OXY5335A

3.5" Single Board Computer
User's Manual

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

Revision	Date (yyyy.mm.dd)	Changes
Version 1.0	2014.02.05	Initial release

Packing list

- ☐ OXY5335A 3.5" SBC
- ☐ CD (Driver + user's manual)
- ☐ Optional Accessories
  - ○ Cable kit
  - ○ Thermal kit:
    - Active heatsink (up to 60°C)
    - Copper heat spreader
    - Passive heatsink (up to 75°C)

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

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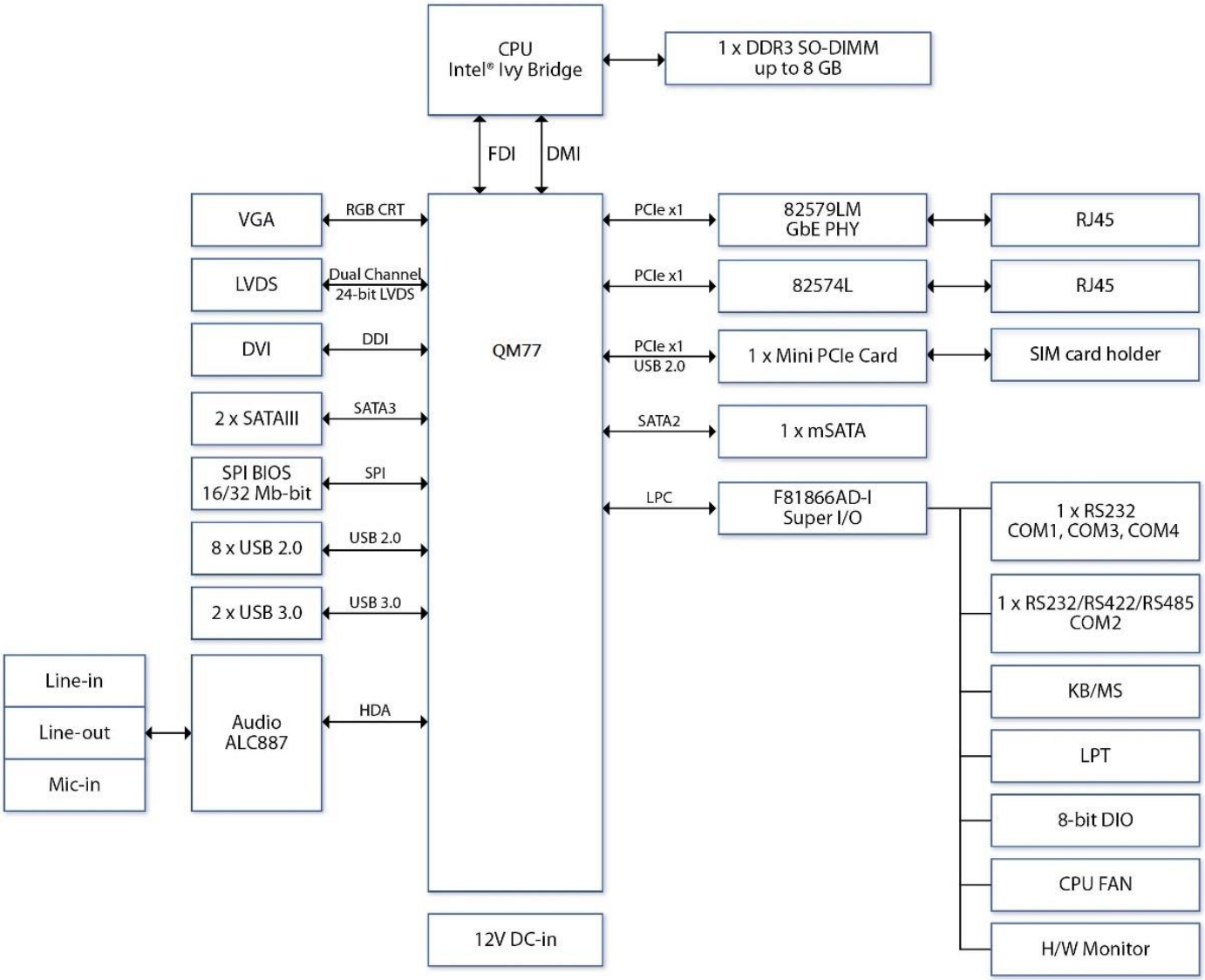
Chapter 1: Product Information

1.1 Block Diagram



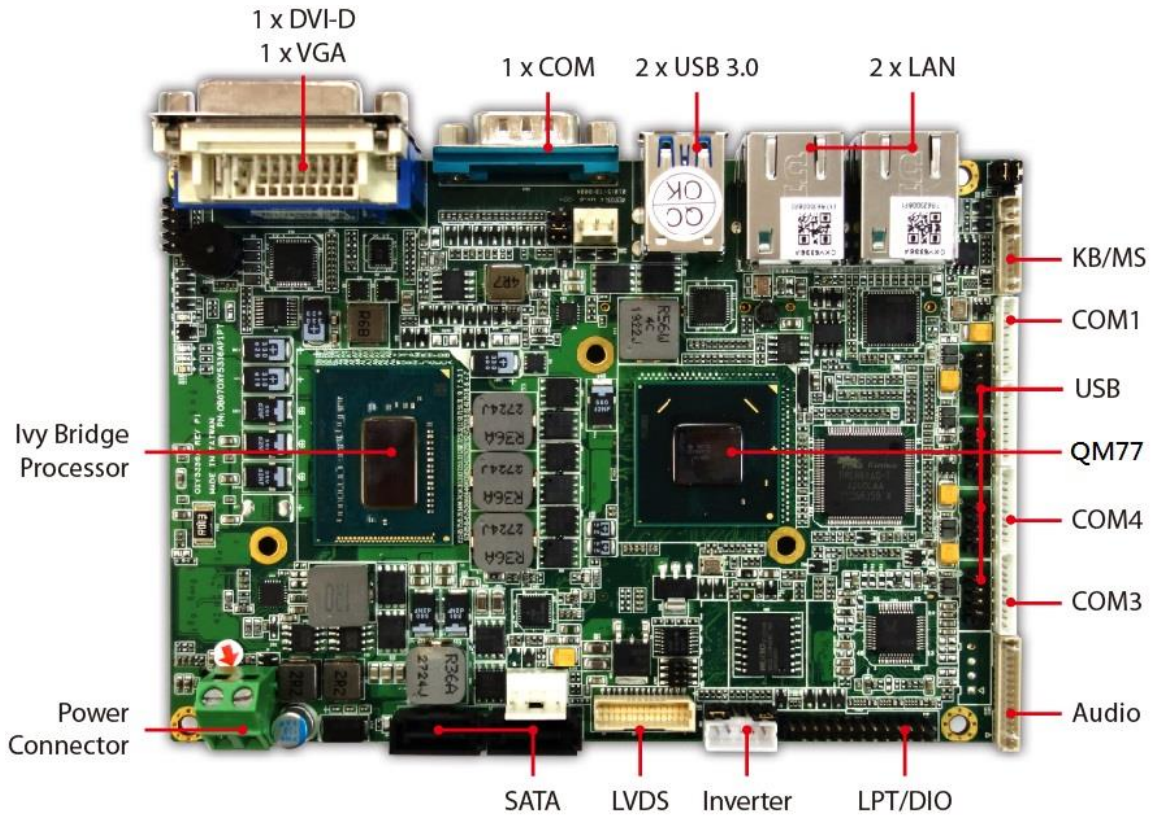
1.2 Key Features

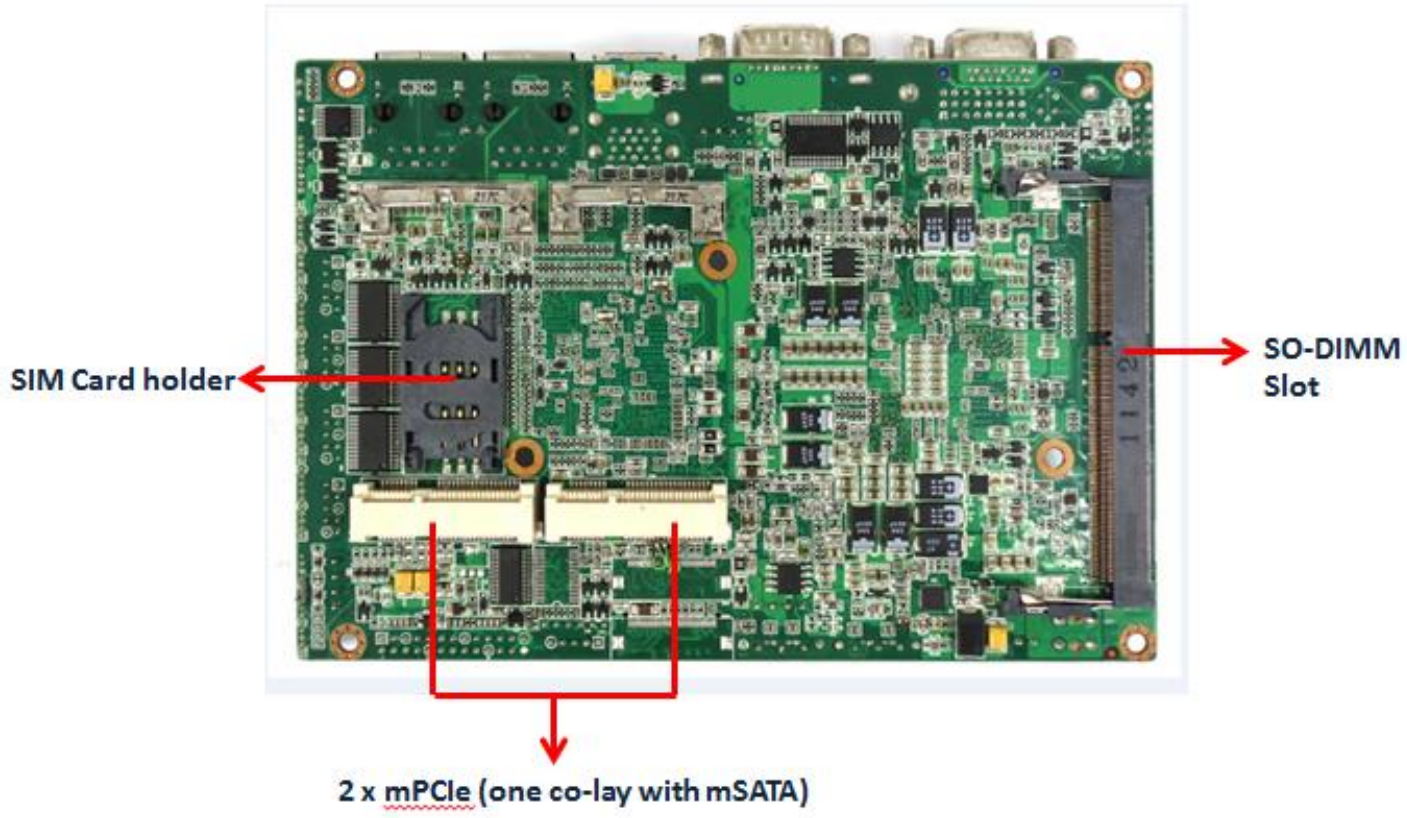
Processor & System	
CPU Type	Intel® Ivy Bridge 22nm Core™ i7/i5/i3, BGA type Core™ i7-3517UE (2C x 1.7 GHz), 4M L2 cache (17W) Core™ i5-3610ME (2C x 2.7 GHz), 3M L2 cache (35W) Core™ i3-3217UE (2C x 1.66 GHz), 3M L2 cache (17W)
Chipset	Intel® QM77
iAMT	iAMT 8.0
Memory Type	1 x 204-pin SO-DIMM DDR3 1333/1600 MHz up to 8 GB
BIOS	AMI® UEFI BIOS
Supoer I/O	Fintek F81866AD-I
Watchdog	1-255 sec. or 1-255 min. software programmable, can generate system reset
Expansion Slot	1 x mPCIe 1 x mSATA
Display	
Chipset	Intel® 82579LM & 82574L GbE
VGA	Yes (Max. resolution 2048 x 1536)
LVDS	Dual channel 24-bit LVDS
Display Type	VGA, LVDS, DVI-D
Audio	
Codec	Realtek ALC887 High De nition Audio Codec
Ethernet	
Chipset	Intel® 82579LM & 82574L GbE
WOL	Yes
Boot from LAN	Yes for PXE
Rear I/O	
VGA	1
DVI-D	1
Ethernet	2 x RJ45
COM	1 x RS232/422/485
USB	2 x USB 3.0
Internal I/O	
SATA	2 x SATAIII (6 Gb/s)
USB	8 x USB 2.0 ports by pin header
COM	3 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	30-pin connector
PS/2	1 x 8-pin header
Parallel Port	2 x 13-pin header
DIO	8-bit (4 in/4 out)
SIM card holder	1

Mechanical and Environment	
Form Factor	3.5" SBC
Power Type	12V DC-in, 4-pin ATX power connector, AT/ATX mode support
Dimension	146 x 102 mm (5.7" x 4")
Operating Temp.	-20 to 70°C
Storage Temp	-40 to 85°C
Relative Humidity	10% to 90%, non-condensing

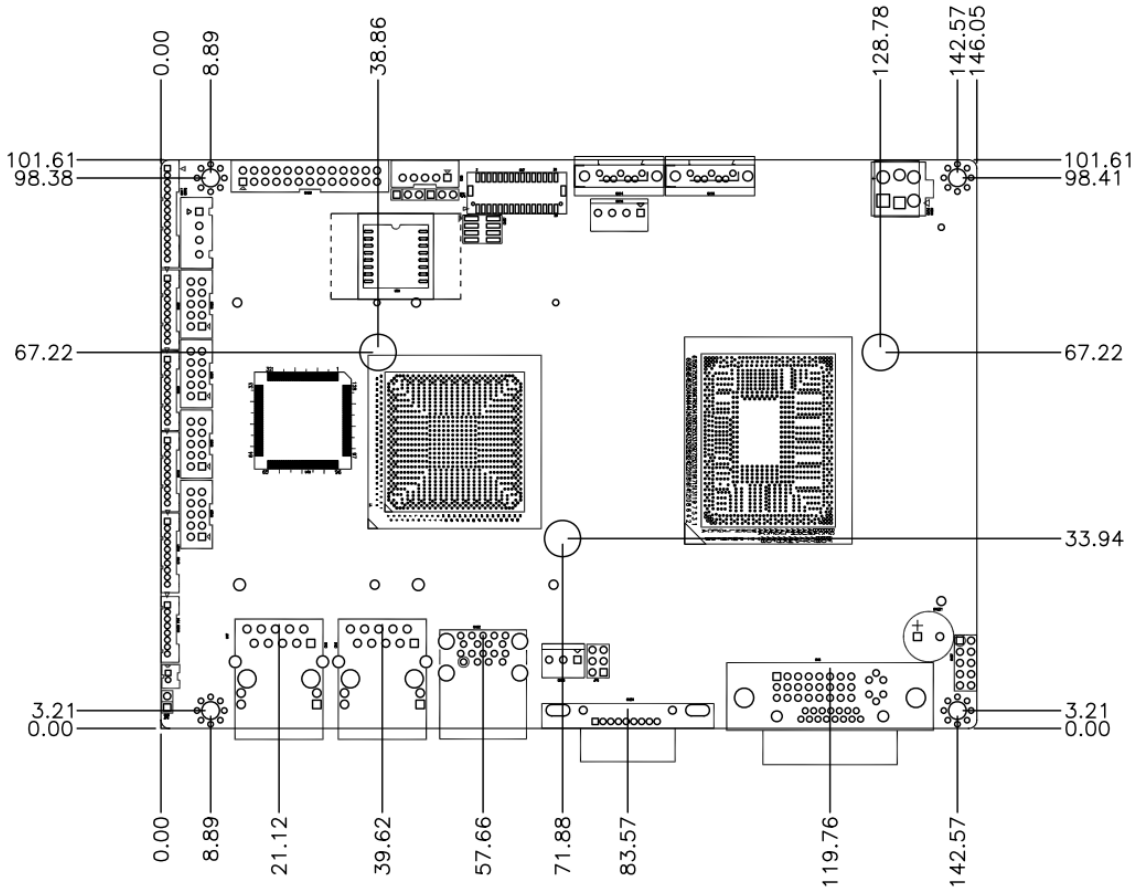
***All specifications and photos are subject to change without notice.**

1.3 Top & back view Board Placement





1.4 Mechanical Drawing



Chapter 2: Jumpers and Connectors

2.1 Onboard connector and jumper list

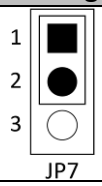
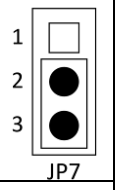
Label	Function
JP6	AT/ATX selection
JP7	LCD Backlight voltage selection
JP8	LCD Panel voltage selection
JP5	COM2 Ring/ +5V/ +12V selection
CN37	Front Panel connector
CN26	LPT port connector
CN16	SATA Power Connector
CN17	Audio connector
CN21/ CN22/ CN23	COM port RS232 connector
CN28/ CN29/ CN30/ CN31	USB connector
CN38	PS2 keyboard and mouse connector
CN7	LVDS connector
CN25	Fan connector
CN8	Backlight connector
CN3	Battery connector
CN24	RS232/422/485 COM port connector
CN5	DVI+VGA
CN14/ CN15	SATA connector
CN32	Dual USB3.0 connector
CN4/ CN6	LAN connector
CN11	MINI-PCIE
CN19	12V DC connector
CN13	MSATA

2.2 Connector and jumper pin definition

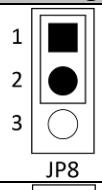
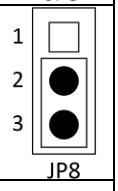
JP6: AT/ATX selection

Jumper	Function description
ON	AT Mode
OFF	ATX Mode

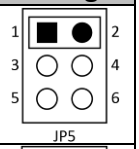
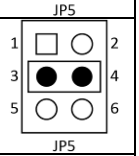
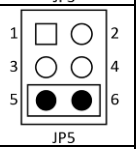
JP7: LCD Backlight voltage selection

Jumper	Function description	Setting
1-2	5V	
2-3	12V	
Default setting: 2-3		

JP8: LCD Panel voltage selection

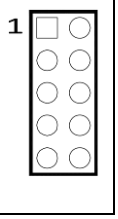
Jumper	Function description	Setting
1-2	5V	
2-3	3.3V	
Default setting: 2-3		

JP5: COM2 Ring/ +5V/ +12V selection

Jumper	Function description	Setting
1-2	12V	
3-4	RI2#_SEL	
5-6	5V	
Default setting: 3-4		

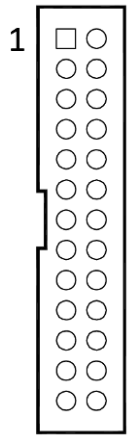
CN37: Front Panel connector

Pin	Definition	Pin	Definition
1	HDD+	2	PW+
3	HDD-	4	PW-
5	GND	6	Power button
7	Reset button	8	GND
9	FP_SPKR	10	NC



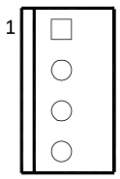
CN26: LPT port connector

Pin	Definition	Pin	Definition
1	P_STB#	2	P_AUTOFD#
3	P_PTD0	4	P_ERROR#
5	P_PTD1	6	P_PINIT#
7	P_PTD2	8	P_SLCTIN#
9	P_PTD3	10	GND
11	P_PTD4	12	GND
13	P_PTD5	14	GND
15	P_PTD6	16	GND
17	P_PTD7	18	GND
19	P_ACK#	20	GND
21	P_BUSY	22	GND
23	P_PE	24	GND
25	P_SLCT	26	



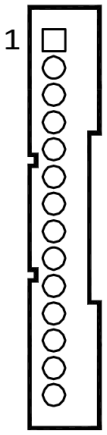
CN16: SATA Power Connector

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



CN17: Audio connector

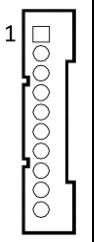
Pin	Definition
1	MIC1-L
2	MIC1-R
3	GND
4	GND
5	LINE1-L
6	NC
7	LINE1-R
8	GND
9	GND
10	NC
11	FRONT-L
12	FRONT-R
13	GND



14	GND	

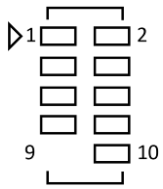
CN21/ CN22/ CN23: COM port RS232 connector

Pin	Definition
1	+V5S
2	GND
3	S_RI#
4	S_DTR#
5	S_CTS#
6	S_TXD
7	S_RTS#
8	S_RXD
9	S_DSR#
10	S_DCD#



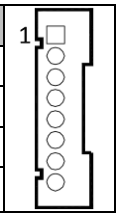
CN28/ CN29/ CN30/ CN31: USB connector

Pin	Definition	Pin	Definition
1	USB_VCC0	2	USB_VCC0
3	DATA0-	4	DATA1-
5	DATA0+	6	DATA1+
7	GND	8	GND
9	NC	10	GND



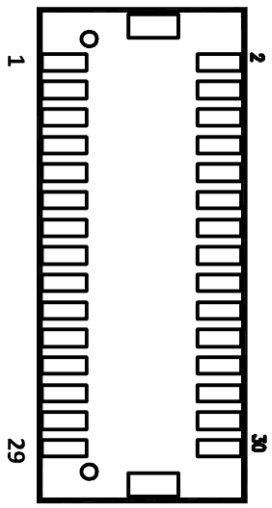
CN38: PS2 keyboard and mouse connector

Pin	Definition	Pin	Definition
1	KB_5V	2	GND
3	NC	4	GND
5	MSDATA	6	KBDATA
7	MSCLK	8	KBCLK



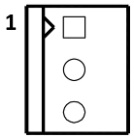
CN7: LVDS connector

Pin	Definition	Pin	Definition
1	LVDSB_CLK	2	GND
3	LVDSB_CLK#	4	LVDSA_DATA3
5	GND	6	LVDSA_DATA3#
7	LVDSB_DATA3	8	GND
9	LVDSB_DATA3#	10	LVDSA_CLK
11	LVDSB_DATA2	12	LVDSA_CLK#
13	LVDSB_DATA2#	14	GND
15	LVDSB_DATA1	16	LVDSA_DATA2
17	LVDSB_DATA1#	18	LVDSA_DATA2#
19	LVDSB_DATA0	20	LVDSA_DATA1
21	LVDSB_DATA0#	22	LVDSA_DATA1#
23	GND	24	LVDSA_DATA0
25	1_LVDS_SCLK	26	LVDSA_DATA0#
27	1_LVDS_SDATA	28	GND
29	LVCC0	30	LVCC0



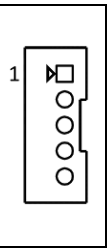
CN25: Fan connector

Pin	Definition
1	GND
2	FAN_CTL
3	+V5S



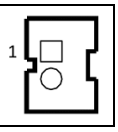
CN8: Backlight connector

Pin	Definition
1	LVDS Voltage select
2	LVDS Backlight control
3	GND
4	GND
5	LVDS Backlight Enable



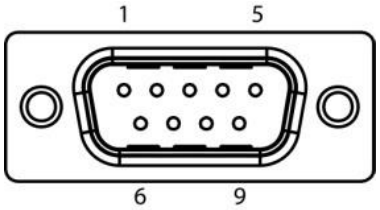
CN3: Battery connector

Pin	Definition
1	RTCBAT
2	GND



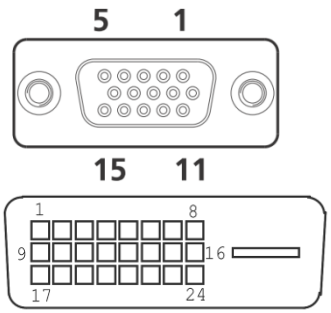
CN24: RS232/422/485 COM port connector

Pin	RS-232	RS-422	Half Duplex RS-485
1	DCD#	TXD-	D-
2	RXD	RXD+	NA
3	TXD	TXD+	D+
4	DTR#	RXD-	NA
5	GND	GND	GND
6	DSR#	NA	NA
7	RTS#	NA	NA
8	CTS#	NA	NA
9	RI# (Define by JP5)	RI# (Define by JP5)	RI# (Define by JP5)



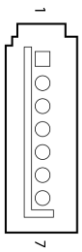
CN5: DVI+VGA

VGA				DVI			
Pin	Definition	Pin	Definition	Pin	Definition	Pin	Definition
1	RED	9	+5V	1	TMDS2-	13	NC
2	GREEN	10	GND	2	TMDS2+	14	+5V
3	BLUE	11	NC	3	GND	15	GND
4	NC	12	DDC DATA	4	NC	16	HOTPLUG_DETECT
5	GND	13	HSYNC	5	NC	17	TMDS0-
6	GND	14	VSYNC	6	DDC_CLK	18	TMDS0+
7	GND	15	DDC CLOCK	7	DDC_DATA	19	GND
8	GND			8	NC	20	NC
				9	TMDS1-	21	NC
				10	TMDS1+	22	GND
				11	GND	23	TMDSCLK+
				12	NC	24	TMDSCLK-



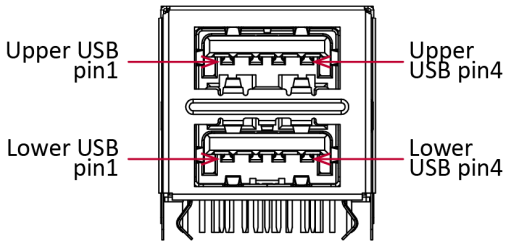
CN14 / CN15: SATA connector

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



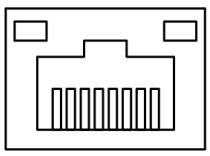
CN32: Dual USB3.0 connector

Upper USB		Lower USB	
Pin	Definition	Pin	Definition
1	+V5A	1	+V5A
2	D-	2	D-
3	D+	3	D+
4	GND	4	GND
5	SSRX-	5	SSRX-
6	SSRX+	6	SSRX+
7	GND_DRAIN	7	GND_DRAIN
8	SSTX-	8	SSTX-
9	SSTX+	9	SSTX+

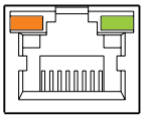


CN4/ CN6: LAN connector

Pin	Definition
R1	LAN_MDI0P
R2	LAN_MDI0N
R3	LAN_MDI1P
R4	LAN_MDI1N
R7	LAN_MDI2P
R8	LAN_MDI2N
R9	LAN_MDI3P
R10	LAN_MDI3N

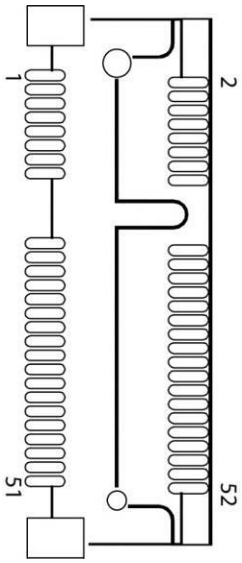


Speed LED	Active LED
Green: 1000Mbps	Orange (blinking): activity
Orange: 100Mbps	No light: not link
No Light: 10Mbps	Orange (no blinking): link



CN11: MINI-PCIE

Pin	Definition	Pin	Definition
1	WAKE#	2	3.3V
3	NC	4	GND
5	NC	6	+1.5V
7	CLKREQ#	8	UIM_PWR
9	GND	10	UIM_DATA
11	PCIE_MINI1_100M_N	12	UIM_CLK
13	PCIE_MINI1_100M_P	14	UIM_RESET
15	GND	16	UIM_VPP
17	NC	18	GND
19	NC	20	CARD_EN
21	GND	22	MINI_RST#
23	RXN	24	+3.3VAUX
25	RXP	26	GND
27	GND	28	+1.5V
29	GND	30	SCLK0
31	TXN	32	SDATA0
33	TXP	34	GND
35	GND	36	USB_D-
37	GND	38	USB_D+
39	3.3V	40	GND
41	3.3V	42	NC
43	GND	44	NC
45	NC	46	NC
47	NC	48	+1.5V
49	NC	50	GND
51	NC	52	3.3V

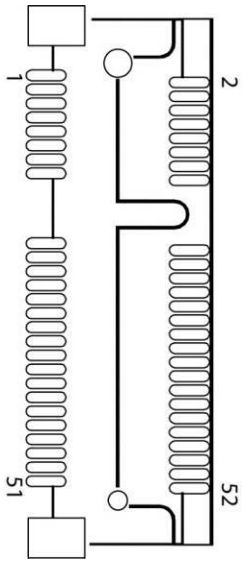


CN19: 12V DC connector

Pin	Signal Name	
1	+12V	
2	GND	

CN13: MSATA

Pin	Definition	Pin	Definition
1	WAKE#	2	+3.3VAUX
3	NC	4	GND
5	NC	6	+1.5V
7	CLKREQ#	8	NC
9	GND	10	NC
11	REFCLK-	12	NC
13	REFCLK+	14	NC
15	GND	16	NC
17	NC	18	GND
19	NC	20	Wireless LAN Disable#
21	GND	22	RESET#
23	PERN0	24	+3.3VAUX
25	PERP0	26	GND
27	GND	28	+1.5V
29	GND	30	SMBUS CLOCK
31	PETN0	32	SMBUS DATA
33	PETP0	34	GND
35	GND	36	USB DATA-
37	GND	38	USB DATA+
39	+3.3VAUX	40	GND
41	+3.3VAUX	42	NC
43	GND	44	NC
45	NC	46	NC
47	NC	48	+1.5V
49	NC	50	GND
51	MCARD_DISABLE	52	+3.3V VAUX



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 <Del> key immediately.
- After the <Del> 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

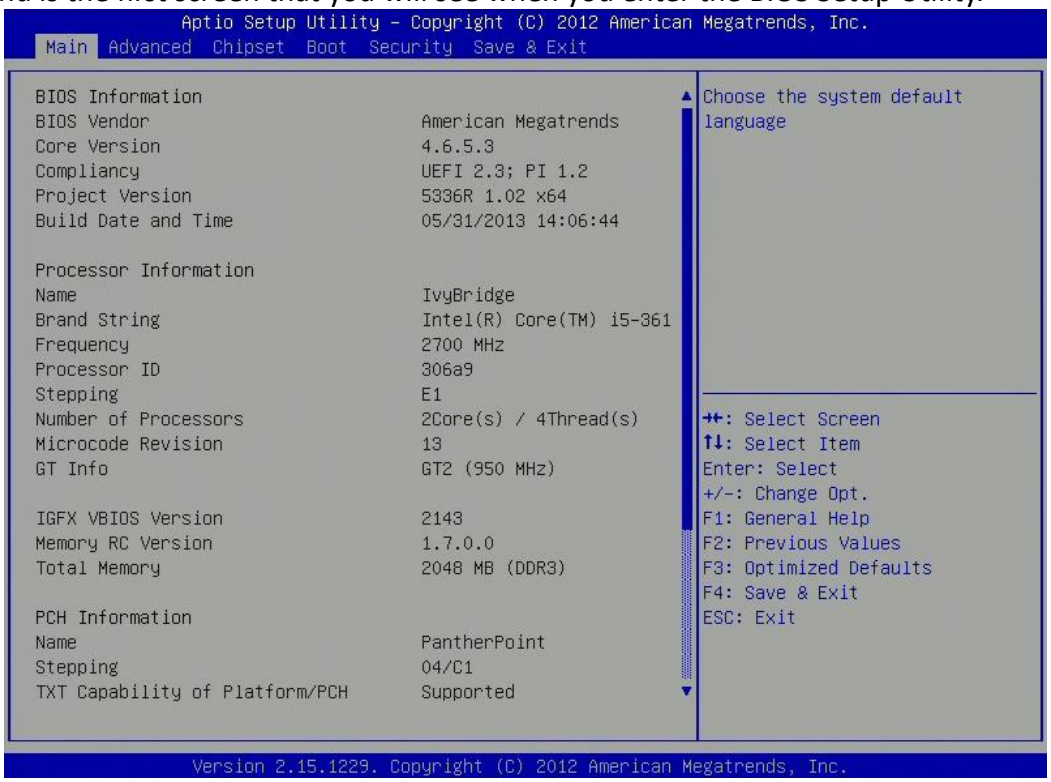
The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process.
Some of the hot keys are <F1>, <F10>, <Enter>, <ESC>, and <Arrow> keys.

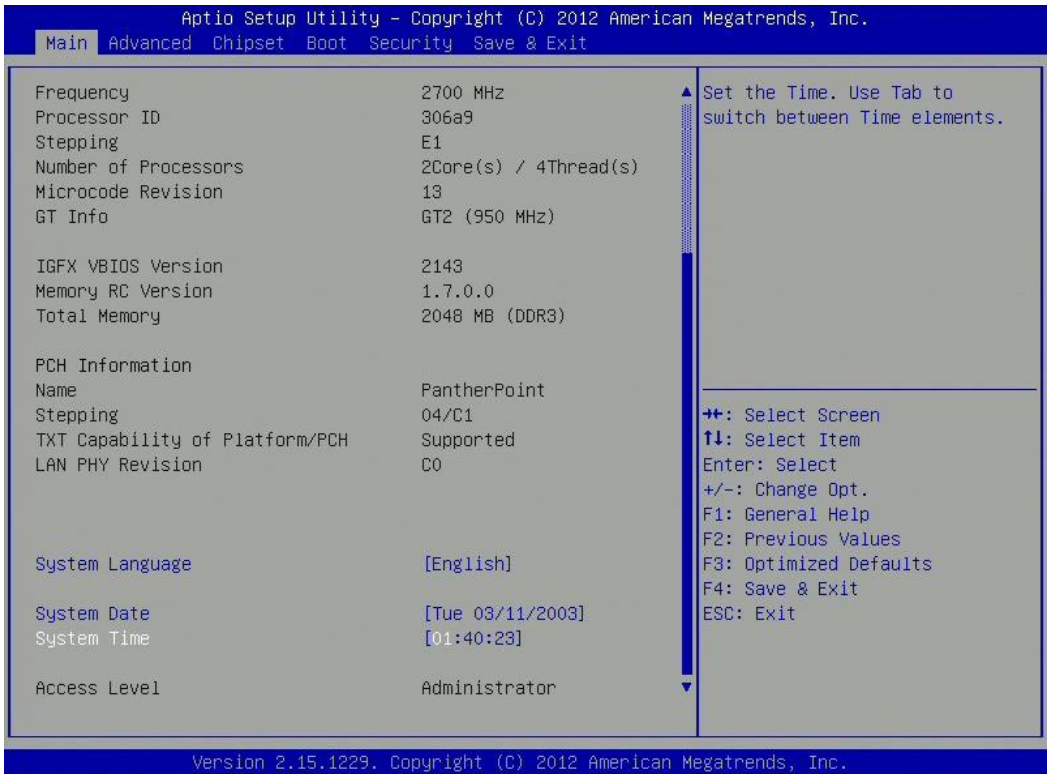
Some of the navigation keys may differ from one screen to another.

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 Language

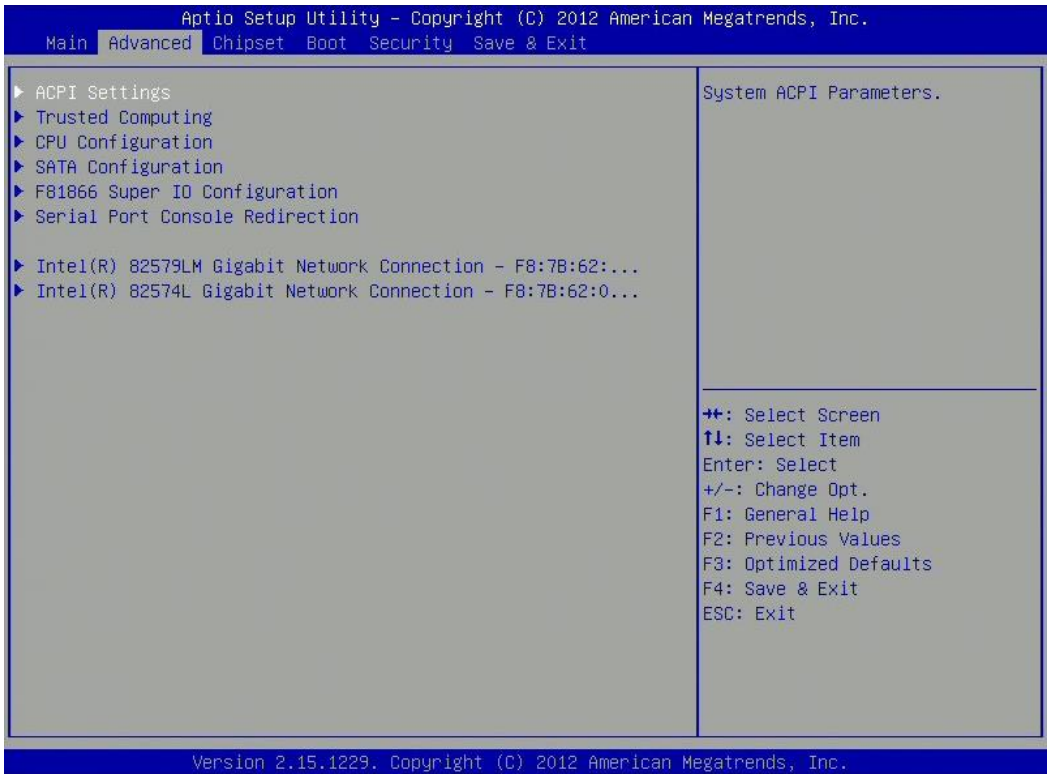
Use this function to select the system language.

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.

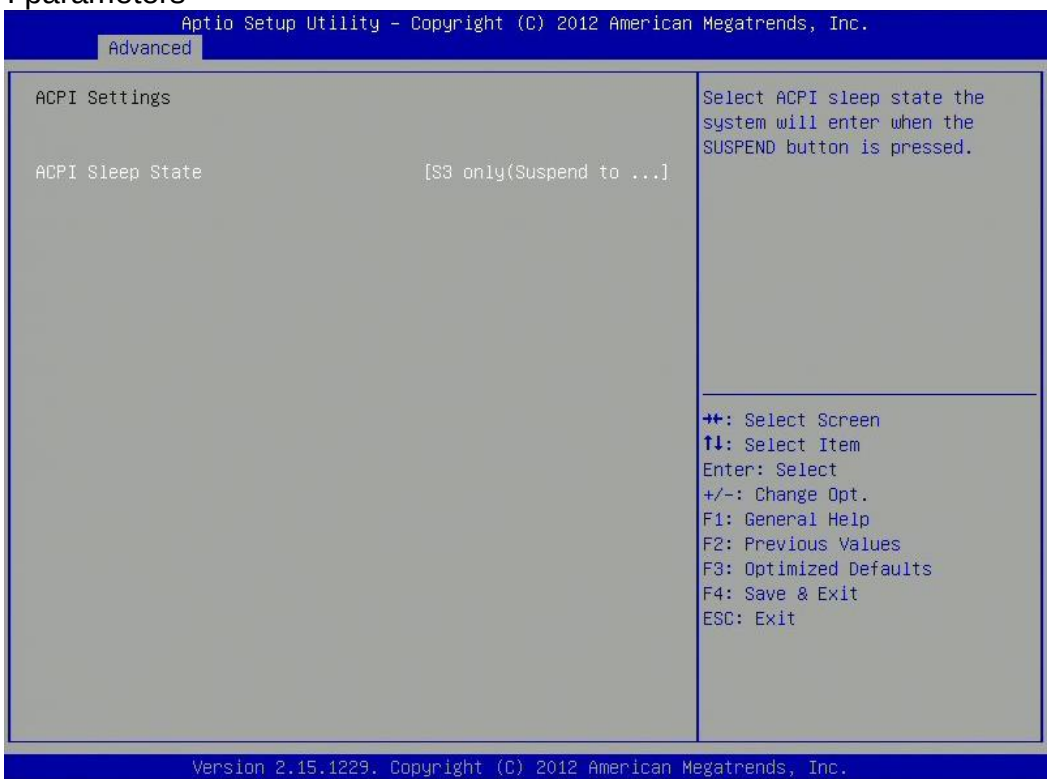
Access Level
Displays the access level of the current user in the BIOS.

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 ACPI Settings

System ACPI parameters

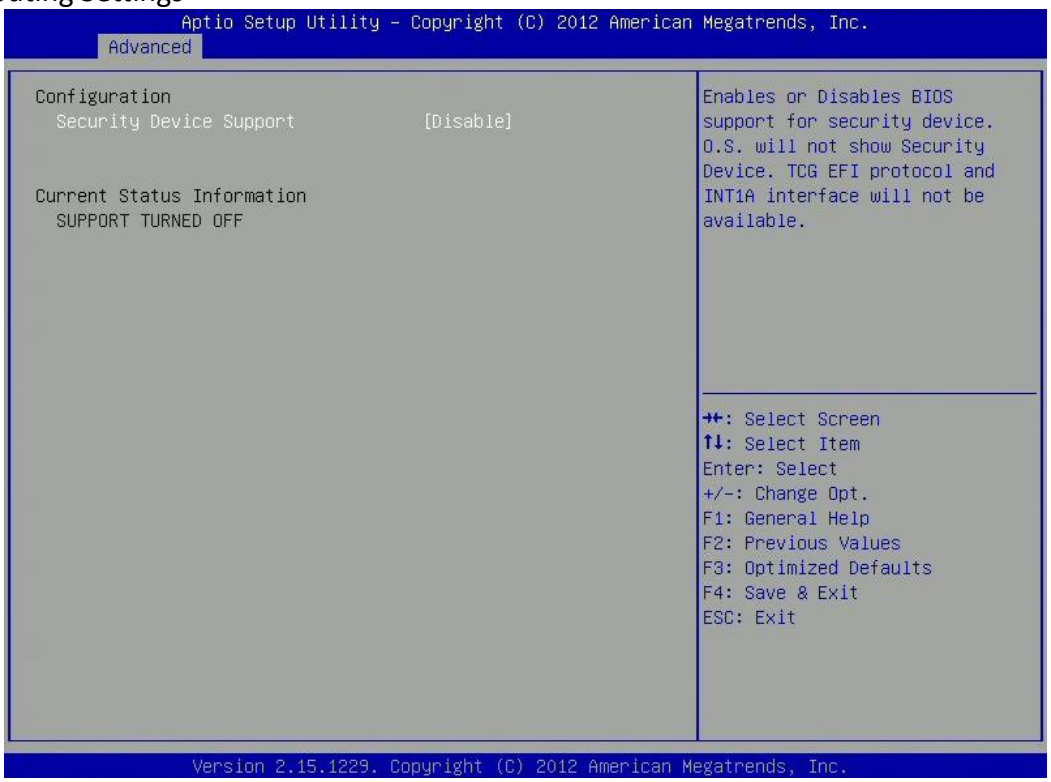


ACPI Sleep State

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

3.4.2 Trusted Computing

Trusted Computing Settings

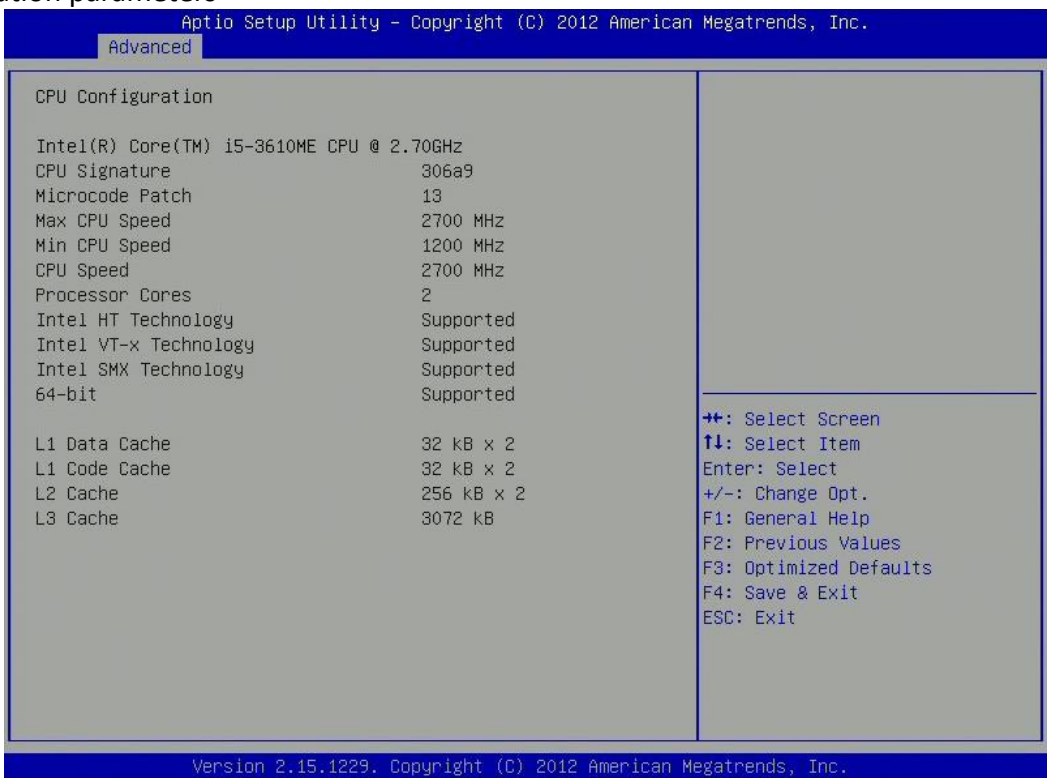


Security Device Support

Enables or disables BIOS support for security device. O.S. will not show security device. TCG EFI protocol and INT1A interface will not be available.

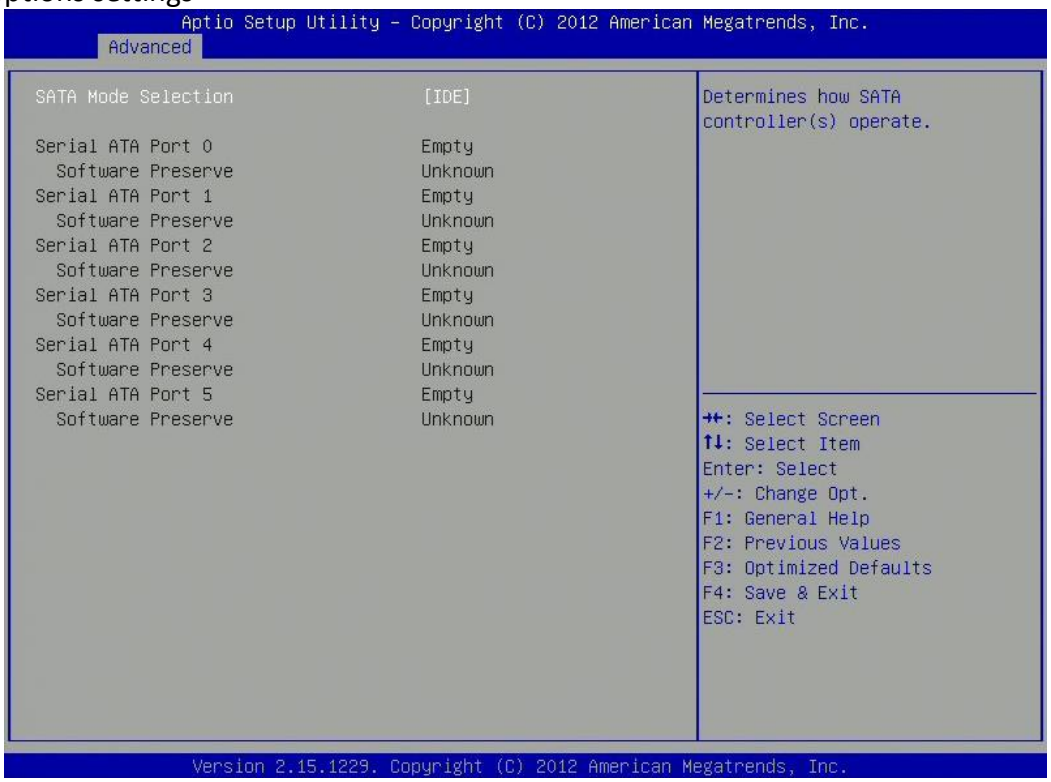
3.4.3 CPU Configuration

CPU configuration parameters



3.4.4 SATA Configuration

SATA device options settings

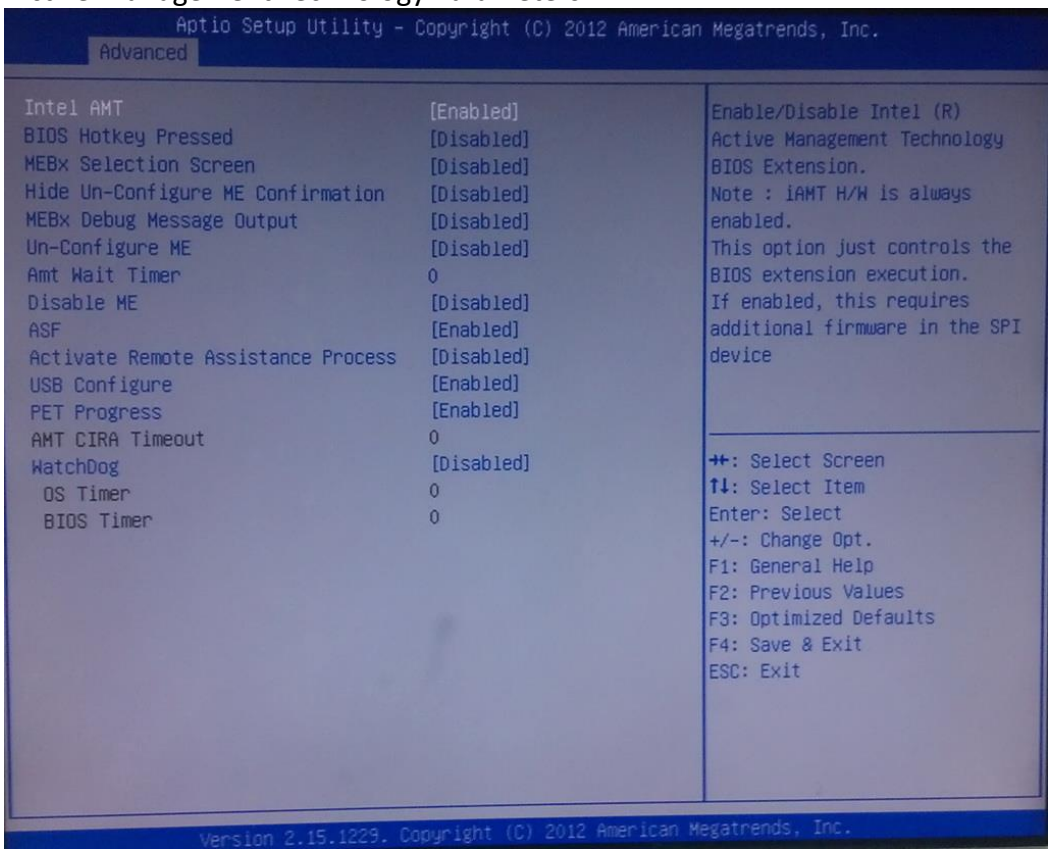


SATA Mode Selection

Determines how SATA controllers operate.

3.4.5 AMT Configuration

Configuration Active Management Technology Parameters.



Intel AMT

Enable/Disable Intel Active Management Technology BIOS Extension.

BIOS Hotkey Pressed

OEMFlag Bit 1: Enable/Disable BIOS hotkey press.

MEBx Selection Screen

OEMLag Bit 2: Enable/Disable MEBx selection screen.

Hide Un-Configure ME Confirmation

OEMFlag Bit 6: Hide Un-Configure ME without password Confirmation Prompt.

MEBx Debug Message Output

OEMFlag Bit 14:Enable MEBx debug message output.

Un-Configure ME

OEMFlag Bit 15: Un-Configure ME without password.

Amt Wait Timer
Set timer to wait before sending ASF_GET_BOOT_OPTIONS.

Disable ME
Set ME to Soft Temporary Disabled.

ASF
Enable/Disable Alert Specification Format.

Activate Remote Assistance Process
Trigger CIRA boot.

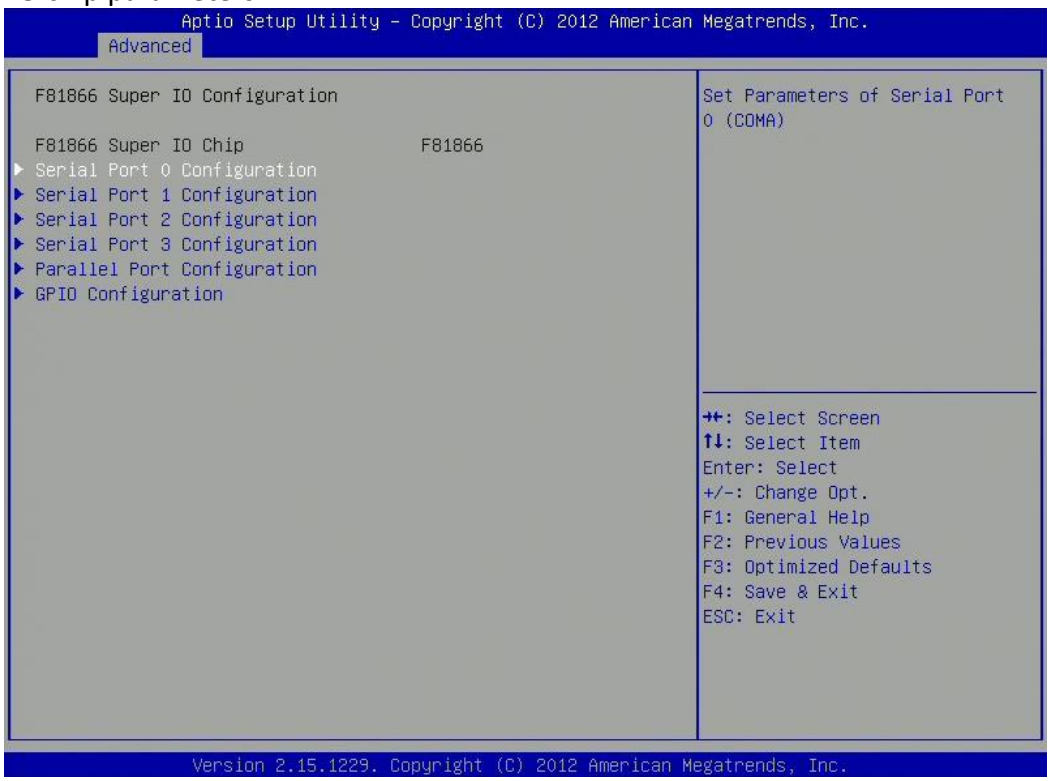
USB Configure
Enable/Disable USB Configure function.

PET Progress
User can Enable/Disable PET Events progress to receive PET events or not.

WatchDog
Enable/Disable WatchDog Timer.

3.4.6 F81866 Super IO Configuration

System Super IO chip parameters

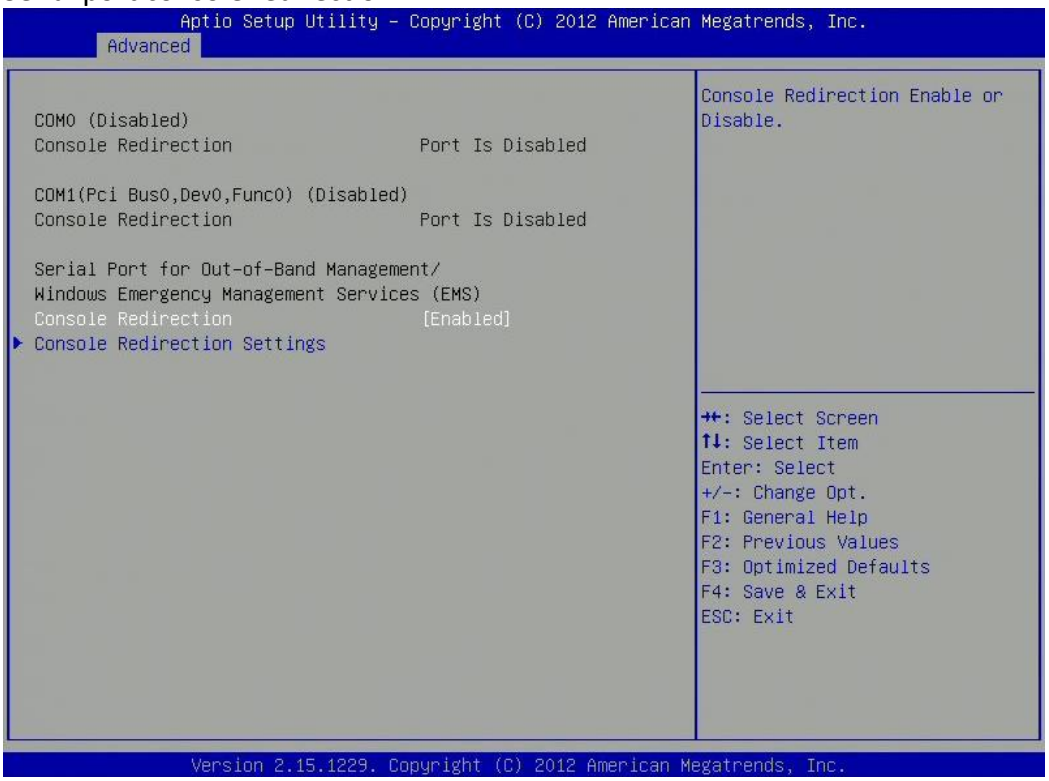


Serial Port Configuration
Set parameters of serial port (COM)

Parallel Port Configuration
Set Parameters of parallel port (LPT/LPTE)

GPIO Configuration
GPIO configuration settings

3.4.7 Serial Port Console Redirection
Serial port console redirection



Console Redirection
Console redirection enable or disable

Console Redirection settings
The settings specify how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.

Out-of-Band Mgmt Port
Microsoft Windows Emergency Management Services (EMS) allows for remote management of a Windows Server OS through a serial port.

Terminal Type
VT-UTF8 is the preferred terminal type for out-of-band management. The next best choice is VT100+ and then VT100. See above, in Console Redirection Settings page, for more help with Terminal Type/Emulation.

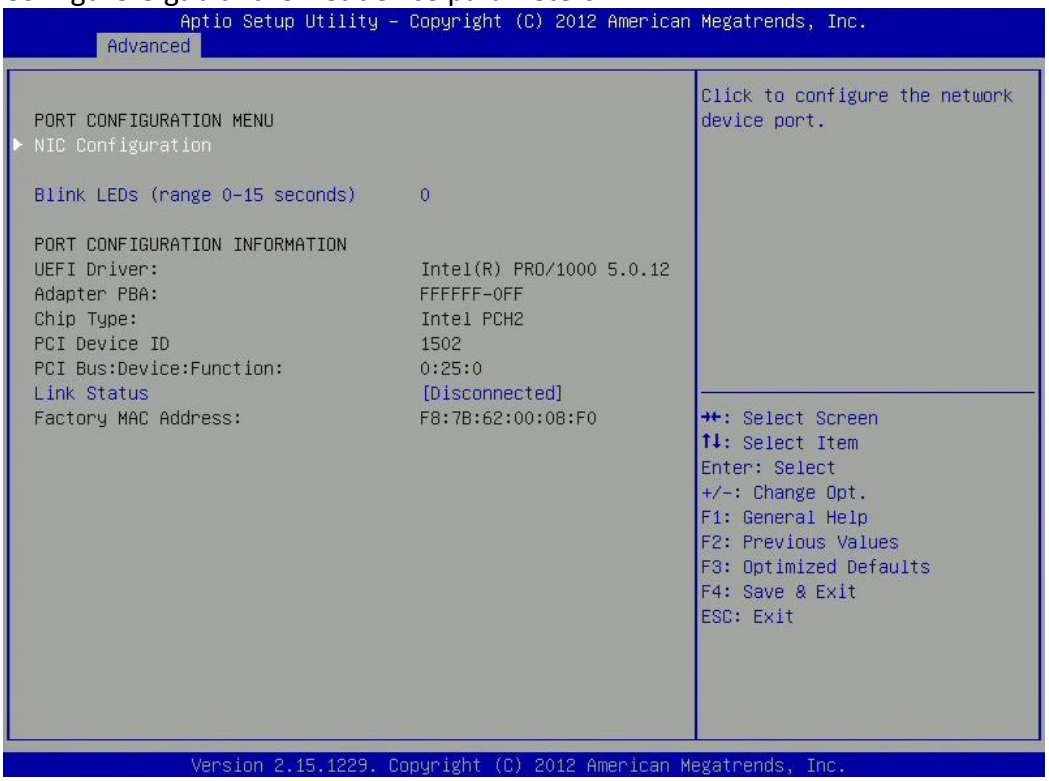
Bits per second
Selects serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.

Flow Control

Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a "stop" signal can be sent to stop the data flow. Once the buffers are empty, a "start" signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals

3.4.8 Intel (R) 82579LM Gigabit Network Connection

Configure Gigabit Ethernet device parameters



NIC configuration

Click to configure the network device port

Link Speed

Change link speed and duplex for current port

Wake on LAN

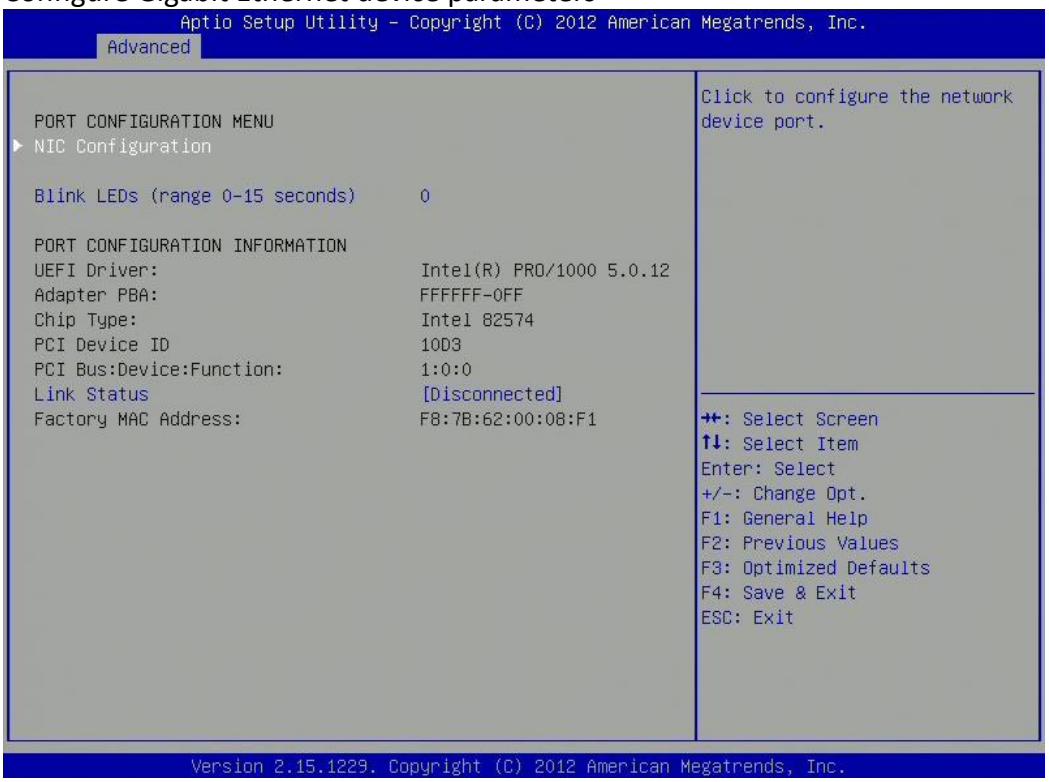
Enable this option to wake the system with a magic packet

Blink LEDs (range 0-15 seconds)

Blink LEDs for the specified duration (up to 15 seconds)

3.4.9 Intel (R) 82574L Gigabit Network Connection

Configure Gigabit Ethernet device parameters



NIC configuration

Click to configure the network device port

Link Speed

Change link speed and duplex for current port

Wake on LAN

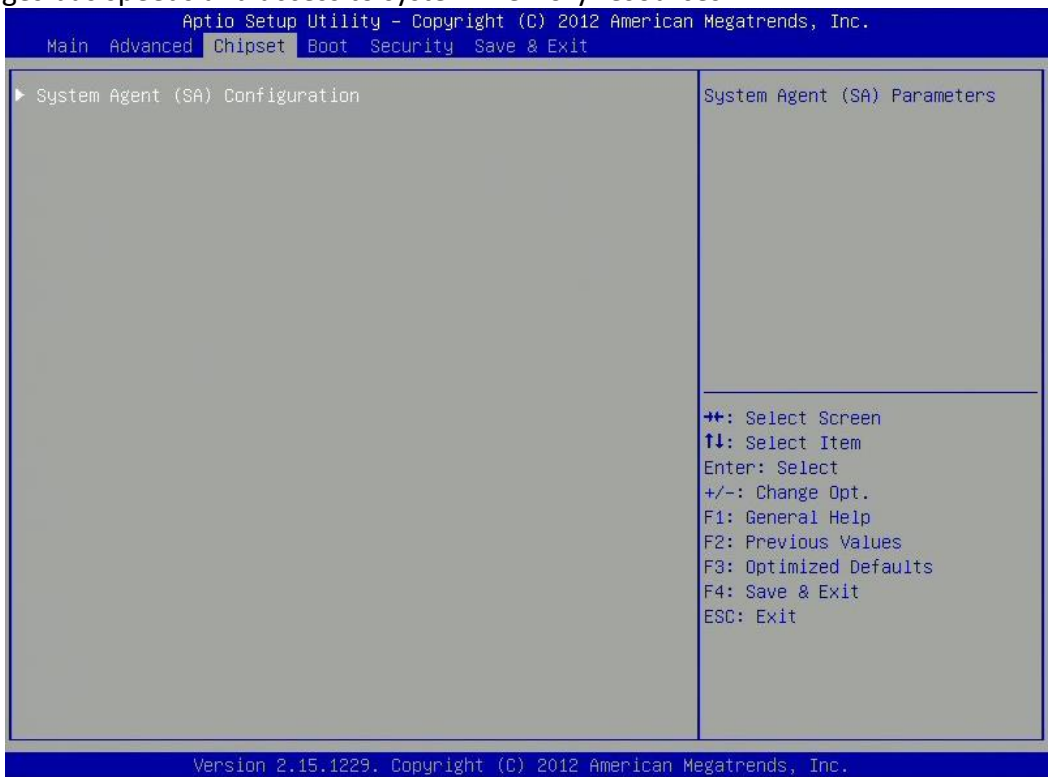
Enable this option to wake the system with a magic packet

Blink LEDs (range 0-15 seconds)

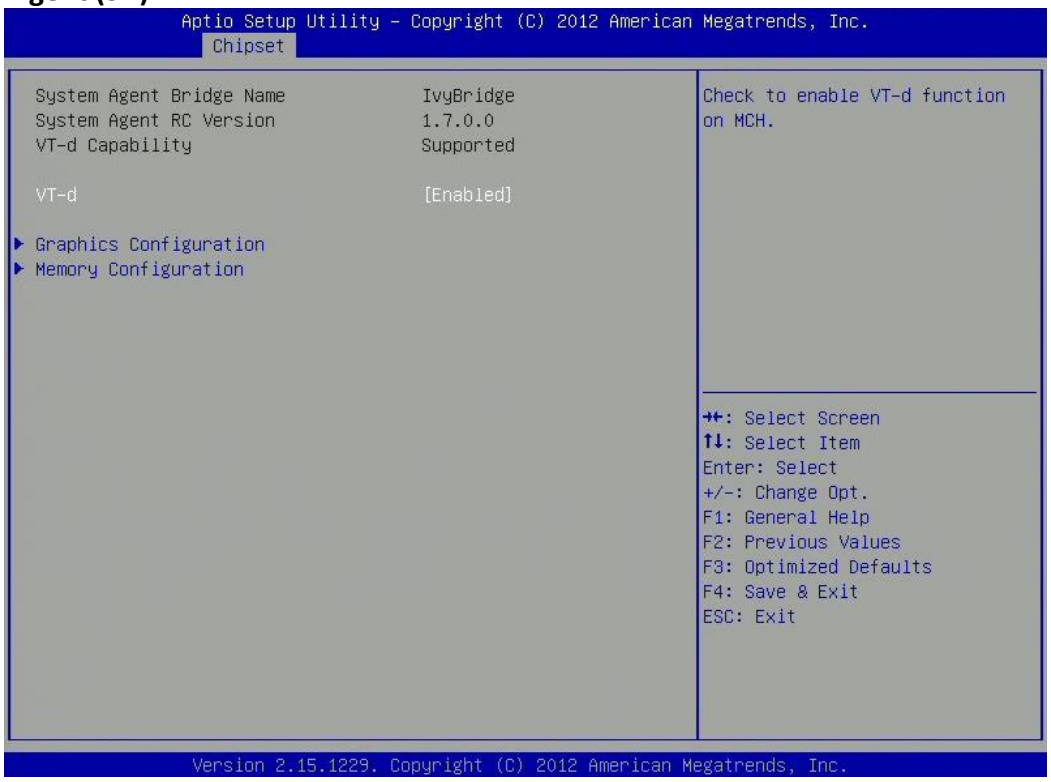
Blink LEDs for the specified duration (up to 15 seconds)

3.5 Chipset

This section gives you functions to configure the system based on the specific features of the chipset. The chipset manages bus speeds and access to system memory resources.



3.5.1 System Agent (SA)



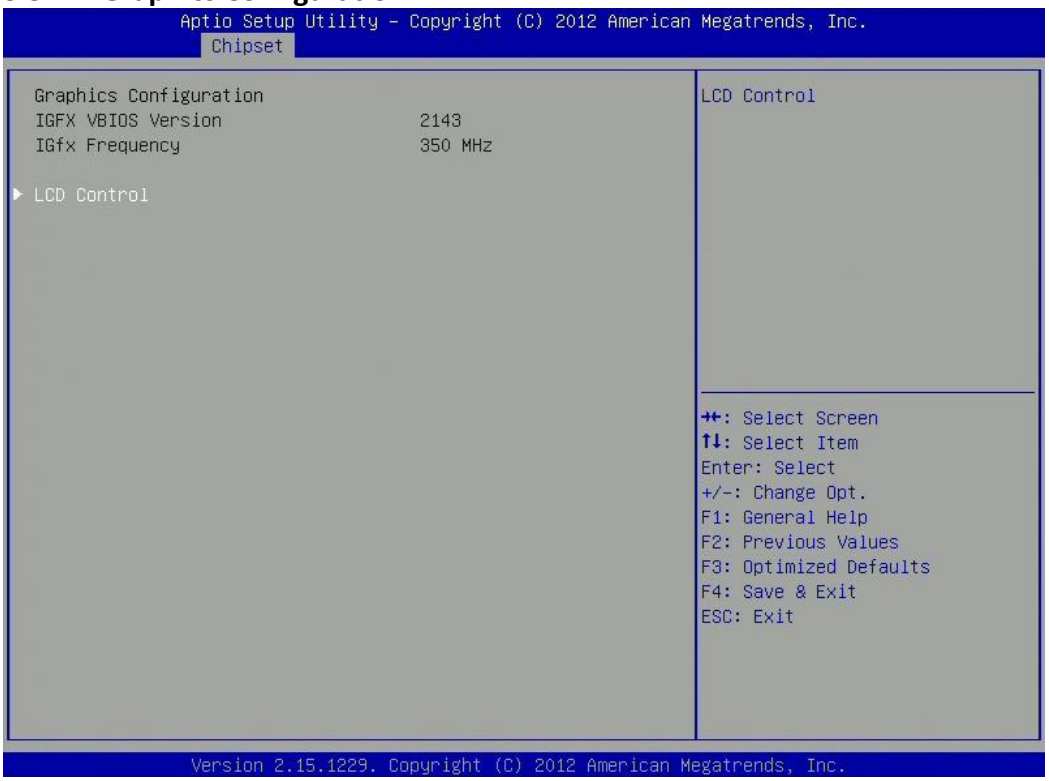
VT-d

Check to enable VT-d function on MCH

Graphics Configuration
Config graphics settings

Memory Configuration
Memory configuration parameters

3.5.1.1 Graphics Configuration



LCD Contol

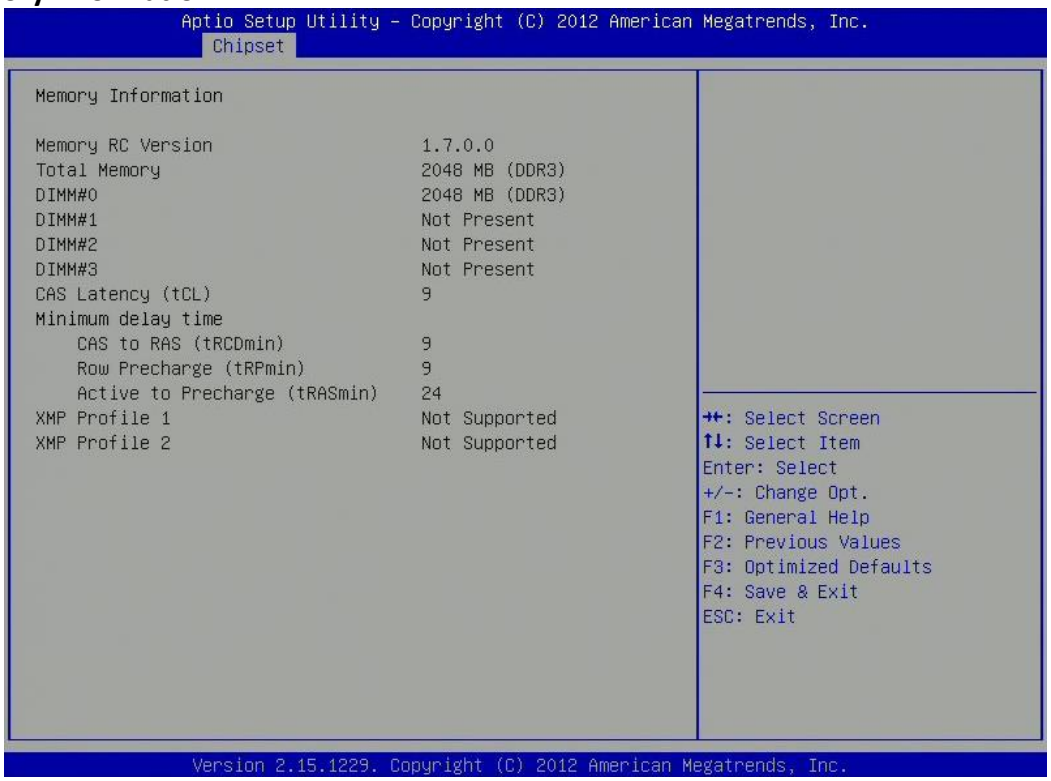
Primary IGFX Boot Display
Select the video device which will be activated during POST. This has no effect if external graphics present. Secondary boot display selection will appears based on your selection. VGA modes will be supported only on primary display.

Second IGFX Boot Display
Select secondary display device

LCD Panel Type
Select LCD panel used by internal graphics device by selecting the appropriate setup item.

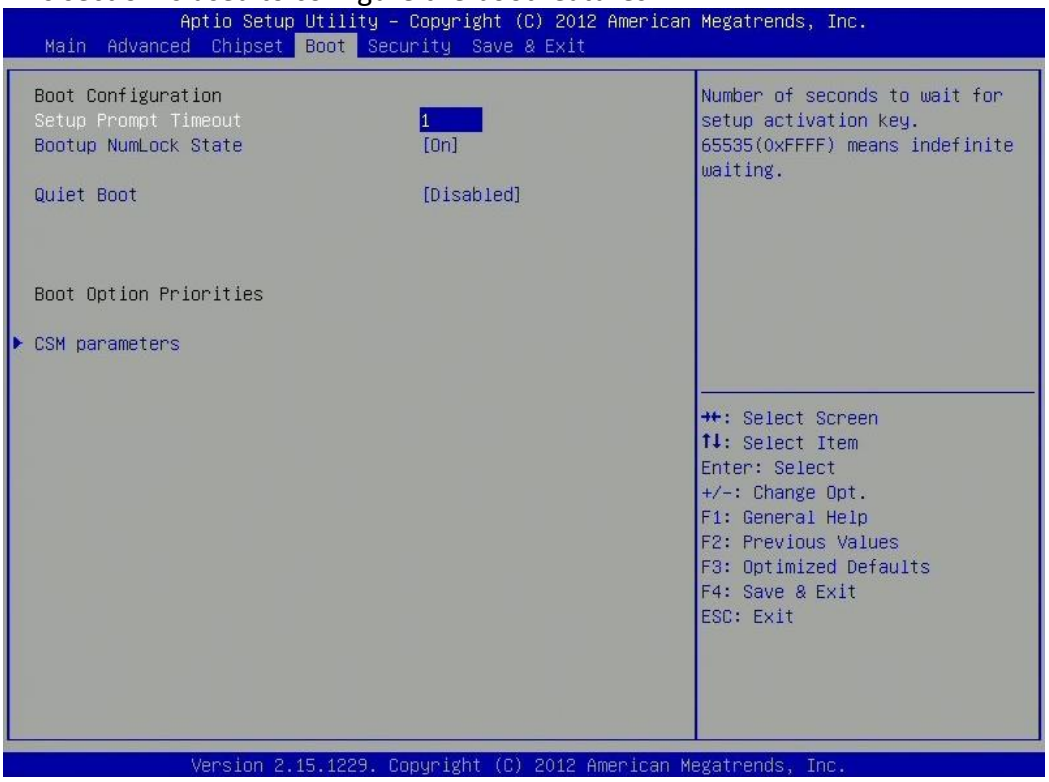
Panel Color Depth
Select the LFP panel color depth

3.5.1.2 Memory Information



3.6 Boot

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

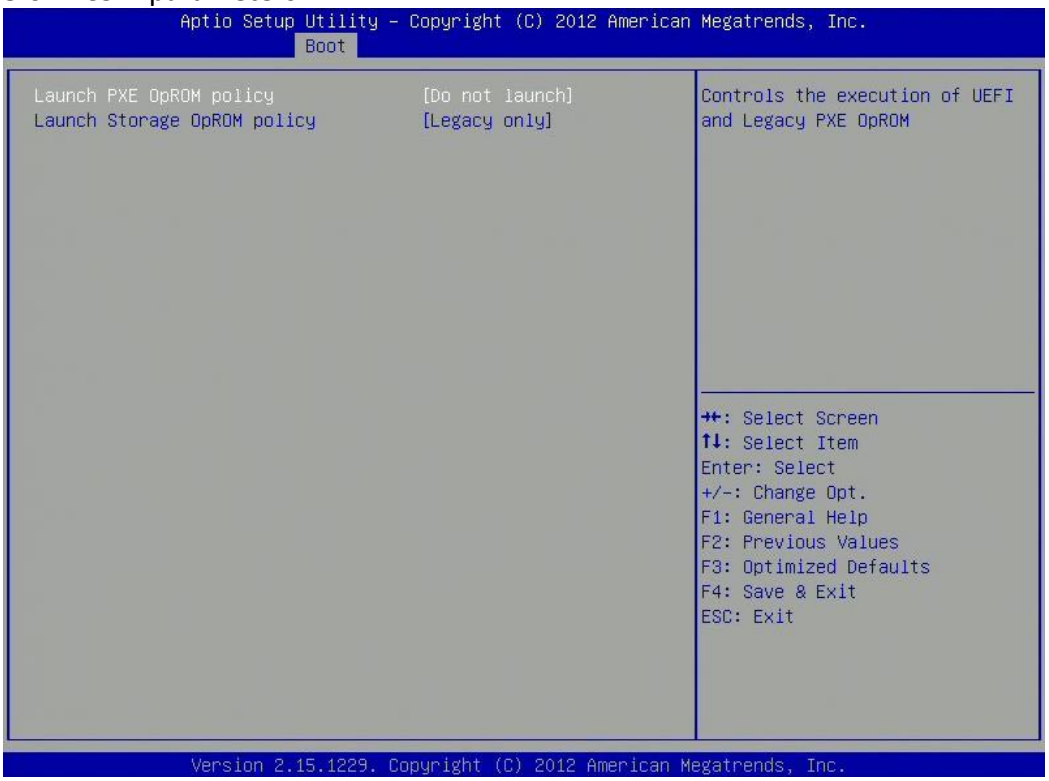
Quiet Boot

Enables or disables quiet boot option

CSM parameters

OpROM execution, boot options filter, etc.

3.6.1 CSM parameters

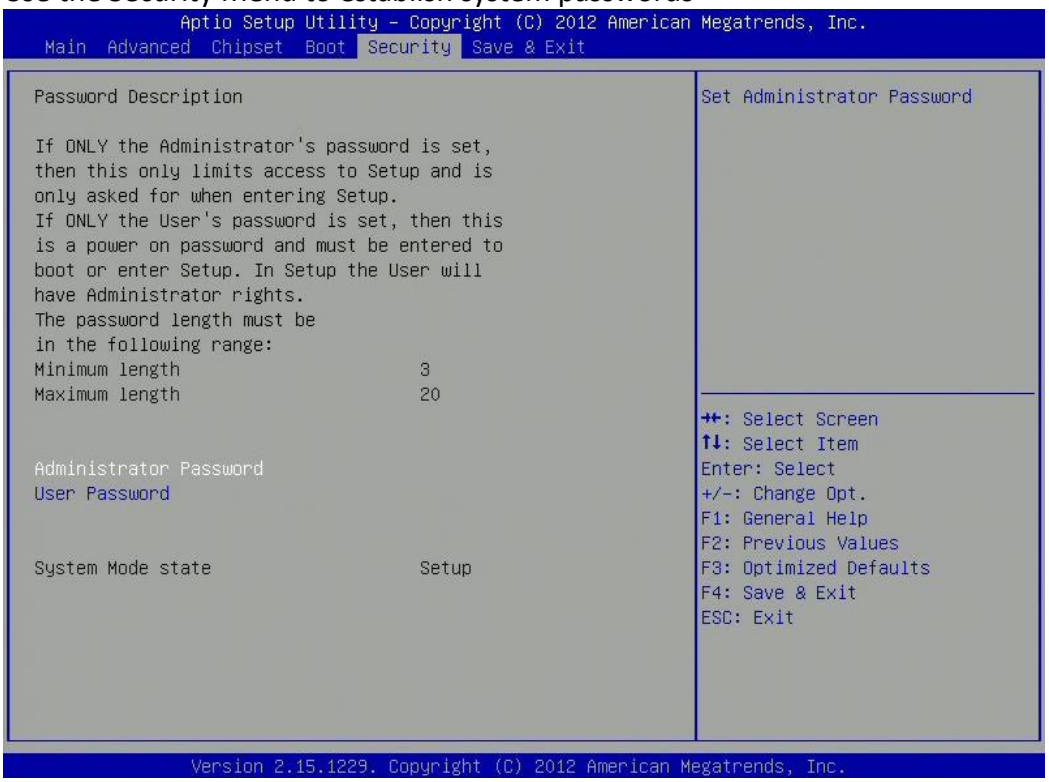


Launch PXE OpROM policy
Controls the execution of UEFI and Legacy PXE OpROM.

Launch Storage OpROM policy
Controls the execution of UEFI and legacy storage OpROM

3.7 Security

Use the Security Menu to establish system passwords



Administrator Password

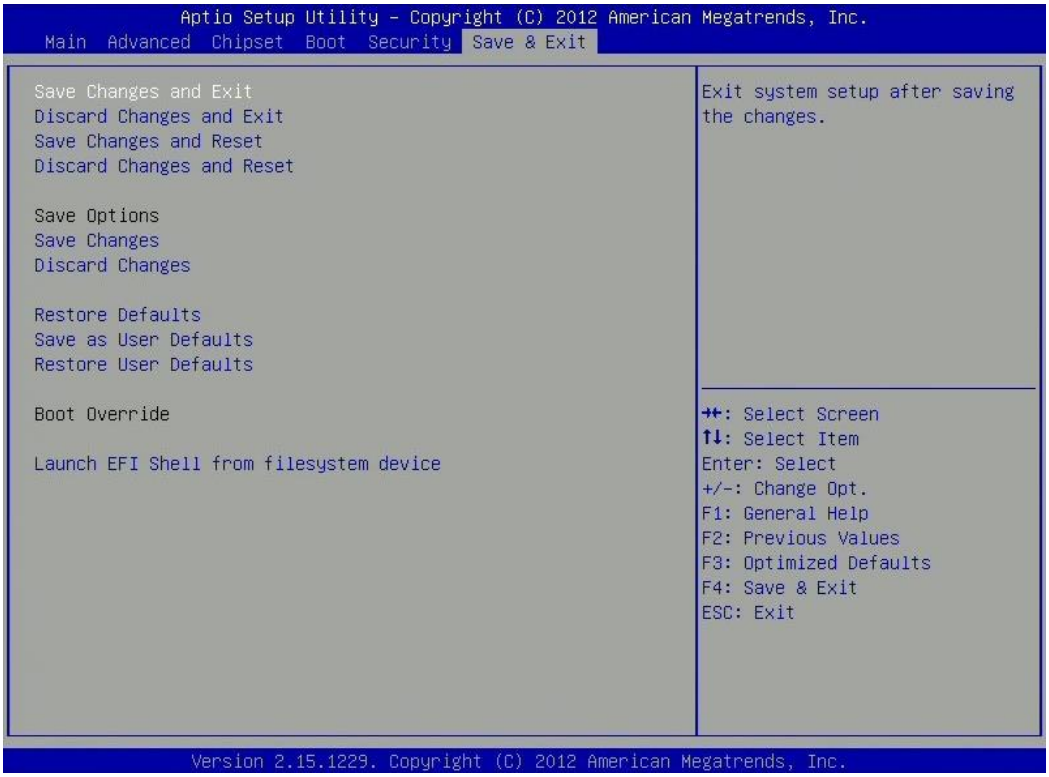
Set administrator password.

User Password

Set User Password.

3.8 Save and 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

Save Changes and Reset
Reset the system after saving the changes

Discard Changes and Reset
Reset system setup without saving any changes

Save Changes
Save changes done so far for any of the setup options

Discard Changes
Discard changes done so far to any of the setup options

Restore Defaults
Restore/Load default values for all the setup options

Save as User Defaults
Save the changes done so far as user defaults

Restore User Defaults
Restore the user defaults to all the setup options

Lauch EFI Shell from filesystem device
Attempts to Launch EFI shell application (Shellx64.efi) from one of the available filesystem devices