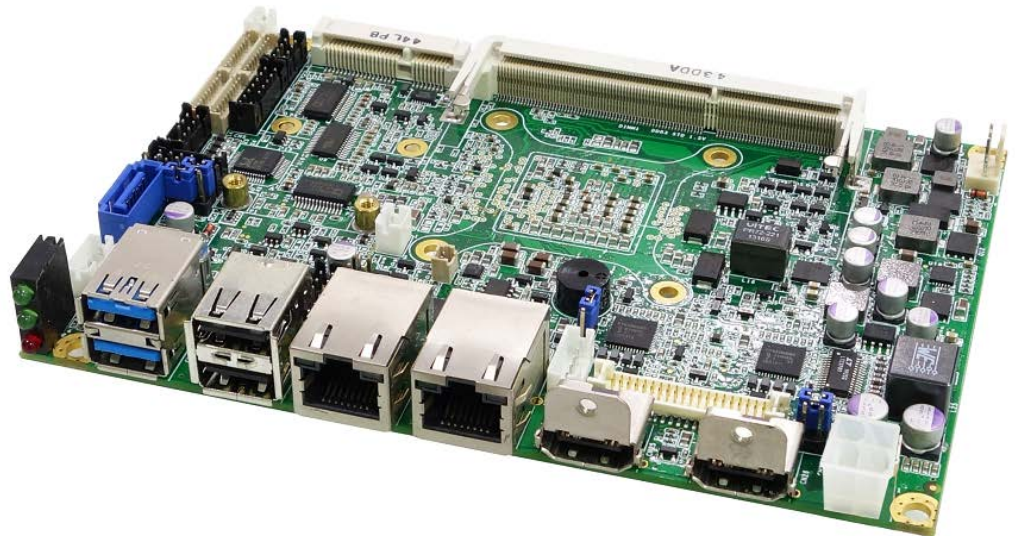


OXY5338A

3.5" SBC with Intel® Broadwell-U SoC



Safety Information

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Make sure that your power supply is set to the correct voltage in your area.
- If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your local distributor.

Operation safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter any technical problems with the product, contact your local distributor

Statement

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- All trademarks are the properties of the respective owners.
- All product specifications are subject to change without prior notice

Revision History

Revision	Date (dd.mm.yyyy)	Changes
Version 1.0	04.06.2016	Initial release
Version 1.1	28.06.2016	Correct Chapter 2
Version 1.2	20.07.2016	Correct CN9, CN10 pin define

Packing list

- OXY5338A-01 3.5" SBC
- OXY5338A-02 3.5" SBC
- CD (Driver + user's manual)
- Optional Accessories
 - Cable kit
 - SATA cable
 - SATA power cable
 - USB cable
 - Thermal kit:
 - Copper heat spreader
 - Passive heatsink (up to 85°C)



If any of the above items is damaged or missing, please contact your local distributor.

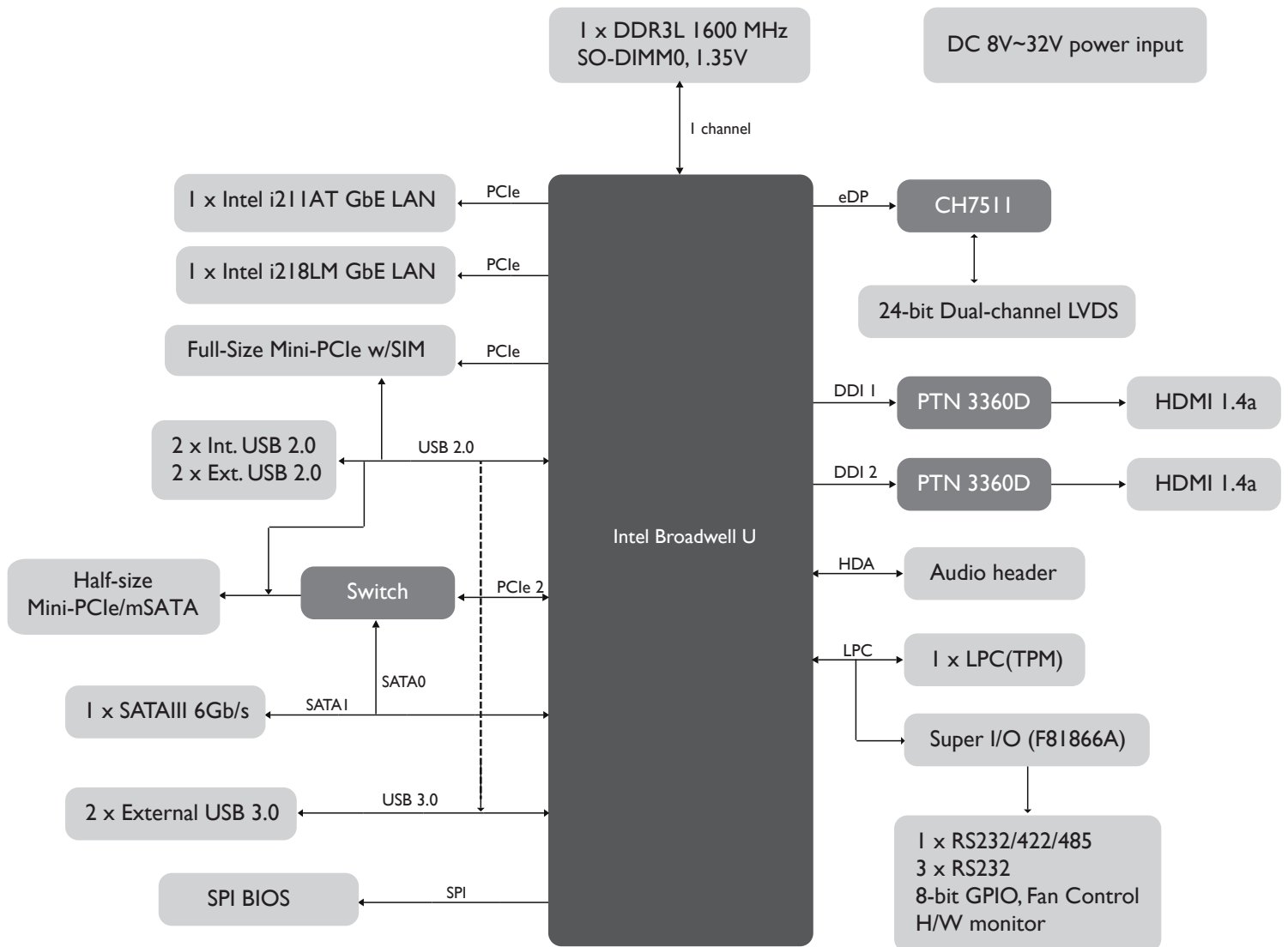
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Chapter 1: Product Information

1.1 Block Diagram

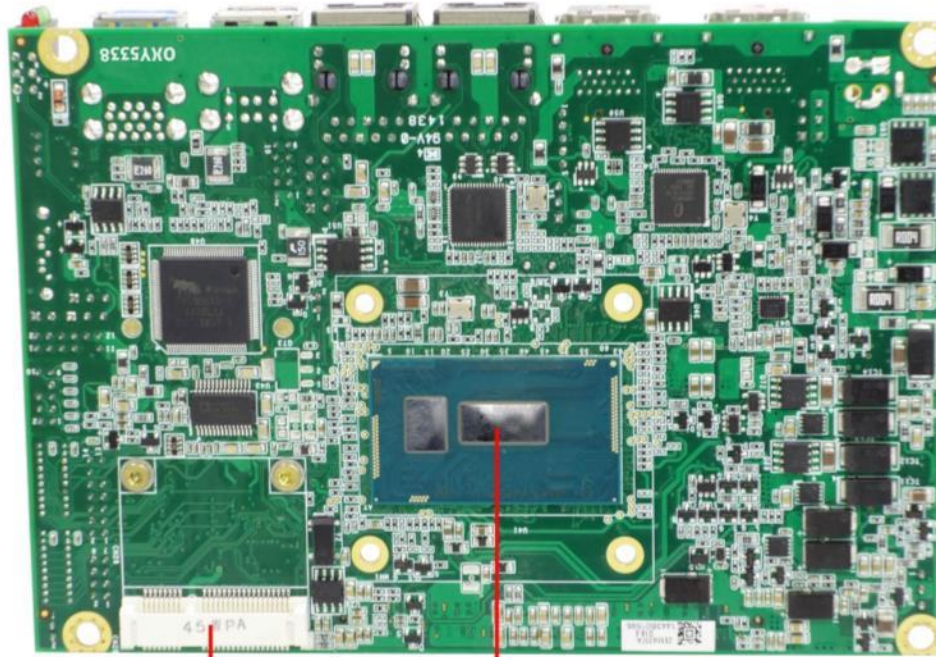
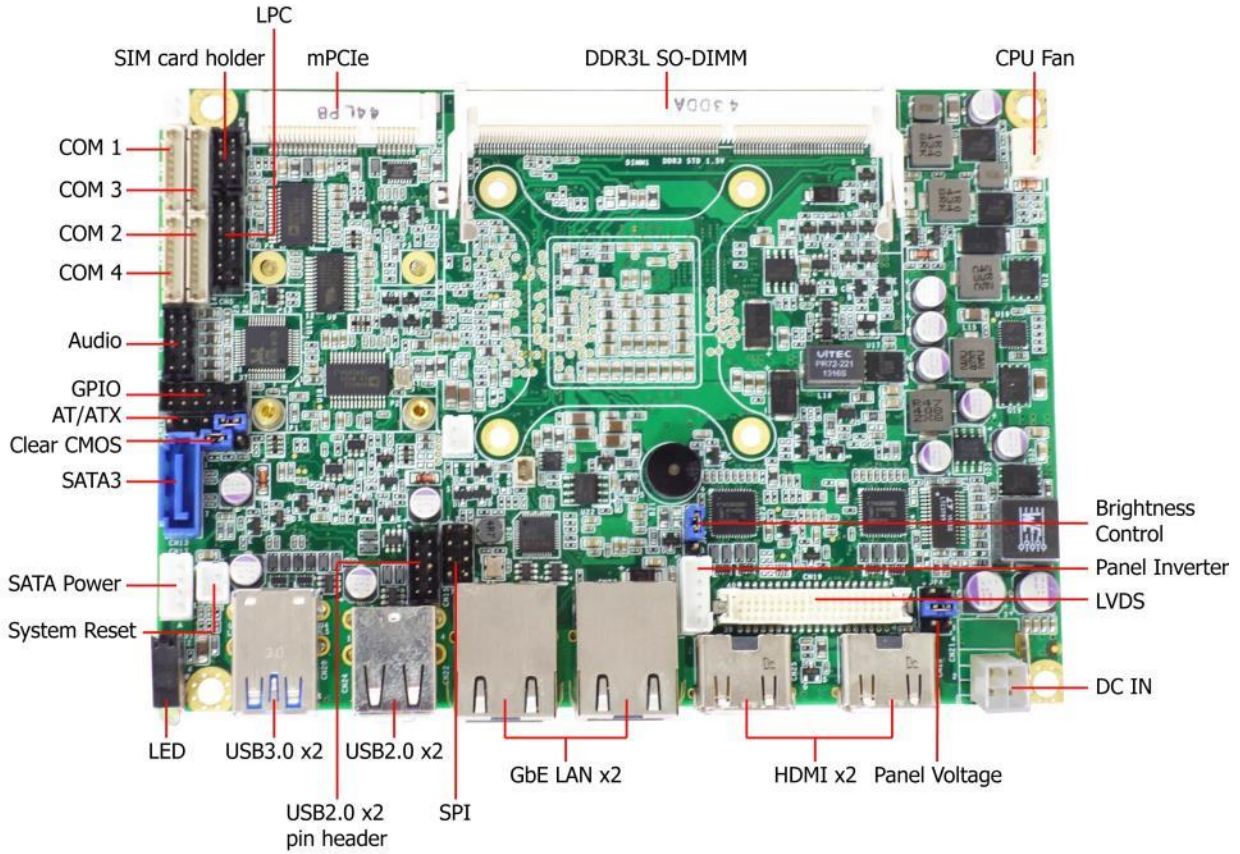


1.2 Key Features

Processor & System	
CPU Type	Intel® Broadwell-U series, BGA type Intel® Core™ i5-5350U (3M Cache, 1.8 GHz) (15W) Intel® Core™ i7-5650U (4M Cache, 2.2 GHz) (15W)
Memory Type	1 x 204-pin SO-DIMM DDR3L 1600 MHz up to 16 GB
BIOS	AMI® UEFI BIOS
Super I/O	Fintek F81866A
Watchdog	1-255 sec.
Expansion Slot	1 x Full-size mPCIe 1 x Half-size mPCIe
Display	
Chipset	Intel® Integrated
HDMI	Max. resolution 4096 x 2304
LVDS	Dual channel 24-bit LVDS
Display Type	VGA, HDMI, LVDS
Audio	
Codec	Realtek ALC887 High Definition Audio Codec
Ethernet	
Chipset	Intel® I210-AT + I218LM
WOL	Yes
Boot from LAN	Yes for PXE
Rear I/O	
HDMI	2 x 1.4a
Ethernet	2 x RJ45
USB	2 x USB 2.0, 2 x USB 3.0
Internal I/O	
SATA	1 x SATAIII (6 Gb/s)
USB	2 x USB 2.0 ports by pin header
COM	4 x COM ports (COM 1, 3, 4 ports support RS232 by pin header)
Audio	Mic-in, Line-in, Line-out
FAN	1 x CPU fan
LVDS	40-pin connector
LPC	14-pin connector
Parallel Port	2 x 13-pin header
GPIO	8-bit (4 in/4 out)
Mechanical and Environment	
Form Factor	3.5" SBC
Power Type	8~32V DC-in, 4-pin ATX power connector, AT/ATX mode support
Dimension	146 x 101mm (5.7" x 4")
Operating Temp.	-20 to 70°C
Storage Temp	-20 to 70°C
Relative Humidity	10% to 90%, non-condensing

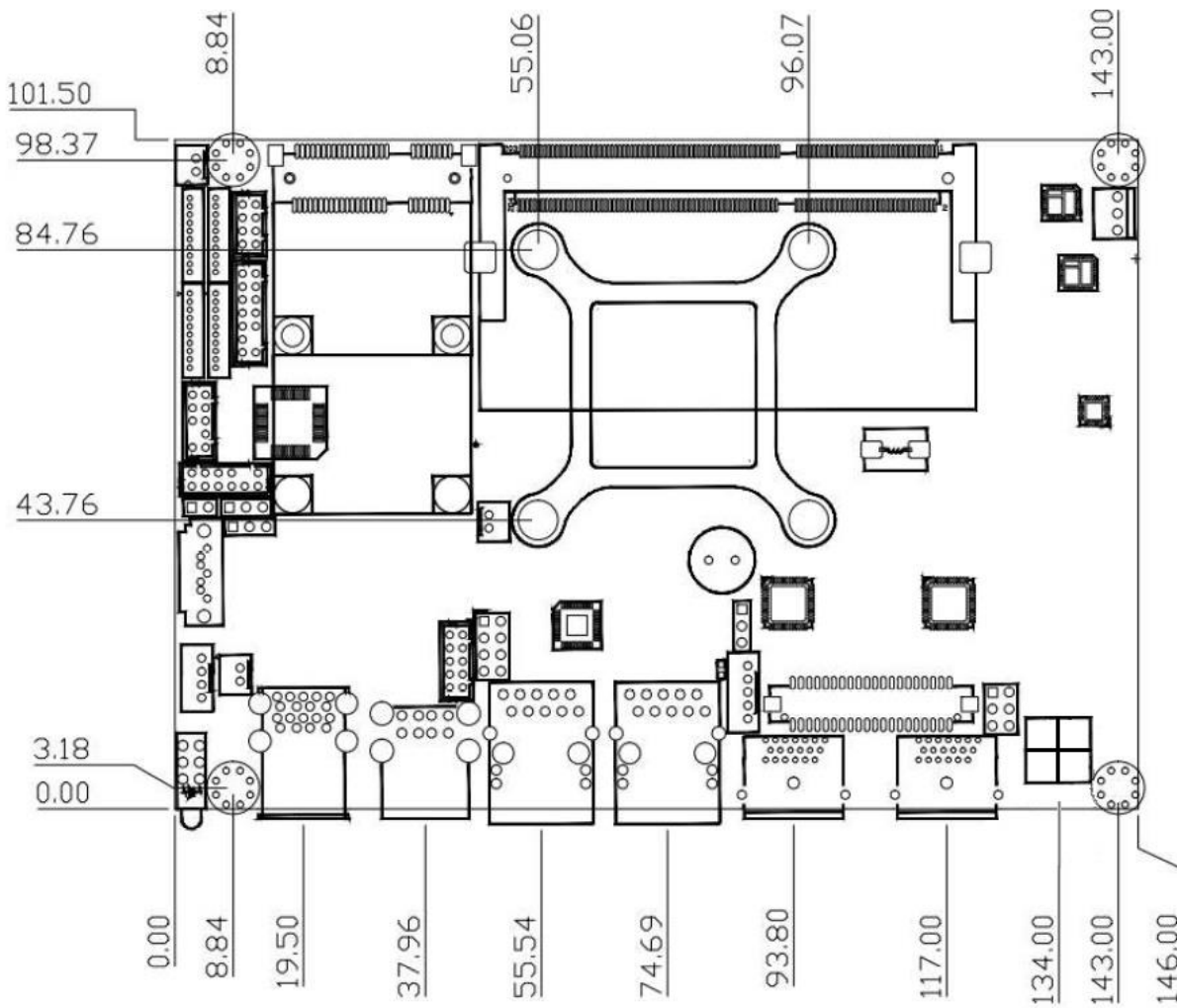
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1.3 Board Placement

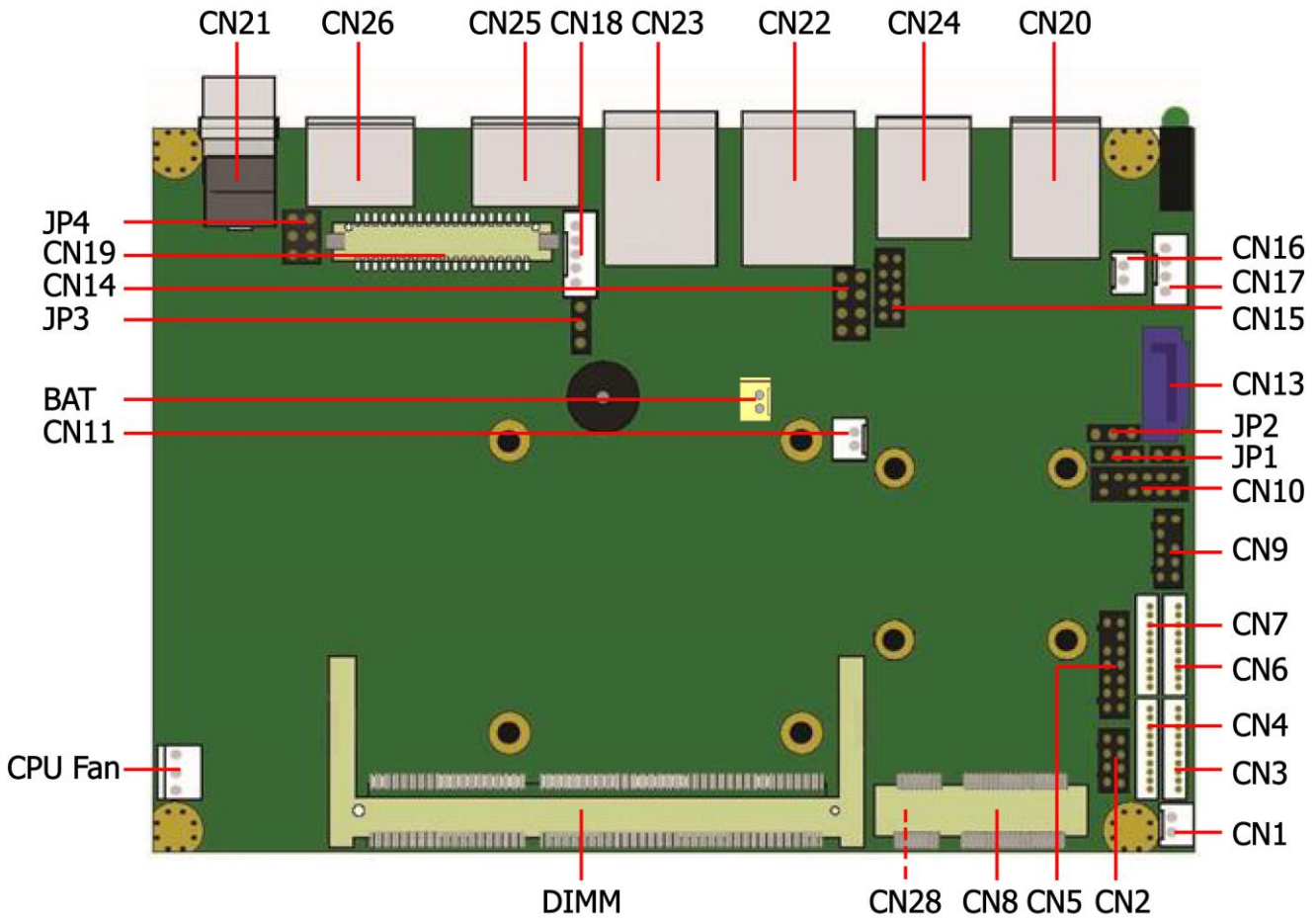


Half-size mPCIe Intel® Broadwell U SoC

1.4 Mechanical Drawing



Chapter 2: Jumpers and Connectors



2.1 Onboard connector and jumper list

Label	Function
JP1	AT/ATX Mode Selection
JP2	Clear CMOS
JP3	LVDS Backlight Control Mode Selection
JP4	LVDS Power Level Selection
CN1	Power Switch Pin Header
CN2	SIM Card Holder Pin Header
CN3	RS232 COM1 Port Connector
CN4	RS232 COM3 Port Connector
CN5	LPC Pin Header
CN6	RS232/422/485 COM2 Port Connector
CN7	RS232 COM4 Port Connector
CN8	Half-size mPCIe Socket
CN9	Audio Pin Header

CN10	GPIO Pin Header
CN11	mSATA LED Pin Header
CN12	Battery Socket
CN13	SATA Connector
CN14	SPI Flash Pin Header
CN15	USB 2.0 Pin Header
CN16	Reset Pin Header
CN17	SATA Power Connector
CN18	Panel Inverter Connector
CN19	LVDS Connector
CN20	USB 3.0 Connector
CN21	DC-in Power Connector (Default: Square 4-pin Plug Connector)
CN22	LAN1 RJ45 Connector (I211)
CN23	LAN2 RJ45 Connector (I218)
CN24	USB 2.0 Connector
CN25	HDMI Connector
CN26	HDMI Connector
CN28 (Bottom Side)	Half-size mPCIe Socket
DIMM	SO-DIMM 204 pins Socket
BAT	Battery Pin Header
CPU Fan	CPU Fan Connector

2.2 Connector and jumper pin definition

2.2.1 Jumper

JP1: AT/ATX mode

Jumper	Function description	Setting
1-2	AT mode	
2-3	ATX mode	
Default setting: 1-2		

JP2: Clear CMOS

Jumper	Function description	Setting
1-2	Normal	
2-3	Clear CMOS	
Default setting: 1-2		

JP3: LVDS Panel

Jumper	Function description	Setting
1-2	PWM mode	
2-3	DC mode	
Default setting: 2-3		

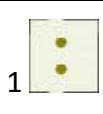
JP4: LVDS power level select

Jumper	Function description	Setting
1-2	+3.3V	
3-4	+5V	
5-6	+12V	
Default setting: 1-2		

2.2.2 Connector


CN1: Power Switch Pin Header

Pin	Definition
1	GND
2	+3.3V



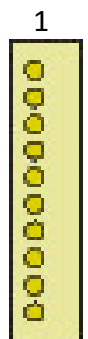
CN2: SIM Card Holder Pin Header

Pin	Definition	Pin	Definition
1	SIM_PWR	2	GND
3	SIM_RESET	4	SIM_VPP
5	SIM_CLK	6	SIM_DATA
7	SIM_C4_R	8	SIM_C8_R




CN3, CN4, CN7: COM1, COM3, COM4 RS232

Pin	RS232 mode
1	DCD
2	DSR
3	RXD
4	RTS
5	TXD
6	CTS
7	DTR
8	RI
9	GND
10	N/C



CN5: LPC Pin Header


Pin	Definition	Pin	Definition
1	+3.3V	2	LAD0
3	LAD1	4	LAD2
5	LAD1	6	LFRAME_N
7	PLTRST_N	8	+5V
9	LPC_Clock	10	GND
11	GND	12	Key
13	SERIRQ	14	LPC_DREQ



CN6: COM2 RS232/422/485

Note: RS232/422/485 can be set by BIOS.

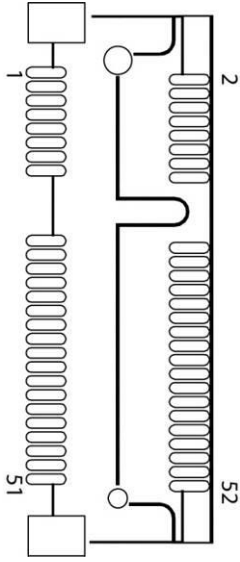
Pin	RS232 mode (Default)	RS422 mode	RS485 mode
1	DCD	TXD-	TXD-
2	DSR		
3	RXD	TXD+	TXD+
4	RTS		
5	TXD	RXD+	
6	CTS		
7	DTR	RXD-	
8	RI		
9	GND		
10	N/C		



CN8: Full-size mPCIe


Note: This mPCIe socket ONLY support PCIe and USB signal.

Pin	Definition	Pin	Definition
1	WAKE#	2	+3.3V AUX
3	NC	4	GND
5	NC	6	+1.5V
7	CLKREQ#	8	UIM_PWR
9	GND	10	UIM_DATA
11	REFCLK-	12	UIM_CLK
13	REFCLK+	14	UIM_RESET
15	GND	16	UIM_VPP
17	UIM_C8	18	GND
19	UIM_C4	20	Wireless LAN Disable#
21	GND	22	PERST
23	PERNO	24	+3.3V AUX
25	PERPO	26	GND
27	GND	28	+1.5V
29	GND	30	SMBUS CLOCK
31	PETNO	32	SMBUS DATA
33	PETPO	34	GND
35	GND	36	USB DATA-
37	GND	38	USB DATA+
39	+3.3V AUX	40	GND
41	+3.3V AUX	42	LED_WWAN
43	GND	44	LED_WLAN
45	NC	46	NC
47	NC	48	+1.5V
49	NC	50	GND
51	NC	52	+3.3V AUX




CN9: Audio pin header

Pin	Definition	Pin	Definition
2	LINE1_L	1	LINE1_R
4	GND	3	GND
6	MIC1_L	5	MIC1_R
8	Key	7	GND
10	FRONT_L	9	FRONT_R

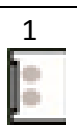


CN10: GPIO pin header

Pin	Definition	Pin	Definition
2	+3.3V	1	GPIO
4	GPI1	3	GPI2
6	GPI3	5	GPIO0
8	GPIO1	7	GPIO2
10	GPIO3	9	Key
12	+5V	11	GND

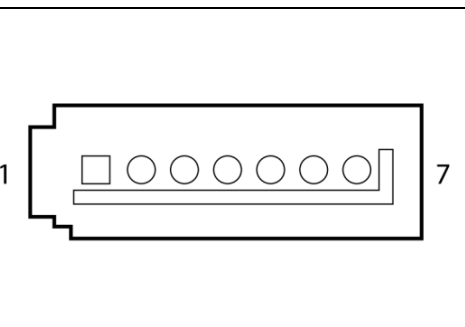


CN11 mSATA LED Pin Header

Pin	Definition	1
1	LED-	
2	+3.3V	


CN13: SATA connector

Pin	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND




CN14: SPI pin header

Pin	Definition	Pin	Definition
1	+3.3V	2	GND
3	SPI_CS0_N	4	SPI_CLK
5	SPI_MISO	6	SPI_MOSI
7	N/A	8	Flash IO



CN15: USB 2.0

Pin	Definition	1
1	+5V	
2	USB D-	
3	USB D+	
4	GND	
5	GND	

CN16: Reset Pin Header

Pin	Definition	1
1	GND	
2	RESET_L	

CN17: SATA Power Connector

Pin	Definition	1
1	+V12S	
2	GND	
3	GND	
4	+V5S	

CN18: Panel inverter power connector

Pin	Definition	1
1	+12V	
2	GND	
3	Backlight enable	
4	Backlight control	
5	+5V	

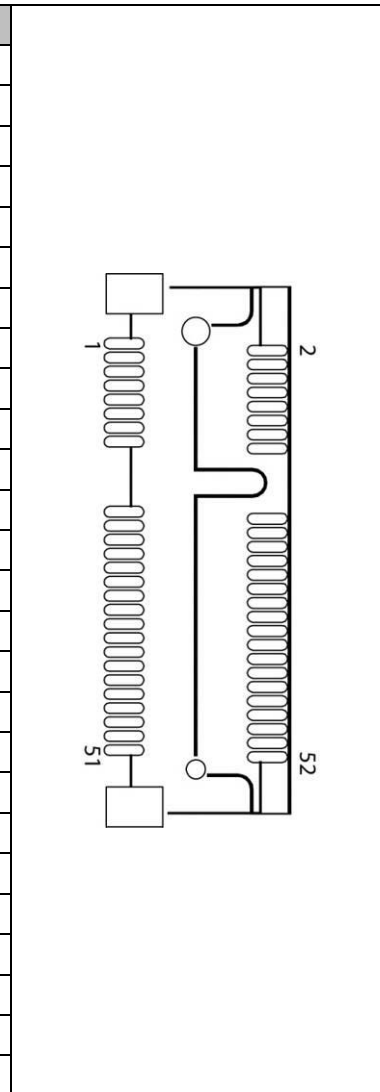
CN19: LVDS connector

Pin	Definition	Pin	Definition
1	LVDS_VCC	2	LVDS_VCC
3	LVDS_VCC	4	LVDS_VCC
5	GND	6	GND
7	LVDSA_0-	8	LVDSB_0-
9	LVDSA_0+	10	LVDSB_0+
11	GND	12	GND
13	LVDSA_1-	14	LVDSB_1-
15	LVDSA_1+	16	LVDSB_1+
17	GND	18	GND
19	LVDSA_2-	20	LVDSB_2-
21	LVDSA_2+	22	LVDSB_2+
23	GND	24	GND
25	LVDSA_Clock-	26	LVDSB_Clock-
27	LVDSA_Clock+	28	LVDSB_Clock+
29	GND	30	GND
31	DDC_Clock	32	DDC_Data
33	GND	34	GND
35	LVDSA_3-	36	LVDSB_3-
37	LVDSA_3+	38	LVDSB_3+
39	SMB_Clock	40	SMB_Data

CN28: Half-size mPCIe (Bottom Side)

Note: This mPCIe socket can support SATA(DEFAULT) or PCIe signal, which could be changed in BIOS.

Pin	Definition	Pin	Definition
1	MSATA_WAKE#	2	+3.3V
3	NC	4	GND
5	NC	6	+1.5V
7	MCLKREQ#	8	NC
9	GND	10	NC
11	MSATA_PE_CLK-	12	NC
13	MSATA_PE_CLK+	14	NC
15	GND	16	NC
17	NC	18	NC
19	NC	20	NC
21	GND	22	PERST_BUF1-
23	MSATA_RXN4	24	MSATA_+3.3V
25	MSATA_RXP4	26	GND
27	GND	28	+1.5V
29	GND	30	ICH_SMBUS CLOCK
31	MSATA_TXN4	32	ICH_SMBUS DATA
33	MSATA_TXP4	34	GND
35	GND	36	USB DATA-
37	NA	38	USB DATA+
39	MSATA_+3.3V	40	GND
41	MSATA_+3.3V	42	LED_WWAN
43	GND	44	LED_WLAN
45	NA	46	NA
47	NA	48	+1.5V
49	NA	50	GND
51	NA	52	+3.3V



BAT

Pin	Definition	1
1	+3V	
2	GND	

CPU Fan

Pin	Definition	1
1	GND	
2	12V	
3	Sensor	

Chapter 3: AMI BIOS UTILITY

This chapter provides users with detailed descriptions on how to set up a basic system configuration through the AMI BIOS setup utility.

3.1 Starting

To enter the setup screens, perform the following steps:

- Turn on the computer and press the key immediately.
- After the key is pressed, the main BIOS setup menu displays. Other setup screens can be accessed from the main BIOS setup menu, such as the Chipset and Power menus.

3.2 Navigation Keys

The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process.

Some of the hot keys are <F1>, <F10>, <Enter>, <ESC>, and <Arrow> keys.

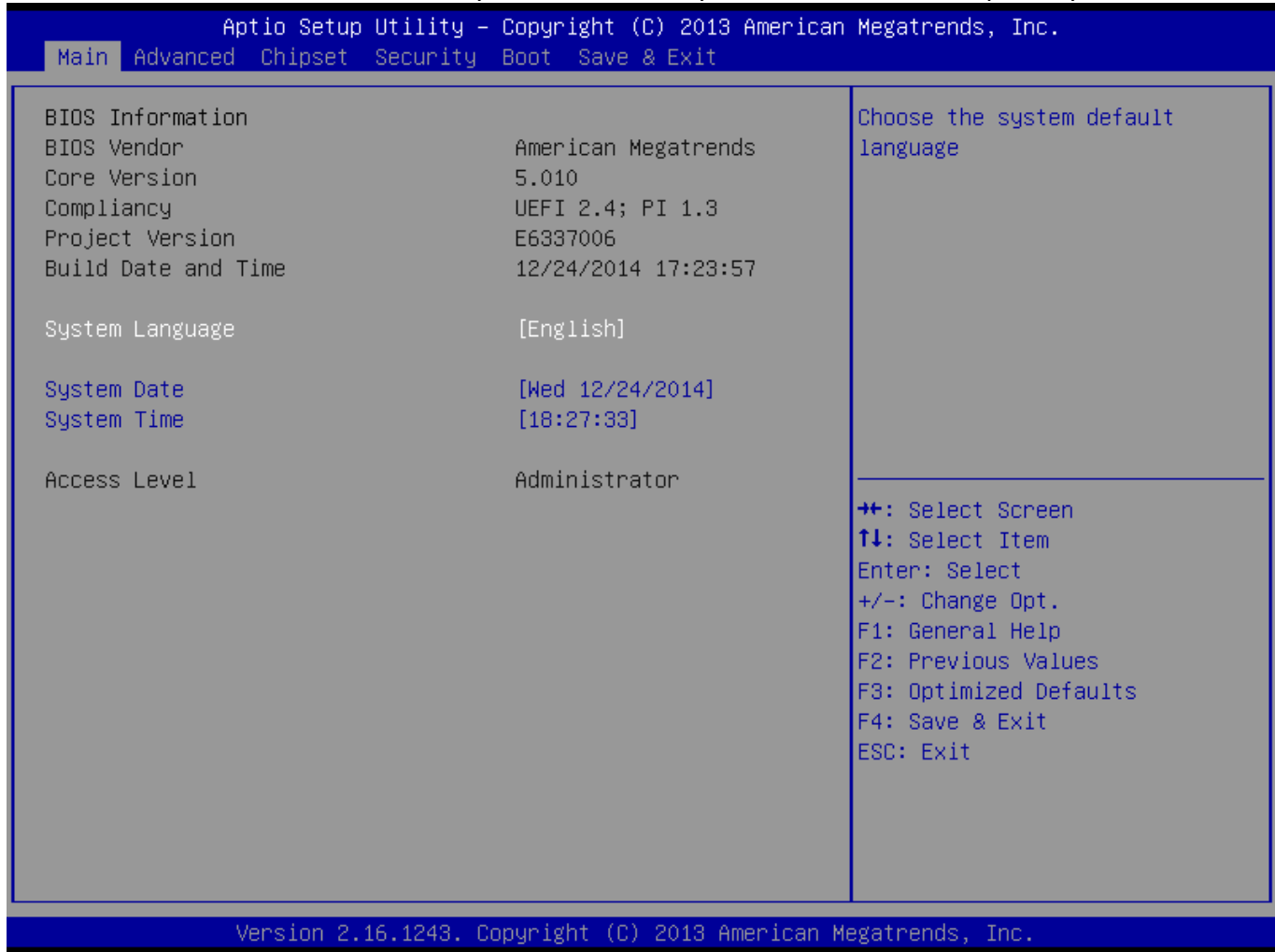


Some of the navigation keys may differ from one screen to another.

Left/Right	The Left and Right <Arrow> keys moves the cursor to select a menu.
Up/Down	The Up and Down <Arrow> keys moves the cursor to select a setup screen or sub-screen.
+– Plus/Minus	The Plus and Minus <Arrow> keys changes the field value of a particular setup setting.
Tab	The <Tab> key selects the setup fields.
F1	The <F1> key displays the General Help screen.
F10	The <F10> key saves any changes made and exits the BIOS setup utility.
Esc	The <Esc> key discards any changes made and exits the BIOS setup utility.
Enter	The <Enter> key displays a sub-screen or changes a selected or highlighted option in each menu.

3.3 Main

The Main menu is the first screen that you will see when you enter the BIOS Setup Utility.



System Date

Use this function to change the system date.

Select System Date using the Up and Down <Arrow> keys. Enter the new values through the keyboard.

Press the Left and Right <Arrow> keys to move between fields.

The date setting must be entered in MM/DD/YY format.

System Time

Use this function to change the system time.

Select System Time using the Up and Down <Arrow> keys. Enter the new values through the keyboard.

Press the Left and Right <Arrow> keys to move between fields.

The time setting is entered in HH:MM:SS format.

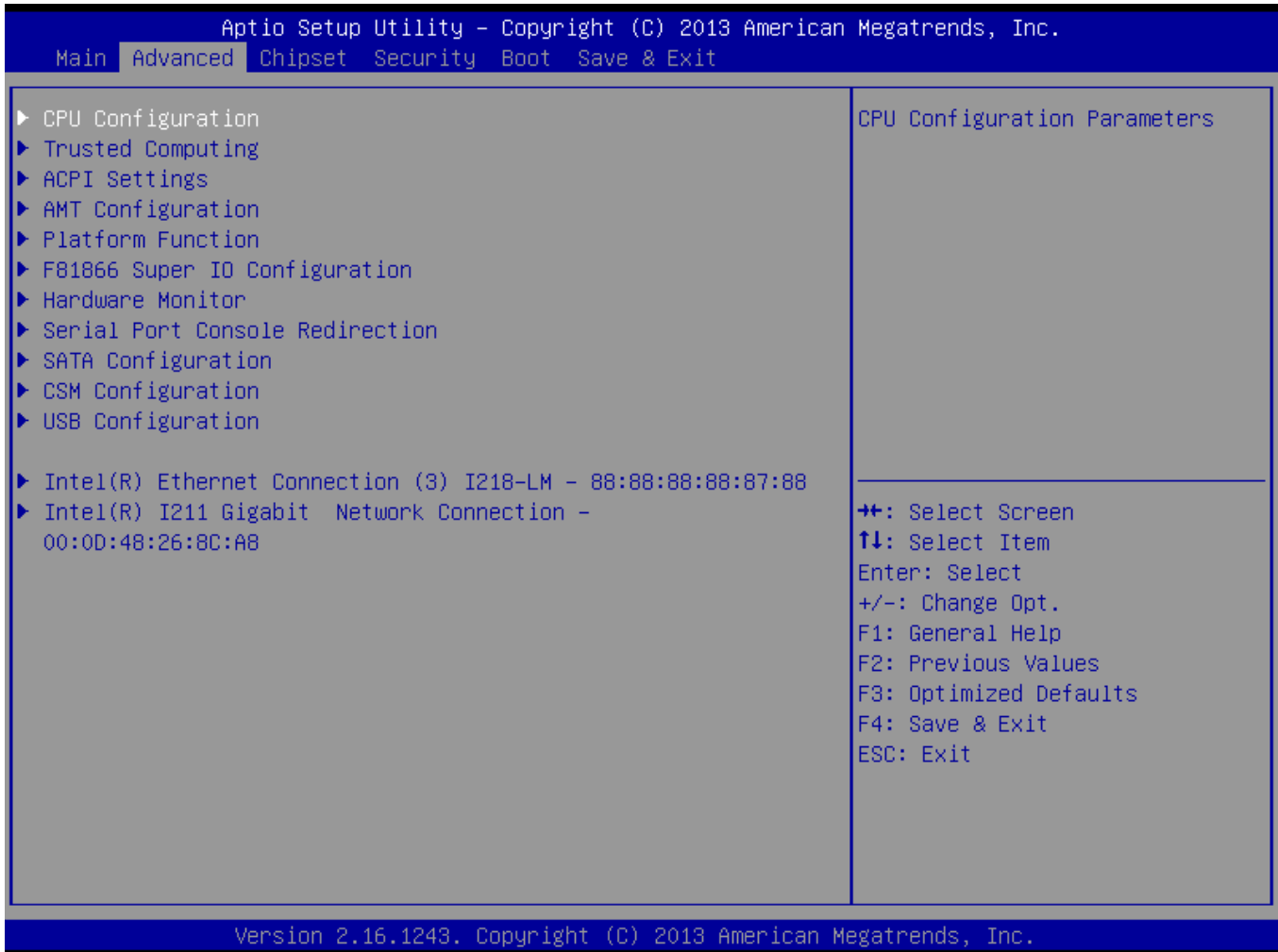
Note: The time is in 24-hour format. For example, 5:30 A.M. appears as 05:30:00, and 5:30 P.M. as 17:30:00.

Access Level

Display the access level of the current user in the BIOS.

3.4 Advanced

The Advanced Menu allows you to configure your system for basic operation. Some entries are defaults required by the system board, while others, if enabled, will improve the performance of your system or let you set some features according to your preference. **Setting incorrect field values may cause the system to malfunction.**



3.4.1 CPU Configuration

This page allows you to configure CPU menu.

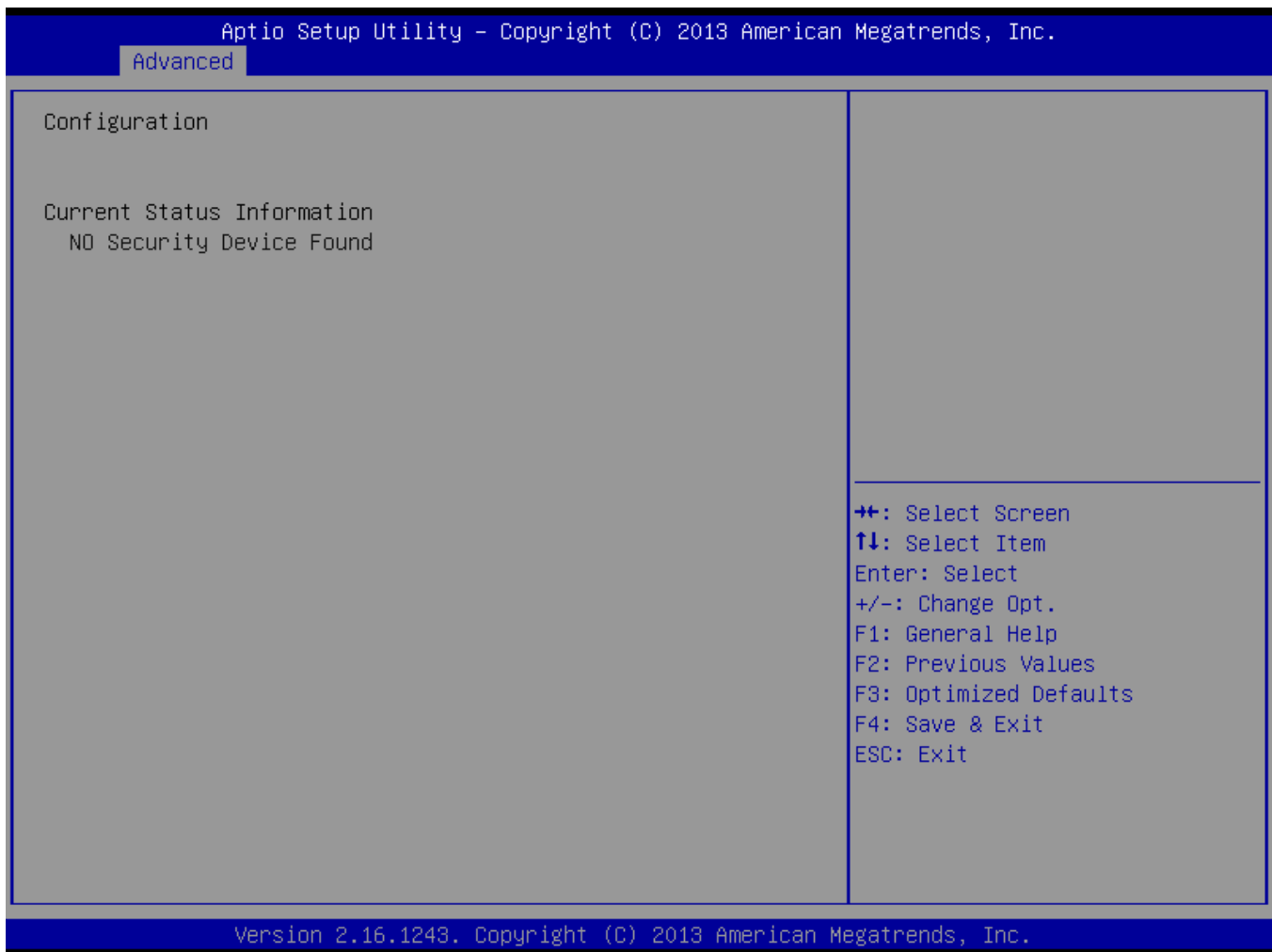
The screenshot shows the 'Advanced' tab of the Aptio Setup Utility. The 'CPU Configuration' section is expanded, displaying various system parameters and their current settings. A legend on the right side of the screen explains the navigation and function keys used in the utility.

CPU Configuration		Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology). When Disabled only one thread per enabled core is enabled.
Intel(R) Core(TM) i5-5350U CPU @ 1.80GHz		
Max CPU Speed	1800 MHz	
Min CPU Speed	500 MHz	
CPU Speed	2700 MHz	
Processor Cores	2	
L1 Data Cache	32 KB x 2	
L2 Cache	256 KB x 2	
L3 Cache	3 MB	
Hyper-threading	[Enabled]	
Execute Disable Bit	[Enabled]	
Intel Virtualization Technology	[Enabled]	
EIST	[Enabled]	
CPU C states	[Enabled]	
Intel TXT(LT) Support	[Disabled]	

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

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3.4.2 Trust Computing



3.4.3 ACPI Setting

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.

Advanced

<p>ACPI Settings</p> <p>Enable ACPI Auto Configuration [Disabled]</p> <p>Enable Hibernation [Enabled]</p> <p>ACPI Sleep State [S3 (Suspend to RAM)]</p> <p>S3 Video Repost [Disabled]</p>	<p>Enables or Disables BIOS ACPI Auto Configuration.</p> <hr/> <p> ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit </p>
--	--

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3.4.4 AMT Setting

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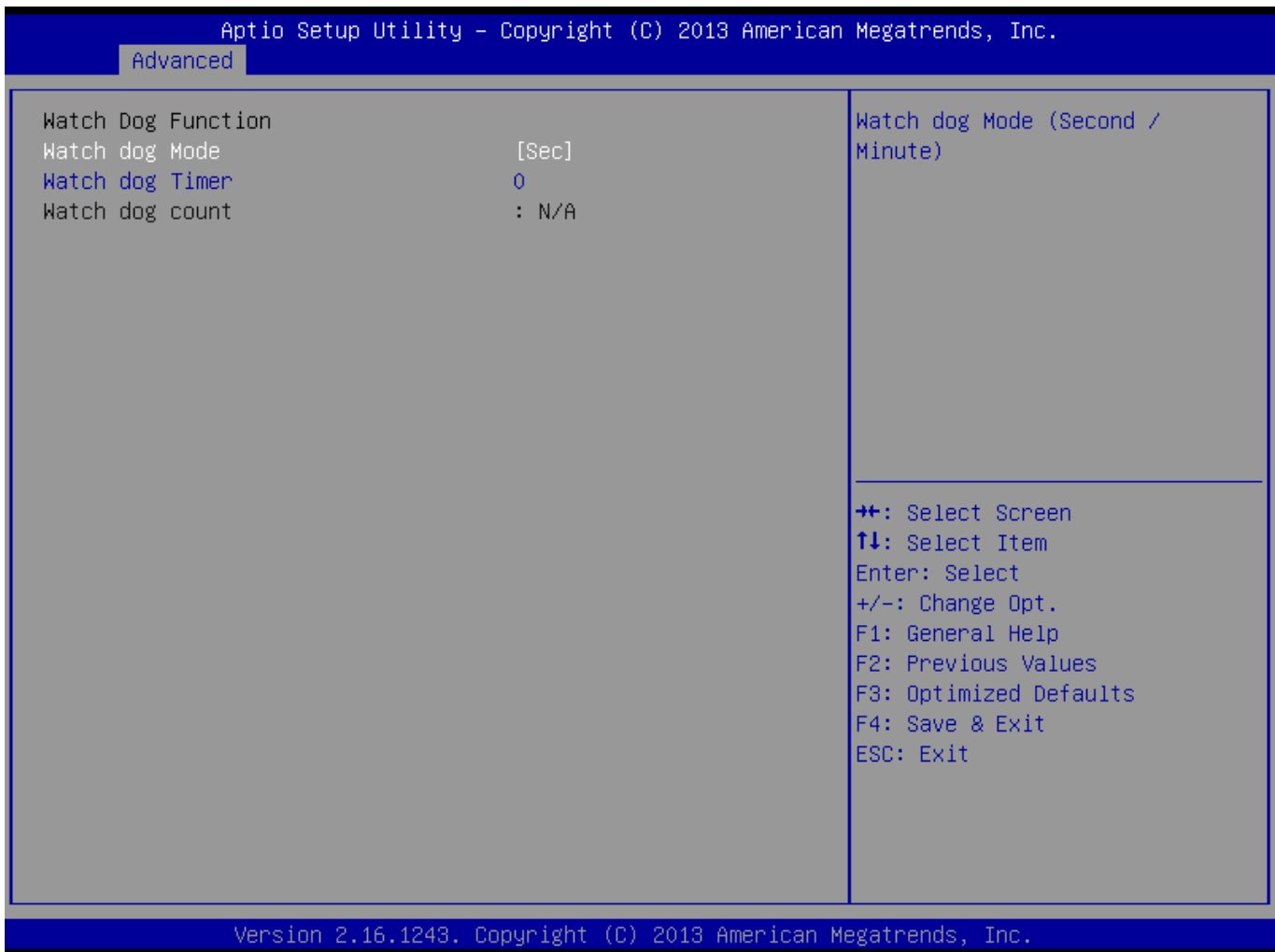
Advanced

Intel AMT	[Enabled]	Enable/Disable Intel (R) Active Management Technology BIOS Extension. Note : iAMT H/W is always enabled. This option just controls the BIOS extension execution. If enabled, this requires additional firmware in the SPI device
BIOS Hotkey Pressed	[Disabled]	
MEBx Selection Screen	[Disabled]	
Hide Un-Configure ME Confirmation Prompt	[Disabled]	
MEBx Debug Message Output	[Disabled]	
Un-Configure ME	[Disabled]	
Amt Wait Timer	0	
Disable ME	[Disabled]	
ASF	[Enabled]	
Activate Remote Assistance Process	[Disabled]	
USB Configure	[Enabled]	
PET Progress	[Enabled]	
AMT CIRA Timeout	0	
WatchDog	[Disabled]	
OS Timer	0	
BIOS Timer	0	

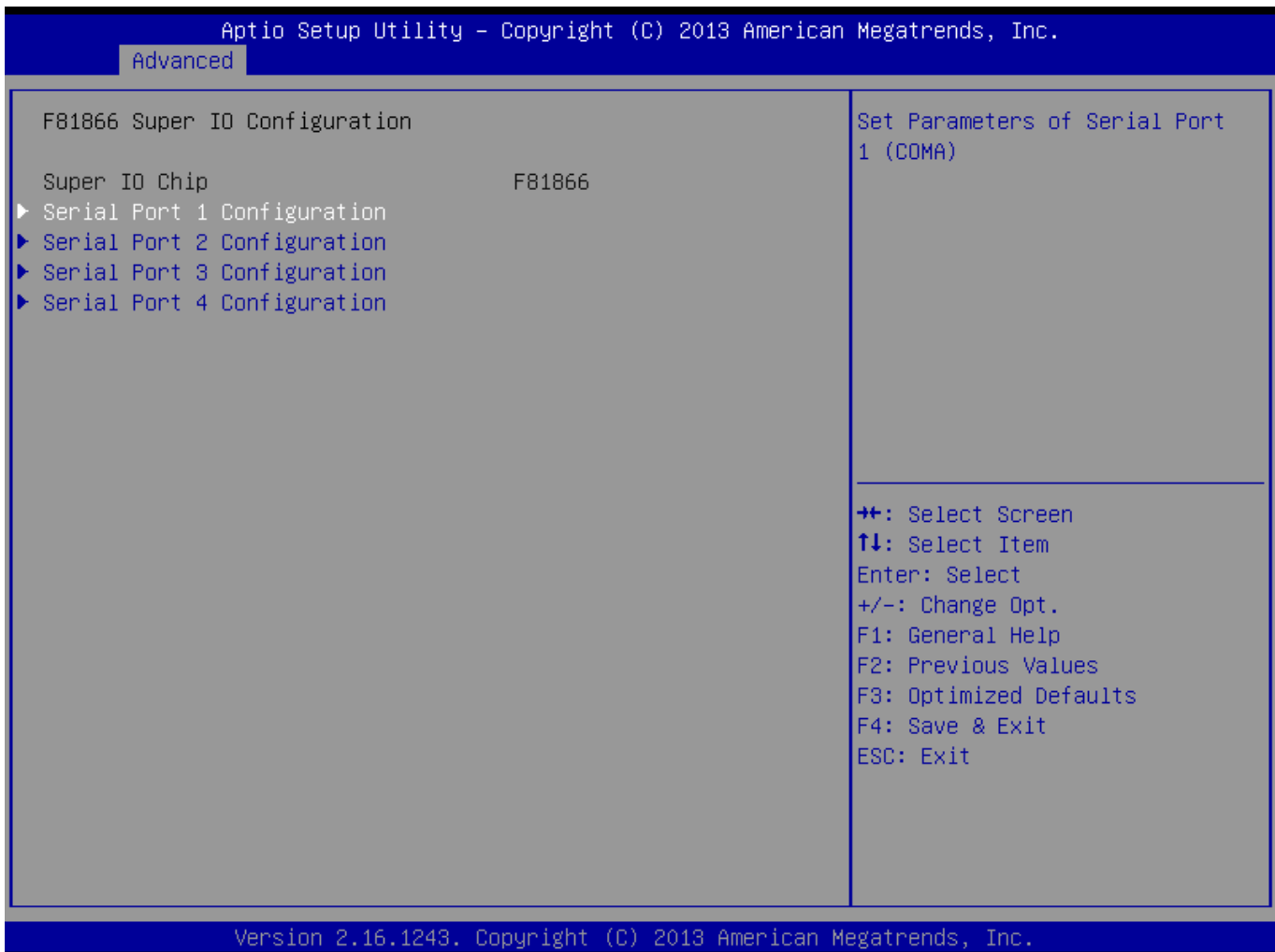
++: Select Screen
 ↑↓: Select Item
 Enter: Select
 +/-: Change Opt.
 F1: General Help
 F2: Previous Values
 F3: Optimized Defaults
 F4: Save & Exit
 ESC: Exit

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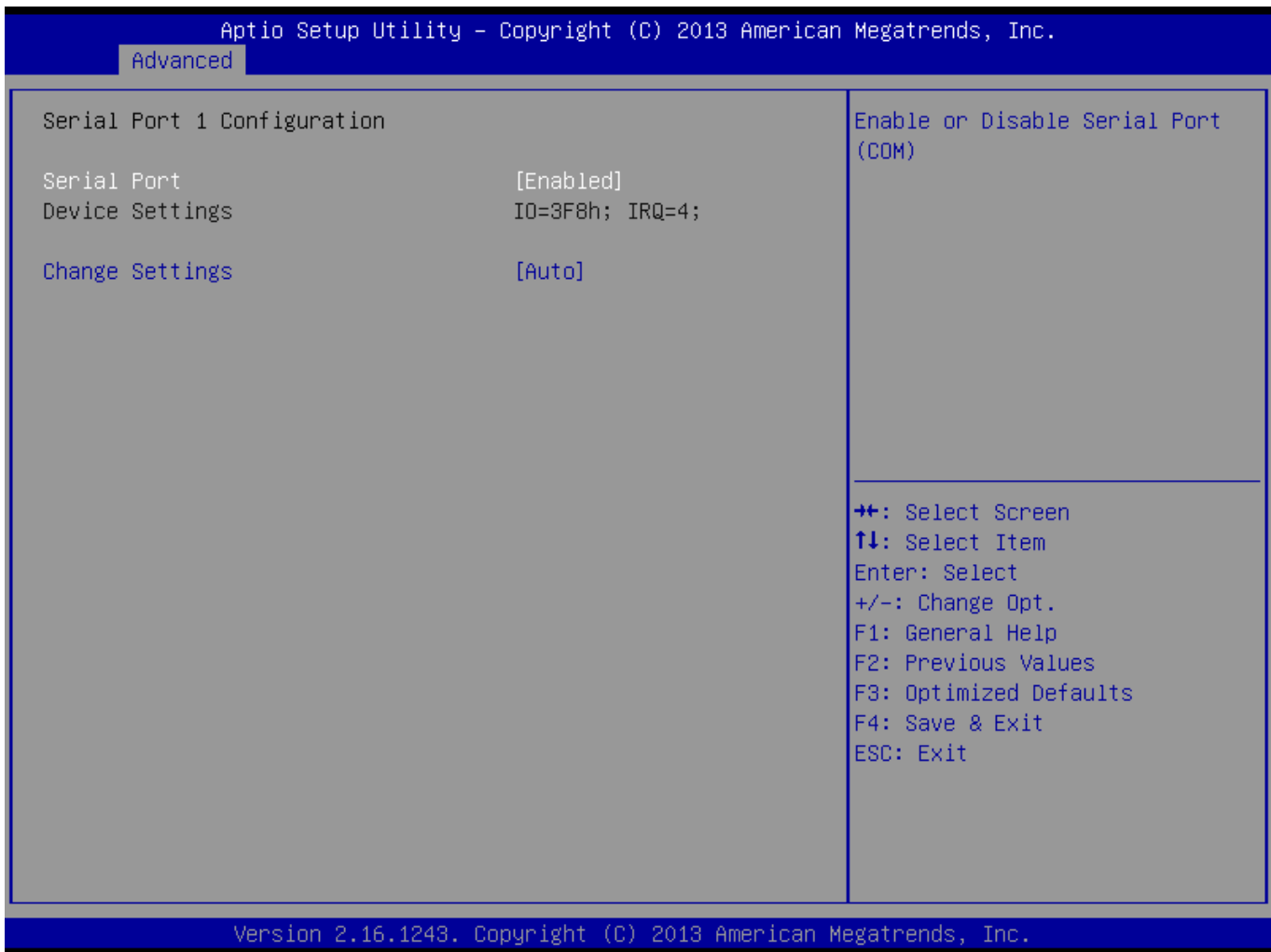
3.4.4.1 WatchDog Setting



3.4.5 F81866 Super IO Configuration



3.4.5.1 Series Port 1 Configuration



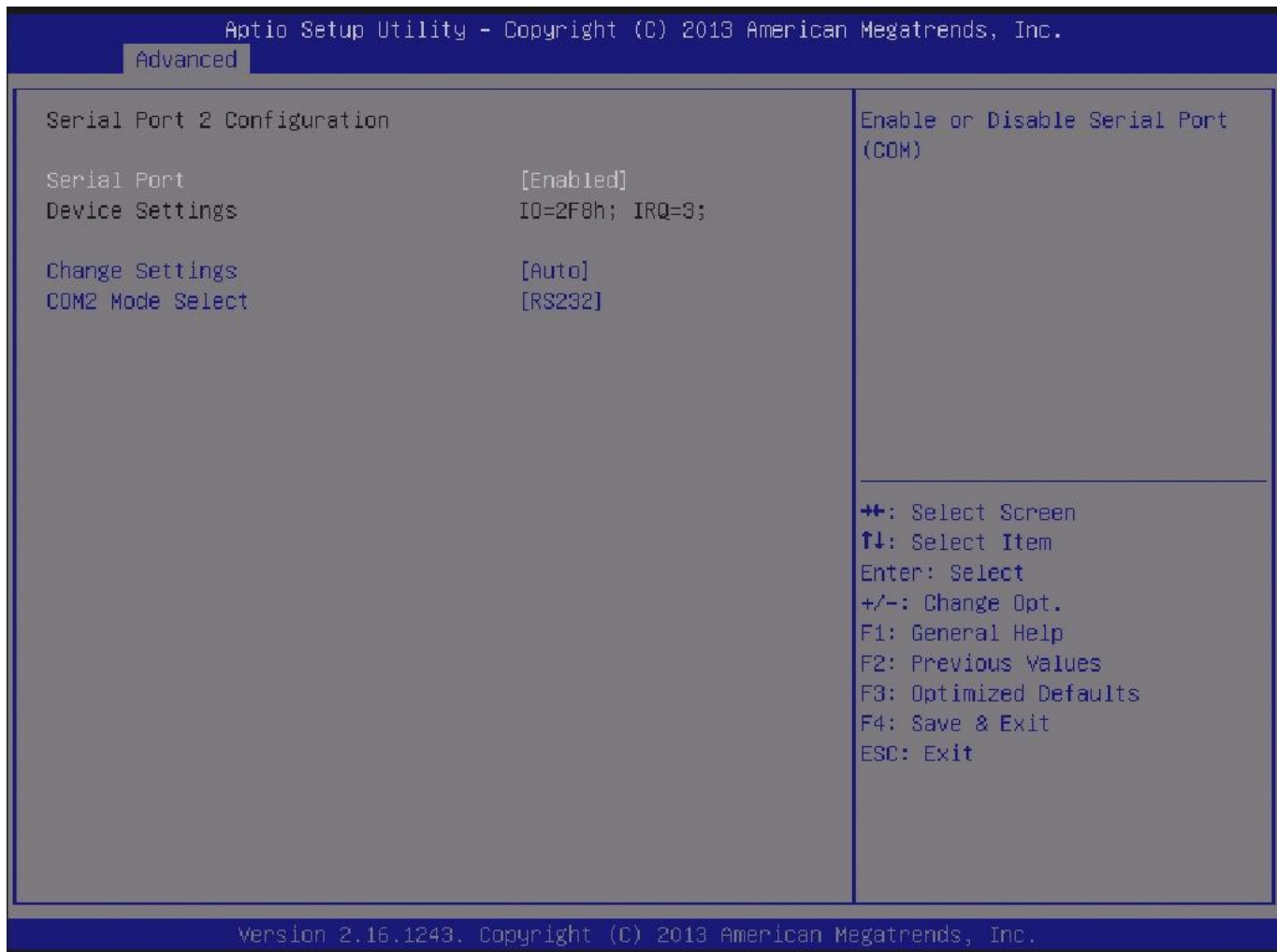
Serial Port

Enable or disable serial port (COM)

Change Setting

Select an optimal setting for Super IO device

3.4.6.2 Series Port 2 Configuration



Serial Port

Enable or disable serial port (COM)

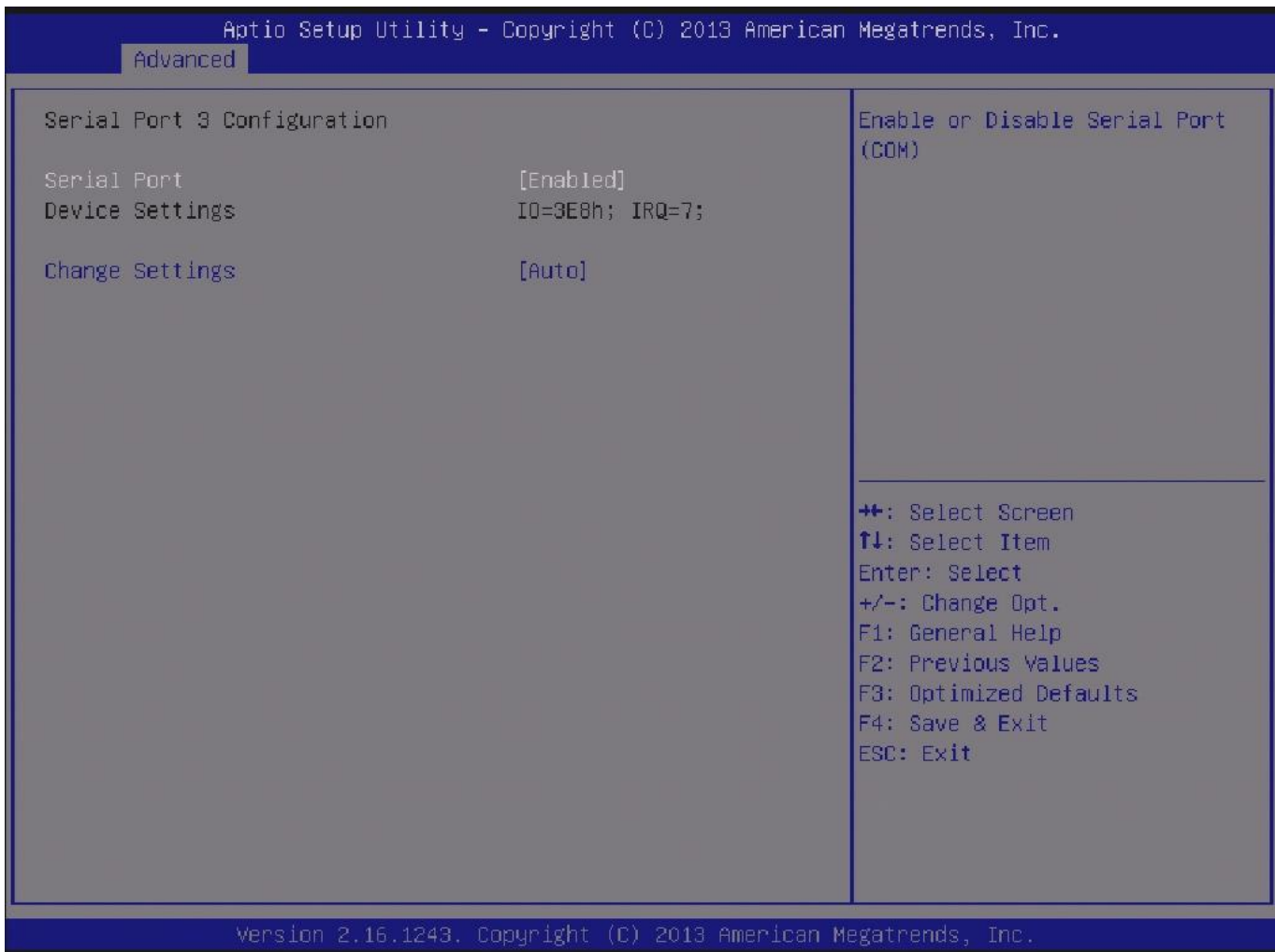
Change Setting

Select an optimal setting for Super IO device

COM2 Mode Select

Select RS232 or RS422 or RS485 Mode

3.4.6.3 Series Port 3 Configuration



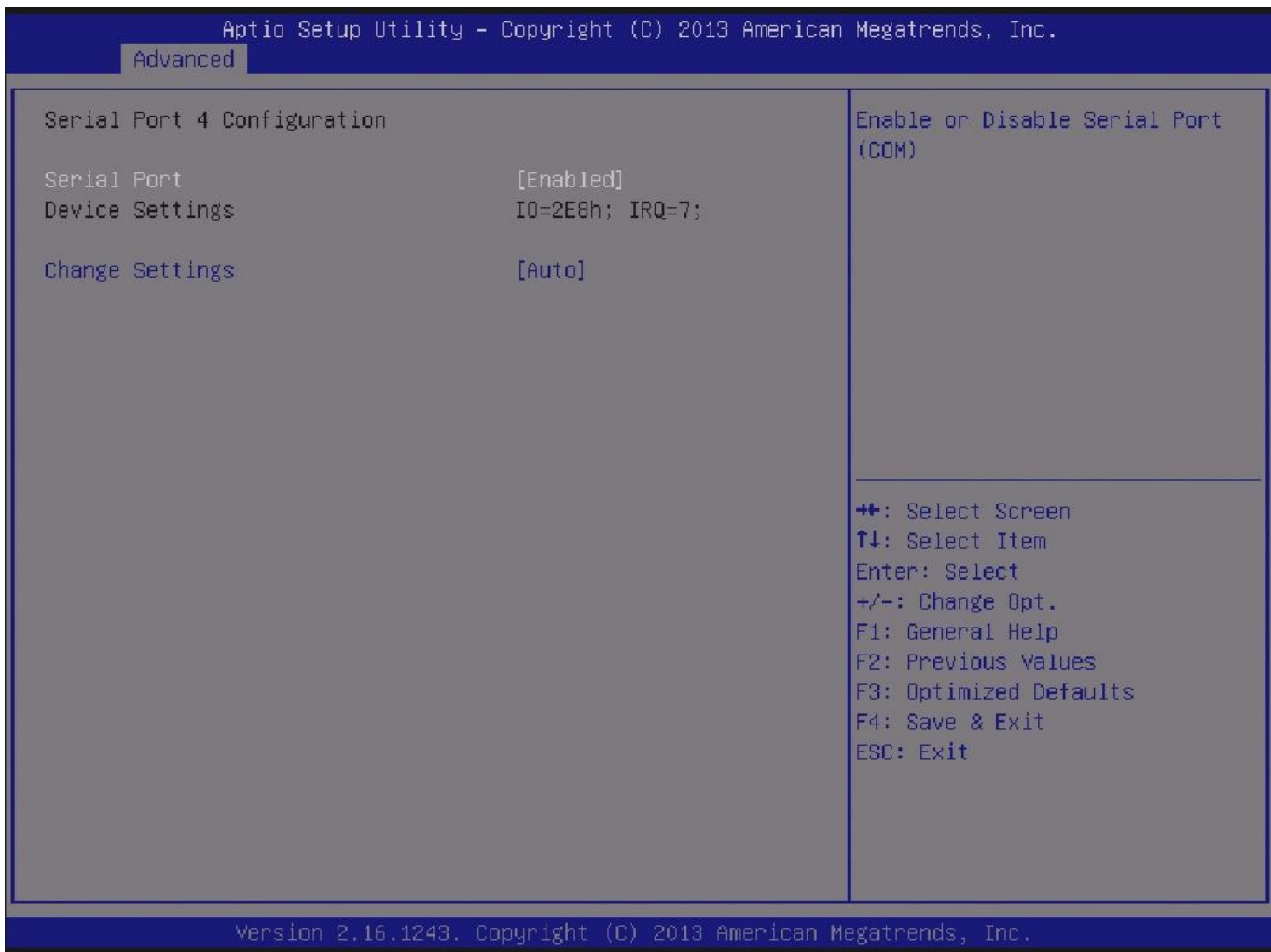
Serial Port

Enable or disable serial port (COM)

Change Setting

Select an optimal setting for Super IO device

3.4.6.4 Series Port 4 Configuration



Serial Port

Enable or disable serial port (COM)

Change Setting

Select an optimal setting for Super IO device

3.4.7 Hardware Monitor

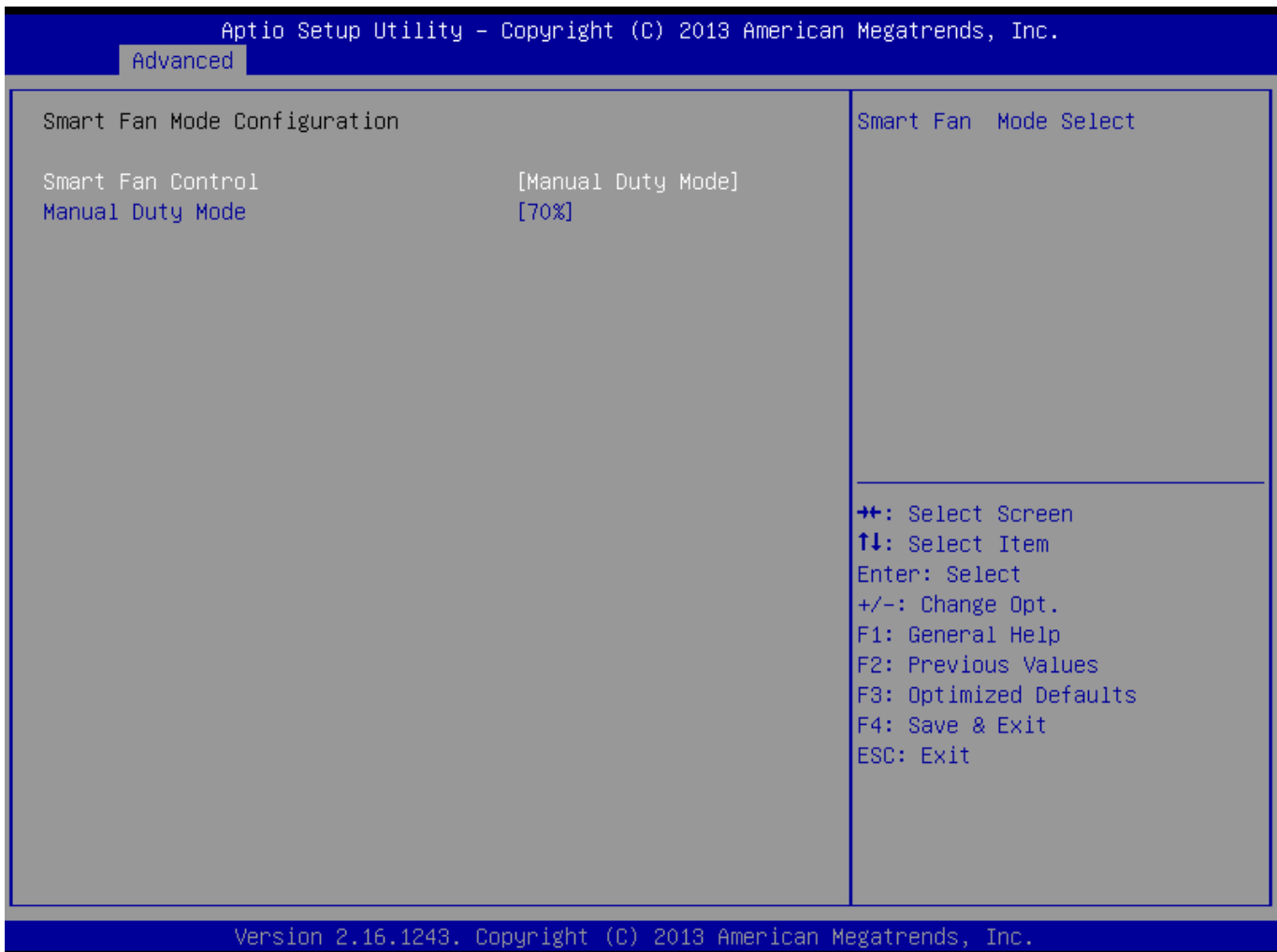
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Advanced

<p>Pc Health Status</p> <p>Smart Fan Function [Enabled]</p> <p>▶ Smart Fan Mode Configuration</p> <p>CPU temperature : +34 C</p> <p>System temperature : +23 C</p> <p>Fan Speed : 616 RPM</p> <p>VCC_Core : +1.728 V</p> <p>+V5P0 : +5.173 V</p> <p>+V3P3 : +3.303 V</p> <p>+V12P0 : +12.185 V</p> <p>VCC3V : +3.232 V</p> <p>VSB3V : +3.248 V</p> <p>VSB5V : +4.982 V</p> <p>VBAT : +3.248 V</p>	<p>Enable or Disable Smart Fan</p> <hr/> <p>←→: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</p>
---	--

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3.4.7.1 Smart Fan Mode Configuration



3.4.8 Serial Port Console Redirection



3.4.8.1 COM0 Console Redirection Settings

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Advanced

COM0 Console Redirection Settings		Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100+: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.
Terminal Type	[VT100+]	<hr/> ⇧⇧: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Bits per second	[115200]	
Data Bits	[8]	
Parity	[None]	
Stop Bits	[1]	
Flow Control	[None]	
VT-UTF8 Combo Key Support	[Enabled]	
Recorder Mode	[Disabled]	
Resolution 100x31	[Disabled]	
Legacy OS Redirection Resolution	[80x24]	
Putty KeyPad	[VT100]	
Redirection After BIOS POST	[Always Enable]	

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3.4.9 SATA Configuration

SATA device options settings.

```

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  Advanced
SATA Controller(s)           [Enabled]           Enable or disable SATA Device.
Aggressive LPM Support       [Enabled]
SATA Controller Speed       [Default]

Serial ATA Port 0           Empty
  Software Preserve         Unknown
  Port 0                    [Enabled]
  Hot Plug                  [Disabled]
  External SATA             [Disabled]
  SATA Device Type          [Hard Disk Drive]
  Spin Up Device            [Disabled]
  Device Sleep              [Disabled]
  SATA DEVSLEP Idle Timeout Config [Disabled]

Serial ATA Port 1           Empty
  Software Preserve         Unknown
  Port 1                    [Enabled]
  Hot Plug                  [Disabled]
  External SATA             [Disabled]
  SATA Device Type          [Hard Disk Drive]
  Spin Up Device            [Disabled]
  Device Sleep              [Disabled]
  SATA DEVSLEP Idle Timeout Config [Disabled]

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

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```

3.4.10 CSM Configuration

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Advanced

Compatibility Support Module Configuration		Enable/Disable CSM Support.
CSM Support	[Enabled]	
CSM16 Module Version	07.75	
GateA20 Active	[Upon Request]	
Option ROM Messages	[Force BIOS]	
INT19 Trap Response	[Immediate]	
Boot option filter	[UEFI and Legacy]	
Option ROM execution		
Network	[Do not launch]	
Storage	[Legacy]	
Video	[Legacy]	
Other PCI devices	[UEFI]	

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

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3.4.11 USB Configuration

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.

Advanced

<p>USB Configuration</p> <p>USB Module Version 8.11.02</p> <p>USB Devices: 1 Drive, 1 Keyboard, 1 Hub</p> <p>Legacy USB Support [Enabled] XHCI Hand-off [Enabled] EHCI Hand-off [Disabled] USB Mass Storage Driver Support [Enabled]</p> <p>USB hardware delays and time-outs: USB transfer time-out [20 sec] Device reset time-out [20 sec] Device power-up delay [Auto]</p> <p>Mass Storage Devices: ADATA USB Flash Drive 1.00 [Auto]</p>	<p>Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.</p> <hr/> <p> ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit </p>
--	---

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3.5 Chipset Menu



3.5.1 System Agent Configuration

```

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
  Chipset
-----
System Agent Bridge Name      Broadwell
System Agent RC Version      2.0.0.0
VT-d Capability               Supported

VT-d                          [Enabled]
Above 4GB MMIO BIOS assignm  [Disabled]

▶ Graphics Configuration
▶ Memory Configuration

Check to enable VT-d function on MCH.

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

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```

3.5.1.1 Graphics Configuration

```

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
  Chipset

Graphics Configuration
IGFX VBIOS Version          0000
IGfx Frequency              200 MHz
Graphics Turbo IMON Current 31

Primary Display             [Auto]
  Primary PCIE              [Auto]
Internal Graphics          [Auto]
Aperture Size              [256MB]
DVTM Pre-Allocated         [32M]
DVTM Total Gfx Mem         [256M]
Gfx Low Power Mode         [Disabled]
▶ Display Control

Graphics turbo IMON current
values supported (14-31)

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

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```


3.5.1.1.1 Display Control Configuration

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.	
Chipset	
Display Control	
Primary IGFX Boot Display	[HDMI1]
Secondary IGFX Boot Display	[HDMI2]
LCD Panel Type	[VBIOS Default]
Spread Spectrum clock Chip	[Off]
Active LVDS	[Enabled]
<p>Select the Video Device which will be activated during POST. This has no effect if external graphics present. Secondary boot display selection will appear based on your selection. VGA modes will be supported only on primary display</p> <hr/> <p> ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit </p>	
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3.5.1.2 Memory Configuration

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.

Chipset

Memory Information		▲ Select DIMM timing profile that should be used.
Memory RC Version	2.0.0.2	
Memory Frequency	1600 Mhz	++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Total Memory	8192 MB (DDR3)	
Memory Voltage	1.35v	
DIMM#0	8192 MB (DDR3)	
DIMM profile	[Default DIMM profile]	
Memory Frequency Limiter	[Auto]	
Max TOLUD	[Dynamic]	
Enh Interleave Support	[Enabled]	
RI Support	[Enabled]	
DLL Weak Lock Support	[Enabled]	
Enable RH Prevention	[Enabled]	
Row Hammer Solution	[Hardware RHP]	
RH Activation Probability	[1/2^14]	
Enable RH Keep Seeds	[Disabled]	
Mc Lock	[Enabled]	
Ch Hash Support	[Auto]	
NMode Support	[Auto]	
Memory Scrambler	[Enabled]	
RMT Crosser Support	[Disabled]	
MRC Fast Boot	[Enabled]	
DIMM Exit Mode	[Auto]	

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3.5.2 PCH-IO Configuration

```

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
  Chipset
-----
Intel PCH RC Version          2.0.0.0
Intel PCH SKU Name           Premium SKU(BDW-U)
Intel PCH Rev ID             01/B0

▶ PCI Express Configuration
▶ USB Configuration
▶ PCH Azalia Configuration

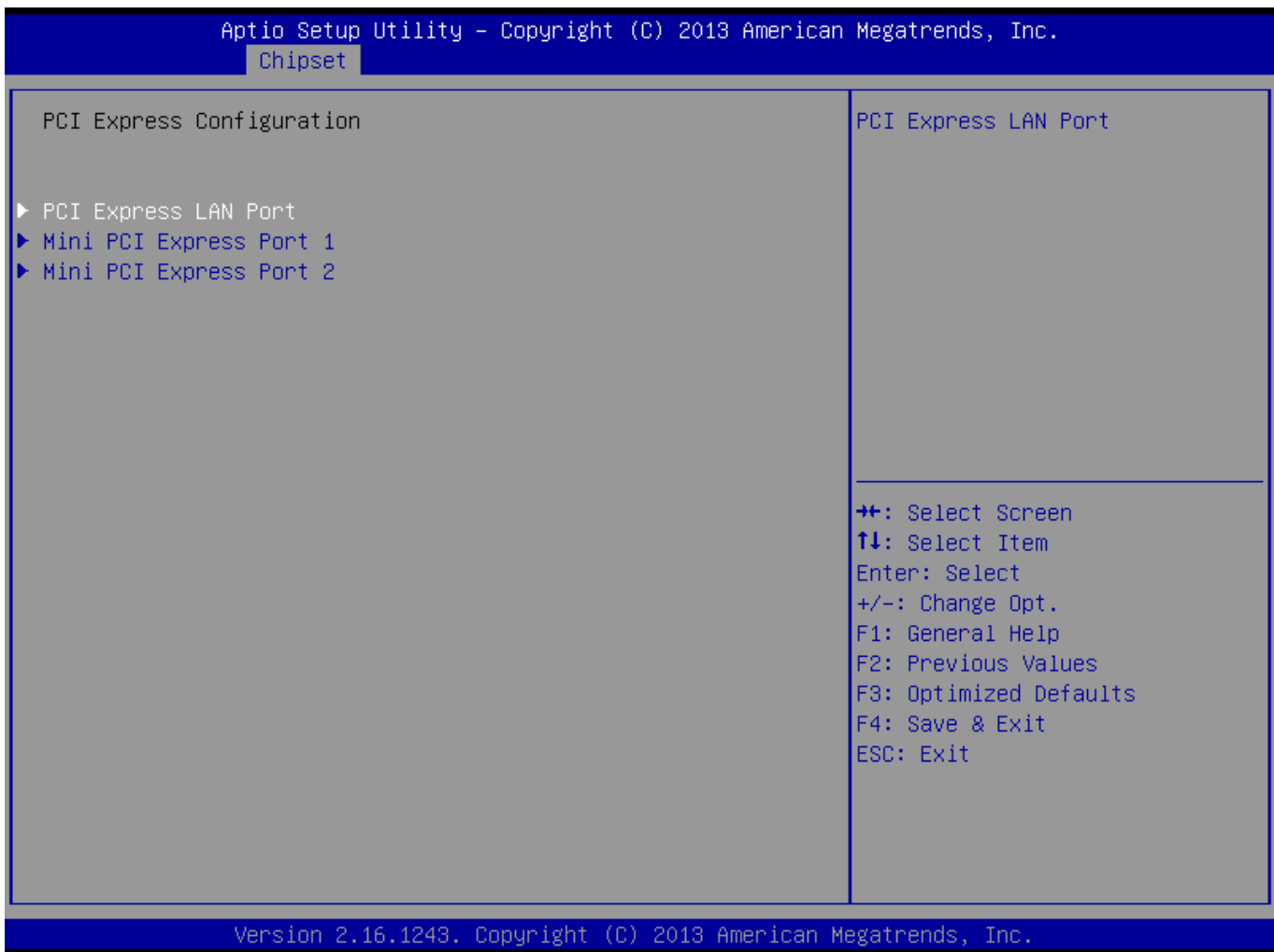
PCH LAN Controller           [Enabled]
  Wake on LAN                 [Disabled]
Restore AC Power Loss        [Last State]

PCI Express Configuration
settings

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

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```

3.5.2.1 PCI Express Configuration



3.5.2.1.1 PCI LAN Port Configuration

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Chipset

PCI Express LAN Port	[Enabled]	Control the PCI Express Root Port.
ASPM	[Auto]	
L1 Substates	[L1.1 & L1.2]	
URR	[Disabled]	
FER	[Disabled]	
NFER	[Disabled]	
CER	[Disabled]	
CTO	[Disabled]	
SEFE	[Disabled]	
SEFE	[Disabled]	
SECE	[Disabled]	
PME SCI	[Enabled]	
Hot Plug	[Disabled]	
PCIe Speed	[Auto]	
Detect Non-Compliance Device	[Disabled]	
Extra Bus Reserved	0	
Reseved Memory	10	
Prefetchable Memory	10	
Reserved I/O	4	
PCIE LTR	[Enabled]	
PCIE LTR Lock	[Disabled]	
Snoop Latency Ocerride	[Auto]	
Non Snoop Latency Ocerride	[Auto]	

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

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3.5.2.1.2 Mini PCI Express Port 1 Configuration

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Chipset

Mini PCI Express Port 1	[Enabled]	Control the PCI Express Root Port.
ASPM	[Auto]	
L1 Substates	[L1.1 & L1.2]	
URR	[Disabled]	
FER	[Disabled]	
NFER	[Disabled]	
CER	[Disabled]	
CTD	[Disabled]	
SEFE	[Disabled]	
SENFE	[Disabled]	
SECE	[Disabled]	
PME SCI	[Enabled]	
Hot Plug	[Disabled]	
PCIe Speed	[Auto]	←+: Select Screen
Detect Non-Compliance Device	[Disabled]	↑↓: Select Item
Extra Bus Reserved	0	Enter: Select
Reseved Memory	10	+/-: Change Opt.
Prefetchable Memory	10	F1: General Help
Reserved I/O	4	F2: Previous Values
PCIe LTR	[Enabled]	F3: Optimized Defaults
PCIe LTR Lock	[Disabled]	F4: Save & Exit
Snoop Latency Ocerride	[Auto]	ESC: Exit
Non Snoop Latency Ocerride	[Auto]	

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3.5.2.1.3 Mini PCI Express Port 2 Configuration

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.

Chipset

Mini PCI Express Port 2	[Enabled]	Control the PCI Express Root Port.
ASPM	[Auto]	
L1 Substates	[L1.1 & L1.2]	
URR	[Disabled]	
FER	[Disabled]	
NFER	[Disabled]	
CER	[Disabled]	
CTD	[Disabled]	
SEFE	[Disabled]	
SECFE	[Disabled]	
SECE	[Disabled]	
PME SCI	[Enabled]	
Hot Plug	[Disabled]	
PCIe Speed	[Auto]	←+: Select Screen
Detect Non-Compliance Device	[Disabled]	↑↓: Select Item
Extra Bus Reserved	0	Enter: Select
Reserved Memory	10	+/-: Change Opt.
Prefetchable Memory	10	F1: General Help
Reserved I/O	4	F2: Previous Values
PCIe LTR	[Enabled]	F3: Optimized Defaults
PCIe LTR Lock	[Disabled]	F4: Save & Exit
Snoop Latency Ocerride	[Auto]	ESC: Exit
Non Snoop Latency Ocerride	[Auto]	

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3.5.2.2 USB Configuration

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.

Chipset

<p>USB Configuration</p> <p>USB Precondition [Enabled]</p> <p>XHCI Mode [Smart Auto]</p> <p>BTCG [Enabled]</p> <p>USB Port #0 [Enabled]</p> <p>USB Port #1 [Enabled]</p> <p>USB Port #2 [Enabled]</p> <p>USB Port #3 [Enabled]</p> <p>USB Port #4 [Enabled]</p> <p>USB Port #5 [Enabled]</p> <p>USB Port #6 [Enabled]</p> <p>USB Port #7 [Enabled]</p>	<p>Precondition work on USB host controller and root ports for faster enumeration.</p> <hr/> <p> ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit </p>
---	--

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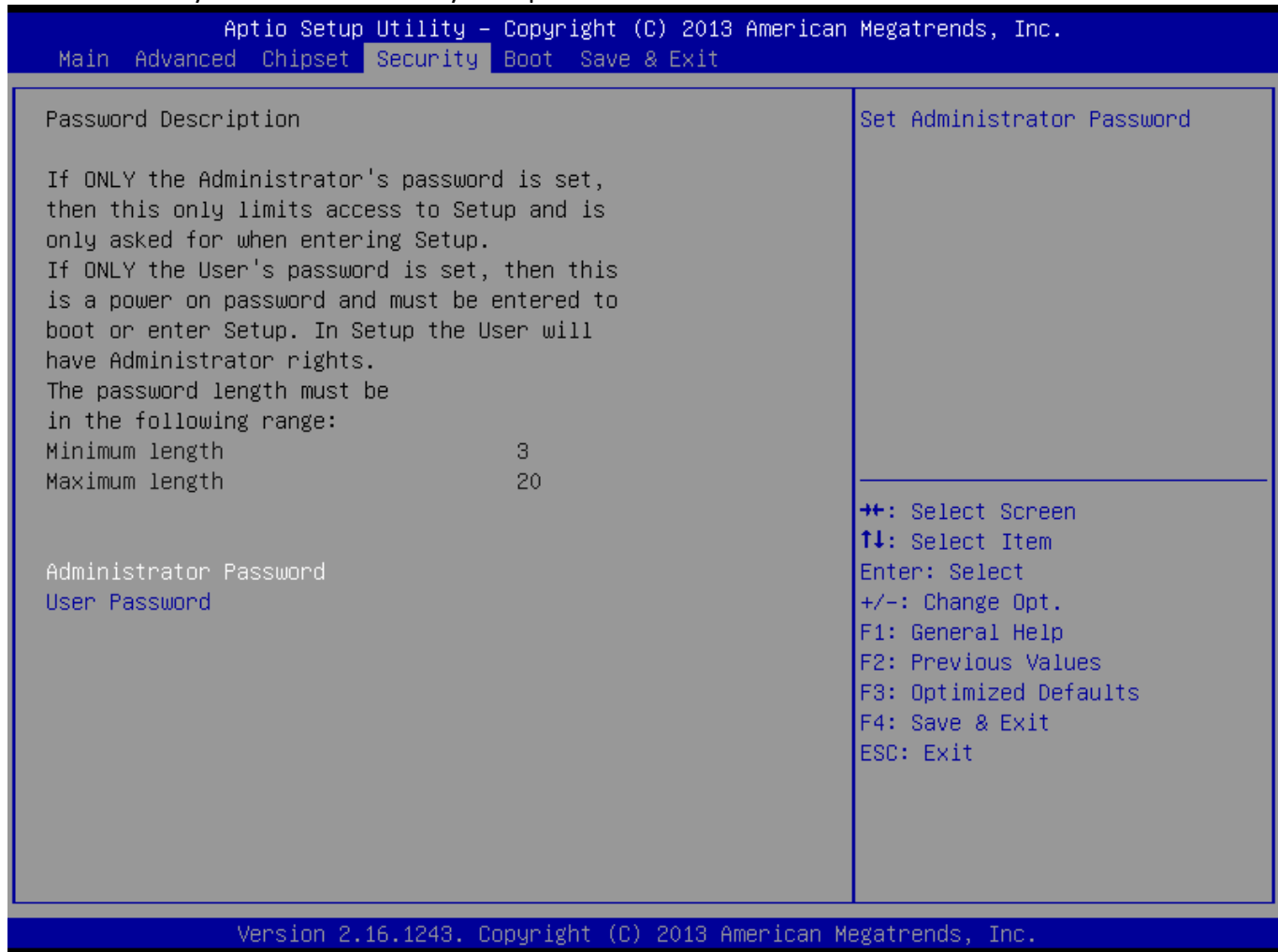
3.5.2.3 PCH Azalia Configuration

```

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
  Chipset
PCH Azalia Configuration
Azalia [Enabled]
  Azalia Docking Support [Enabled]
  Azalia PME [Disabled]
Control Detection of the Azalia device.
Disabled = Azalia will be unconditionally disabled
Enabled = Azalia will be unconditionally Enabled
Auto = Azalia will be enabled if present, disabled otherwise.
+*: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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```

3.6 Security Menu

Use the Security Menu to establish system passwords



Administrator Password

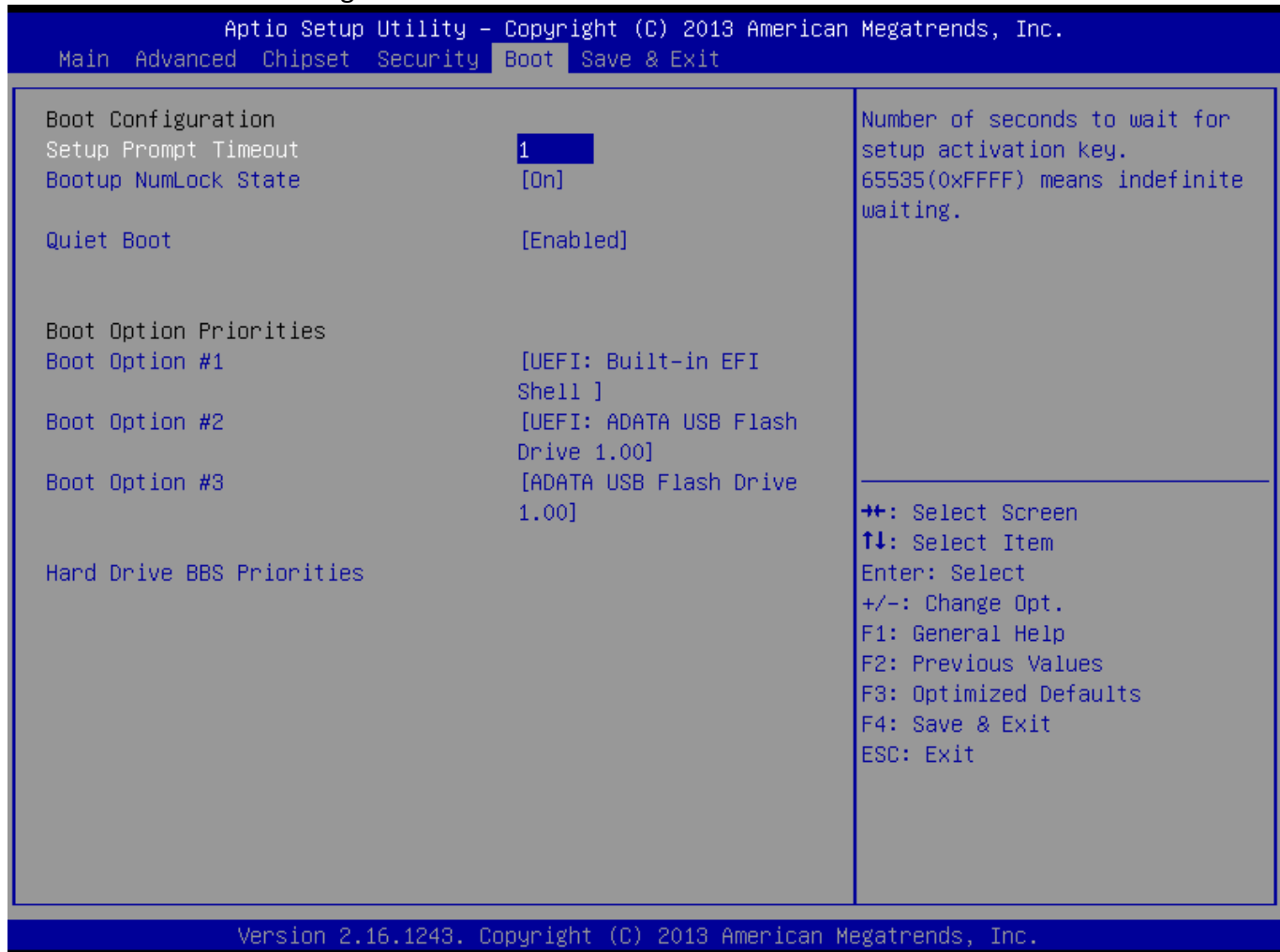
Set administrator password.

User Password

Set user Password.

3.7 Boot Menu

This section is used to configure the boot features.



Setup Prompt Timeout

Number of seconds to wait for setup activation key. 65535 (0xFFFF) means indefinite waiting.

Bootup NumLock State

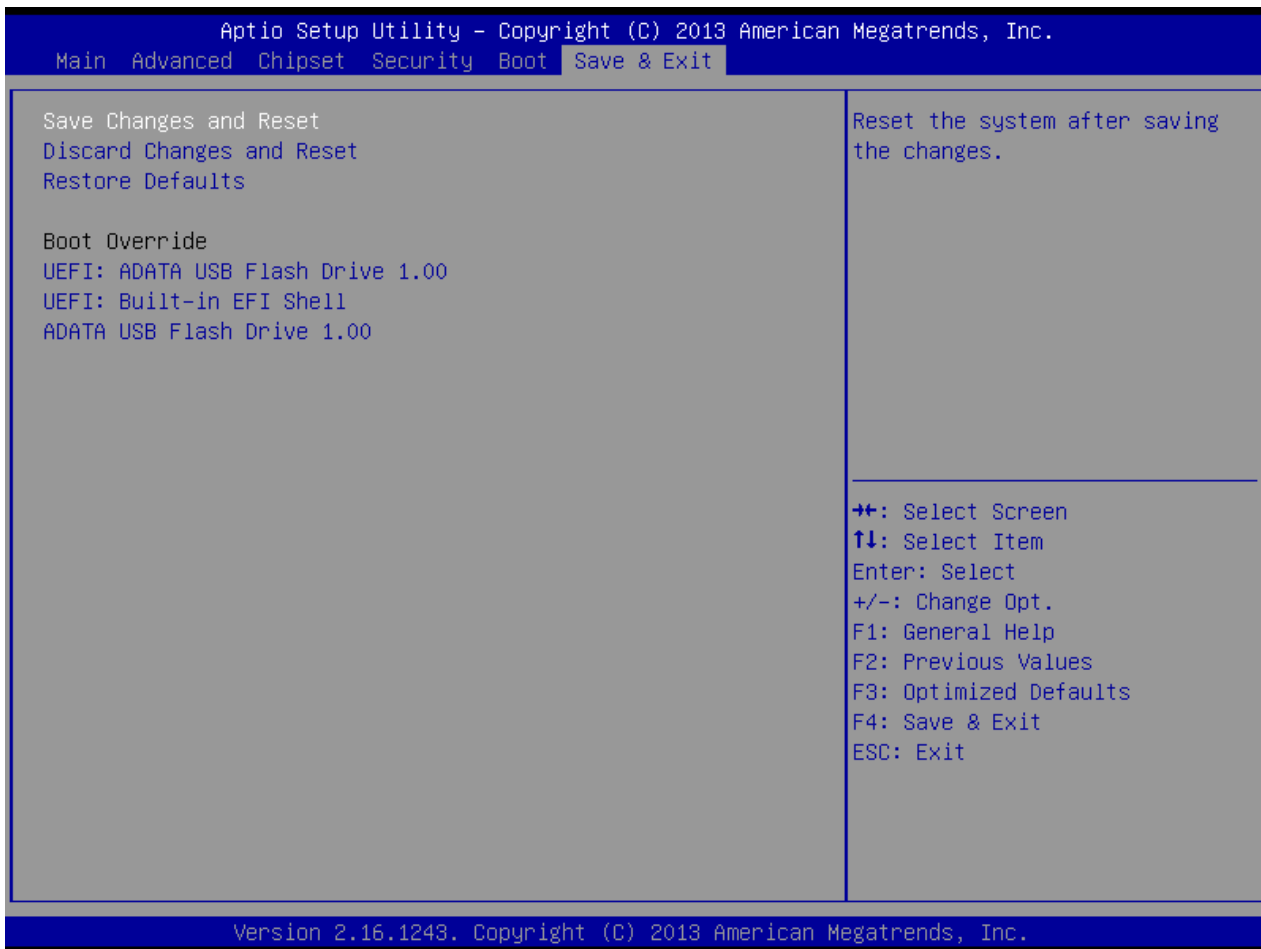
Select the keyboard NumLock state

Quiet Boot

Enables or disables quiet boot option

3.8 Save & Exit

This screen provides functions for handling changes made to the BIOS settings and the exiting of the Setup program.



Save Changes and Exit

Exit system setup after saving the changes

Discard Changes and Exit

Exit system setup without saving changes

Restore Defaults

Restore/Load default values for all the setup options