IMB-183

User Manual

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(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

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The Lithium battery adopted on this motherboard contains Perchlorate, a toxic substance controlled in Perchlorate Best Management Practices (BMP) regulations passed by the California Legislature. When you discard the Lithium battery in California, USA, please follow the related regulations in advance.
"Perchlorate Material-special handling may apply, see www.dtsc.ca.gov/hazardouswaste/perchlorate"

ASRock Website: http://www.asrock.com

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Chapter 1: Introduction

Thank you for purchasing ASRock ***IMB-183*** motherboard, a reliable motherboard produced under ASRock's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRock's commitment to quality and endurance.

In this manual, chapter 1 and 2 contain introduction of the motherboard and step-by-step guide to the hardware installation. Chapter 3 and 4 contain the configuration guide to BIOS setup and information of the Support CD.

Because the motherboard specifications and the BIOS software might be updated, the content of this manual will be subject to change without notice. In case any modifications of this manual occur, the updated version will be available on ASRock website without further notice. You may find the latest VGA cards and CPU support lists on ASRock website as well. ASRock website http://www.asrock.com

If you require technical support related to this motherboard, please visit our website for specific information about the model you are using. www.asrock.com/support/index.asp

1.1 Package Contents

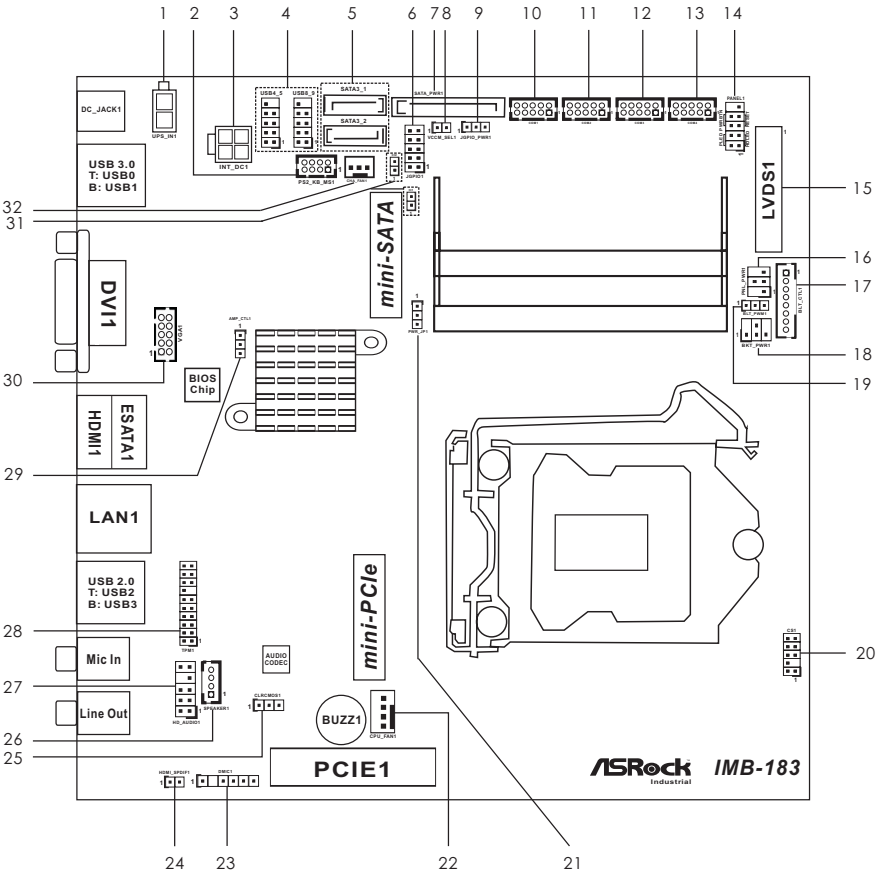
ASRock ***IMB-183*** Motherboard
(Mini-ITX Form Factor: 6.7-in x 6.7-in, 17.0 cm x 17.0 cm)
ASRock ***IMB-183*** Driver CD
ASRock ***IMB-183*** Jumper setting instruction
1 x I/O Panel Shield

1.2 Specifications

Form Factor	Dimensions	Mini-ITX (6.7-in x 6.7-in)
Processor System	CPU	Socket LGA1150 for Intel® Core i7/i5/i3/Celeron (Haswell)
	Core Number	(By CPU, Max 4)
	Max Speed	(By CPU)
	L3 Cache	(By CPU)
	Chipset	H81
	BIOS	UEFI
Expansion Slot	PCI	0
	Mini-PCIe	1 (PCIe+USB)
	mSATA	1 (SATA+USB)
	PCIe	1 (x4)
	CFast Card Socket	0
Memory	Technology	Dual Channel DDR3 1066/1333/1600 MHz SDRAM
	Max.	16GB
	Socket	2 x SO-DIMM
Graphics	Controller	Intel® HD Graphics (By CPU)
	VRAM	Shared Memory
	VGA	0
	LVDS	1
	HDMI	Supports HDMI 1.4a, max resolution 4096x2304
	DVI-I	1
	DisplayPort	0
	Multi Display	Yes (Dual Monitor)
Ethernet	Ethernet	10/100/1000 Mbps
	Controller	GbE LAN1: Intel® I217V
	Connector	1 x RJ-45
SATA	Max Data Transfer Rate	2 x SATA3 (6.0Gb/s)
Rear I/O	VGA	0
	DVI-I	1
	HDMI	1
	DisplayPort	0
	Ethernet	1

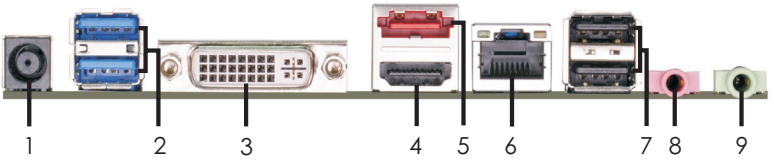
	USB	4 (2 x USB 3.0 compliant, 2 x USB 2.0 compliant)
	Audio	2 (Mic-In, Line-Out)
	eSATA	1
	PS/2	0
Internal Connector	USB	2 x USB 2.0 headers
	LVDS/ Inverter	1
	VGA	1
	Serial	4 (RS-232)
	SATA	2 x SATA3 (6.0Gb/s)
	mPCIe	1
	Parallel	0
	mSATA	1
	IrDA	0
	GPIO 8-bit	4 x GPI + 4 x GPO
	SATA PWR Output Con	1
	Speaker Header	1
	PS2 Keyboard/ Mouse Header	1
	DMIC Header	1
	HDMI_ SPDIF Header	1
	Customer Solution Header	1
Watchdog Timer	Output	Output from super I/O to drag RESETCON#
	Interval	256 Segments, 0,1,2…255 Sec/Min
Power Requirements	Input PWR	DC 12-19 input
	Power On	AT/ATX Supported AT : Directly PWR on as power input ready ATX : Press button to PWR on after power input ready
Environment	Temperature	0ºC – 60ºC

1.3 Motherboard Layout



1 : 2-pin UPS Module Power Input Connector
2 : PS2 Keyboard/Mouse Header
3 : 4-pin ATX Power Input/Output Connector
4 : USB2.0 Headers (USB4_5, USB8_9)
5 : SATA3 Connectors (SATA3_1, SATA3_2)
6 : Digital Input / Output Pin Header
7 : SATA Power Output Connector
8 : VCCM Power Selection
9 : Digital Input / Output Power Selection
10 : COM Port Header (COM1)
11 : COM Port Header (COM2)
12 : COM Port Header (COM3)
13 : COM Port Header (COM4)
14 : System Panel Header
15 : LVDS Panel Connector
16 : Panel Power Selection (PNL_PWR1)
17 : BLT_CTL1
18 : Backlight Power Selection (BKT_PWR1)
19 : Backlight Control Level (BLT_PWM1)
20 : Customer Solution Header
21 : ATX/AT Mode Selection
22 : 4-Pin CPU FAN Connector
23 : DMIC Header
24 : HDMI_SPDIF Header
25 : Clear CMOS Header
26 : 3W Audio AMP Output Wafer
27 : Front Panel Audio Header
28 : TPM Header
29 : Speaker Control
30 : VGA Header
31 : Chassis Intrusion Headers (CI1, CI2)
32 : 3-Pin Chassis FAN Connector

1.4 I/O Panel



1	DC Jack (DC_JACK1)	6	LAN RJ-45 Port*
2	USB 3.0 Ports (USB3_01)	7	USB 2.0 Ports (USB23)
3	DVI-I Port (DVI1)	8	Microphone (Pink)
4	HDMI Port (HDMI1)	9	Line out (Lime)
5	eSATA Port (ESATA1)		

* There are two LED next to the LAN port. Please refer to the table below for the LAN port LED indications.

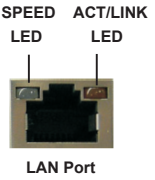
LAN Port LED Indications

Activity/Link LED

Status	Description
Off	No Link
Blinking	Data Activity
On	Link

SPEED LED

Status	Description
Off	10Mbps connection
Off	100Mbps connection
Green	1Gbps connection



Chapter 2: Installation

This is a Mini-ITX form factor (6.7” x 6.7”, 17.0 x 17.0 cm) motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.

Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so may cause physical injuries to you and damages to motherboard components.

2.1 Screw Holes

Place screws into the holes to secure the motherboard to the chassis.

Do not over-tighten the screws! Doing so may damage the motherboard.

2.2 Pre-installation Precautions

Take note of the following precautions before you install motherboard components or change any motherboard settings.

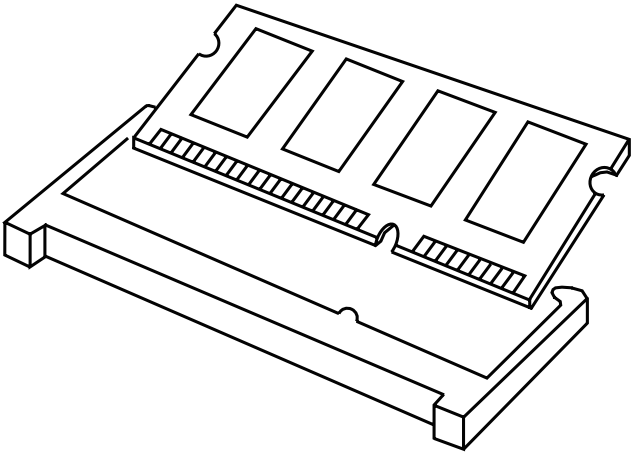
1. Unplug the power cord from the wall socket before touching any component.
2. To avoid damaging the motherboard components due to static electricity, NEVER place your motherboard directly on the carpet or the like. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle components.
3. Hold components by the edges and do not touch the ICs.
4. Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that comes with the component.

Before you install or remove any component, ensure that the power is switched off or the power cord is detached from the power supply.
Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.

2.3 Installation of Memory Modules (SO-DIMM)

IMB-183 provides two 204-pin DDR3 (Double Data Rate 3) SO-DIMM slots.

Step 1. Align a SO-DIMM on the slot such that the notch on the SO-DIMM matches the break on the slot.



1. The SO-DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the SO-DIMM if you force the SO-DIMM into the slot at incorrect orientation.
2. Please do not intermix different voltage SO-DIMMs on this motherboard.

Step 2. Firmly insert the SO-DIMM into the slot until the retaining clips at both ends fully snap back in place and the SO-DIMM is properly seated.

2.4 Expansion Slots (mini-PCIe, mini-SATA and PCI Express Slots)

There is 1 mini-PCIe slot, 1 mini-SATA slot and 1 PCI Express slot on this motherboard.

mini-PCIe slot:

MINI_PCIE1 (mini-PCIe slot; half size) is used for PCI Express mini cards.

mini-SATA slot:

MINI_SATA1 (mini-SATA slot; full size) is used for mSATA cards.

PCIE slot: PCIE1 (PCIE x4 slot) is used for PCI Express x4 lane width cards.

Installing an expansion card

Step 1. Before installing the expansion card, please make sure that the power supply is switched off or the power cord is unplugged. Please read the documentation of the expansion card and make necessary hardware settings for the card before you start the installation.

Step 2. Remove the system unit cover (if your motherboard is already installed in a chassis).

Step 3. Remove the bracket facing the slot that you intend to use. Keep the screws for later use.

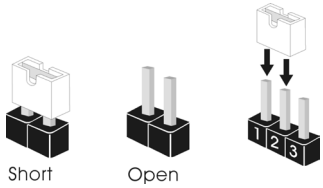
Step 4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.

Step 5. Fasten the card to the chassis with screws.

Step 6. Replace the system cover.

2.5 Jumpers Setup

The illustration shows how jumpers are setup. When the jumper cap is placed on pins, the jumper is “Short”. If no jumper cap is placed on pins, the jumper is “Open”. The illustration shows a 3-pin jumper whose pin1 and pin2 are “Short” when jumper cap is placed on these 2 pins.



Jumper	Setting	Description
Clear CMOS Jumper (3-pin CLRCMOS1) (see p.8, No. 25)	1_2 Default 2_3 Clear CMOS	

Note: CLRCMOS1 allows you to clear the data in CMOS. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord from the power supply. After waiting for 15 seconds, use a jumper cap to short pin2 and pin3 on CLRCMOS1 for 5 seconds. However, please do not clear the CMOS right after you update the BIOS. If you need to clear the CMOS when you just finish updating the BIOS, you must boot up the system first, and then shut it down before you do the clear-CMOS action. Please be noted that the password, date, time, user default profile and MAC address will be cleared only if the CMOS battery is removed.

AT/ATX Mode Selection (3-pin PWR_JP1) (see p.8, No. 21)	1 2 3	1-2 : AT Mode 2-3 : ATX Mode
Digital Input / Output Power Selection (3-pin JGPIO_PWR1) (see p.8, No. 9)	1 2 3	1-2 : +12V 2-3 : +5V
VCCM Power Selection (2-pin VCCM_SEL1) (see p.8, No. 8)	1	Short : +1.36V Open : Auto

Speaker Control

(3-pin AMP_CTL1)

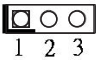
(see p.8, No. 29)

PIN	Signal Name
1	GPIO_VOL_DW
2	GND
3	GPIO_VOL_UP

Backlight Control Level (CON_LBKLT_CTL)

(3-pin BLT_PWM1)

(see p.8, No. 19)



1-2 : +3.3V

2-3 : +5V

Panel Power Selection

(4-pin PNL_PWR1)

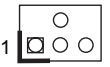
(see p.8, No. 16)

PIN	Signal Name	PIN	Signal Name
6	NC	5	+5V
4	+12V	3	LCD_VCC
2	NC	1	+3.3V

Backlight Power Selection

(4-pin BKT_PWR1)

(see p.8, No. 18)



PIN	Signal Name	PIN	Signal Name	PIN	Signal Name
2	NC	4	+VIN	6	NC
1	+5V	3	LCD_BLT_VCC	5	+12V

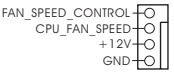
2.6 Onboard Headers and Connectors

Onboard headers and connectors are NOT jumpers. Do NOT place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage of the motherboard!

CPU Fan Connectors

(4-pin CPU_FAN1)

(see p.8 No. 22)



Please connect the CPU fan cable to the connector and match the black wire to the ground pin.

Though this motherboard provides 4-Pin CPU fan (Quiet Fan) support, the 3-Pin CPU fan still can work successfully even without the fan speed control function. If you plan to connect the 3-Pin CPU fan to the CPU fan connector on this motherboard, please connect it to Pin 1-3.

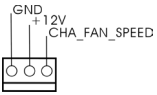
Pin 1-3 Connected ←

3-Pin Fan Installation

Chassis Fan Connector

(3-pin CHA_FAN1)

(see p.8, No. 32)

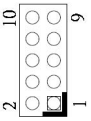


Please connect the fan cable to the fan connector and match the black wire to the ground pin.

Digital Input / Output Pin Header

(10-pin JGPIO1)

(see p.8, No. 6)



PIN	Signal Name	PIN	Signal Name
10	GND	9	JGPIO_PWR
8	SIO_GP23	7	SIO_GP27
6	SIO_GP22	5	SIO_GP26
4	SIO_GP21	3	SIO_GP25
2	SIO_GP20	1	SIO_GP24

Chassis Intrusion Headers

(2-pin CI1, CI2: see p.8, No. 31)

This motherboard supports CASE OPEN detection feature that detects if the chassis cover has been removed. This feature requires a chassis with chassis intrusion detection design.

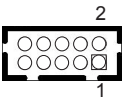
COM Port Headers

(9-pin COM1: see p.8, No. 10)

(9-pin COM2: see p.8, No. 11)

(9-pin COM3: see p.8, No. 12)

(9-pin COM4: see p.8, No. 13)



PIN	Signal Name	PIN	Signal Name	PIN	Signal Name	PIN	Signal Name	PIN	Signal Name
10	+12V	8	CCTS#	6	DDSR#	4	DDTR#	2	RRXD
9	+5V	7	RRTS#	5	GND	3	TTXD	1	DDCD#

This motherboard supports RS232/422/485 on COM1 port. Please refer to below table for the pin definition. In addition, COM1 port (RS232/422/485) can be adjusted in BIOS setup utility > Advanced Screen > Super IO Configuration. You may refer to page 31 for details.

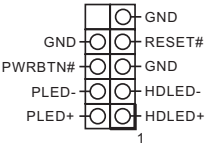
COM1 Port Pin Definition

PIN	RS232	RS422	RS485
1	DCD	TX-	RTX-
2	RXD	RX+	N/A
3	TXD	TX+	RTX+
4	DTR	RX-	N/A
5	GND	GND	GND
6	DSR	N/A	N/A
7	RTS	N/A	N/A
8	CTS	N/A	N/A
9	+5V	+5V	+5V
10	+12V	+12V	+12V

System Panel Header

(9-pin PANEL1)

(see p.8, No. 14)



This header accommodates several system front panel functions.

Connect the power switch, reset switch and system status indicator on the chassis to this header according to the pin assignments below. Note the positive and negative pins before connecting the cables.

PWRBTN (Power Switch):
Connect to the power switch on the chassis front panel. You may configure the way to turn off your system using the power switch.

RESET (Reset Switch):
Connect to the reset switch on the chassis front panel. Press the reset switch to restart the computer if the computer freezes and fails to perform a normal restart.

PLED (System Power LED):
Connect to the power status indicator on the chassis front panel. The LED is on when the system is operating. The LED keeps blinking when the system is in S1/S3 sleep state. The LED is off when the system is in S4 sleep state or powered off (S5).
HDLED (Hard Drive Activity LED):
Connect to the hard drive activity LED on the chassis front panel. The LED is on when the hard drive is reading or writing data.

The front panel design may differ by chassis. A front panel module mainly consists of power switch, reset switch, power LED, hard drive activity LED, speaker and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assign-ments are matched correctly.

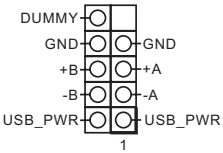
SATA3 Connectors

(SATA3_1, SATA3_2: see p.8, No. 5)

These two Serial ATA3 (SATA3) connectors support SATA data cables for internal storage devices. The current SATA3 interface allows up to 6.0 Gb/s data transfer rate.

USB 2.0 Headers

(9-pin USB4_5, USB8_9: see p.8, No. 4)

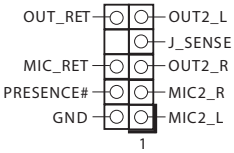


Besides two USB 2.0 ports on the I/O panel, there are two headers on this motherboard. Each USB 2.0 header can support two ports.

Front Panel Audio Header

(9-pin HD_AUDIO1)

(see p.8 No. 27)



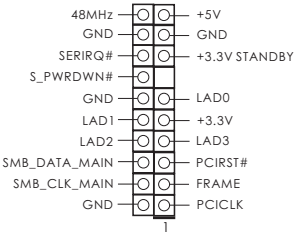
This is an interface for front panel audio cable that allows convenient connection and control of audio devices.

1. High Definition Audio supports Jack Sensing, but the panel wire on the chassis must support HDA to function correctly. Please follow the instruction in our manual and chassis manual to install your system.
2. If you use AC'97 audio panel, please install it to the front panel audio header as below:
   A. Connect Mic_IN (MIC) to MIC2_L.
   B. Connect Audio_R (RIN) to OUT2_R and Audio_L (LIN) to OUT2_L.
   C. Connect Ground (GND) to Ground (GND).
   D. MIC_RET and OUT_RET are for HD audio panel only. You don't need to connect them for AC'97 audio panel.
   E. To activate the front mic.
      Go to the "FrontMic" Tab in the Realtek Control panel. Adjust "Recording Volume".

TPM Header

(19-pin TPM1)

(see p.8, No. 28)

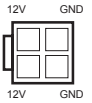


This connector supports a Trusted Platform Module (TPM) system, which can securely store keys, digital certificates, passwords, and data. A TPM system also helps enhance network security, protects digital identities, and ensures platform integrity.

ATX Power Input/Output Connector

(4-pin INT_DC1)

(see p.8 No. 3)

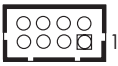


Please connect a DC 12V power supply to this connector.

PS2 Keyboard/Mouse Header

(8-pin PS2_KB_MS1)

(see p.8 No. 2)



PIN	Signal Name	PIN	Signal Name	PIN	Signal Name	PIN	Signal Name
8	GND	6	GND	4	+5V STANDBY	2	+5V STANDBY
7	MSCLK	5	MSDATA	3	KBDATA	1	KBCLK

3W Audio AMP Output Wafer

(4-pin SPEAKER1)

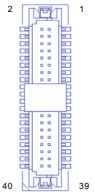
(see p.8 No. 26)

PIN	Signal Name
4	SPK R-
3	SPK R+
2	SPK L+
1	SPK L-

LVDS Connector

(40-pin LVDS1)

(see p.8 No. 15)



PIN	Signal Name	PIN	Signal Name
2	LCD_VCC	1	LCD_VCC
4	LDDC_CLK	3	+3.3V
6	LVDS_A_DATA0#	5	LDDC_DATA
8	GND	7	LVDS_A_DATA0
10	LVDS_A_DATA1	9	LVDS_A_DATA1#
12	LVDS_A_DATA2#	11	GND
14	GND	13	LVDS_A_DATA2
16	LVDS_A_DATA3	15	LVDS_A_DATA3#
18	LVDS_A_CLK#	17	GND
20	GND	19	LVDS_A_CLK
22	LVDS_B_DATA0	21	LVDS_B_DATA0#
24	LVDS_B_DATA1#	23	GND
26	GND	25	LVDS_B_DATA1
28	LVDS_B_DATA2	27	LVDS_B_DATA2#
30	LVDS_B_DATA3#	29	DPLVDD_EN
32	GND	31	LVDS_B_DATA3
34	LVDS_B_CLK	33	LVDS_B_CLK#
36	CON_LBKLT_EN	35	GND
38	LCD_BLT_VCC	37	CON_LBKLT_CTL
40	LCD_BLT_VCC	39	LCD_BLT_VCC

SATA Power Connector

(SATA_PWR1)

(see p.8 No. 7)

Please connect a SATA power cable to this connector.

UPS Module Power Input Connector

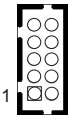
(UPS_IN1)

(see p.8 No. 1)

Please connect an UPS power cable to this connector.

VGA1

(10-pin VGA1: see p.8, No. 30)



PIN	Signal Name	PIN	Signal Name
9	DDC_CLK	10	DDC_DATA
7	HSYNC	8	VSYNC
5	BLUE	6	GND
3	GREEN	4	GND
1	RED	2	GND

HDMI_SPDIF Header

(2-pin HDMI_SPDIF1)

(see p.8, No. 24)

HDMI_SPDIF header, providing SPDIF audio output to HDMI VGA card, allows the system to connect HDMI Digital TV/ projector/LCD devices. Please connect the HDMI_SPDIF connector of HDMI VGA card to this header.

DMIC Header

(5-pin DMIC1)

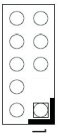
(see p.8, No. 23)

PIN	Signal Name	PIN	Signal Name	PIN	Signal Name	PIN	Signal Name	PIN	Signal Name	PIN	Signal Name
1	+5V	2	NC	3	DMIC_CLK	4	GND	5	DMIC_DATA	6	+3.3V

Customer Solution Header

(9-pin CS1)

(see p.8, No. 20)



PIN	Signal Name	PIN	Signal Name
10	GND	9	+5V STANDBY
8	CIRRX	7	PWRBT#
6	SMB_DATA_RESUME	5	+3.3V STANDBY
4	SMB_CLK_RESUME	3	NC
2	GND	1	WATCH DOG TIMER

BLT_CTL1

(8-pin BLT_CLT1)

(see p.8, No. 17)

PIN	Signal Name
1	CON_LBKLT_EN
2	CON_LBKLT_CTL
3	LCD_BLT_VCC
4	LCD_BLT_VCC
5	GND
6	GND
7	GPIO_BLT_UP
8	GPIO_BLT_DW

Chapter 3: UEFI SETUP UTILITY

3.1 Introduction

This section explains how to use the UEFI SETUP UTILITY to configure your system. The UEFI chip on the motherboard stores the UEFI SETUP UTILITY. You may run the UEFI SETUP UTILITY when you start up the computer. Please press <F2> or <Del> during the Power-On-Self-Test (POST) to enter the UEFI SETUP UTILITY, otherwise, POST will continue with its test routines.

If you wish to enter the UEFI SETUP UTILITY after POST, restart the system by pressing <Ctl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis. You may also restart by turning the system off and then back on.

Because the UEFI software is constantly being updated, the following UEFI setup screens and descriptions are for reference purpose only, and they may not exactly match what you see on your screen.

3.1.1 UEFI Menu Bar

The top of the screen has a menu bar with the following selections:

Main	To set up the system time/date information
Advanced	To set up the advanced UEFI features
H/W Monitor	To display current hardware status
Boot	To set up the default system device to locate and load the Operating System
Security	To set up the security features
Exit	To exit the current screen or the UEFI SETUP UTILITY

Use < ← > key or < → > key to choose among the selections on the menu bar, and then press <Enter> to get into the sub screen. You can also use the mouse to click your required item.

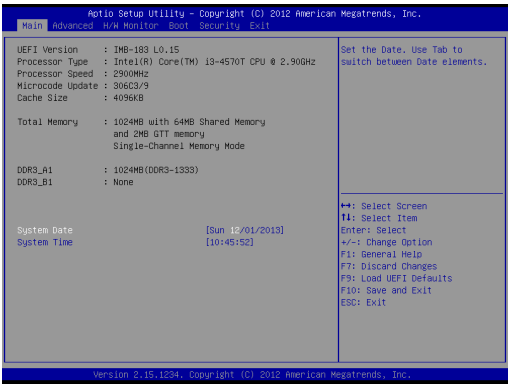
3.1.2 Navigation Keys

Please check the following table for the function description of each navigation key.

Navigation Key(s)	Function Description
← / →	Moves cursor left or right to select Screens
↑ / ↓	Moves cursor up or down to select items
+ / -	To change option for the selected items
<Enter>	To bring up the selected screen
<F1>	To display the General Help Screen
<F7>	Discard changes
<F9>	To load optimal default values for all the settings
<F10>	To save changes and exit the UEFI SETUP UTILITY
<F12>	Print screen
<ESC>	To jump to the Exit Screen or exit the current screen

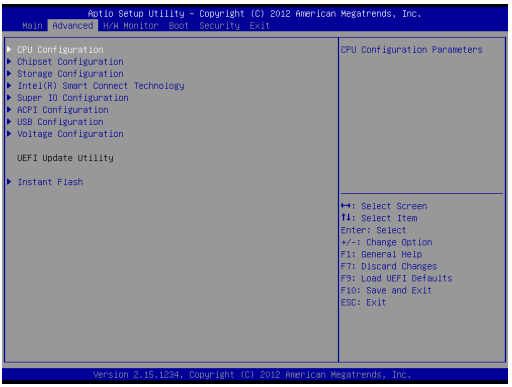
3.2 Main Screen

When you enter the UEFI SETUP UTILITY, the Main screen will appear and display the system overview.



3.3 Advanced Screen

In this section, you may set the configurations for the following items: CPU Configuration, Chipset Configuration, Storage Configuration, Intel(R) Smart Connect Technology, Super IO Configuration, ACPI Configuration, USB Configuration and Voltage Configuration.

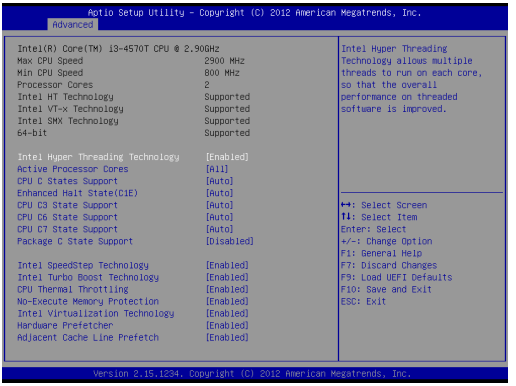


Setting wrong values in this section may cause the system to malfunction.

Instant Flash

Instant Flash is a UEFI flash utility embedded in Flash ROM. This convenient UEFI update tool allows you to update system UEFI without entering operating systems first like MS-DOS or Windows®. Just launch this tool and save the new UEFI file to your USB flash drive, floppy disk or hard drive, then you can update your UEFI only in a few clicks without preparing an additional floppy diskette or other complicated flash utility. Please be noted that the USB flash drive or hard drive must use FAT32/16/12 file system. If you execute Instant Flash utility, the utility will show the UEFI files and their respective information. Select the proper UEFI file to update your UEFI, and reboot your system after UEFI update process completes.

3.3.1 CPU Configuration



Intel Hyper Threading Technology

To enable this feature, a computer system with an Intel processor that supports Hyper-Threading technology and an operating system that includes optimization for this technology, such as Microsoft® Windows® 7 / 8 is required. Set to [Enabled] if using Microsoft® Windows® 7, 8, or Linux kernel version 2.4.18 or higher. This option will be hidden if the installed CPU does not support Hyper-Threading technology.

Active Processor Cores

Select the number of cores to enable in each processor package.

CPU C States Support

Enable CPU C States Support for power saving. It is recommended to keep C3, C6 and C7 all enabled for better power saving.

Enhanced Halt State (C1E)

Enable Enhanced Halt State (C1E) for lower power consumption.

CPU C3 State Support

Enable C3 sleep state for lower power consumption.

CPU C6 State Support

Enable C6 deep sleep state for lower power consumption.

CPU C7 State Support

Enable C7 deep sleep state for lower power consumption.

Package C State Support

Enable CPU, PCIe, Memory, Graphics C State Support for power saving.

Intel SpeedStep Technology

Intel SpeedStep technology is Intel's new power saving technology. Processors can switch between multiple frequencies and voltage points to enable power saving. The default value is [Enabled]. Configuration options:

[Enabled] and [Disabled]. If you install Windows® 7 / 8 and want to enable this function, please set this item to [Enabled]. This item will be hidden if the current CPU does not support Intel SpeedStep technology.

Please note that enabling this function may reduce CPU voltage and lead to system stability or compatibility issues with some power supplies. Please set this item to [Disabled] if above issues occur.

Intel Turbo Boost Technology

Use this item to enable or disable Intel Turbo Boost Mode Technology. Turbo Boost Mode allows processor cores to run faster than marked frequency in specific conditions. The default value is [Enabled].

CPU Thermal Throttling

You may select [Enabled] to enable CPU internal thermal control mechanism to keep the CPU from overheating.

No-Execute Memory Protection

No-Execution (NX) Memory Protection Technology is an enhancement to the IA-32 Intel Architecture. An IA-32 processor with “No Execute (NX) Memory Protection” can prevent data pages from being used by malicious software to execute codes. This option will be hidden if the current CPU does not support No-Excute Memory Protection.

Intel Virtualization Technology

When this option is set to [Enabled], a VMM (Virtual Machine Architecture) can utilize the additional hardware capabilities provided by Vanderpool Technology. This option will be hidden if the installed CPU does not support Intel Virtualization Technology.

Hardware Prefetcher

Use this item to turn on/off the MLC streamer prefetcher.

Adjacent Cache Line Prefetch

Use this item to turn on/off prefetching of adjacent cache lines.

3.3.2 Chipset Configuration

DRAM Frequency

If [Auto] is selected, the motherboard will detect the memory module(s) inserted and assign the appropriate frequency automatically.

Primary Graphics Adapter

This allows you to select [Onboard] or [PCI Express] as the boot graphic adapter priority. The default value is [PCI Express].

VT-d

Use this to enable or disable Intel® VT-d technology (Intel® Virtualization Technology for Directed I/O). The default value of this feature is [Disabled].

PCIE1 Link Speed

Select the link speed for PCIE1.

Share Memory

Configure the size of memory that is allocated to the integrated graphics processor when the system boots up.

IGPU Multi-Moniter

Select disable to disable the integrated graphics when an external graphics card is installed. Select enable to keep the integrated graphics enabled at all times.

Render Standby

Use this to enable or disable Render Standby by Internal Graphics Device. The default value is [Enabled].

Onboard HD Audio

Select [Auto], [Enabled] or [Disabled] for the onboard HD Audio feature. If you select [Auto], the onboard HD Audio will be disabled when PCI Sound Card is plugged.

Front Panel

Select [Auto] or [Disabled] for the onboard HD Audio Front Panel.

Onboard HDMI HD Audio

This allows you to enable or disable the Onboard HDMI HD Audio feature.

Onboard LAN1

This allows you to enable or disable the Onboard LAN1 feature.

Deep Sleep

Mobile platforms support Deep S4/S5 in DC only and desktop platforms support Deep S4/S5 in AC only. The default value is [Disabled].

Restore on AC/Power Loss

This allows you to set the power state after an unexpected AC/power loss. If [Power Off] is selected, the AC/power remains off when the power recovers. If [Power On] is selected, the AC/power resumes and the system starts to boot up when the power recovers. If [LAST STATE] is selected, the AC/power restores to the last power state when the power recovers.

Active LVDS

Use this to enable or disable the LVDS. The default value is [Enabled].

Panel Type Selection

Use this to select panel type.

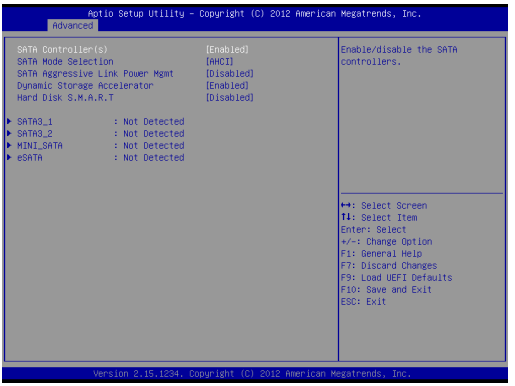
Primary IGFX Boot Display

Use this to select primary internal graphics boot display. Configuration options: [VBIOS Default], [DVI-A], [Internal VGA], [DVI-D], [HDMI] and [LVDS]. The default value is [VBIOS Default].

Secondary IGFX Boot Display

This item appears only when you select [DVI-A], [Internal VGA], [DVI-D], [HDMI] or [LVDS] in “Primary IGFX Boot Display“. Use this to select secondary internal graphics boot display. The default value is [Disabled].

3.3.3 Storage Configuration



SATA Controller(s)

Use this item to enable or disable the SATA Controller feature.

SATA Mode Selection

Use this to select SATA mode. Configuration options: [IDE Mode], [AHCI Mode] and [Disabled]. The default value is [AHCI Mode].

AHCI (Advanced Host Controller Interface) supports NCQ and other new features that will improve SATA disk performance but IDE mode does not have these advantages.

SATA Aggressive Link Power Management

Use this item to configure SATA Aggressive Link Power Management.

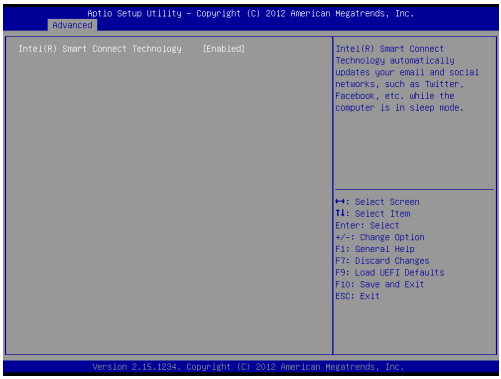
Dynamic Storage Accelerator

Keep this option enabled for higher HDD and SDD I/O performance, lower latency and increased system responsiveness.

Hard Disk S.M.A.R.T.

Use this item to enable or disable the S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) feature. Configuration options: [Disabled] and [Enabled].

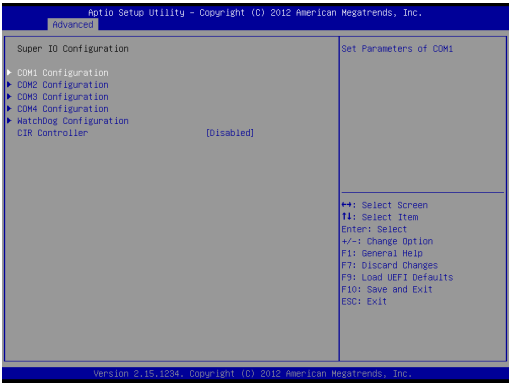
3.3.4 Intel(R) Smart Connect Technology



Intel(R) Smart Connect Technology

Use this item to enable or disable Intel(R) Smart Connect Technology. Intel(R) Smart Connect Technology keeps your e-mail and social networks, such as Twitter, Facebook, etc. updated automatically while the computer is in sleep mode. The default is [Enabled].

3.3.5 Super IO Configuration



COM1 Configuration

Use this to set parameters of COM1. Select COM1 port type: [RS232], [RS422] or [RS485].

COM2 Configuration

Use this to set parameters of COM2.

COM3 Configuration

Use this to set parameters of COM3.

COM4 Configuration

Use this to set parameters of COM4.

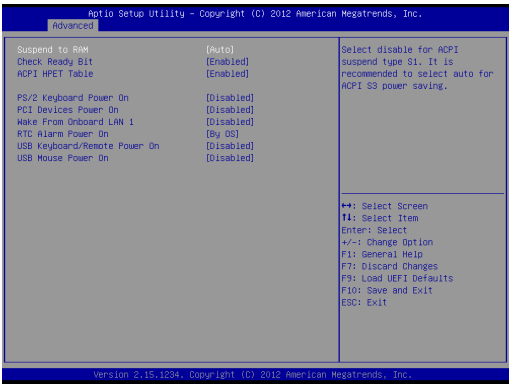
Watchdog Configuration

Use this to set the Watch Dog Timer.

CIR Controller

Use this to enable or disable CIR controller.

3.3.6 ACPI Configuration



Suspend to RAM

Use this item to select whether to auto-detect or disable the Suspend-to-RAM feature. Select [Auto] will enable this feature if the OS supports it.

Check Ready Bit

Use this item to enable or disable the feature Check Ready Bit.

ACPI HPET Table

Use this item to enable or disable ACPI HPET Table. The default value is [Enabled]. Please set this option to [Enabled] if you plan to use this motherboard to submit Windows® certification.

PS/2 Keyboard Power On

Use this item to enable or disable PS/2 keyboard to turn on the system from the power-soft-off mode.

PCI Devices Power On

Use this item to enable or disable PCI devices to turn on the system from the power-soft-off mode.

Wake From Onboard LAN 1

Use this item to enable or disable the Wake From Onboard LAN 1 feature.

CIR Power On

Use this item to enable or disable CIR to power on the system.

RTC Alarm Power On

Use this item to enable or disable RTC (Real Time Clock) to power on the system.

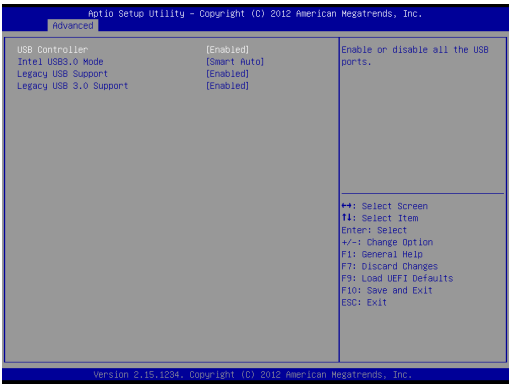
USB Keyboard/Remote Power On

Use this item to enable or disable USB Keyboard/Remote to power on the system.

USB Mouse Power On

Use this item to enable or disable USB Mouse to power on the system.

3.3.7 USB Configuration



USB Controller

Use this item to enable or disable the use of USB controller.

Intel USB 3.0 Mode

Use this item to enable or disable the use of Intel USB 3.0 mode.

Legacy USB Support

Use this option to select legacy support for USB devices. There are four configuration options: [Enabled], [Auto] and [UEFI Setup Only]. The default value is [Auto]. Please refer to below descriptions for the details of these four options:

[Enabled] - Enables support for legacy USB.

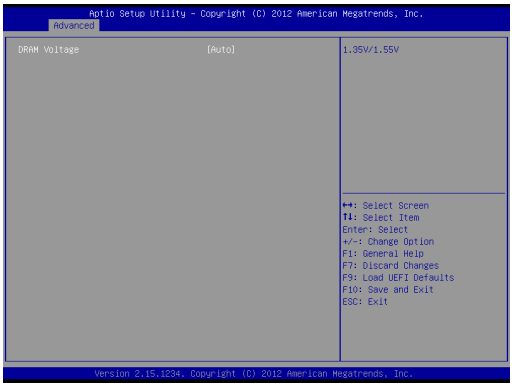
[Auto] - Enables legacy support if USB devices are connected.

[UEFI Setup Only] - USB devices are allowed to use only under UEFI setup and Windows / Linux OS.

Legacy USB 3.0 Support

Use this option to enable or disable legacy support for USB 3.0 devices. The default value is [Enabled].

3.3.8 Voltage Configuration

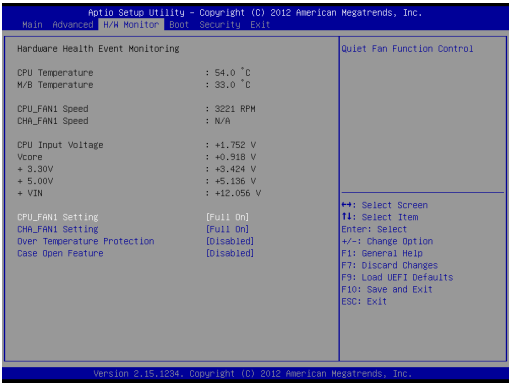


DRAM Voltage

Use this to select DRAM Voltage. The default value is [Auto].

3.4 Hardware Health Event Monitoring Screen

In this section, it allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, CPU fan speed, chassis fan speed, and the critical voltage.



CPU_FAN1 Setting

This allows you to set CPU fan 1's speed. Configuration options: [Full On] and [Automatic Mode]. The default value is [Full On].

CHA_FAN1 Setting

This allows you to set chassis fan 1's speed. Configuration options: [Full On] and [Automatic Mode]. The default value is [Full On].

Over Temperature Protection

Use this to enable or disable Over Temperature Protection. The default value is [Enabled].

Case Open Feature

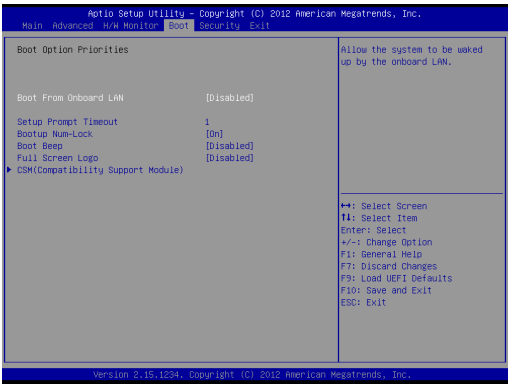
This allows you to enable or disable case open detection feature. The default is value [Disabled].

Clear Status

This option appears only when the case open has been detected. Use this option to keep or clear the record of previous chassis intrusion status.

3.5 Boot Screen

In this section, it will display the available devices on your system for you to configure the boot settings and the boot priority.



Boot From Onboard LAN

Use this item to enable or disable the Boot From Onboard LAN feature.

Setup Prompt Timeout

This shows the number of seconds to wait for setup activation key. 65535(0XFFFF) means indefinite waiting.

Bootup Num-Lock

If this item is set to [On], it will automatically activate the Numeric Lock function after boot-up.

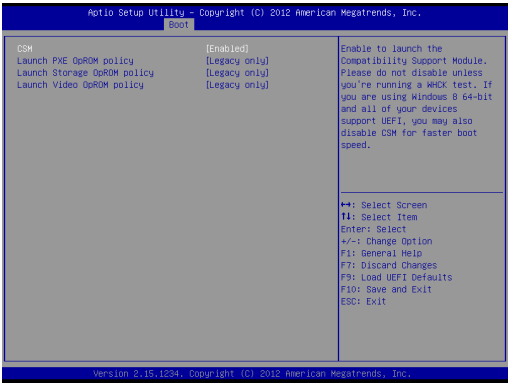
Boot Beep

Select whether the Boot Beep should be turned on or off when the system boots up. Please note that a buzzer is needed.

Full Screen Logo

Use this item to enable or disable OEM Logo. The default value is [Enabled].

CSM (Compatibility Support Module)



CSM

Enable to launch the Compatibility Support Module. Please do not disable unless you're running a WHCK test. If you are using Windows® 8 64-bit and all of your devices support UEFI, you may also disable CSM for faster boot speed.

Launch PXE OpROM Policy

Select UEFI only to run those that support UEFI option ROM only. Select Legacy only to run those that support legacy option ROM only. Do not launch?

Launch Storage OpROM Policy

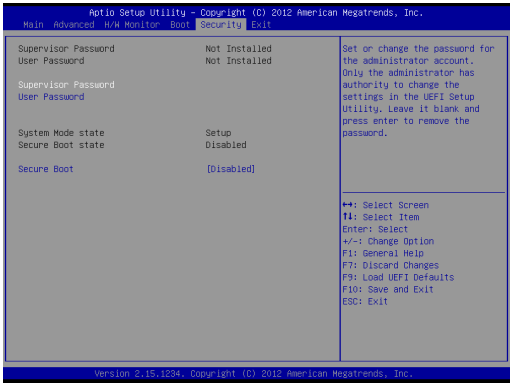
Select UEFI only to run those that support UEFI option ROM only. Select Legacy only to run those that support legacy option ROM only. Do not launch?

Launch Video OpROM Policy

Select UEFI only to run those that support UEFI option ROM only. Select Legacy only to run those that support legacy option ROM only. Do not launch?

3.6 Security Screen

In this section, you may set, change or clear the supervisor/user password for the system.



Supervisor Password

Set or change the password for the administrator account. Only the administrator has authority to change the settings in the UEFI Setup Utility. Leave it blank and press enter to remove the password.

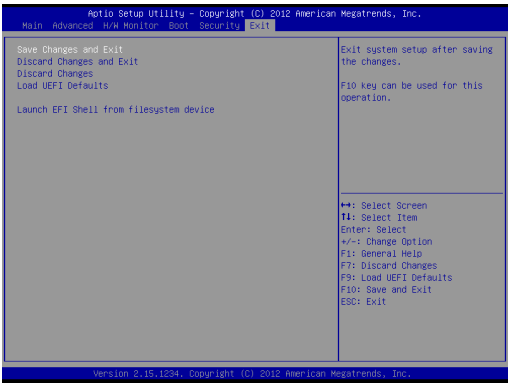
User Password

Set or change the password for the user account. Users are unable to change the settings in the UEFI Setup Utility. Leave it blank and press enter to remove the password.

Secure Boot

Enable to support Windows 8 Secure Boot.

3.7 Exit Screen



Save Changes and Exit

When you select this option, it will pop-out the following message, "Save configuration changes and exit setup?" Select [OK] to save the changes and exit the UEFI SETUP UTILITY.

Discard Changes and Exit

When you select this option, it will pop-out the following message, "Discard changes and exit setup?" Select [OK] to exit the UEFI SETUP UTILITY without saving any changes.

Discard Changes

When you select this option, it will pop-out the following message, "Discard changes?" Select [OK] to discard all changes.

Load UEFI Defaults

Load UEFI default values for all the setup questions. F9 key can be used for this operation.

Launch EFI Shell from filesystem device

Attempts to Launch EFI Shell application (Shell64.efi) from one of the available filesystem devices.

Chapter 4: Software Support

4.1 Install Operating System

This motherboard supports various Microsoft® Windows® operating systems: 8.1 / 8.1 64-bit / 8 / 8 64-bit / 7 / 7 64-bit. Because motherboard settings and hardware options vary, use the setup procedures in this chapter for general reference only. Refer your OS documentation for more information.

4.2 Support CD Information

The Support CD that came with the motherboard contains necessary drivers and useful utilities that enhance the motherboard's features.

4.2.1 Running The Support CD

To begin using the support CD, insert the CD into your CD-ROM drive. The CD automatically displays the Main Menu if "AUTORUN" is enabled in your computer. If the Main Menu did not appear automatically, locate and double click on the file "ASRSETUP.EXE" from the BIN folder in the Support CD to display the menus.

4.2.2 Drivers Menu

The Drivers Menu shows the available device's drivers if the system detects installed devices. Please install the necessary drivers to activate the devices.

4.2.3 Utilities Menu

The Utilities Menu shows the application software that the motherboard supports. Click on a specific item then follow the installation wizard to install it.

4.2.4 Contact Information

If you need to contact ASRock or want to know more about ASRock, you're welcome to visit ASRock's website at http://www.asrock.com; or you may contact your dealer for further information.