row Refresh Cycle Time(tRFC) (110)

Use this item to specify the Row Refresh Cycle Time of the same bank.

Boot Menu

This page enables you to set the boot device priority.
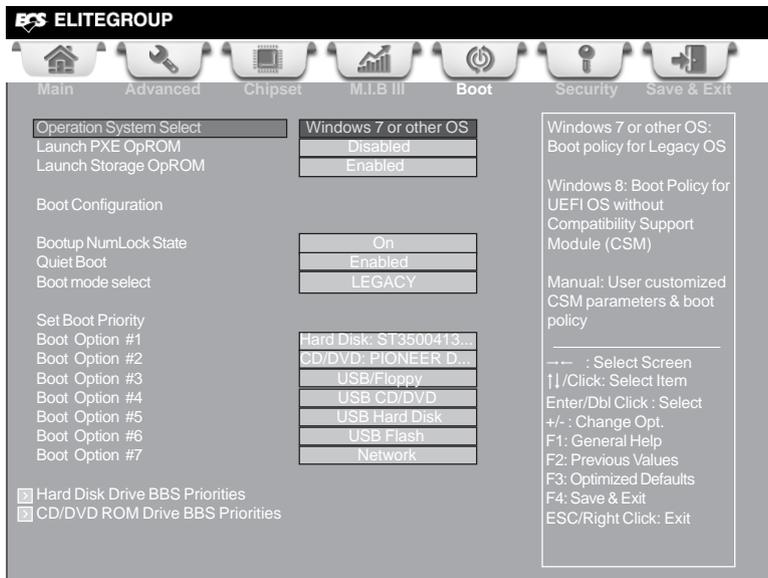
Operation System Select (Windows 7 or other OS)
This item is used to select the operation system.

Launch PXE OpROM (Disabled)
Use this item to enable or disable the PXE OpROM.

Launch Storage OpROM (Enabled)
Use this item to enable or disable the Storage OpROM.

Bootup NumLock State (On)
This item determines if the NumLock key is active or inactive at system start-up time.

Quiet Boot (Enabled)
This item determines if the NumLock key is active or inactive at system start-up time.

Boot mode select (LEGACY)
Use this item to select boot mode.

Boot Option #1/#2/#3/#4/#5/#6/#7/ (Hard Disk / CD/DVD / USB/Floppy / USB CD/DVD / USB HardDisk / USB Flash / Network)
These items show the boot priorities.

Hard Disk / CD/DVD ROM Drive BBS Priorities
These items enable you to specify the sequence of loading the operating system.
Press <Enter> to see the submenu.

Security Menu

This page enables you to set setup administrator password and user password.

ECS ELITEGROUP

| Main | Advanced | Chipset | M.I.B III | Boot | Security | Save & Exit |

Administrator Password		Set Setup Administrator Password
System Mode state	Setup	
Secure Boot state	Disabled	
Secure Boot	Disabled	

→← : Select Screen
↑↓/Click: Select Item
Enter/Dbl Click : Select
+/- : Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC/Right Click: Exit
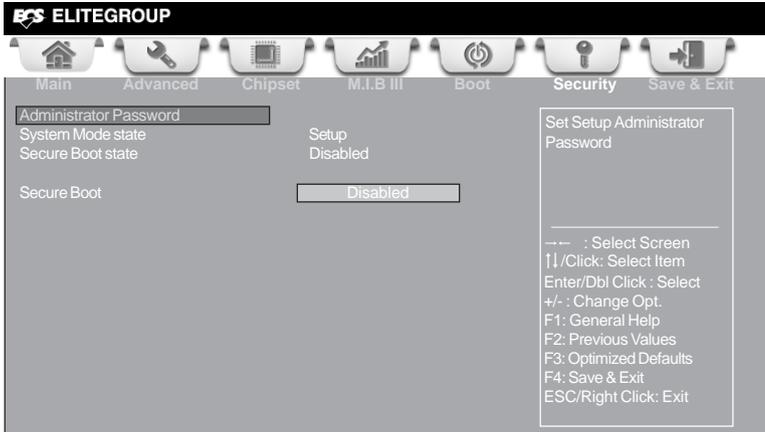
Administrator Password

Press <Enter> to setup administrator password.

System Mode state (Setup)

This item shows system mode setup or not.

Secure Boot state (Disabled)

This item allows you to enable or disable the secure boot state.

Secure Boot (Enabled)

This item is used to control the secure boot flow, it is possible only if system runs in User Mode.

Save & Exit Menu

This page enables you to exit system setup after saving or without saving the changes.

ECS ELITEGROUP

| Main | Advanced | Chipset | M.I.B III | Boot | Security | **Save & Exit** |

Back to EZ Mode

Save Changes and Reset
Discard Changes and Exit
Discard Changes and Reset

Save Options
Save Changes
Discard Changes

Restore Defaults
Save as User Defaults
Restore User Defaults

Boot Override
SATA SS: ST3500413AS
SATA PS: PIONEER DVD-RW DVR-

Go back to EZ Mode

→← : Select Screen
↑↓ /Click: Select Item
Enter/Dbl Click : Select
+/- : Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC/Right Click: Exit

Back to EZ Mode

This item enables you to back to EZ mode.

Save Changes and Reset

This item enables you to reset the system setup after saving the changes.

Discard Changes and Exit

This item enables you to exit system setup without saving any changes.

Discard Changes and Reset

This item enables you to reset system setup without saving any changes.

Save Options

This item enables you to save the options that you have made.

Save Changes

This item enables you to save the changes that you have made.

Discard Changes

This item enables you to discard any changes that you have made.

Restore Defaults

This item enables you to restore the system defaults.

Save as User Defaults

This item enables you to save the changes that you have made as user defaults.

Restore User Defaults

This item enables you to restore user defaults to all the setup options.

Boot Override

Use this item enables you to set the device order.

Using BIOS

Updating the BIOS

You can download and install updated BIOS for this motherboard from the manufacturer's Website. 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. Prepare a bootable device or 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: AFUDOS.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

Auto-installing under Windows XP/7/8

The auto-install DVD-ROM makes it easy for you to install the drivers and software. The support software DVD-ROM disc loads automatically under Windows XP/7/8. When you insert the DVD-ROM disc in the DVD-ROM drive, the auto-run feature will automatically bring up the installation screen. The screen has four buttons on it: **Setup**, **Utilities**, **Browse CD** and **Exit**.

Information:
Displays the path for all software and drivers available on the disk.

Click "**Exit**" button to close the Auto-Setup window.

Browse CD:
Open Windows Explorer and show the contents of the support disk.

Click the "**Setup**" button to select and run the software installation program.

Click the " **Utilities"** button to select and install ECS Intelligent Utility.
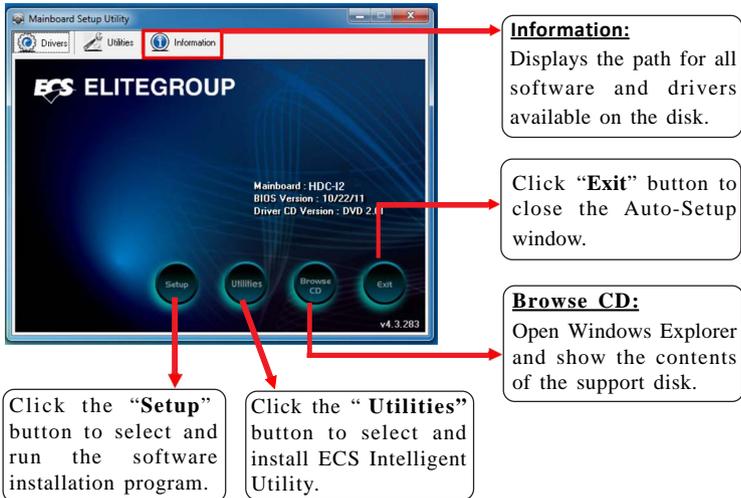
Running Setup

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:
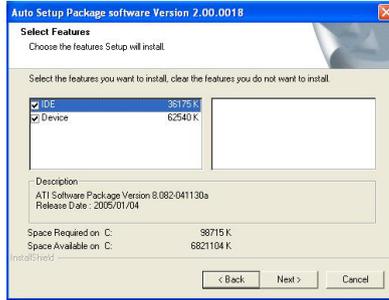
3. Check the box next to the items you want to install. The default options are recommended.

4. Click **Next** to run the Installation Wizard. An item installation screen appears:

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

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.

Windows 8 will show the following screen after system restart, you must select "Desktop" in the bottom left to install the next driver.

Using the Motherboard Software

Windows 7/8 will appear below UAC (User Account Control) message after the system restart. You must select "Yes" to install the next driver. Continue this process to complete the drivers installation.
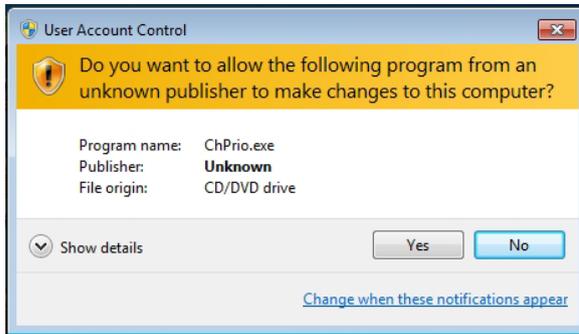
Manual Installation

If the auto-install DVD-ROM does not work on your system, you can still install drivers through the file manager for your OS (for example, Windows Explorer). Look for the chipset and motherboard model, and 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.

ECS Utility Software (Intelligent EZ Utility)

ECS Intelligent EZ Utility provides friendly interfaces under Windows O.S, which makes your computing more easily and conveniently.

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

Chapter 5
Trouble Shooting

Start up problems during assembly

After assembling the PC for the first time you may experience some start up problems. Before calling for technical support or returning for warranty, this chapter may help to address some of the common questions using some basic troubleshooting tips.

a) System does not power up and the fans are not running.

1.Disassemble the PC to remove the VGA adaptor card, DDR memory, LAN, USB and other peripherals including keyboard and mouse. Leave only the motherboard, CPU with CPU cooler and power supply connected. Turn on again to see if the CPU and power supply fans are running.

2. Make sure to remove any unused screws or other metal objects such as screwdrivers from the inside PC case. This is to prevent damage from short circuit.

3. Check the CPU FAN connector is connected to the motherboard.

4. Check the 12V power connector is connected to the motherboard.

5. Check that the 12V power & ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.

b) Power is on,   fans are running but there is no display

1. Make sure the monitor is turned on and the monitor cable is properly connected to the PC.

2. Check the VGA adapter card (if applicable) is inserted properly.

3. Listen for beep sounds. If you are using internal PC speaker make sure it is connected.
    a. continuous 3 short beeps : memory not detected
    b. 1 long beep and 8 short beeps : VGA not detected

c) The PC suddenly shuts down while booting up.

1. The CPU may experience overheating so it will shutdown to protect itself. Ensure the CPU fan is working properly.

2. From the BIOS setting, try to disable the Smartfan function to let the fan run at default speed. Doing a Load Optimised Default will also disable the Smartfan.

Start up problems after prolong use

After a prolong period of use your PC may experience start up problems again. This may be caused by breakdown of devices connected to the motherboard such as HDD, CPU fan, etc. The following tips may help to revive the PC or identify the cause of failure.

1. Clear the CMOS values using the CLR_CMOS jumper. Refer to CLR_CMOS jumper in Chapter 2 for Checking Jumper Settings in this user manual. When completed, follow up with a Load Optimised Default in the BIOS setup.

2. Check the CPU cooler fan for dust. Long term accumulation of dust will reduce its effectiveness to cool the processor. Clean the cooler or replace a new one if necessary.

3. Check that the 12V power & ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.

4. Remove the hard drive, optical drive or DDR memory to determine which of these components may be at fault.

Maintenance and care tips

Your computer, like any electrical appliance, requires proper care and maintenance. Here are some basic PC care tips to help prolong the life of the motherboard and keep it running as best as it can.

1. Keep your computer in a well ventilated area. Leave some space between the PC and the wall for sufficient airflow.

2. Keep your computer in a cool dry place. Avoid dusty areas, direct sunlight and areas of high moisture content.

3. Routinely clean the CPU cooler fan to remove dust and hair.

4. In places of hot and humid weather you should turn on your computer once every other week to circulate the air and prevent damage from humidity.

5. Add more memory to your computer if possible. This not only speeds up the system but also reduces the loading of your hard drive to prolong its life span.

6. If possible, ensure the power cord has an earth ground pin directly from the wall outlet. This will reduce voltage fluctuation that may damage sensitive devices.

Basic Troubleshooting Flowchart

- Power Button is pressed but PC fails to start.
- Check if Power Supply Unit (PSU) is working — No
- AC power cord is plugged and PSU switch is turned on?
  - No → Turn on PSU switch or connect to wall socket and restart.
  - Yes → Problem with PSU or board? If board problem -> contact RMA
- Check if monitor has display — No
- Any Beep sound?
  - Yes → - If 3 short beeps: DIMM memory not properly inserted or memory failure
    - If 1 long beep and 8 short beeps: VGA not detected
  - No → CLR CMOS and check if CPU 12V power is connected → Restart the PC → Check if monitor has display
    - No → Board problem -> contact RMA
    - Yes
- Halt at POST screen?
  - Yes → CLR CMOS and restart. If fail, contact RMA
  - No → Peripheral device issue
    - HDD problem.
    - CMOS setup error, need to CLR CMOS.
- System fail to start or unstable after modify BIOS setting. → CLR CMOS and restart

Memo