USER MANUAL

ZKAIO3000 Series

Version 1.0   Date: April, 2017

Important Claim

Firstly, thank you for purchasing this hybrid-bio terminal. Before using, please read this manual carefully to avoid the unnecessary damage! The company reminds you that the proper use will improve the use affect and authentication speed.

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Safety Instructions

1. Read these instructions carefully. Keep these instructions for future reference.
2. Please disconnect this equipment from AC outlet before cleaning. Don't use liquid or sprayed detergent for cleaning. Use moisture sheet or cloth for cleaning.
3. Please keep this equipment from humidity.
4. Lay this equipment on a reliable surface when install. A drop or fall could cause injury.
5. Make sure power cord such a way that people cannot step on it. Do not place anything over the power cord.
6. All cautions and warnings on the equipment should be noted.
7. If the equipment is not used for long time, disconnect the equipment from main to avoid being damaged by transient over voltage.
8. Never pour any liquid into opening; this could cause fire or electrical shock.
9. If one of the following situations arises, get the equipment checked by a service personnel:
10. The power cord or plug is damaged.
11. Liquid has penetrated into the equipment.
12. The equipment has been exposed to moisture.
13. The equipment does not work well or you cannot get it work according to user manual.
14. The equipment has dropped and damaged.
15. Do not leave this equipment in an environment unconditioned, storage temperature below -20℃ or above 60℃, it may damage the equipment.
16. Unplug the power cord when doing any service or adding optional kits.

Lithium Battery Caution:

1. Danger of explosion can happen if the battery is incorrectly replaced. Replace only the original or equivalent type recommended by the manufacture. Dispose used batteries according to the manufacturer's instructions.
2. Do not remove the cover, and ensure no user serviceable components are inside. Take the unit to the service center for service and repair.

Contents

1 Introduction

This chapter includes the ZKAIO3000 series system background information.

- General Information
- Specification
- Dimensions

1.1 General Information

ZKAIO3000 is a fashionable and out of traditional all in one POS terminal design, it's totally fanless and has an excellent heat dissipation thus allowing Celeron J1900 to provide outstanding performance with minimal heat increase. The ZKAIO3000 supports versatile peripheral options such as VFD, ibutton, MSR, thermal printer, 2nd display, keyboard, mouse and so on to meet the diversified applications. It's a multi-functional system for retail and hospitality.

1.2 Specifications

SYSTEM

CPU

- Intel® new Atom^{TM} Baytrail-M/D Supports Hyper-Threading Technology Default J1900 Quad core processor

Memory

- 1 x 204 Pin SO-DIMM up to 8GB DDR3L SDRAM

Graphics

- Intel Gen 7 Intel Graphics DX11, OGL3.2

SATA

- 1 x SATAII (3.0Gb/s)

Network

- One Realtek RTL8111G-CG 10/100/1000 Ethernet

Audio

- Realtek ALC662 HD Codec

Watchdog Timer

- 256 segments, 0~255 seconds/minutes

BIOS

- UEFI

Power Supply

- DC-IN 24V (24V/2.75A Max. 65W)

I/O PORTS

USB

- 4 x USB 3.0

Serial Ports

- 3 x DB-9 (RS232 only)
- All com 5V & 12V selectable via Jumper setting (Default no power)

LAN

- 1 x RJ-45 interface

PS/2

- 2 x PS/2 (Mouse and Keyboard)

Audio

- 1 x Line out, 1 x Mic in

VGA

- 1 x DB-15 VGA interface

Cash Drawer

- 1 x RJ11 port

PHSICAL DIMENSION

Dimension

- 205mm(D) * 360mm(W) *425 mm(H)

ENVIRONMENT

Temperature

- Operating: 0~40℃
- Storage: -20~60℃

Humidity

- 10%~90%

OS SUPPORT

OS

- Windows Embedded Standard 7 / Windows Embedded Professional 7 / Windows7 Embedded POSReady 7 / Windows Embedded 8.1 Professional / Windows Embedded 8.1 Industry/Win10 IOT Enterprise Retail 64 bit

Note: *Specifications are subject to revision or update without notice.*

1.3 Dimensions
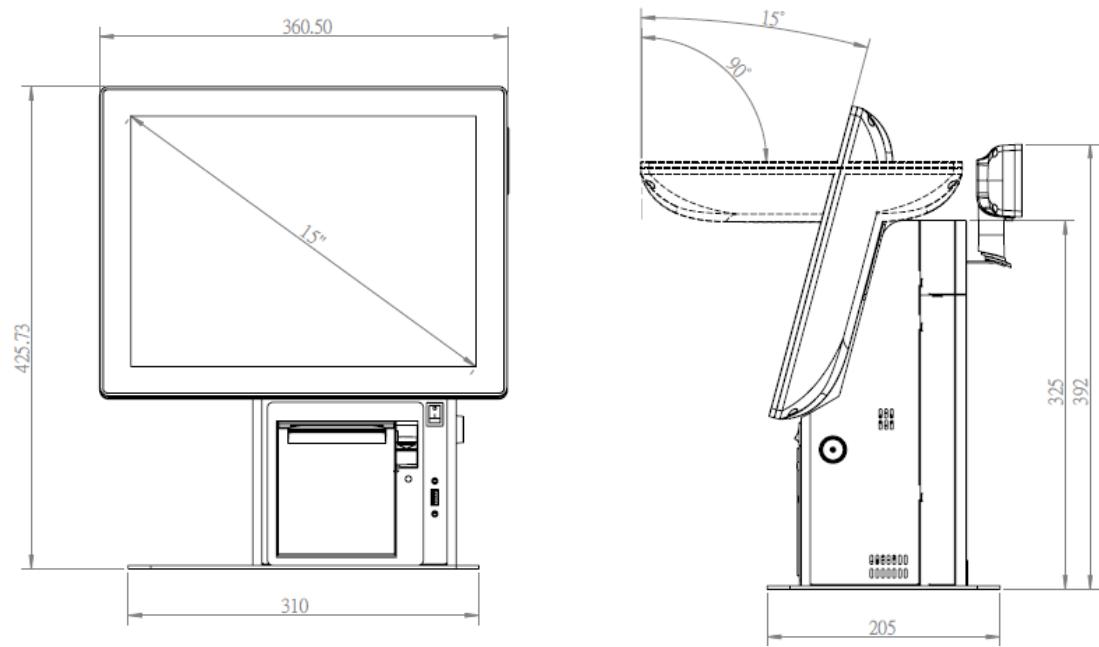
Width: 205mm(D) * 360.5mm(W) * 425.73mm(H)

2 Using the System

2.1 Identifying the System

2.1.1 Front view

2.1.2 Rear view

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2.1.3 Side view

2.2 First Time System Setup

To set up the ZKAIO3000 series for the first-time, you should have the following items ready. These items are either included in the accessory box or available from your local computer parts store.

- ZKAIO3000 Utility CDI
- Power Adapter
- Power cord

2.2.1 Hardware Installation Procedure

(Prior to turning the power on)

1. Connect a PS/2 keyboard or AT keyboard to the PS/2 keyboard port, or an USB keyboard to a USB port. If you are using an AT keyboard, you need an adapter (AT to PS/2) for this connection.
2. Connect the PS/2 mouse to the PS/2 mouse port, or an USB mouse to an USB port.
3. Connect the male end of the power cord to an electrical outlet.

2.2.2 System BIOS Setup

If you are a commercial user, the ZKAIO3000 series should have been set up and configured by your distributor already. In the case where you may find it necessary to change some system configuration information, you will need to run the Basic Input Output System (BIOS) setup program. Under the following conditions, the CMOS settings may be changed:

1.   The system is starting and being configured for the first time with new components.
2.   The hardware devices attached to the ZKAIO3000 system have been changed.
3.   The CMOS memory has lost power and the configuration information has been erased.

The BIOS setup program is stored in ROM, which can be accessed by pressing <DEL> key on the keyboard immediately when the system is powered on. In order to retain the specified setup information when the system power is turned off, the system setup information is stored in a battery-backed CMOS RAM. The battery is to ensure the settings will not be erased when the computer is turned off or reset. When the computer is powered on again, the system will read the settings stored in the CMOS RAM and compare them to the equipment check conducted during the power on self-test (POST). If any error or mismatch occurs, an error message will be shown on the screen and the computer will be prompted to run the setup program.

2.2.3 Operating System and Driver

The standard ZKAIO3000 series system may not be equipped with an operating system (OS). If you are a commercial user, the system is likely to have been pre-installed with a proper operating system and software drivers by your dealer or system integrator. If the system is not pre-installed with any system OS and drivers or you intend to install your preferred ones, you will need to load an OS and software into the system.

1.   Connect a USB CD-ROM Drive to load OS from a bootable CD. Recent releases of operating systems include setup programs that load automatically and guide you through the installation. You can also refer to your OS user manual for instructions on formatting or partitioning the hard disk drive before any software installation.
2.   Install software drivers for your operating system and any peripherals that are connected. The ZKAIO3000 utility CD includes software drivers for Chipset driver, Audio, LAN, Touch, Wireless and VGA Display drivers. See driver installation chapters for more information.

2.3 Installation Memory Module

This motherboard provides two 204-pin DDR3L (Double Data Rate 3) SO-DIMM slots.

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

Step 2. Firmly insert the DIMM into the slot until the retaining clips at both ends fully snap back in place and the DIMM is properly seated.
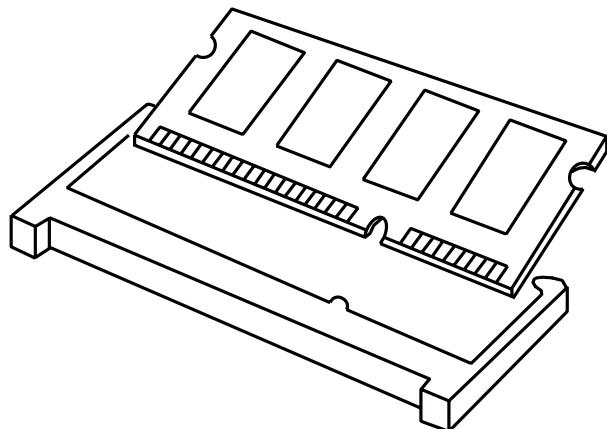
Note: *The DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the DIMM if you force the DIMM into the slot at incorrect orientation.*

Note: *If you are installing only one SO-DIMM, please ensure it is inserted into DDR3_A1 slot, otherwise the system will not be able to start.*

2.4 Versatile Stand with Options

Desk, Frame and Table Top: The ZKAIO3000 series include a sleek and stable pedestal assembled with the base that enables the ZKAIO3000 Series to endure intense operation in any public setting. The two side hinges swivel the base up and down, from 15° to 90°.

2.5 Programming the Watchdog Timer

The main board in ZKAIO3000 features a watchdog timer (WDT) that can generate a system reset if the CPU processing comes to a halt. This feature ensures the system dependability during unattended operation.

The WDT is used to generate a variety of output signals after a user programmable count.

The WDT is suitable for use in the prevention of system lock-up, such as when software becomes trapped in a deadlock. Under such circumstances, the timer will count to zero and the selected outputs will be driven. Under normal circumstance, the user will restart the WDT at regular intervals before the timer counts to zero.

3 LCD Displays

The ZKAIO3000 series include one TFT-LCD (Thin Film Transistor Liquid Crystal Display).

The ZKAIO3000 series have two kinds of LCD size for a primary 15.0″ color TFT display with touch screen controller installed used for the graphics user interface. 15.0″ LCD supports 1024x768.

4 Input/Output Connectors
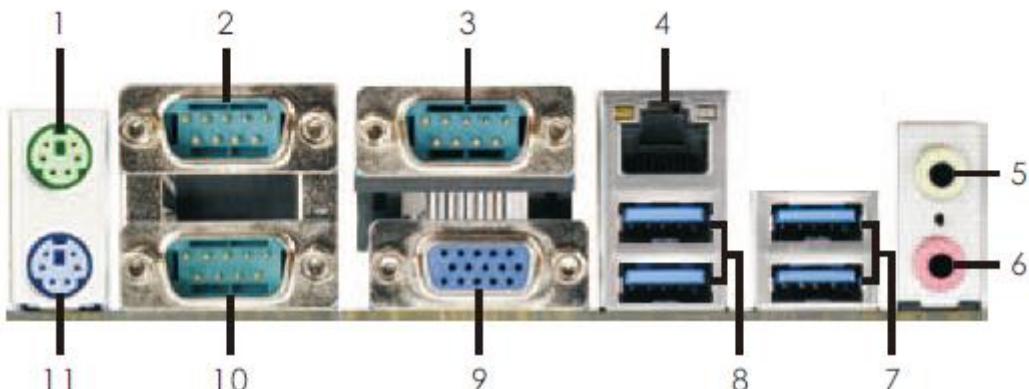
1	PS/2 Mouse Port	7	USB 3.0 Ports (USB3_0_1)
2	COM Port 2 (COM2)	8	USB 3.0 Ports (USB3_2_3)
3	COM Port 3 (COM3)	9	VGA Port (VGA1)
4	LAN RJ-45 Port*	10	COM Port 1 (COM1)
5	Line out (Green)	11	PS/2 Keyboard Port
6	Microphone (Pink)		

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COM1~3 Port Pin Definition

PIN	RS232
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	COM1: +5V/+12V/+5VSB COM2, 3: +5V/+12V

** 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**

LAN Port LED Indications

Activity/Link LED		SPEED LED	
Status	Description	Status	Description
Off	No Link	Off	10Mbps connection
Blinking	Data Activity	Orange	100Mbps connection
On	Link	Green	1Gbps connection

ACT/LINK LED   SPEED LED

LAN Port
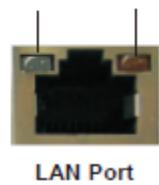
5 System Main Board

5.1 Main Board Dimensions (mm)
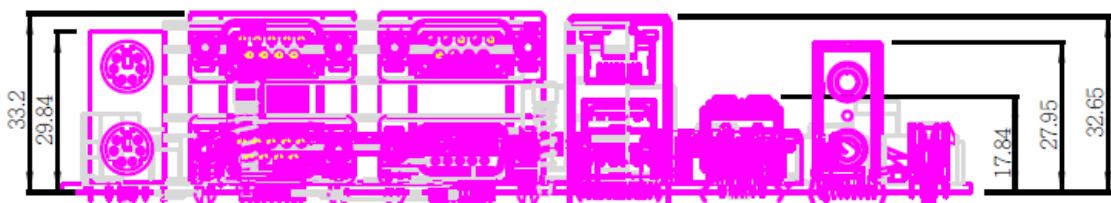
5.2 Main Board Layout
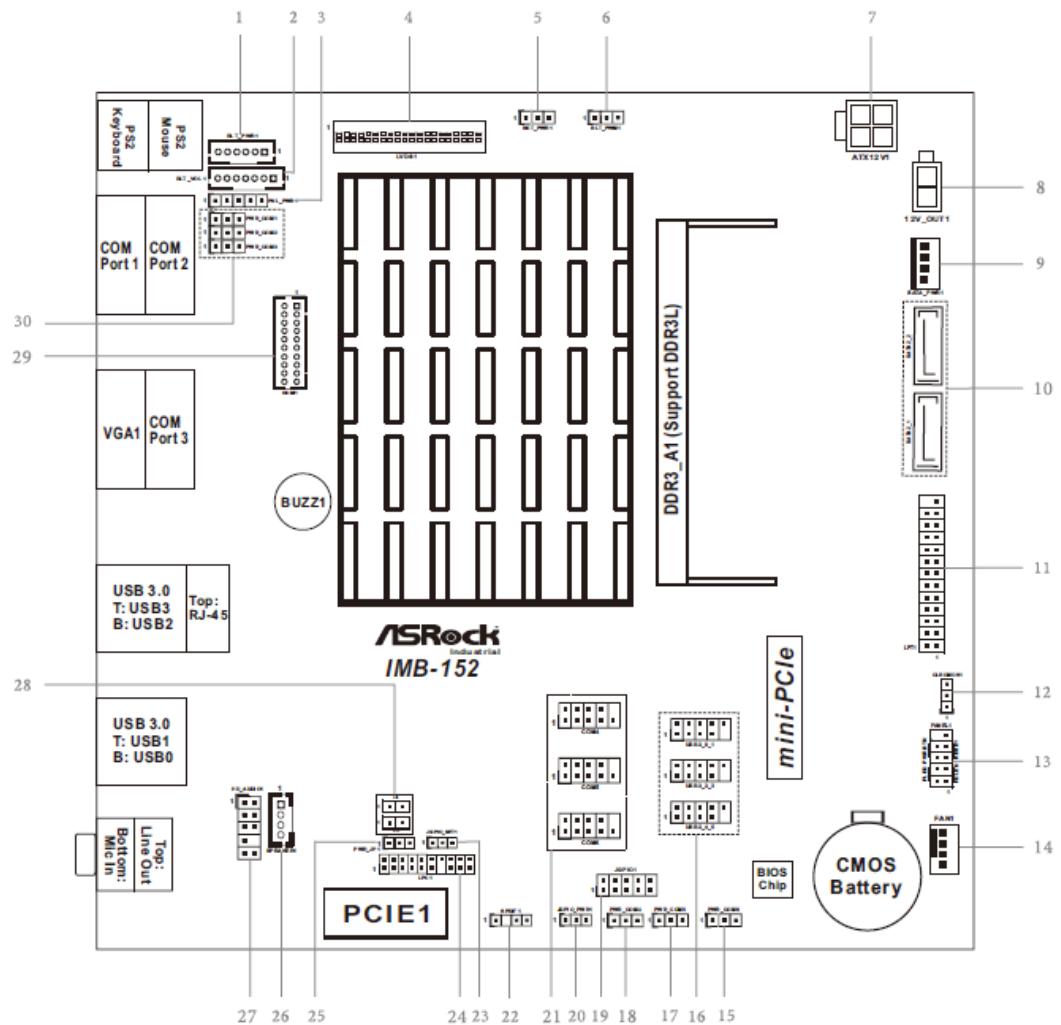
5.3 Connector List

No.	Connector
1	Backlight Power Connector (BLT_PWR1)
2	Backlight Volume Control (BLT_VOL1)
3	Panel Power Selection (LCD_VCC) (PNL_PWR1)
4	LVDS Panel Connector
5	Backlight Power Selection (LCD_BLT_VCC) (BKT_PWR1)
6	BLT_PWM1
7	ATX Power Connector (Input 12V)
8	+12V_OUT1 Connector
9	SATA Power Output Connector
10	SATA2 Connectors (SATA2_1, SATA2_2)
11	Printer Port Header
12	Clear CMOS Header
13	System Panel Header
14	4-Pin FAN Connector (+12V)
15	COM Port PWR Setting Jumper (PWR_COM6) (For COM Port6)
16	USB2.0 Connectors (USB2_0_1, USB2_2_3, USB2_4_5)
17	COM Port PWR Setting Jumper (PWR_COM5) (For COM Port5)
18	COM Port PWR Setting Jumper (PWR_COM4) (For COM Port4)
19	Digital Input / Output Pin Header
20	Digital Input / Output Power Select
21	COM4, 5, 6 Headers (RS232)
22	SPDIF Header
23	JGPIO_SET1
24	LPC Header
25	ATX/AT Mode Selection
26	3W Audio AMP Output Wafer
27	Front Panel Audio Header
28	Chassis Intrusion Headers (CI1, CI2)
29	HDMI Connector
30	COM Port PWR Setting Jumper (PWR_COM1, 2, 3) (For COM Port1, 2, 3)

5.4 Onboard Board Headers and Connectors

Note: 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!

5.4.1 USB2.0 Connector

There are three USB 2.0 connectors on this motherboard. (9-pin USB2_0_1, USB2_2_3, USB2_4_5)(See p.5-12 No.16). Each USB 2.0 connector can support two USB ports.
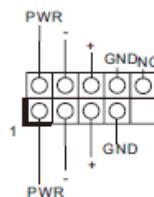
5.4.2 SATA2 Connectors

These two Serial ATA2 (SATA2_1, SATA2_2: see p.5-12, No. 10) (SATA2) connectors support SATA data cables for internal storage devices. The current SATA2 interface allows up to 3.0 Gb/s data transfer rate.

5.4.3 System Panel Header

This header accommodates several system front panel functions.

(9-pin PANEL1)
(see p.5-12 No. 13)
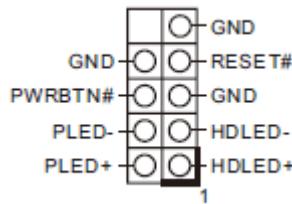
NOTE：

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 sleep state. The LED is off when the system is in S3/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.*

5.4.4 3W Audio AMP Output Wafer

(4-pin SPEAKER1)

    (see p.5-12 No. 26)

PIN	Signal Name
1	OUTLN
2	OUTLP
3	OUTRP
4	OUTRN

5.4.5 Front Panel Audio Header

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

    (9-pin HD_AUDIO1)

    (see p.5-12 No. 27)

MIC2_L	GND
MIC2_R	PRESENCE#
OUT2_R	MIC_RET
J_SENSE	
OUT2_L	OUT_RET
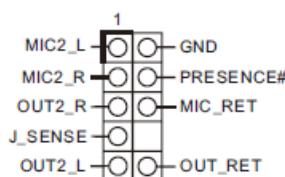
    NOTE：

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".

5.4.6 Fan Connector

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

(4-pin CPU_FAN1)

(see p.5-12 No. 14)


```
1  GND
2  +12V
3  FAN_SPEED
4  FAN_SPEED_CONTROL
```
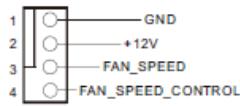
5.4.7 ATX Power Connector

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

1-2: GND

3-4: DC Input

(Input 12V)

(4-pin ATX12V1)

(see p.5-12 No. 7)

5.4.8 Printer Port Header

(25-pin LPT1)

(see p.5-12 No. 11)
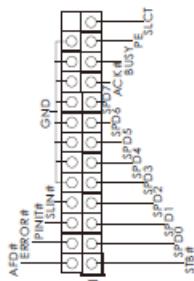
5.4.9 LVDS Connector

(40-pin LVDS1)

(see p.5-12 No. 4)
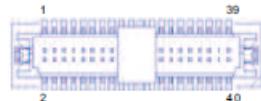
| PIN	Signal Name	PIN	Signal Name
1	LCD_VCC	2	LCD_VCC
3	+3.3V	4	LDDC_CLK
5	LDDC_DATA	6	LVDS_A_DATA0#
7	LVDS_A_DATA0	8	GND
9	LVDS_A_DATA1#	10	LVDS_A_DATA1
11	GND	12	LVDS_A_DATA2#
13	LVDS_A_DATA2	14	GND
15	LVDS_A_DATA3#	16	LVDS_A_DATA3
17	GND	18	LVDS_A_CLK#
19	LVDS_A_CLK	20	GND
21	LVDS_B_DATA0#	22	LVDS_B_DATA0
23	GND	24	LVDS_B_DATA1#
25	LVDS_B_DATA1	26	GND
27	LVDS_B_DATA2#	28	LVDS_B_DATA2
29	LVDD_EN	30	LVDS_B_DATA3#
31	LVDS_B_DATA3	32	GND
33	LVDS_B_CLK#	34	LVDS_B_CLK
35	GND	36	CON_LBKLT_EN
37	CON_LBKLT_CTL	38	LCD_BLT_VCC
39	LCD_BLT_VCC	40	LCD_BLT_VCC

5.4.10 Digital Input / Output Pin Header

(10-pin JGPIO1)

(see p.5-12 No. 19)
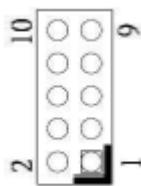
PIN	Signal Name	PIN	Signal Name
10	GND	9	JGPIO_PWR
8	SIO_GP23	7	SIO_GP27
6	SIO_GP22	5	SIO_GP26
4	SIO_GP21	3	SIO_GP25
2	SIO_GP20	1	SIO_GP24

5.4.11 Backlight Volume Control

(7-pin BLT_VOL1)

(see p.5-12 No. 2)

PIN	Signal Name
1	GPIO_VOL_UP
2	GPIO_VOL_DW
3	PWRDN
4	LVDS1_BLUP
5	LVDS1_BLDW
6	GND
7	GND

5.4.12 Backlight Power Connector

(6-pin BLT_PWR1)

(see p.8 No. 1)

PIN	Signal Name
1	GND
2	GND
3	BL CTL
4	BL EN
5	LCD_BLT_VCC
6	LCD_BLT_VCC

5.4.13 SATA Power Output Connector

(4-pin SATA_PWR1)

(see p.5-12 No. 9)
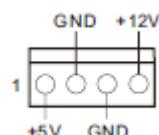
5.4.14 Chassis Intrusion Headers

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.

(2-pin CI1, CI2: see p.5-12, No. 28)
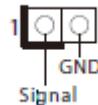
5.4.15 COM4,5, 6 Headers (RS232)

(9-pin COM4/COM5/COM6: see p.5-12, No. 21)
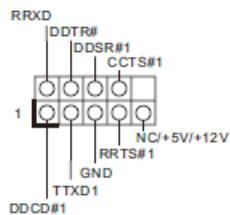
5.4.16 LPC Header

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

(19-pin LPC1)

(see p.5-12, No. 24)
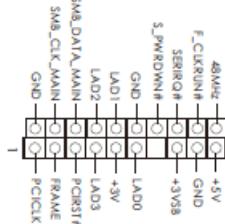
5.4.17 HDMI Connector

(20-pin HDMI1:see p.5-12 No. 29)
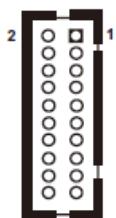
PIN	Signal Name	PIN	Signal Name
2	NC	1	GND
4	GND	3	TMDS CLK-
6	TMDS DATA1+	5	TMDS CLK+
8	TMDS DATA1-	7	GND
10	GND	9	GND
12	DDC DATA	11	TMDS DATA0+
14	DDC CLK	13	TMDS DATA0-
16	GND	15	GND
18	TMDS DATA2+	17	HOT PLUG
20	TMDS DATA2-	19	+5V

5.4.18 SPDIF Header

(3-pin SPDIF1:see p.5-12 No. 22)
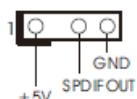
5.4.19 +12V_OUT1   Connector

(2-pin +12V_OUT1: see p.5-12, No. 8)

Pin1: GND

Pin2: +12V
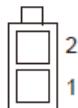
5.5 Jumpers Setup

The illustration shows how jumpers are setup. When the jumper cap is placed on the pins, the jumper is "Short". If no jumper cap is placed on the pins, the jumper is "Open". The illustration shows a 3-pin jumper whose pin1 and pin2 are "Short" when a jumper cap is placed on these 2 pins.
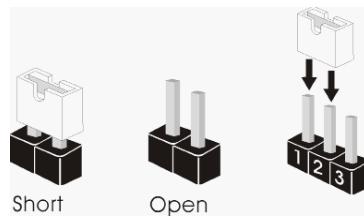
5.5.1 Digital Input / Output Power Select

(3-pin JGPIO_PWR1) 2-3: +5V
(see p.5-12 No. 20)
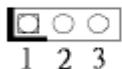
1-2: +12V
2-3: +5V

5.5.2 ATX/AT Mode Selection

(3-pin PWR_JP1)
(see p.5-12 No. 25)

1-2: AT Mode
2-3: ATX Mode

5.5.3 Panel Power Selection (LCD_VCC)

Use this to set up the VDD power of the LVDS connector

(5-pin PNL_PWR1)
 (see p.5-12 No. 3)

1-2: LVDD: +3V
2-3: LVDD: +5V
4-5: LVDD: +12V

5.5.4 Backlight Power Selection

Use this to set up the backlight power of the LVDS connector and the panel backlight power

of BLT_PWM1.

(5-pin BKT_PWR1)

(see p.5-12 No. 5)
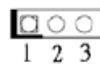
1-2: LCD_BLT_VCC: +5V

2-3: LCD_BLT_VCC: +12V

5.5.5 Backlight Control Level (CON_LBKLT_CTL)

(3-pin BLT_PWM1)

(see p.5-12, No. 6)

1-2: +3V Level

2-3: +5V Level

5.5.6 COM Port PWR Setting Jumpers

(3-pin PWR_COM1,2,3 for COM Port1,2,3)

(see p.5-12, No. 30)

(3-pin PWR_COM4, for COM Port4)

 (see p.5-12, No. 18)
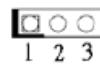
1-2: +5V

2-3: +12V

(3-pin PWR_COM5, for COM Port5)

 (see p.5-12, No. 17)

(3-pin PWR_COM6, for COM Port6)

 (see p.5-12, No. 15)

5.5.7 JGPIO_JP Jumper

(3-pin JGPIO_JP1)

(see p.5-12, No. 23)
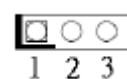
1-2: +3V

3-4: GND

6 UEFI Setup Utility

6.1 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.

Note: 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.

6.1.1 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   Exit the current screen or the UEFI Setup Utility

Use <←> key or <→> key to choose among the selections on the menu bar, and use < ↑> key or < ↓> key to move the cursor up or down to select items, then press <Enter> to get into the sub screen. You can also use the mouse to click your required item.
Please check the following table for the descriptions of each navigation key.

6.1.2 Navigation Keys

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

Navigation Key(s)	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 and exit the SETUP UTILITY
<F9>	Load optimal default values for all the settings
<F10>	Save changes and exit the SETUP UTILITY
<F12>	Print screen
<ESC>	To jump to the Exit Screen or exit the current screen

6.2 Main Screen

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

Advanced BIOS Feature Setup

In this section, you may set the configurations for the following items: CPU Configuration, Chipset Configuration, Storage Configuration, Super IO Configuration, ACPI Configuration and USB Configuration.
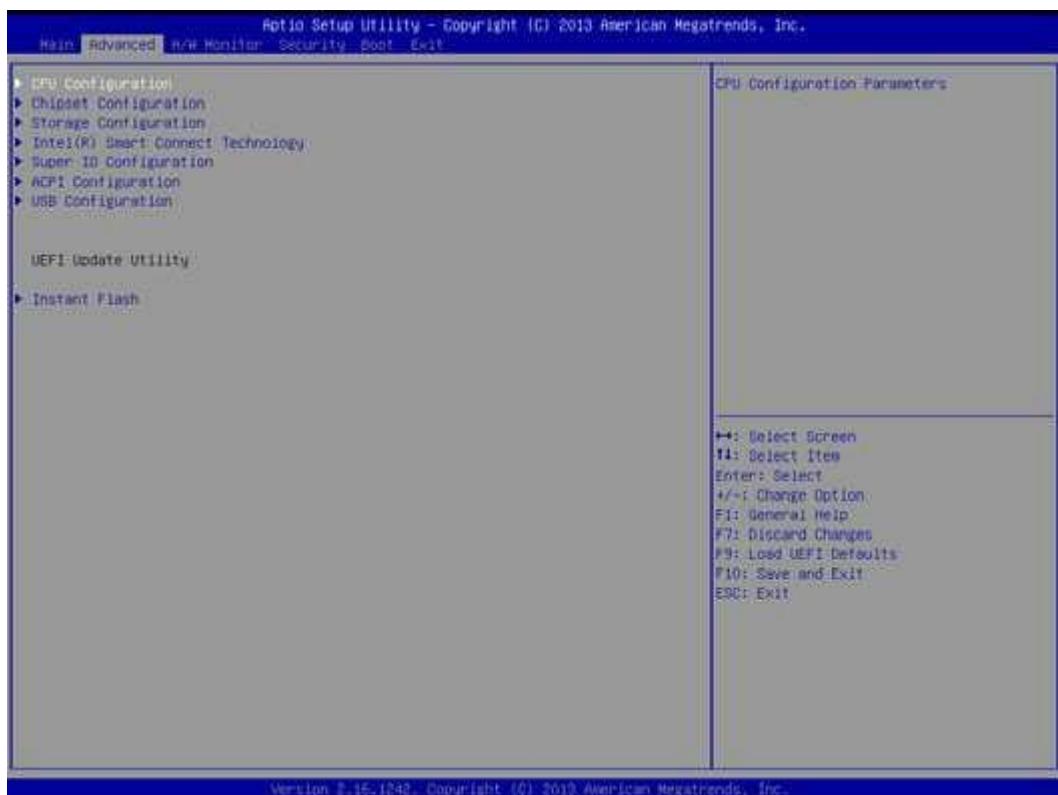
Note: *Setting wrong values in this section may cause the system to malfunction.*

Instant Flash

Instant Flash is a UEFI flash utility embedded in Flash ROM. This convenient UEFI update tool allows you to update the system UEFI without entering operating systems like MS-DOS or Windows® first. Just save the new UEFI file to your USB flash drive, floppy disk or hard drive and launch this tool, 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 the UEFI update process is completed.

6.3 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 and USB Configuration.

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

Instant Flash

Instant Flash is a UEFI lash 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 lash 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 lash utility. Please be noted that the USB lash 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.

6.3.1 CPU Configuration
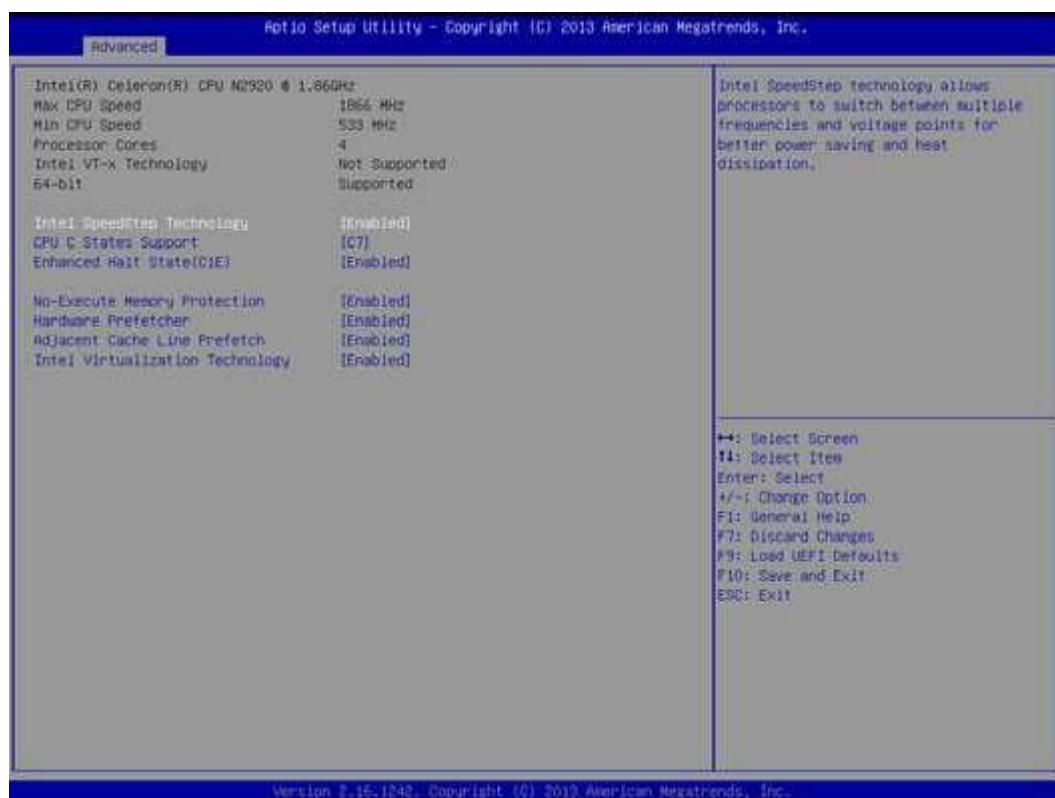
Intel SpeedStep Technology

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® 8 / 8.1 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.

Note: *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.*

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.

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-Execute Memory Protection.

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.

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.

6.3.2 Chipset Configuration
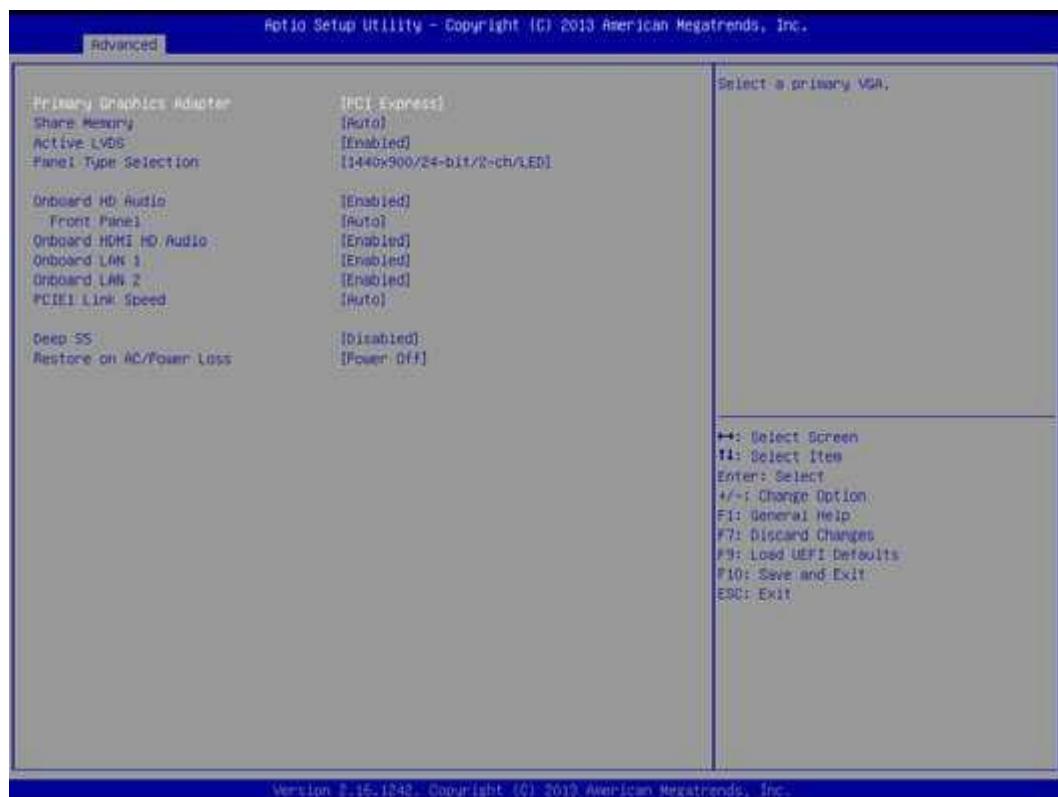
Primary Graphics Adapter

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

Share Memory

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

Active LVDS

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

Panel Type Selection

Use this to select panel type.

Onboard HD Audio

Select [Auto], [Enabled] or [Disabled] for the onboard HD Audio feature.

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.

Onboard LAN2

This allows you to enable or disable the Onboard LAN2.

PCIE1 Link Speed

Select the link speed for PCIE1.

Deep S5

Mobile platforms support Deep S5 in DC only and desktop platforms support Deep 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.

6.3.3 Storage Configuration
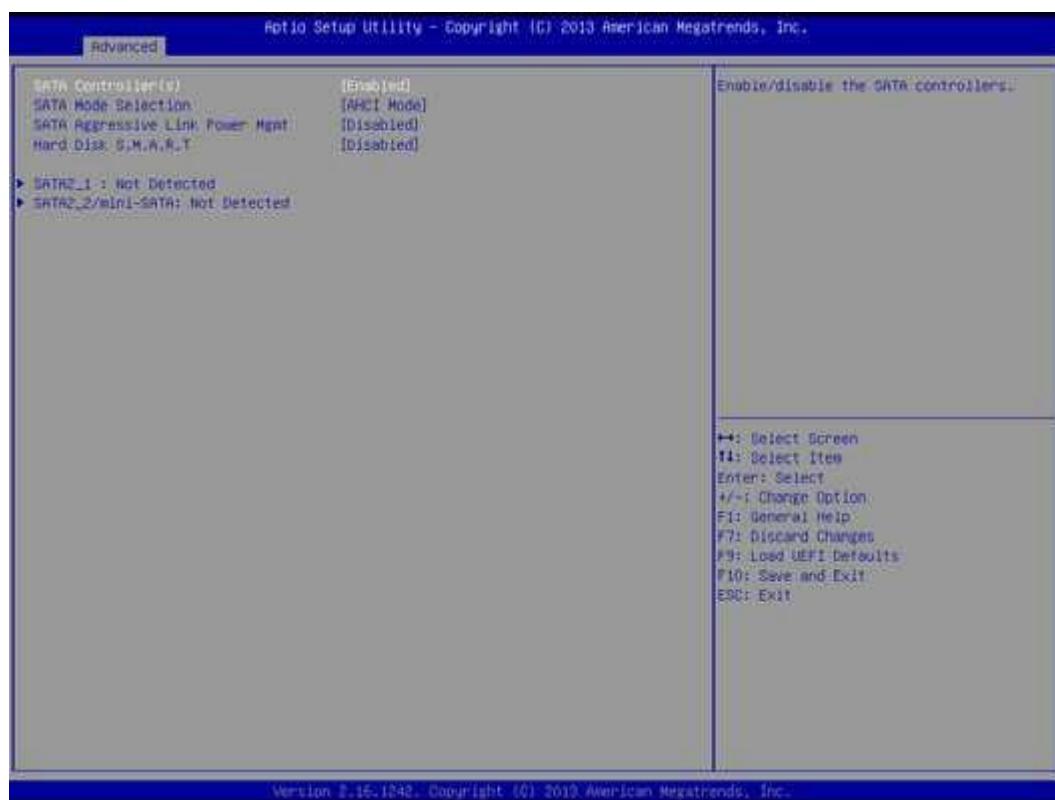
SATA Controller(s)

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].

*Note: 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.

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].

6.3.4 Intel® Smart Connect Technology
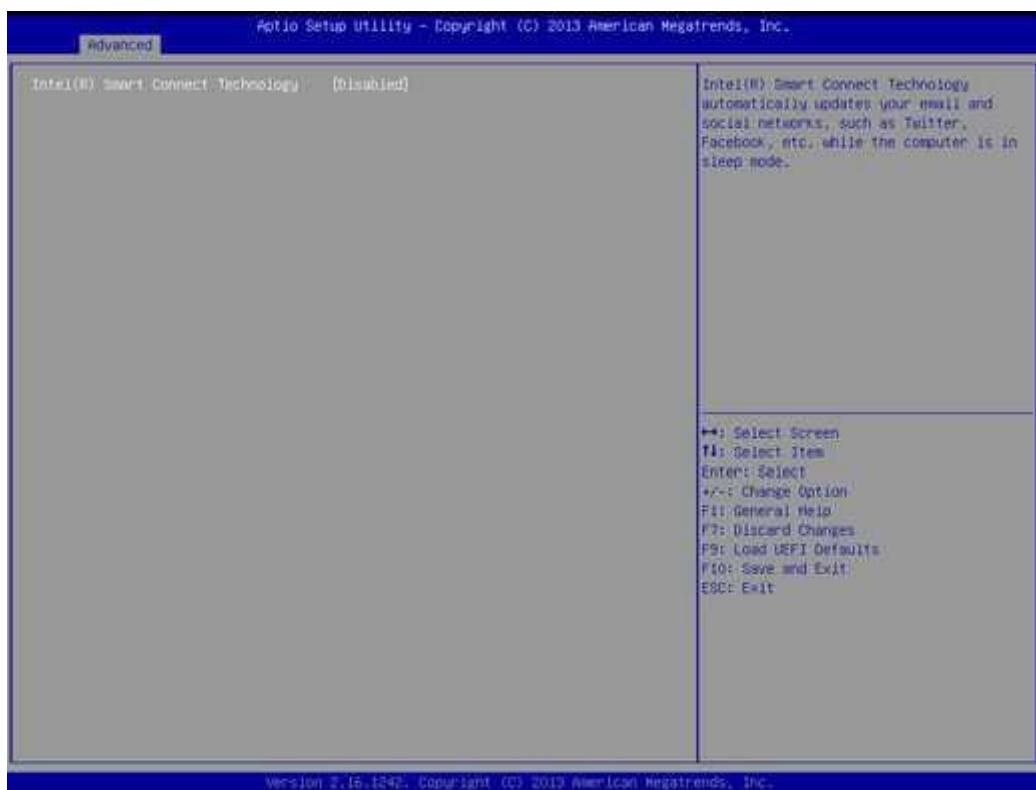
Intel(R) Smart Connect Technology

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].

6.3.5 Super IO Configuration
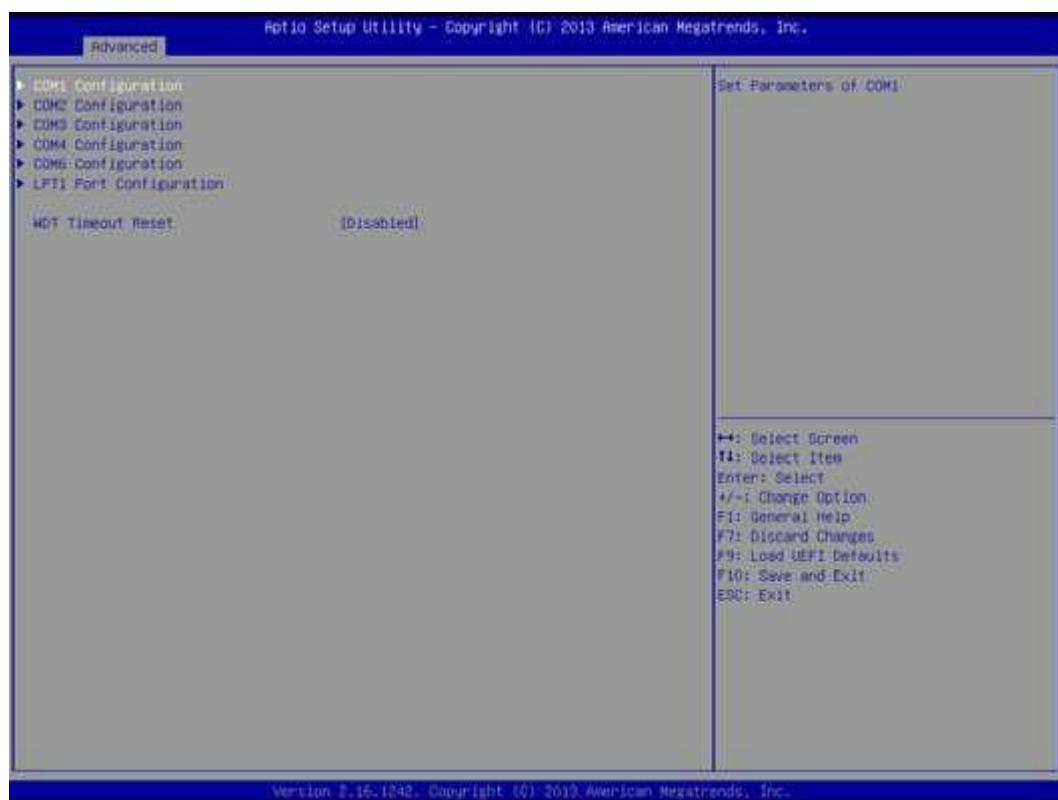
COM1 Configuration

Use this to set parameters of COM1. Select COM1 port type: [RS232].

COM2 Configuration

Use this to set parameters of COM2. Select COM2 port type: [RS232].

COM3 Configuration

Use this to set parameters of COM3. Select COM3 port type: [RS232].

COM4 Configuration

Use this to set parameters of COM4.

COM6 Configuration

Use this to set parameters of COM6.

LPT1 Port Configuration

Use this set parameters of the onboard parallel port.

WDT Timeout Reset

This allows users to enable/disable the Watch Dog Timer timeout to reset system. The default value is [Disabled].

6.3.6 ACPI Configuration
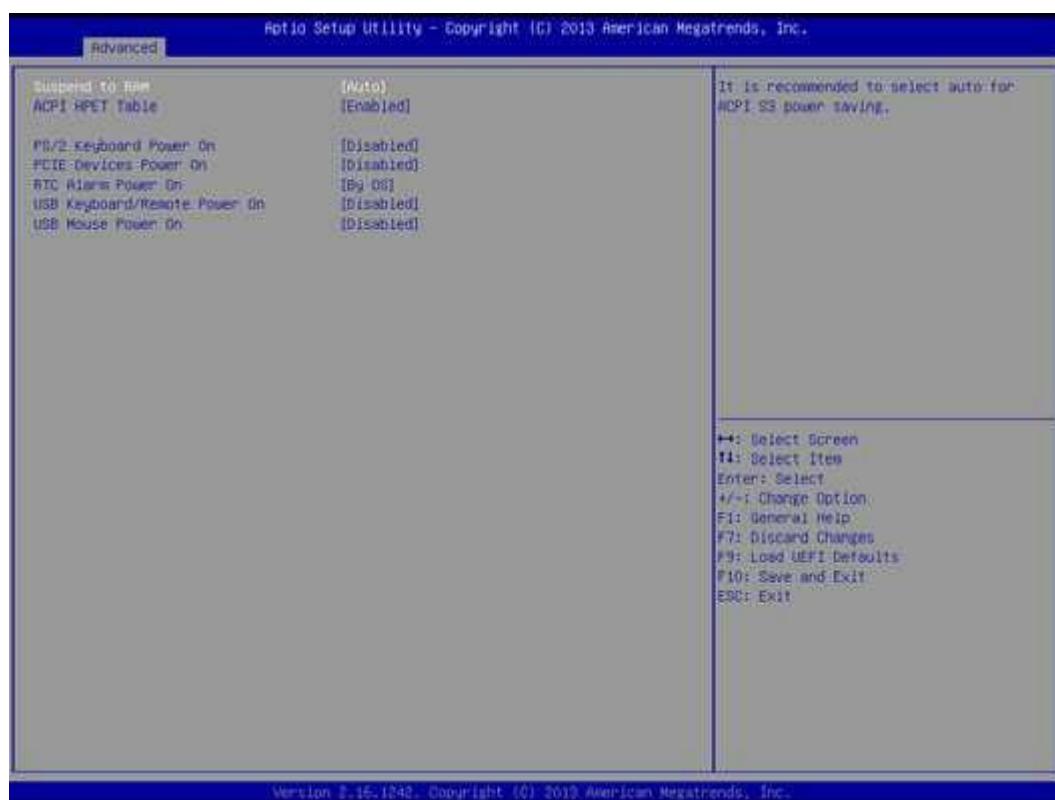
Suspend to RAM

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

ACPI HPET Table

Use this to enable/disable S3 Video Repost.

PS/2 Keyboard Power On

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.

PCIE Devices Power On

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

RTC Alarm Power On

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

USB Keyboard/Remote Power On

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

USB Mouse Power On

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

6.3.7 USB Configuration
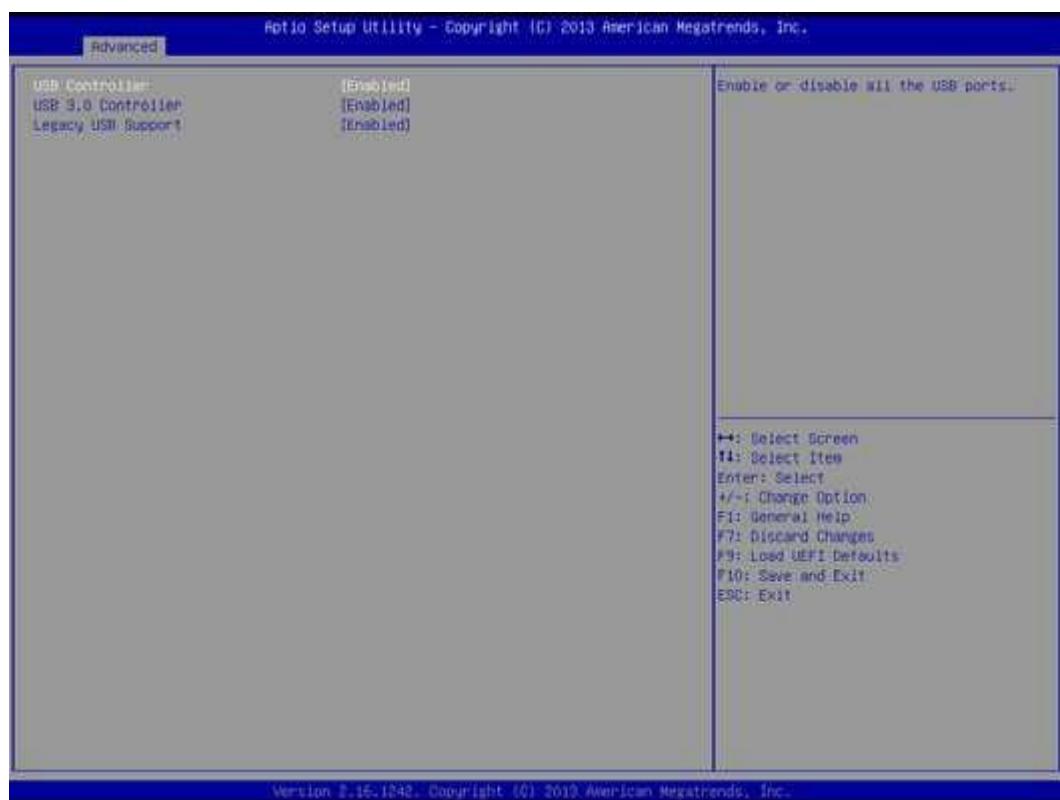
USB Controller

Use this to enable or disable the USB controller.

USB 3.0 Controller

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

Legacy USB Support

Use this to select legacy support for USB devices. There are four configuration options:

[Enabled], [Auto],　[Disabled] and [UEFI Setup Only]. The default value is [Enabled]. Please refer to the descriptions below for details of these four options:

[Enabled] - Enables support for legacy USB.

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

[Disabled] - USB devices are not allowed to be used under legacy OS and UEFI setup when [Disabled] is selected. If you have USB compatibility issues, it is recommended to select [Disabled] to enter the OS.

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

6.4 Hardware Health Event Monitoring Screen

This section allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, fan speed and voltage.

CPU FAN1 Setting

This allows you to set CPU FAN1's speed. Configuration options: [Full On] and [Automatic Mode].

CHA_FAN1 Setting

This allows you to set CHA_FAN1's speed. Configuration options: [Full On] and [Automatic Mode]. The default value is [Full On].

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.

6.5 Security Screen

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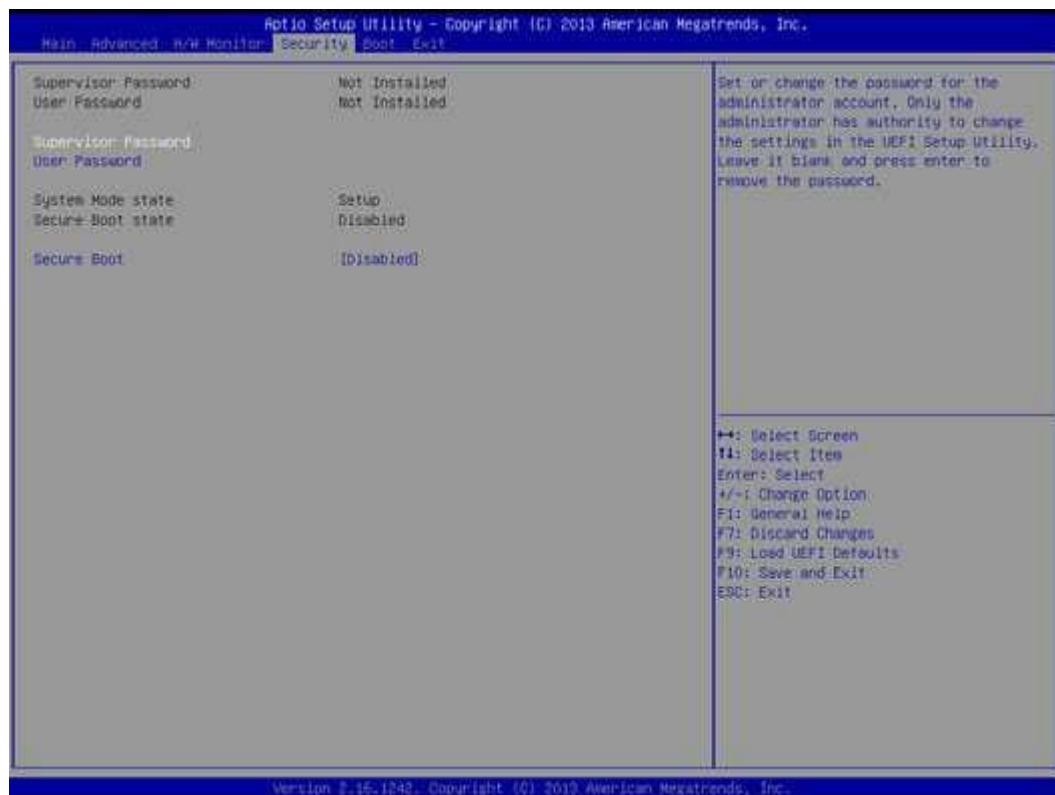
Supervisor Password

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 64-bit Secure Boot.

6.6 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.
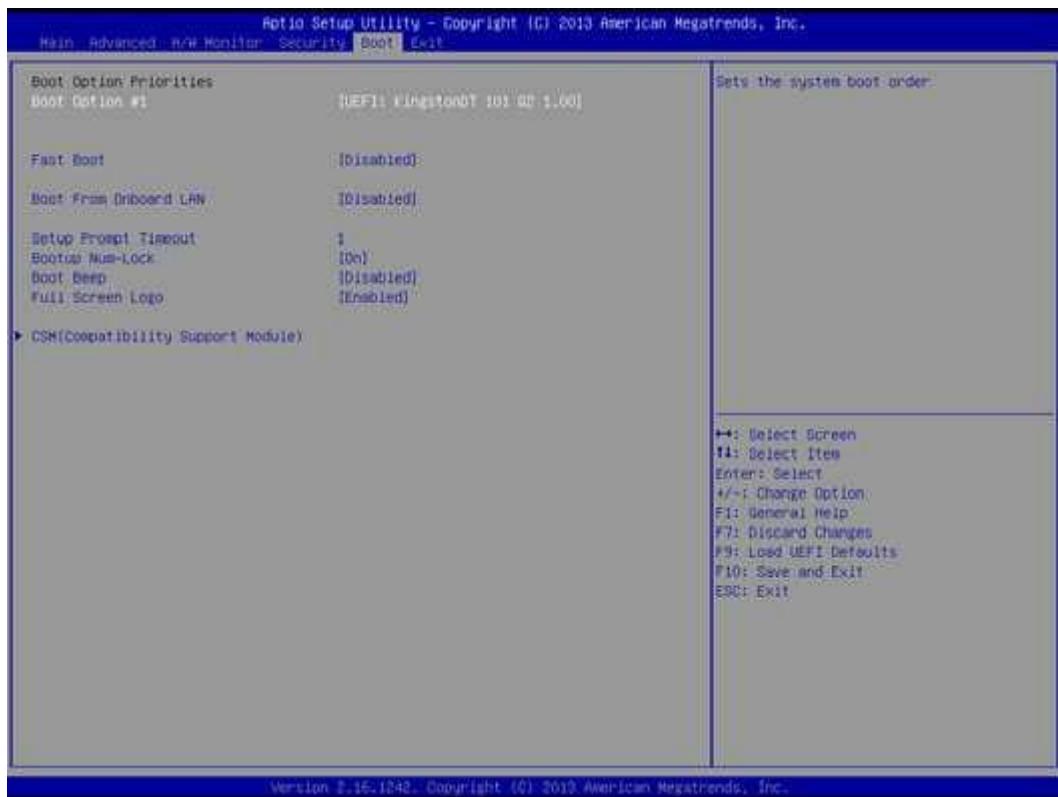
Fast Boot

Fast Boot minimizes your computer's boot time. There are three configuration options: [Disabled], [Fast] and [Ultra Fast]. The default value is [Disabled]. Please refer to below descriptions for the details of these three options:

[Disabled] - Disable Fast Boot.

[Fast] - The only restriction is you may not boot by using an USB lash drive.

[Ultra Fast] - There are a few restrictions.

1. Only supports Windows® 8 64-bit UEFI operating system.

2. You will not be able to enter BIOS Setup (Clear CMOS or run utility in Widows® to enter BIOS Setup).

3. If you are using an external graphics card, the VBIOS must support UEFI GOP in order to boot.

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.

Boot up 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 of f 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)
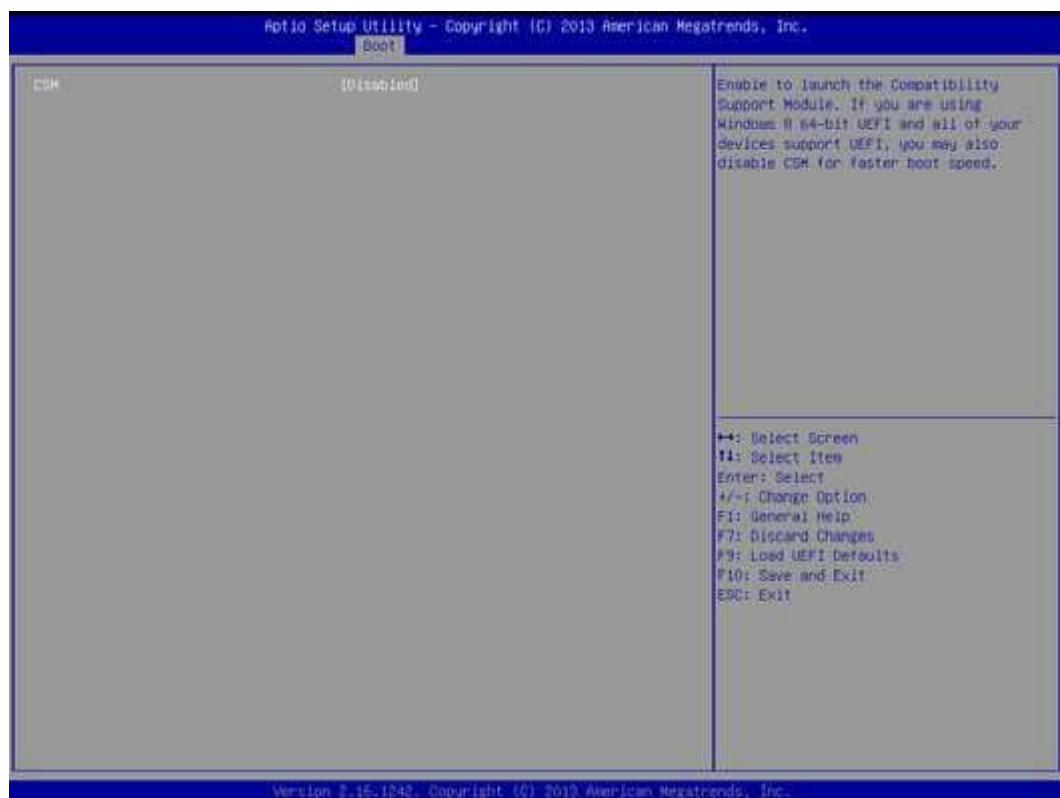
CSM

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.

6.7 Exit Screen
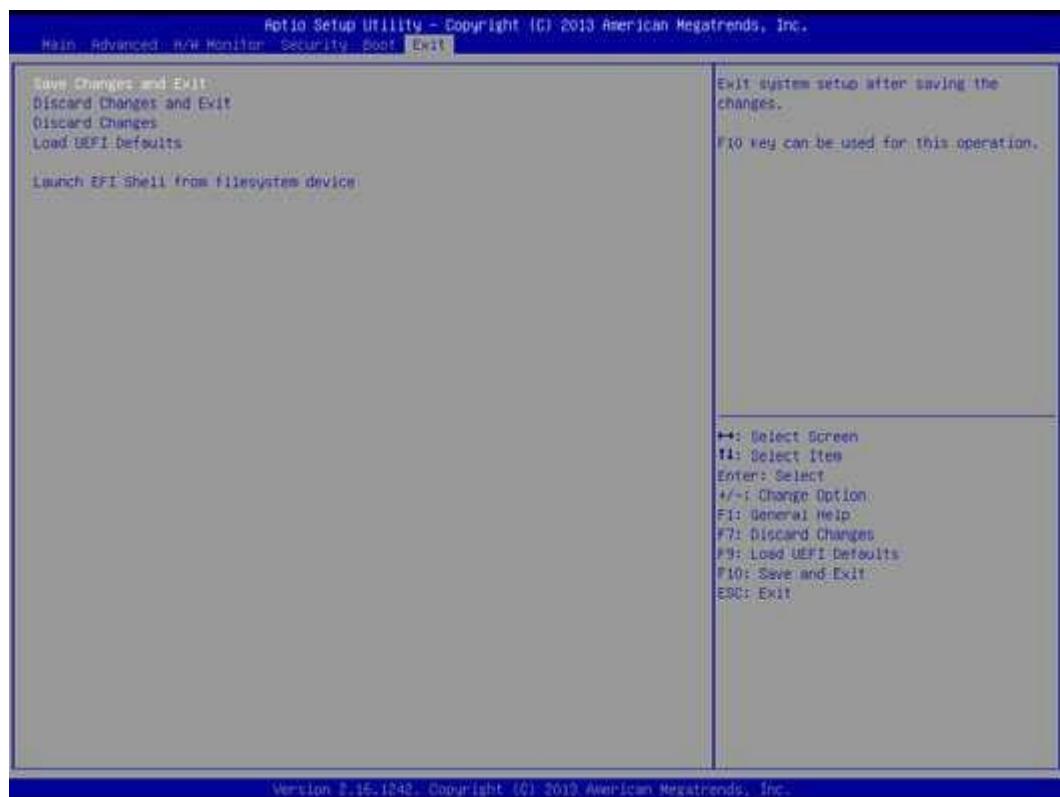
Save Changes and Exit

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

Discard Changes and Exit

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

Discard Changes

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

Load UEFI Defaults

Load UEFI default values for all options. The F9 key can be used for this operation.

Launch EFI Shell from file system device

Attempt to Launch EFI Shell application (Shell64.efi) from one of the available file system devices.

CE Notice

This device complies with the requirements of the CE directive.

FCC Notice

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 radiated 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 receiver.

Connect the equipment into 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 interface cables must be used in order to comply with emission limits.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

WEEE Notice

This appliance is labeled in accordance with European Directive 2002/96/EC concerning waste electrical and electronic equipment (WEEE). The Directive determines the framework for the return and recycling of used appliances as applicable throughout the European Union. This label is applied to various products to indicate that the product is not to be thrown away, but rather reclaimed upon end of life per this Directive.

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