

# ELSKY I3HGP, I5HGP, I7HGP Motherboards User Manual

Updated: August 30, 2019

## The motherboard description:

1. The motherboard has 2COM,6COM pins to choose;
2. When the motherboard has 6\*COM pins, the motherboard will support GPIO pin.
3. The motherboard has single or dual Gigabit (1000Mbps) Ethernet RJ45 ports to choose.
4. The motherboard has integrated 2GB memory or replaceable memory to choose.

I3HGP Motherboard Series							
Motherboard Model	Optional Intel Core CPU	LAN ( RJ45 )	COM	USB	Memory ( MAX )	DC Power	GPIO
I3HGP-2C	I3-3217U I3-3227U	1	2	8	8GB	+12V	0
I3HGP-6C		1	6	8			1
I3HGP-2L2C		2	2	6			0
I3HGP-2L6C		2	6	6	1		
I3HGP-2C-2G		1	2	8	10GB		0
I3HGP-6C-2G		1	6	8			1

I5HGP Motherboard Series							
Motherboard Model	Optional Intel Core CPU	LAN ( RJ45 )	COM	USB	Memory ( MAX )	DC Power	GPIO
I5HGP-2C	I5-3317U I5-3337U I5-3437U	1	2	8	8GB	+12V	0
I5HGP-6C		1	6	8			1
I5HGP-2L2C		2	2	6			0
I5HGP-2L6C		2	6	6	1		
I5HGP-2C-2G		1	2	8	10GB		0
I5HGP-6C-2G		1	6	8			1

I7HGP Motherboard Series							
Motherboard Model	Optional Intel Core CPU	LAN ( RJ45 )	COM	USB	Memory ( MAX )	DC Power	GPIO
I7HGP-2C	I7-3517U I7-3537U	1	2	8	8GB	+12V	0
I7HGP-6C		1	6	8			1
I7HGP-2L2C		2	2	6			0
I7HGP-2L6C		2	6	6	1		
I7HGP-2C-2G		1	2	8	10GB		0
I7HGP-6C-2G		1	6	8			1

The I3HGP, I5HGP, I7HGP motherboards support Intel processors(FCBGA1023 socket):							
Motherboard Model	Processor Model	Intel Brand	Cores	Processor Base Frequency (GHz)	Max. Turbo Frequency (GHz)	TDP (W)	CPU Graphics
I3HGP	I3-3217U	Core I3	2	1.8	/	17	Integrated Intel HD Graphics 4000 in CPU. (1080P,2K resolution,FHD)
	I3-3227U			1.9	/		
I5HGP	I5-3317U	Core i5		1.7	2.6		
	I5-3337U			1.8	2.7		
	I5-3437U			1.9	2.9		
I7HGP	I7-3517U	Core i7		1.9	3.0		
	I7-3537U		2.0	3.1			



**Notice:**

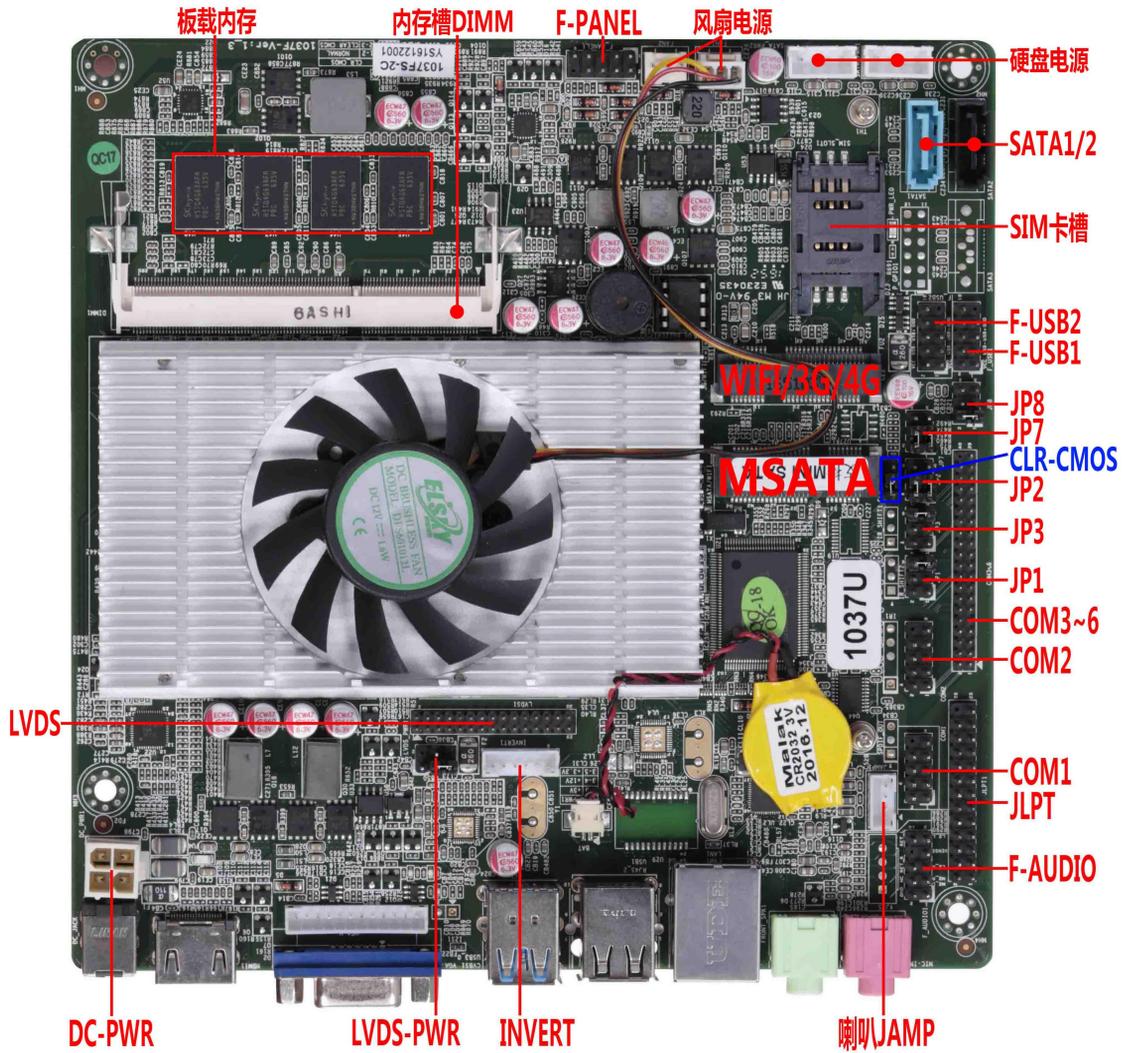
1. Changing the number of network ports will only affect the number of USB2.0 and will not affect others.
2. By default, when the motherboard has single network port,it will only has 8\*USB.  
If you want to use 3G/4G or 2-in-1 Bluetooth WIFI module, the motherboard will only support 7\*USB.
3. By default, when the motherboard has dual network ports,it will only has 6\*USB.  
If you want to use 3G/4G or 2-in-1 Bluetooth WIFI module, the motherboard will only support 5\*USB.

Changes in the number of USB		
LAN	USB	Use module(3G,4G,WIFI&Bluetooth,etc) or not
1	8	Not use
1	7	Use
2	6	Not use
2	5	Use

## Chapter One The Motherboard Specifications

Form Factor	Standard Mini-ITX ,170*170*18mm(L*W*H)	
Intel CPU	Support 3th generation Core I3/I5/I7 CPU: I3-3217U,I5-3317U,I7-3517U,etc.	
Chipset	HM65/HM67/HM70/HM76 express Chipset.	
Memory	1*DDR3 SODIMM 1333/1600MHz memory channel supports Max 8GB RAM.	
Power Supply	1*DC_JACK	Support DC 12V ; Recommended to use 12V 5A or above.
	1*DC_PWR	The motherboard power consumption is about 30W.
Display	Intel HD Graphics 4000 in CPU;Support single display, dual display copy, dual display expansion,single display under DOS.	
	1*VGA DB15 interface	Support Max resolution 1920*1200@60HZ
	1*HDMI 1.4 interface	Support Max resolution 1920*1080@60HZ (1080P,2K resolution,FHD)
	1*LVDS pin	Support Max resolution 1920*1080@60HZ(1080P,2K resolution,FHD) ( 2*15Pin , 2.0mm )
	1*VGA_OUT pin	Support Max resolution 1920*1200@60HZ ( 1*12Pin , 2.0mm )
Ethernet	1* Realtek8111E Gigabit NIC chip supports Wake-on-LAN,PXE function. <b>Other options:</b> dual Ethernet ports.	
Hard Disk	1*SATA1 interface	Standard SATA3.0 hard disk interface,Max transmission speed 6.0Gbps.
	1*SATA2 interface	Standard SATA2.0 hard disk interface,Max transmission speed 3.0Gbps.
	1*MSATA interface	Support MSATA hard disk.
	2*SATA_PWR pins	Can take 5V ,12V from hard disk power supply pin. ( 1*4Pin , 2.54mm )
Sound	Integrated Realtek ALC662 HD digital audio decoder,6-channel high-fidelity audio controller.	
	1*FRONT_SPK port	Support audio output (Green color)
	1*MIC_IN interface	Support microphone input (Pink color)
	1*JAMP pin	The amplifier supports 8Ω 5W speaker and two channels of output. ( 1*4Pin , 2.0mm )
	1*F_AUDIO pin	Standard audio pin ( 2*5Pin , 2.54mm )
USB	2*USB3.0 interfaces	Rear standard USB3.0 interfaces; <b>Notice:When the motherboard uses the HM65/HM67 chipset, the speed of the two USB3.0 ports becomes the speed of USB2.0</b>
	2*USB2.0 interfaces	Rear standard USB2.0 interfaces.
	1*FUSB1 pin	Front USB2.0 pin,one group has 2*USB2.0 pins. ( 2*5Pin , 2.54mm )
	1*FUSB2 pin	Front USB2.0 pin,one group has 2*USB2.0 pins. ( 2*5Pin , 2.54mm )
Switch	1*F_PANEL pin	Switch, power supply light, hard disk light, restart pin. (2*5Pin , 2.54mm)
Other I/O	COM pins	They are serial ports.The motherboard has 2*COM or 6*COM pins to choose; The COM pins support standard RS232 signal.
	1*LPT pin	It is parallel port. The motherboard has standard LPT pin for printer. ( 2*13 , 2.54mm )
	1*MINI_PCIE interface	Support WIFI/3G/4G module.
	1*SIM card slot	Support SIM card. A SIM card is required when using 3G/4G function.
	1*CLR_CMOS pin	Motherboard clears,discharges pin. ( 1*2Pin , 2.54mm )
	1*BAT socket	Battery socket ( 1*2Pin , 2.0mm )
	1*FAN1 pin	Fan pin ( 1*3Pin , 2.54mm )
	1*FAN2 pin	Fan pin ( 1*3Pin , 2.54mm )
Operating Environment	Operating temperature : -20°C~60°C ; Working humidity : 5%~95% Relative humidity, no condensation.	
BIOS	AMI BIOS supports power on,timing switch,remote switch,intelligently identify devices.	
Watch Dog	Watchdog programming supports hardware reset function (256 levels, 0~255 seconds).	
Operating System	Support Windows 10 , Windows 8.1 , Windows 7 , Windows XP , Ubuntu 14.04 , Ubuntu 16.04,etc.	

## 1.1 The motherboard pictures:



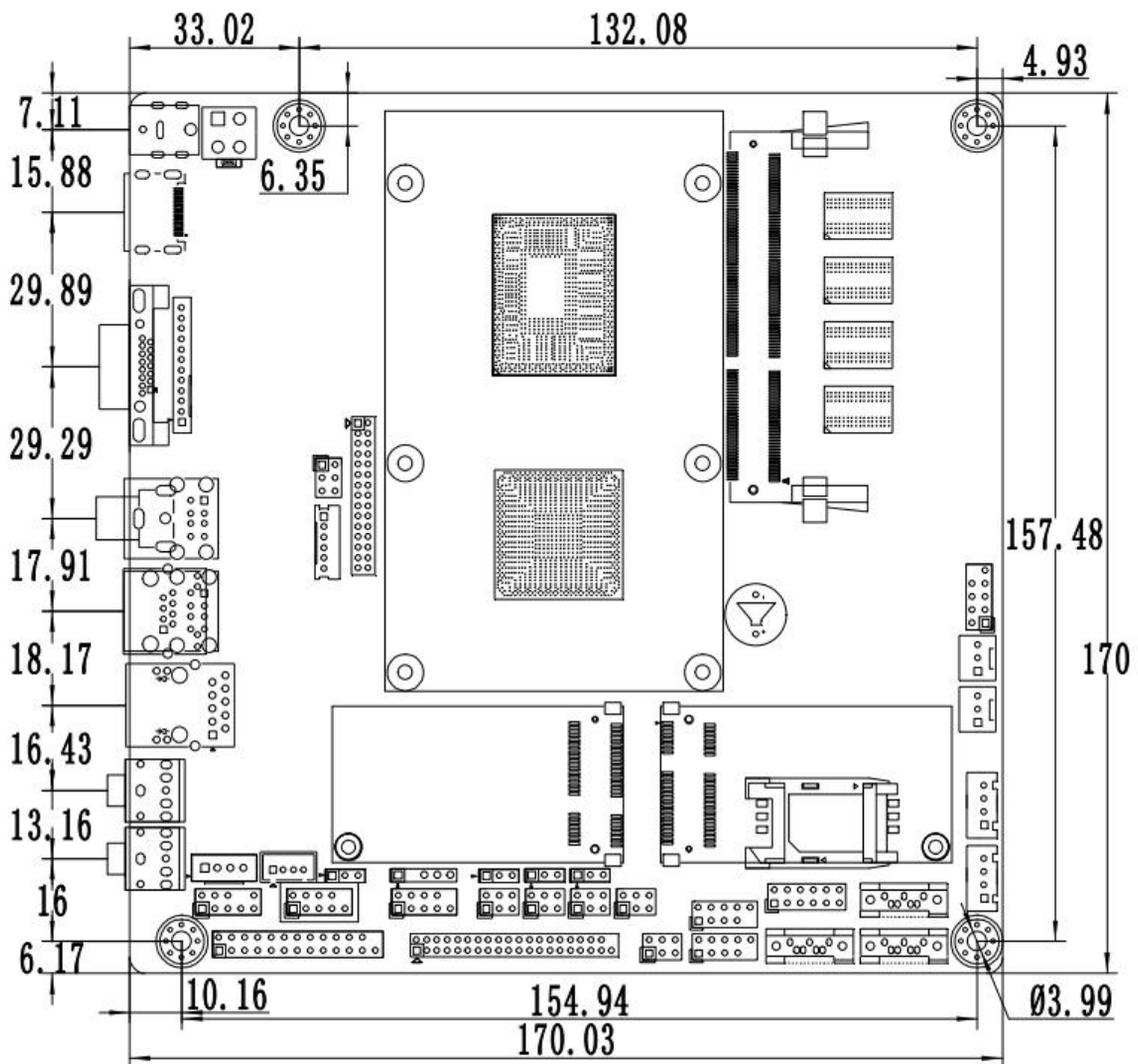
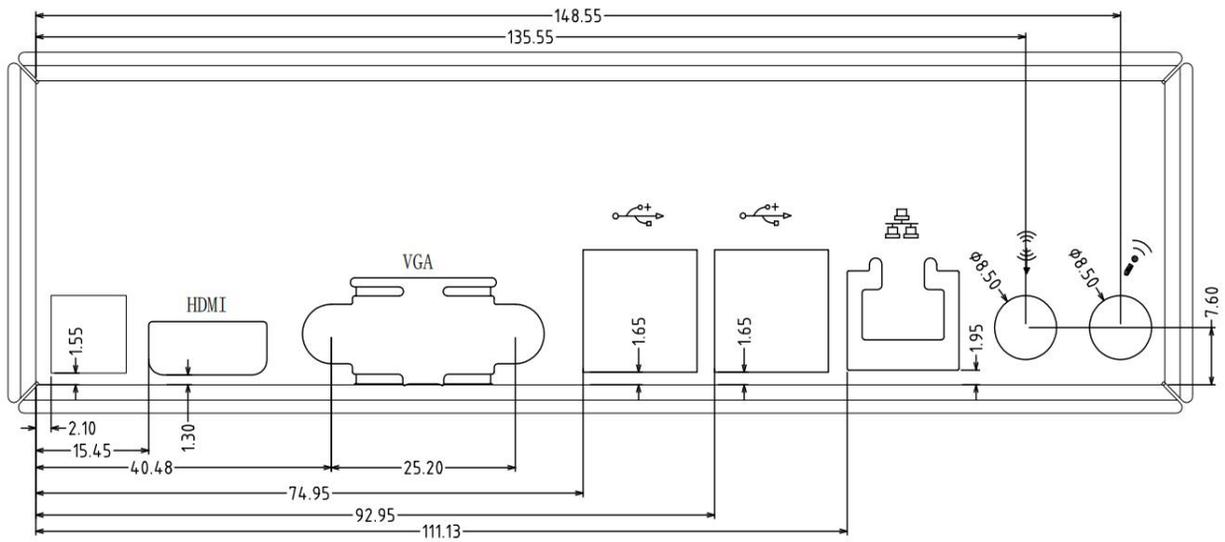
### 1\*LAN:



### 2\*LAN:



## 1.2 Motherboard drawing:



## Chapter two The Motherboard pin definition and description

### 2.0 Display output interface and pin definition:

#### 2.1 VGA pin definition:

Position symbol : VGA_H (1*12Pin , 2.0mm)			
pin	definition	pin	definition
1	GND	2	VSYNC
3	HSYNC	4	GND
5	RED	6	GND
7	GRN	8	GND
9	BLUE	10	GND
11	DDC_DATA	12	DDC_CLK

 **Note:** The **VGA\_H** pin signal is the same signal as the rear VGA interface. Only support dual display copy function.  
When using the dual display copy function, the display brightness will decrease.

#### 2.2 LVDS pin definition:

Position symbol : LVDS (2*15Pin , 2.0mm)			
pin	definition	pin	definition
1	VCC	2	VCC
3	VCC	4	GND
5	GND	6	GND
7	ADO0-	8	ADO0+
9	ADO1-	10	ADO1+
11	ADO2-	12	ADO2+
13	GND	14	GND
15	ACLK-	16	ACLK+
17	ADO3-	18	ADO3+
19	BDO0-	20	BDO0+
21	BDO1-	22	BDO1+
23	BDO2-	24	BDO2+
25	GND	26	GND
27	BCLK-	28	BCLK+
29	BDO3-	30	BDO3+

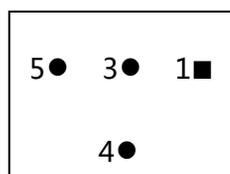
 **Note:** When inserting the LVDS cable, the first stitch of the LVDS cable must correspond to the first pin of the motherboard pin. If the plug is reversed or inserted incorrectly, there is a danger of burning the screen and burning the motherboard!

## 2.2.1 Backlight power supply definition:

Position symbol : INVERT ( 1*6Pin , 2.0mm )	
pin	definition
1	+12V
2	+12V
3	ON/OFF (Backlight switch)
4	ADJ (Backlight brightness adjustment)
5	GND
6	GND

## 2.2.2 Screen operating voltage:

Position symbol : LVDS_PWR ( 2*3Pin , 2.54mm )	
pin	definition
1-3 short circuit	+5V
3-5 short circuit	+3.3V
3-4 short circuit	+12V



 **Note:** Screens of different sizes require different operating voltages. The motherboard provides three screen operating voltages of 3.3V, 5V and 12V. Please set the corresponding value of **LVDS\_PWR** according to the working voltage required by the screen, otherwise there will be danger of burning the screen and burning the motherboard!

## 2.3 Serial port(COM) function and pin definition:

The 2\*COM,6\*COM pins support standard RS232 signal.

The 9th pin of COM1/COM2 can change the jumper setting to output +5V or +12V voltage by JP1/JP3.

Position symbol : JP1 ( 2*3Pin , 2.54mm )	
pin	The 9th pin of COM1 is charged
1-2 short circuit	+5V
3-4 short circuit	+12V
5-6 short circuit	Without electricity

Position symbol : JP3 ( 2*3Pin , 2.54mm )	
pin	The 9th pin of COM2 is charged
1-2 short circuit	+5V
3-4 short circuit	+12V
5-6 short circuit	Without electricity

### COM1/COM2 pin definition:

Position symbol : COM1/2 ( 2*5Pin , 2.54mm )			
pin	definition	pin	definition
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	NC

### COM3~COM6 pins definition:

Position symbol : COM3~6 ( 2*20Pin , 2.0mm )			
pin	definition	pin	definition
1	COM3_DCD	2	COM3_RXD
3	COM3_TXD	4	COM3_DTR
5	GND	6	COM3_DSR
7	COM3_RTS	8	COM3_CTS
9	COM3-RI	10	NC
11	COM4_DCD	12	COM4_RXD
13	COM4_TXD	14	COM4_DTR
15	GND	16	COM4_DSR
17	COM4_RTS	18	COM4_CTS
19	COM4-RI	20	NC
21	COM5_DCD	22	COM5_RXD
23	COM5_TXD	24	COM5_DTR
25	GND	26	COM5_DSR
27	COM5_RTS	28	COM5_CTS
29	COM5-RI	30	NC
31	COM6_DCD	32	COM6_RXD
33	COM6_TXD	34	COM6_DTR
35	GND	36	COM6_DSR
37	COM6_RTS	38	COM6_CTS
39	COM6-RI	40	NC

### 2.4 Parallel port(LPT) pin definition:

Position symbol : JLPT ( 2*13Pin , 2.0mm )			
pin	definition	pin	definition
1	STB	2	AFD
3	PD0	4	ERR
5	PD1	6	INIT
7	PD2	8	SLIN
9	PD3	10	GND
11	PD4	12	GND
13	PD5	14	GND
15	PD6	16	GND
17	PD7	18	GND
19	ACK	20	GND
21	BUSY	22	GND
23	PE	24	GND
25	SLCT	26	NC

## 2.5 USB pin definition:

Position symbol : F_USB1/2 ( 2*5Pin , 2.54mm )			
pin	definition	pin	definition
1	VCC+5V	2	VCC+5V
3	DATA0-	4	DATA1-
5	DATA0+	6	DATA1+
7	GND	8	GND
9	NC	10	GND

## 2.6 Audio interface and pin definition:

Position symbol : F_AUDIO ( 2*5Pin , 2.54mm )			
pin	definition	pin	definition
1	MIC-L	2	GND
3	MIC-R	4	NC
5	LINE OUT-R	6	RET_R
7	SENSE	8	NC
9	LINE OUT-L	10	RET_L

## 2.7 Speaker(Power Amplifier) pin definition:

Position symbol : JAMP ( 1*4Pin , 2.0mm )	
pin	definition
1	L+
2	L-
3	R-
4	R+

## 2.8 GPIO pin definition:

Position symbol : J_GPIO ( 2*5Pin , 2.0mm )			
pin	definition	pin	definition
1	GPIO_IN0	2	GPIO_OUT0
3	GPIO_IN1	4	GPIO_OUT1
5	GPIO_IN2	6	GPIO_OUT2
7	GPIO_IN3	8	GPIO_OUT3
9	+5V	10	GND
11	+3.3V	12	GND

## 2.9 Power supply and switch pin definition:

The motherboard provides a standard 5.5\*2.5mm DC header (DC\_JACK),1\*4Pin ATX power supply interface.

### 4Pin ATX power supply port definition:

Position symbol : DC_PWR ( 2*2Pin )	
pin	definition
1	GND
2	GND
3	+12V
4	+12V

### Switch pin definition:

Position symbol : F_PANEL ( 2*5Pin , 2.54mm )					
pin	definition		pin	definition	
1	HDLED+	Hard disk indicator light	2	PWRLED+	Power indicator light
3	HDLED-		4	GND	
5	GND	Reset button	6	GND	Power switch control
7	RST		8	P_SW IN	
9	GND		10	NC	

#### (1) Hard disk indicator light:

The 1st and 3rd pins are HDDLED. The 1st pin is the positive side of the LED. When the hard disk is being read or written, the indicator light will flash, indicating that the hard disk is running.

#### (2) Power indicator light:

The 2nd and 4th pins are Power LED. The 2nd pin is the positive side of the LED. When the motherboard is powered on, the power indicator light is on. When the motherboard is powered off, the power indicator light is off.

#### (3) Reset button:

The 5th, 7th pins are Reset Button. When the system fails and cannot continue to work, the reset can restart the system.

#### (4) Power switch control:

The 6th, 8th pins are Power Button. Use these two pins to connect to the bounce switch on the front panel of the chassis to turn on or off the computer.

## 2.10 hard disk interface and definition:

### The motherboard has:

1\*SATA3.0 hard disk interface;

1\*SATA2.0 hard disk interface;

2\*4Pin hard disk power supply voltage interface;

1\*MSATA interface;

The SATA1 supports Max transmission speed 6.0Gbps.

The SATA2 supports Max transmission speed 3.0Gbps.

### SATA1/2 definition:

Position symbol : SATA1/2	
pin	definition
1	GND
2	SATA_TXP
3	SATA_TXN
4	GND
5	SATA_RXN
6	SATA_RXP
7	GND

### SATA\_PWR definition:

Position symbol : SATA_PWR1/2 ( 1*4Pin , 2.0mm )	
pin	definition
1	12V
2	GND
3	GND
4	5V



### Note:

The first pin of the **SATA\_PWR** hard disk power supply interface is 12V output, and the fourth pin is 5V output. When using, you must use the customized power cord from our company, to avoid burning the hard disk.

## 2.11 Fan interface definition:

Position symbol : FAN1/2 ( 1*3Pin , 2.54mm )	
pin	definition
1	GND
2	+12V
3	TAC(Fan speed detection)

## 2.12 Motherboard discharge clear and battery:

CMOS is powered by the button battery on the motherboard.

Clearing CMOS will cause the previous BIOS settings to be cleared and set to the original factory setting.

### Clearing CMOS procedures:

- (1) Turn off the motherboard and disconnect the power.
- (2) Using metal conductors to briefly connect the pin 2, pin 3 of **CLR\_CMOS** for 5~6 seconds.
- (3) When booting up, press "Delete" to enter the BIOS.
- (4) After entering the BIOS, press "F9" , "Enter" to reload the optimal default value.
- (5) Press the "F10" to save and exit the setting.

### CMOS pin definition:

Position symbol : CLR_CMOS ( 1*3Pin , 2.0mm )	
pin	Function
1-2 short circuit	Normal start
2-3 short circuit	Clear CMOS content, BIOS will restore factory settings.



### Note:

Please do not clear the **CMOS** when the motherboard is powered on or is charged, so as not to damage the motherboard.

### Button battery pin definition:

Position symbol : BAT ( 1*2Pin )	
pin	definition
1	positive electrode
2	negative electrode

### Button battery specification: **3V CR2032**



### Note:

- (1) Please make sure the battery is facing up.
- (2) Please make sure the battery voltage is enough 2.8V~3V.
- (3) Please must use the same model or the manufacturer recommend the same type of battery.
- (4) If the battery is not replaced correctly, there is a danger of explosion!

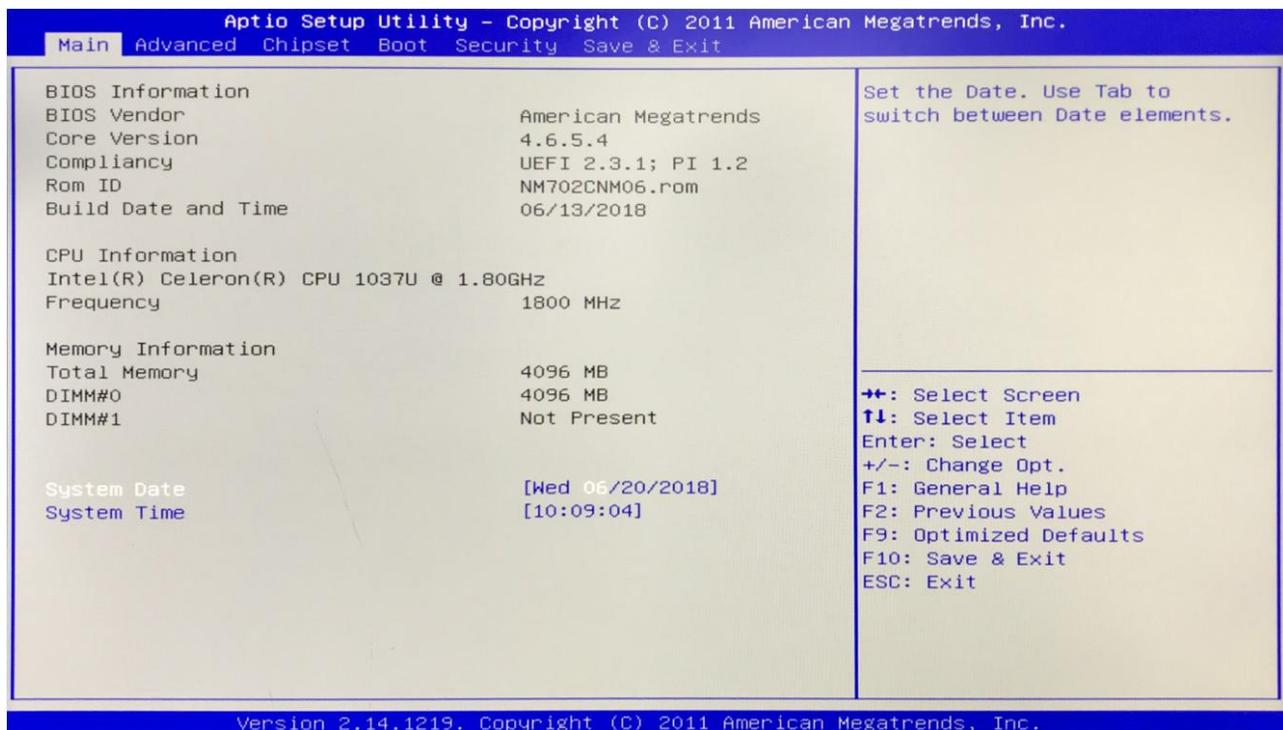
## Chapter three      BIOS Setup

### 3.0 How to enter the BIOS?

- ❖ Method 1: After booting, press “Delete” continuously to enter the BIOS directly.
- ❖ Method 2: Press “F11” continuously after booting, then select “Enter Setup” to enter the BIOS.

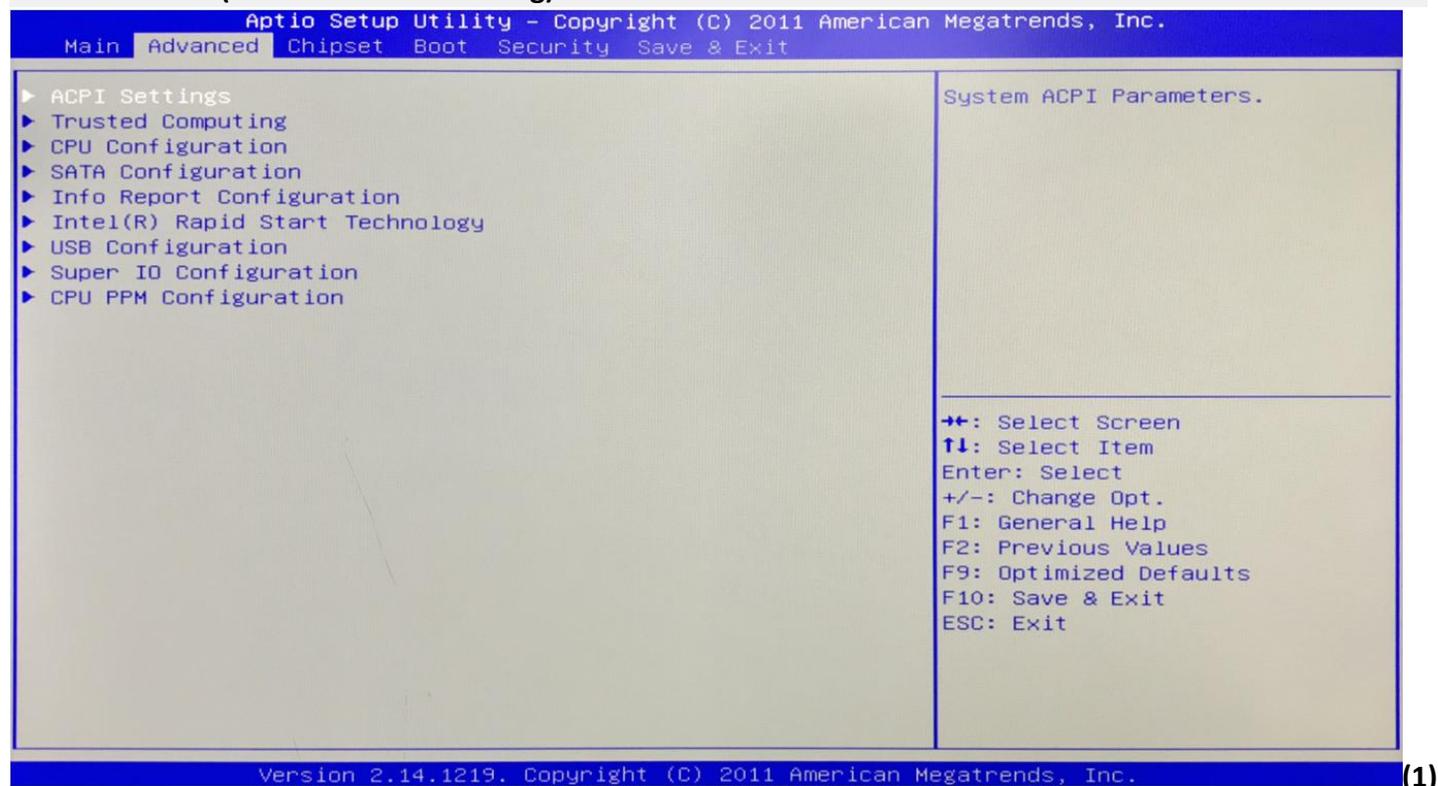
BIOS hot key	Function
When startup, press the “Delete” button	Enter “BIOS”
When startup, press the “F11” button	Select “Setup” , or select enter “BIOS” .
← →	Select Screen(Move the left and right arrows to select an entry).
↑ ↓	Select Item(Move the up and down arrows to select an entry).
Enter	Select(Select item and enter the submenu).
+/-	Change Opt.(Change selections,add or subtract values).
F1	General help(Show related help content).
F9	Optimized Defaults(Go back to the vendor's default settings).
F10	Save&Exit
Esc	Exit

### 3.1 Main Menu(BIOS information and date and time):



- (1)BIOS Vendor: American Megatrends
- (2)Core Version:
- (3)Build Date and Time: 06/13/2018
- (4)CPU Information:
- (5)Memory Information:
- (6)System Date: The format is week Month/day/year
- (7)System Time: The format is hour/minute/second

### 3.2 Advanced (Advanced Menu Setting):



(1) **ACPI Settings:** Advanced configuration and power management interface setting.

(2) **Trusted Computing:** Trusted computing module.

(3) **CPU Configuration:** CPU parameter information and common setup options.

(4) **SATA Configuration:** Hard disk mode settings and hard disk information.

(5) **Info Report Configuration:**

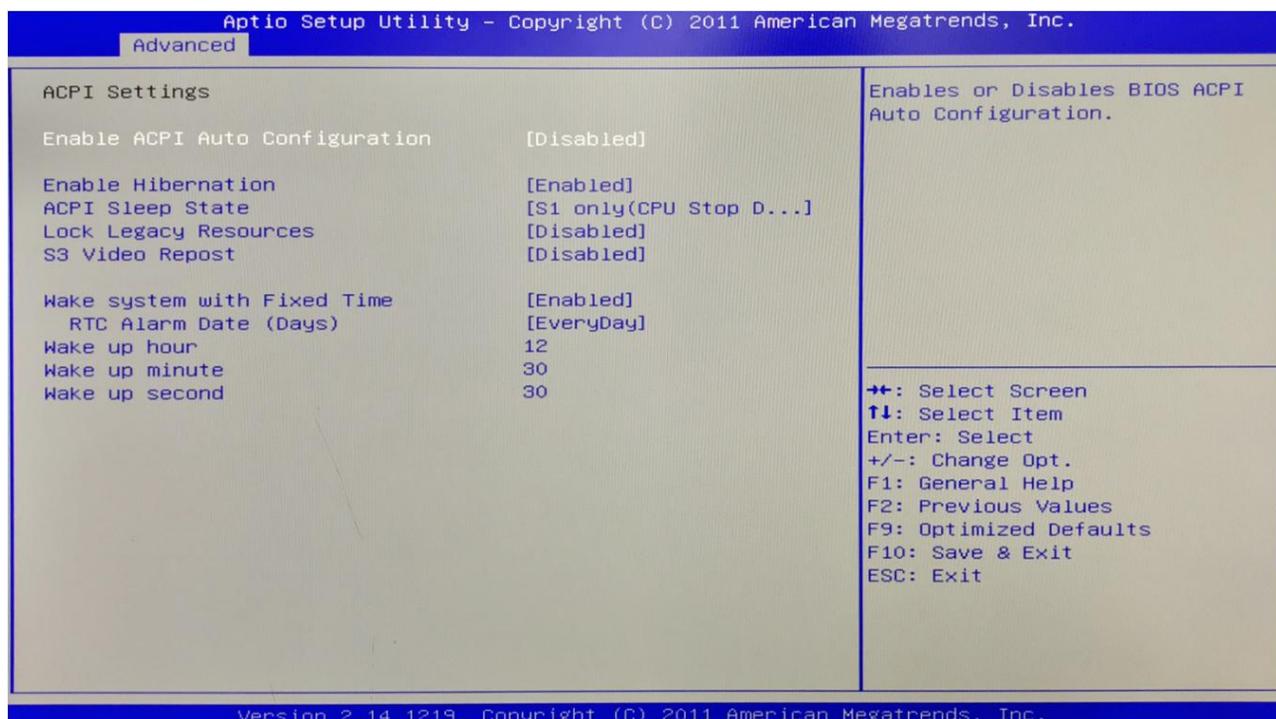
(6) **Intel (R) Rapid Start Technology:**

(7) **USB Configuration:** USB information and control options.

(8) **Super IO Configuration:**

(9) **CPU PPM Configuration:** CPU power supply management configuration.

### 3.2.1 ACPI Settings:



**(1)Enable ACPI Auto Configuration:** This item is ACPI automatically configured.It can “Enabled” or “Disabled” the ACPI auto configuration of the BIOS.

**(2)Enable Hibernation:** This item is hibernation support.It can “Enabled” or “Disabled” the system hibernation function(OS/S4 sleep state).However, this option does not work on some operating systems.

**(3)ACPI Sleep State:**This item is used to select the power saving mode when the system sleeps.The mode is different, the system power consumption will be different.

- ❖ **Suspend Disabled:** Turn off sleep mode.
- ❖ **S1(CPU Stop Clock):** The CPU stops working, but the other devices are still powered normally.
- ❖ **S3(Suspend to Ram):** Suspend to memory.

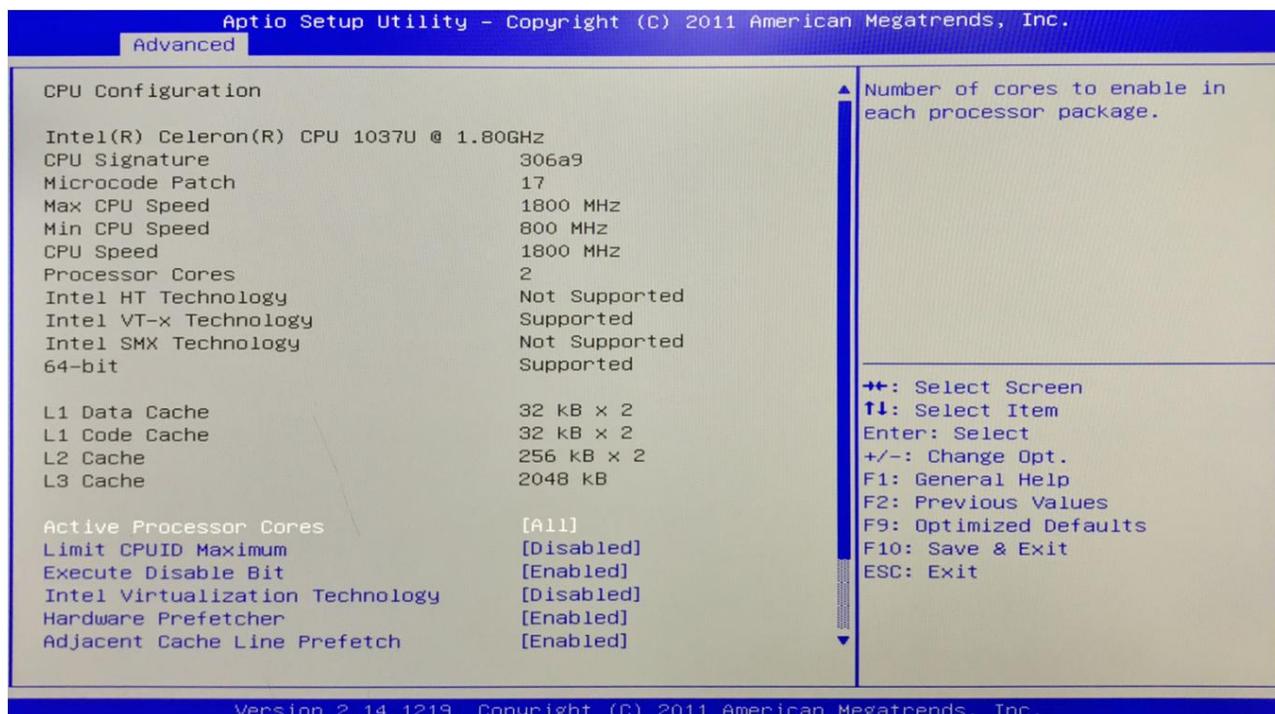
**(4)Lock Legacy Resources:** It can “Enabled” or “Disabled” legacy resources lock.

**(5)S3 Video Repost:** When the S3/STR sleep mode is awakened,BIOS post function of the VGA is turned on as well.

**(6)Wake system with Fixed Time:** It is timed boot setting.The “Disabled” is turn off;The “Enabled” is turn on.

- ❖ **RTC Alarm Date(Days):**
- ❖ **Wake up hour:**
- ❖ **Wake up minute:**
- ❖ **Wake up second:**

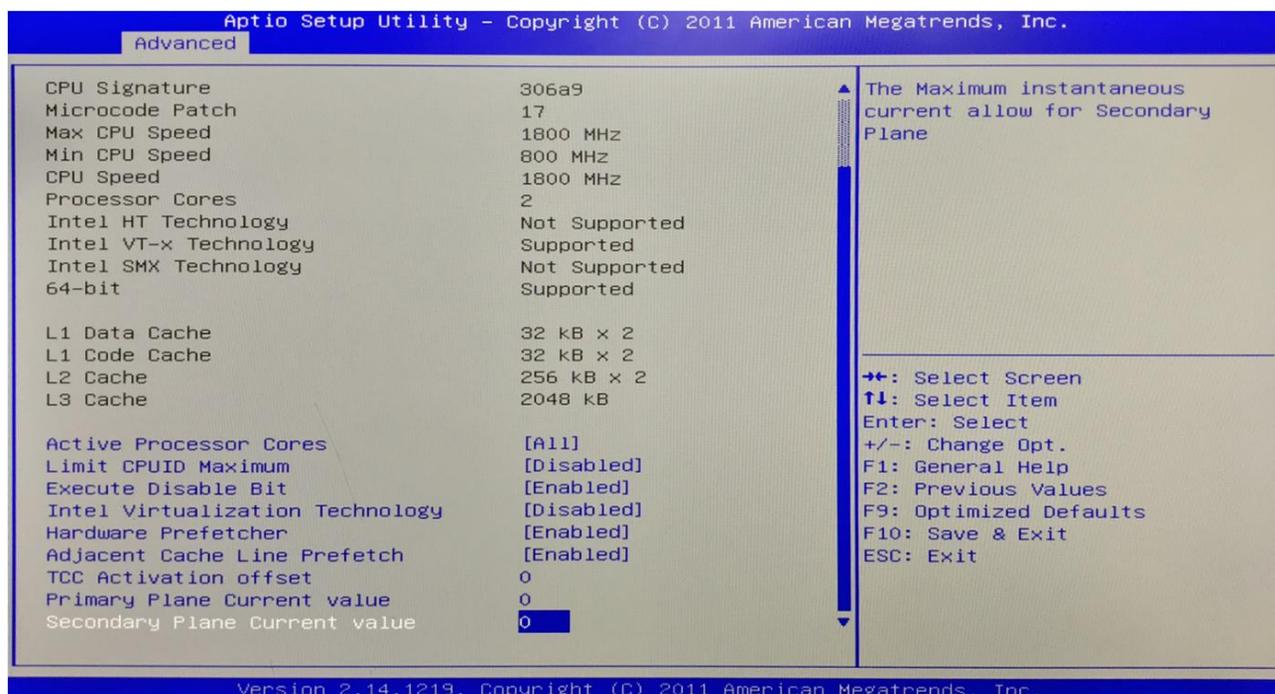
### 3.2.3 CPU Configuration:

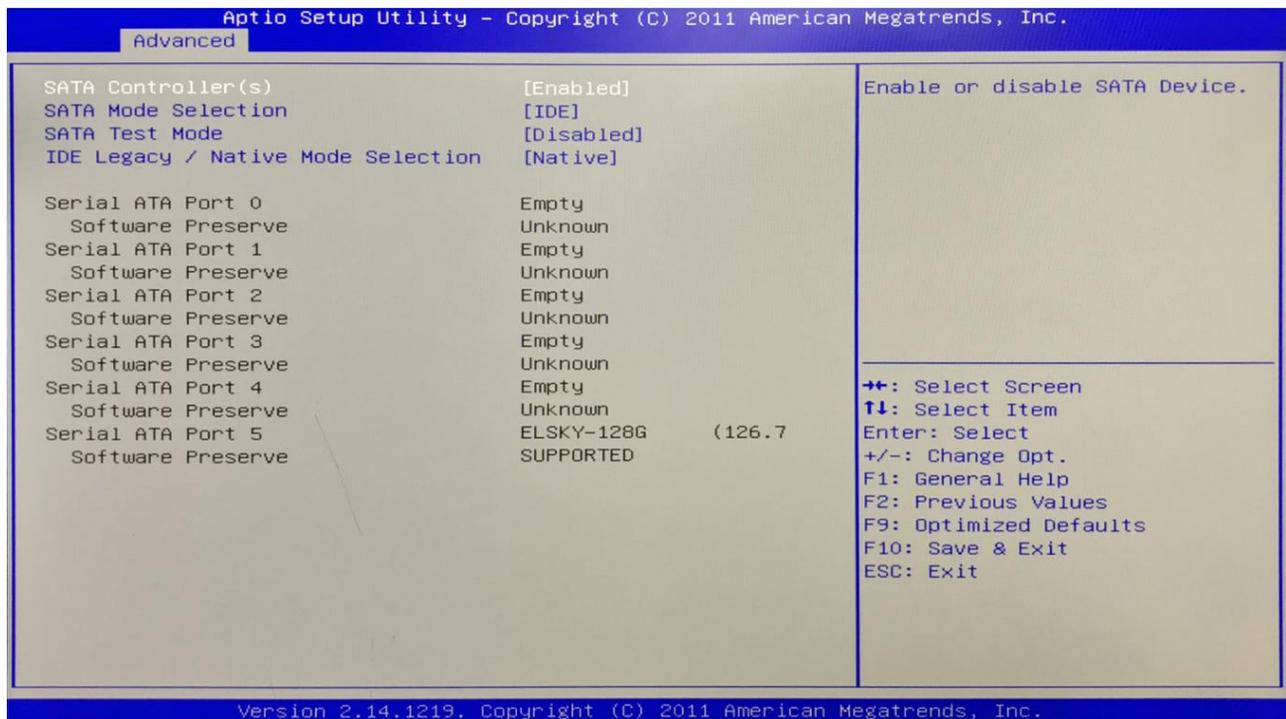


The read-only item contains the details of the CPU.

It specifically includes information such as CPU manufacturer,model,frequency,level 1 cache capacity,and level 2 cache capacity,etc.

### 3.2.4 SATA Configuration(Hard disk configuration):





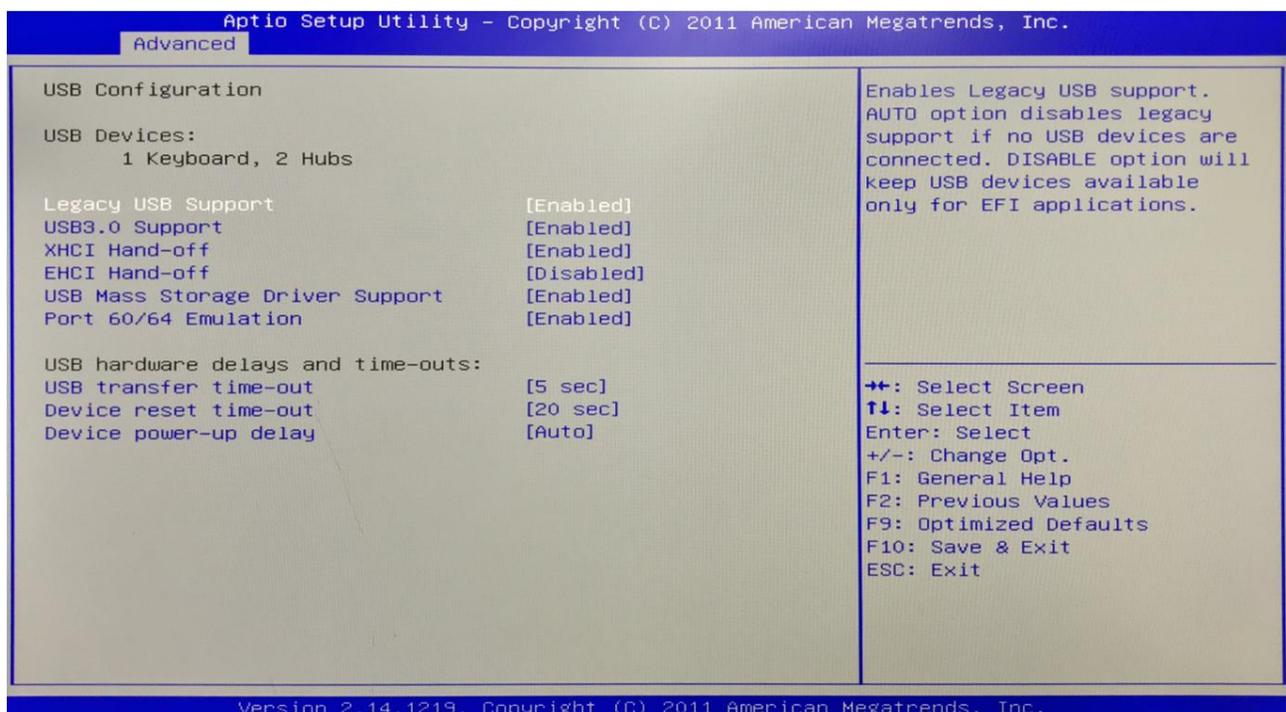
**(1)SATA Controller:**

**(2)SATA Mode Selection:** It is Hard disk mode setting.Its options are AHCI,IDE.

**(3)SATA Test Mode:** It is Hard disk test mode.

**(4)IDE Legacy / Native Mode Selection:**

### 3.2.5 USB Configuration:



**(1)Legacy USB Support:** This item is used for the settings of the old USB.

If you need to support USB device,U disk, USB keyboard under DOS,please set this item to "Enabled" or "Auto" ,otherwise select "Disabled" .

**(2)XHCI Hand-off:** Whether to enable the USB XCHI transport protocol.

**(3)EHCI Hand-off:** This option is used to determine whether to cut the USB hub into USB2.0 mode before entering the OS.

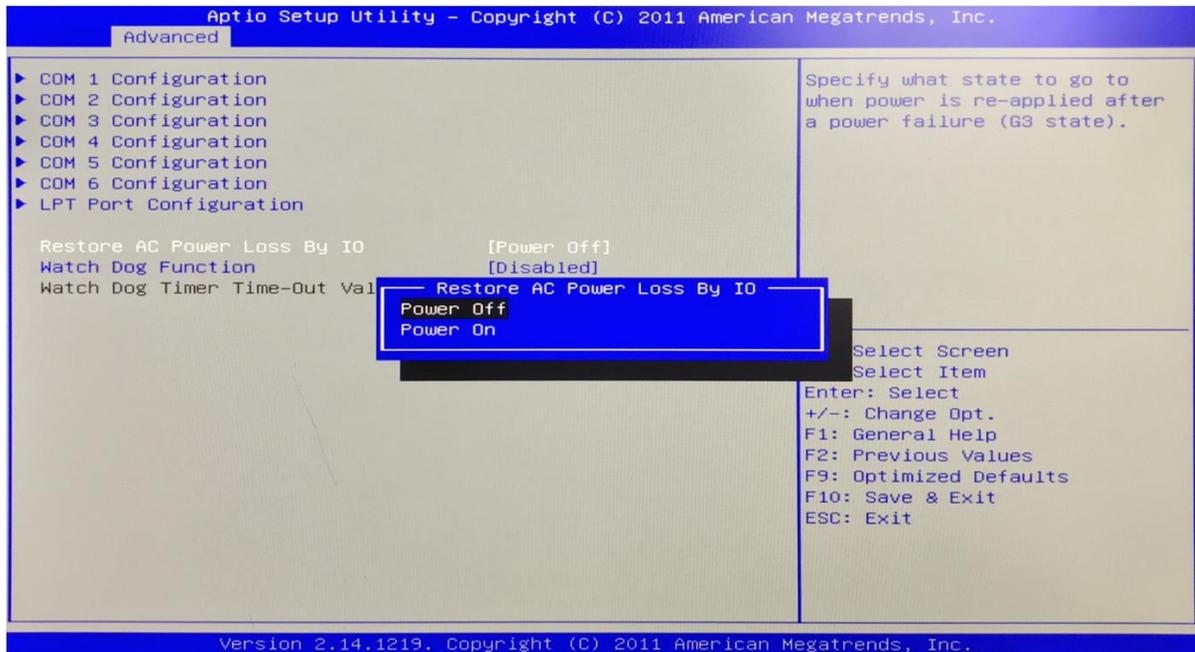
**(4)USB Mass Storage Driver Support:** This is a switch that supports USB mass storage devices.

**(5)USB Transfer time-out:** Set the time-out of the control, batch, and interrupt transmission. By default, the time is set to "5 sec" .

**(6) Device reset time-out:** Set the time-out of the large-capacity USB disk boot command. By default, the time is set to "20 sec" .

**(7) Device Power-up Delay:** Set the maximum delay time that the USB device reports to the primary controller.

### 3.2.6 Super IO Configuration:



It contains COM pin (Serial port),LPT port(Parallel port) configuration information and settings.

(1)COM 1 Configuration:

(2)COM 2 Configuration:

(3)COM 3 Configuration:

(4)COM 4 Configuration:

(5)COM 5 Configuration:

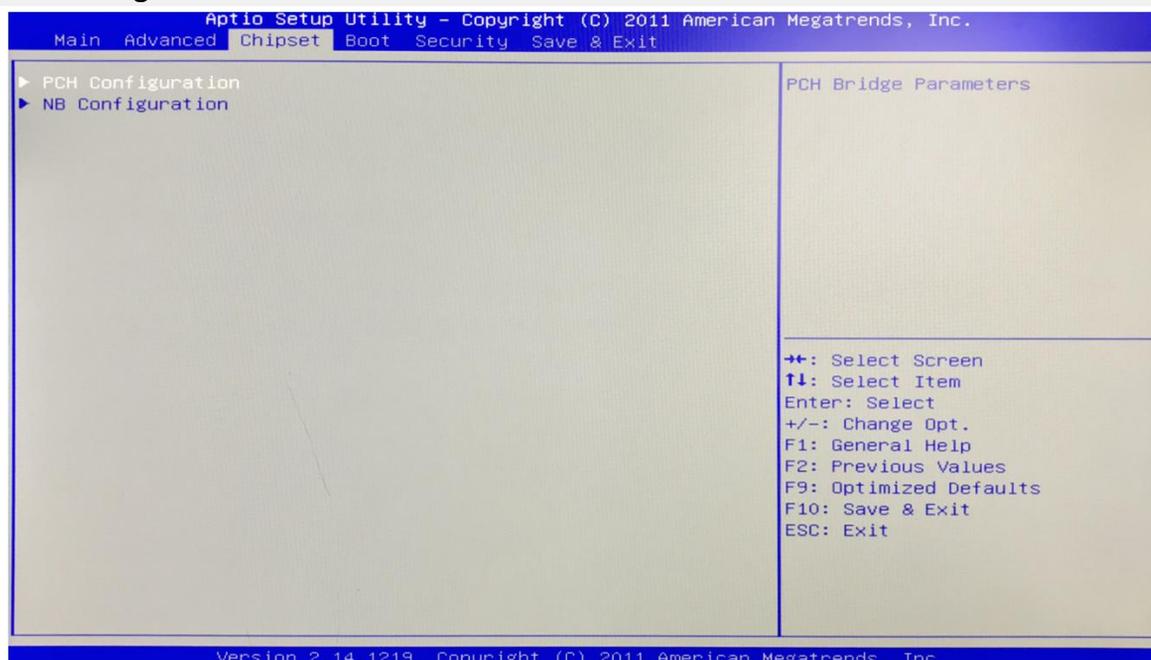
(6)COM 6 Configuration:

(7)LPT Port Configuration:

(8)Restore AC Power Loss By IO: It is the power on,power off switch in BIOS.

- ❖ **Power Off:** After the motherboard is powered,it won't automatically boot and you need to boot it manually.
- ❖ **Power On:** After the motherboard is powered,it will automatically boot and you don't need to boot it manually.

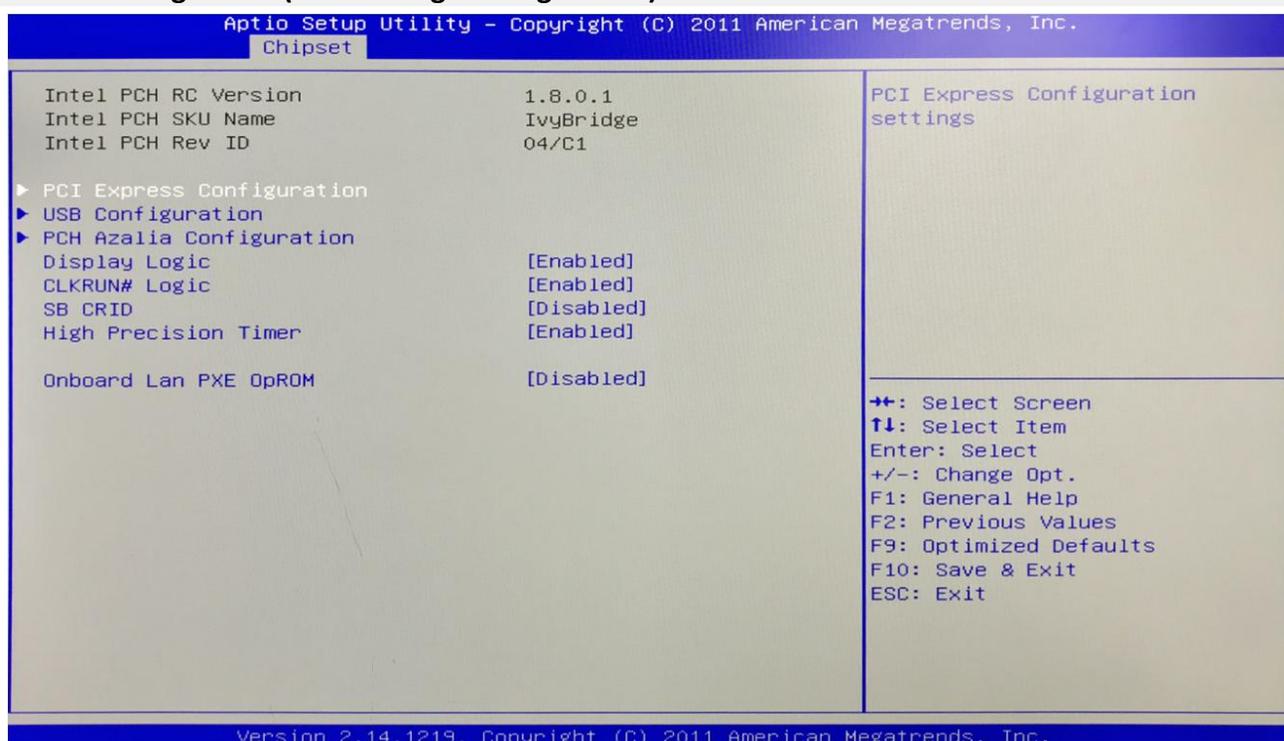
### 3.3 Chipset Setting:



**PCH Configuration:** It is South Bridge Configuration. It includes PCI-E,USB,PXE options.

**NB Configuration:** It is North Bridge Configuration.It includes video memory,display device options.

#### 3.3.1 PCH Configuration(South Bridge Configuration):



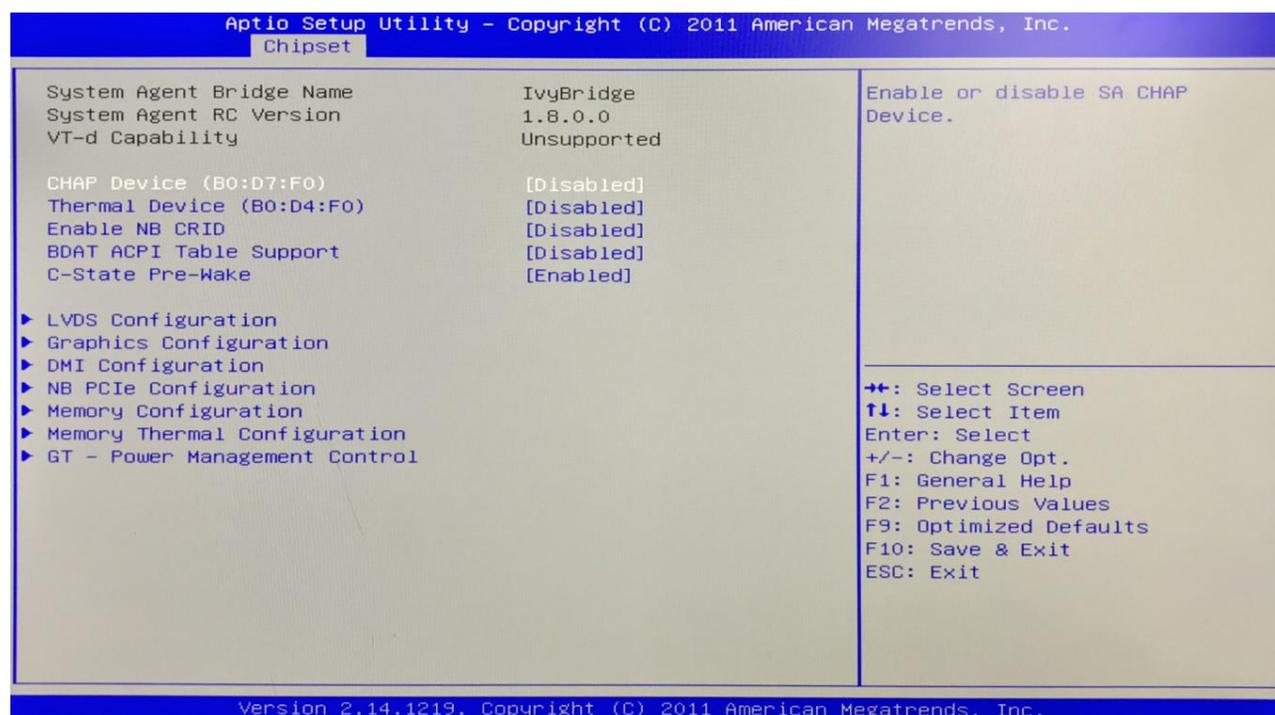
(1)PCI Express Configuration: This item is PCIE setting.

(2)USB configuration: This item is USB setting.

(3)PCH Azalia Configuration: This item is PCH Sound card setting.

(4)Onboard Lan PXE OpROM: This item is the network PXE switch(Diskless start).The "Disabled" is turn off;  
The "Enabled" is turn on.

### 3.3.2 NB Configuration(North Bridge Setting):



(1)LVDS Configuration: This is LVDS output option settings.

(2)Graphics Configuration:

(3)DMI Configuration:

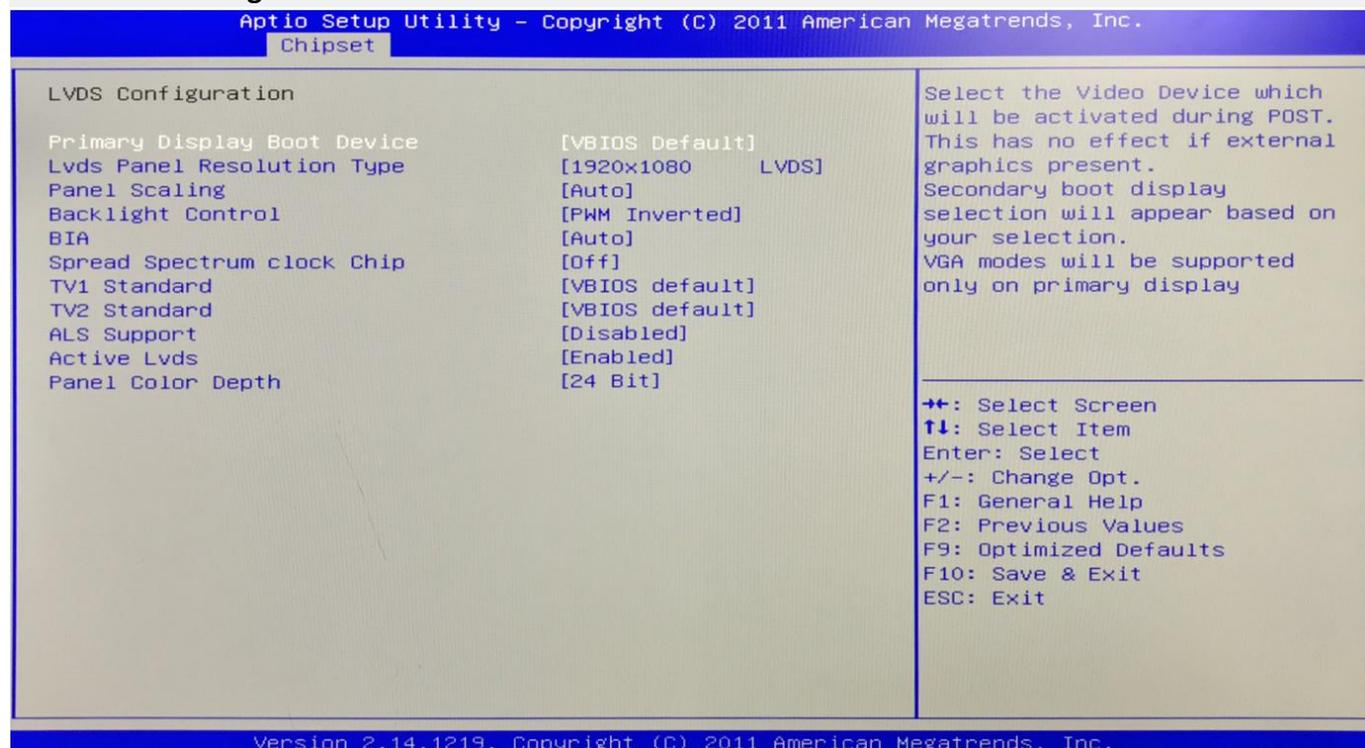
(4)NB PCIe Configuration: This is North Bridge PCIe device configuration.

(5)Memory Configuration:

(6)Memory Thermal Configuration: Memory heat dissipation management.

(7)GT-Power Management Control:

### 3.3.3 LVDS Configuration:



**(1)Primary Display Boot Device:** This is the guide of the first display device.The **VBIOS default** is automatically recognized.You can also set it to VGA/ HDMI / LVDS.

**(2)LVDS Panel Resolution Type:** This is the LVDS resolution setting.It only works for LVDS.

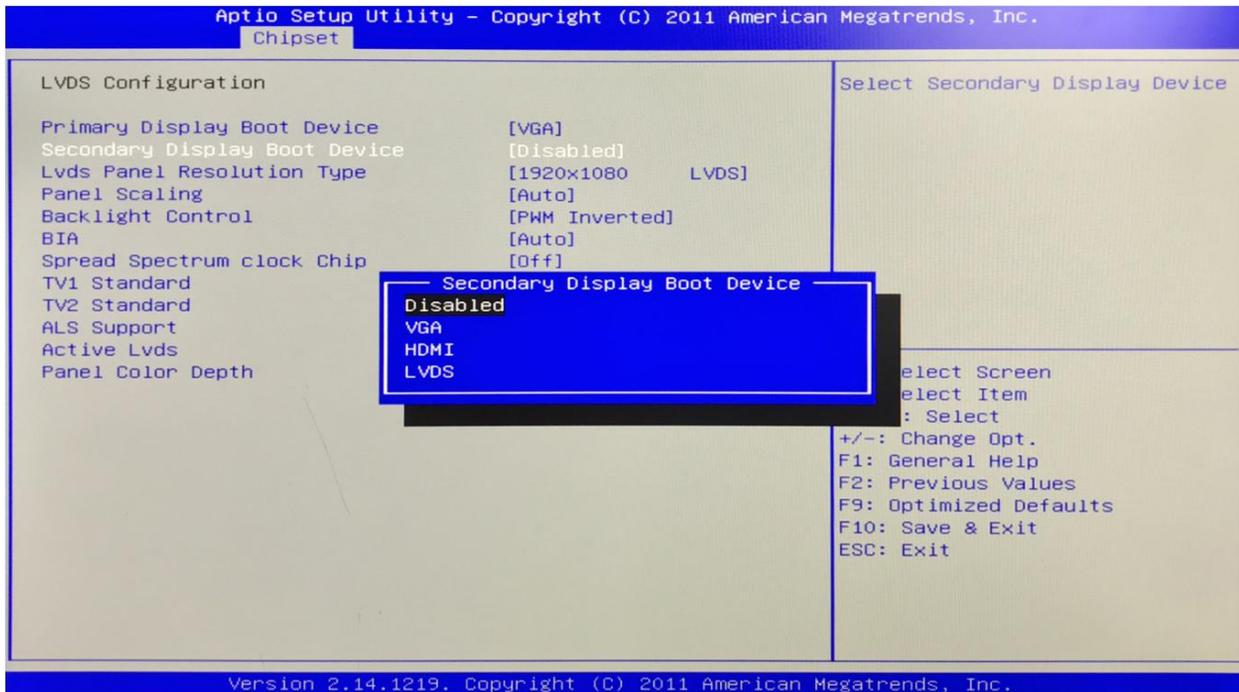
**(3)Backlight Control:** This is the backlight control option.

❖ The “PWM-Inverted” is the inverse duty cycle.

❖ The “PWM-Normal” is the normal duty cycle.

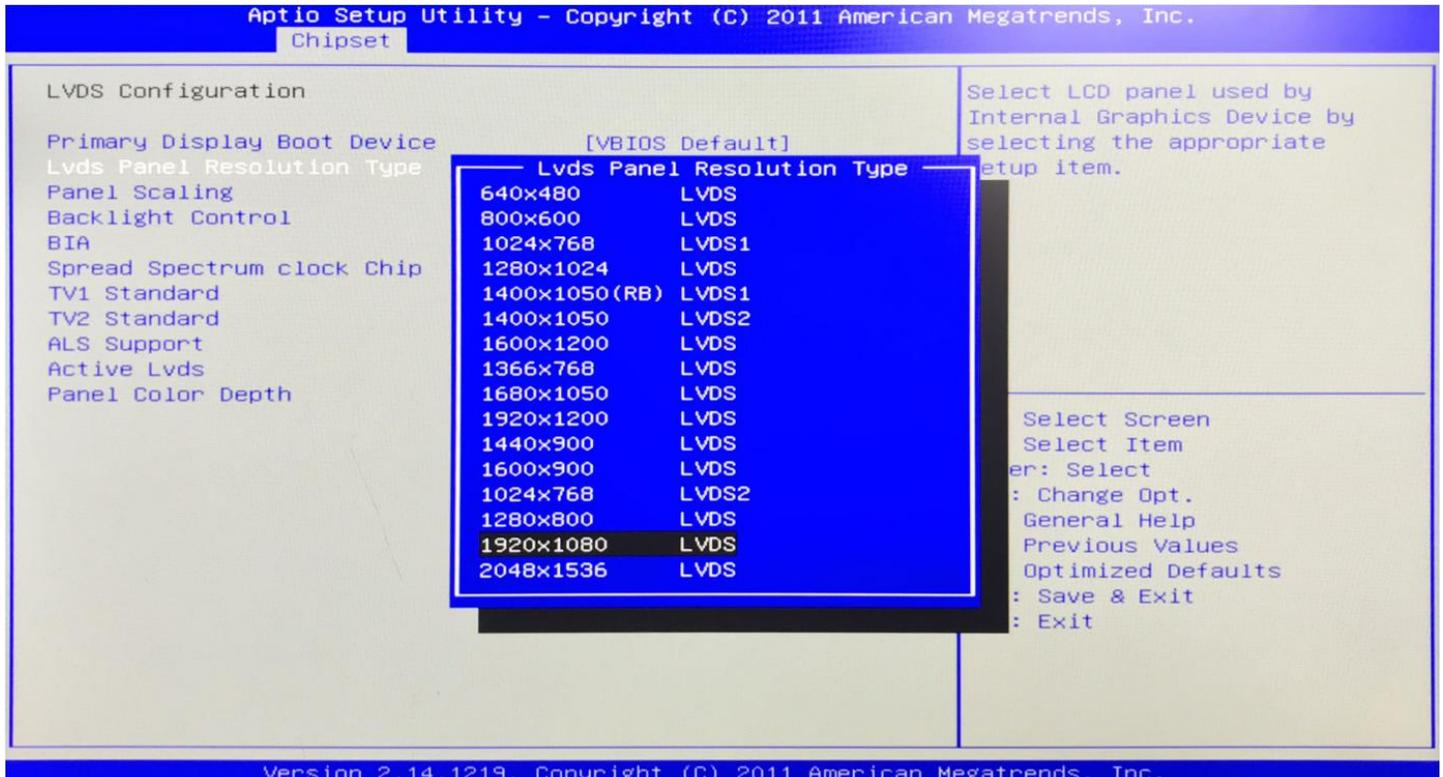
**(4)Active LVDS:** This is the LVDS switch. The “Disabled” is turn off; The “Enabled” is turn on.

**(5)Panel Color Depth:** It has 18 bit and 24 bit options(According to the corresponding number of bits on the screen).

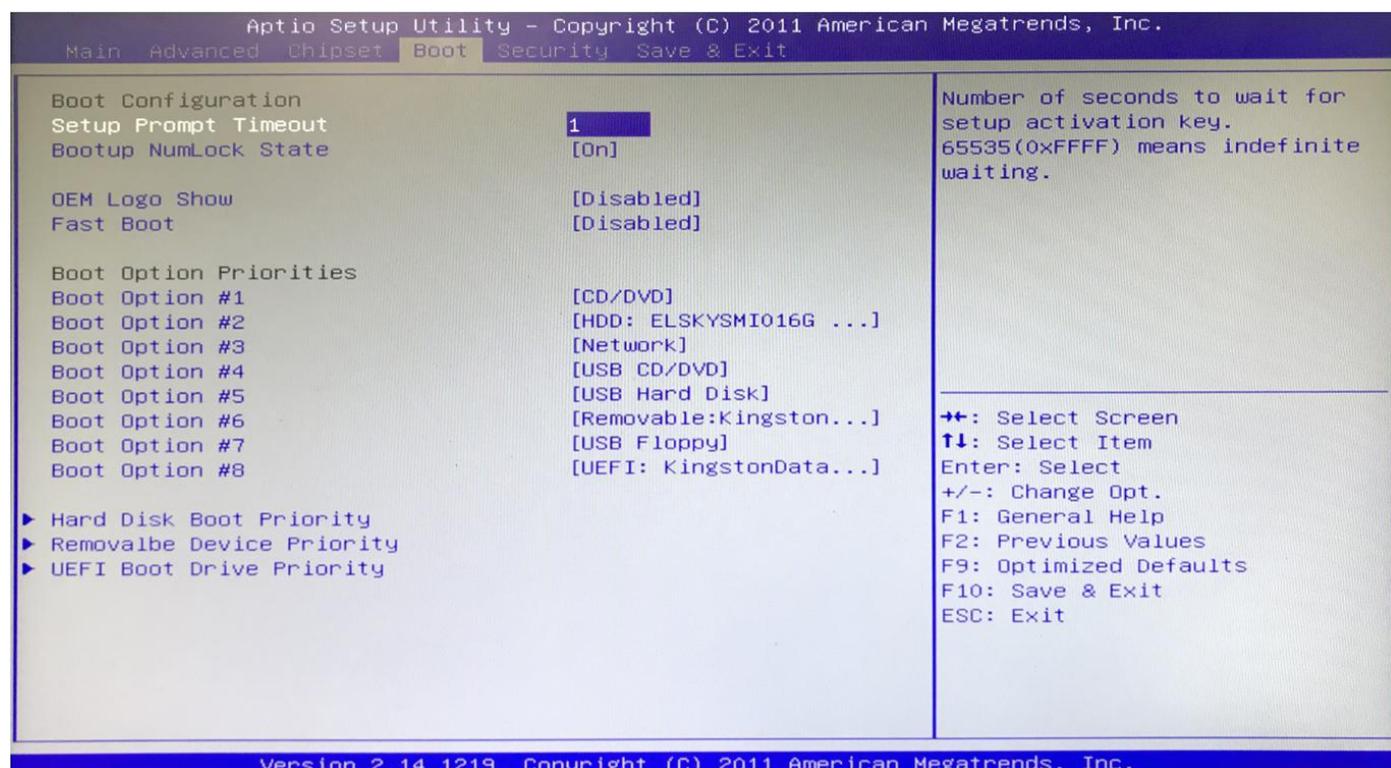


If the primary display boot device is VGA/HDMI/LVDS, the secondary display boot Device will be added. Please select the corresponding device.

### 3.3.4 LVDS Resolution list:



### 3.4 Boot Setting:



**(1) Setup Prompt Timeout:** Set the screen prompt time to wait when starting up. If you do not press the **Setup** hot key within the set time, it will continue to start. By default, the motherboard is set to "1" .

**Warm reminder:** If the computer's configuration is very advanced and starts is fast. And you want to see your customized logo on screen. You can set larger value in Setup Prompt Timeout, the logo will disappear more slowly, the computer will delay loading the operating system. Recommend: "Setup Prompt Timeout : 3" .

**(2) Bootup NumLock State:** Activate the numeric lock function of the keypad after the system is powered up to the DOS system.

- ❖ "On" : Digital lock is on when the system starts up.
- ❖ "Off" : The keypad is in cursor control when the system starts up.

**(3) OEM Logo Show:** This item is a customized start screen LOGO display switch. The "Disabled" is turn off; The "Enabled" is turn on.

**(4) Fast Boot:** The "Disabled" is turn off; The "Enabled" is turn on.

**(5) Boot Option Priorities:** The system will detect the device in the set order. Find a device that can be booted and it will boot from this device. The "Boot Option #1" is the priority boot device.

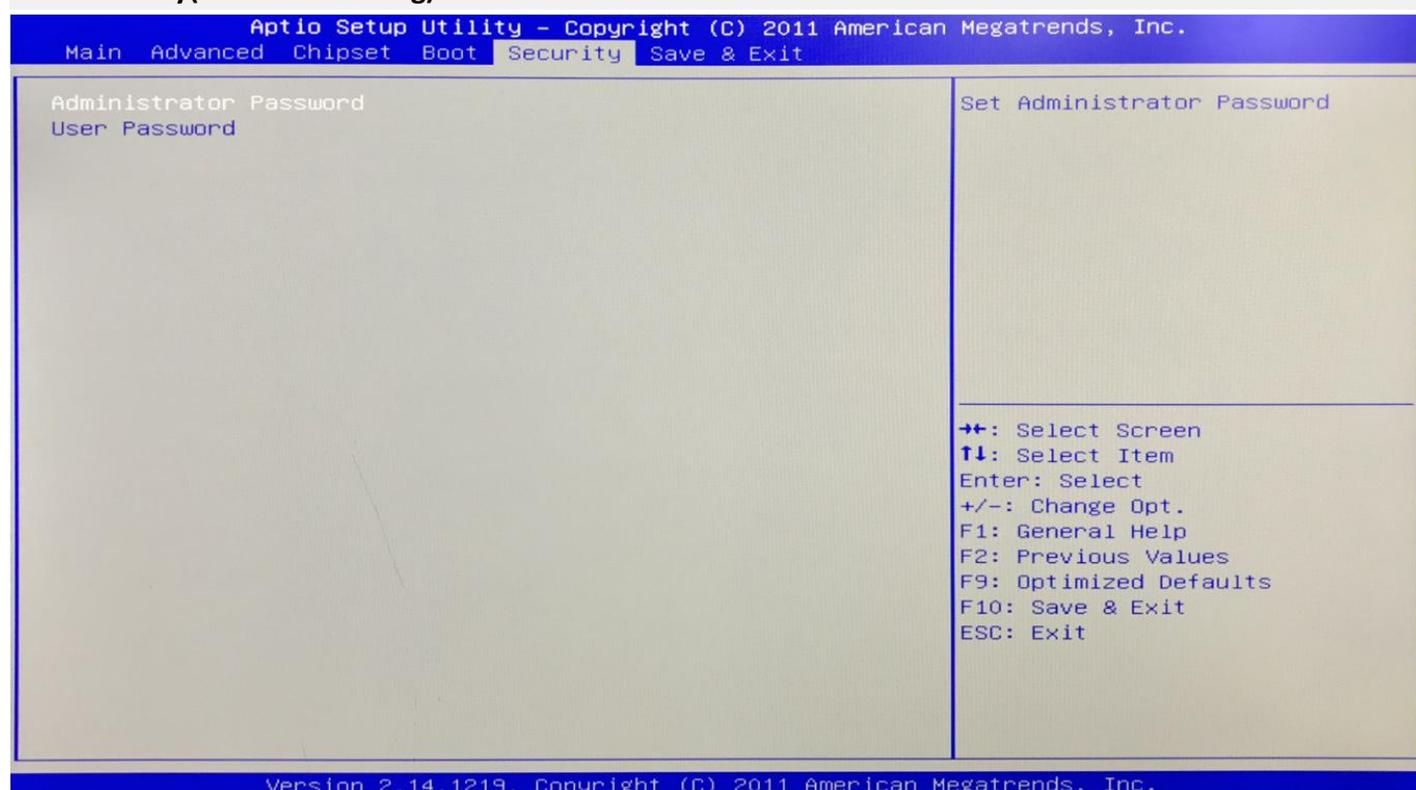
**Warm reminder:** If you cannot boot the motherboard, please set the "Boot Option #1" as a hard disk (With operating system).

**(6) Hard Disk Boot Priority:** It is used for hard disk (SSD).

**(7) Removal Device Priority:** This is the mobile device boot priority setting. It can be used to set up a mobile device similar to a USB flash disk.

**(8) UEFI Boot Drive Priority:** It can also be used in Ubuntu system.

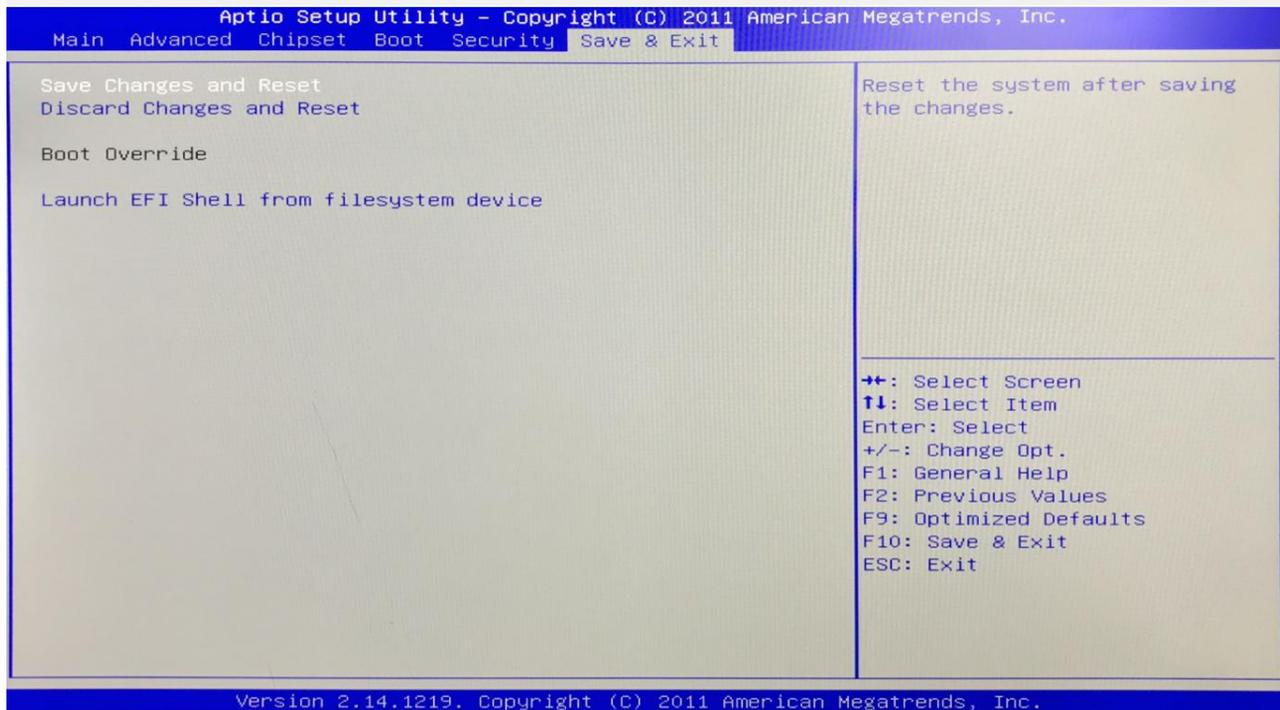
### 3.5 Security (Password Setting):



**Administrator Password:** It is used to set the superuser password.

**User Password:** It is used to set the normal user password.

### 3.6 Save & Exit:



**(1) Save Changes and Reset:** Save,exit the BIOS settings,then restart the motherboard.

**(2) Discard Changes and Reset:** Give up your changes and exit the setting,then restart the motherboard.

**(3)Boot Override:** This option is used to select the specified boot device.The boot devices are a SATA hard disk,a USB flash drive,an EFI Shell,a PXE, etc.It will boot directly,does not need to save,exit.

Other methods: When booting, press "F11" to directly select the specified device to boot.

## Chapter Four Analysis and Solution of Common Faults

Common Faults	Solutions
The computer does not boot after the power is connected.	<ol style="list-style-type: none"> <li>1. Please confirm that the power cable is connected properly.</li> <li>2. Please confirm whether the power adapter meets the power supply requirements of the motherboard.</li> <li>3. Please re-plug the memory.</li> <li>4. Please replace the memory.</li> <li>5. Please follow the steps in the motherboard manual to clear the motherboard CMOS.</li> <li>6. Please confirm if there is an external card.After taking the external card, whether the computer start normally.</li> </ol>

<p>After booting, VGA does not display.</p>	<ol style="list-style-type: none"> <li>1. Please check if the monitor is turned on.</li> <li>2. Please check the power cord is properly connected to the monitor and system unit.</li> <li>3. Please check the monitor cable is properly connected to the system unit and monitor.</li> <li>4. Please check if the display brightness control is set to dark. Brightness can be increased by the brightness control. To get more detailed information, please refer to the monitor instruction.</li> <li>5. When the display is in "Power Save" mode, please press any key on the keyboard to display the screen.</li> </ol>
<p>Unable to save BIOS setting.</p>	<ol style="list-style-type: none"> <li>1. Please confirm whether the CMOS battery voltage is lower than 2.8V. If it is lower than 2.8V, please replace the battery, then reset the BIOS and save it.</li> <li>2. The BIOS settings are incorrect. Adjust the time and date in the BIOS according to the button (DEL) indicated on the startup screen.</li> </ol>
<p>Prompt that a bootable device could not be found.</p>	<ol style="list-style-type: none"> <li>1. Please confirm whether the hard disk power cable and hard disk data cable are connected properly.</li> <li>2. Please confirm whether the hard disk is physically damaged.</li> <li>3. Please confirm that the operating system is installed properly on the hard disk.</li> </ol>
<p>During the process of entering the system, the computer appears blue screen or crashes.</p>	<ol style="list-style-type: none"> <li>1. Please confirm whether the memory and external card are loose.</li> <li>2. Please try to remove the newly installed hardware or uninstall the driver or software.</li> <li>3. Please try to replace the memory.</li> <li>4. Please try to enter the BIOS to change the hard disk mode.</li> </ol>
<p>Entering the operating system is slow.</p>	<ol style="list-style-type: none"> <li>1. Please try to use a third-party software to check if the hard drive has bad track.</li> <li>2. Please confirm whether there is too little space for operating system in the hard disk partition.</li> <li>3. Please check if the CPU cooling fan is rotating normally.</li> </ol>
<p>Operating system automatically restarts.</p>	<ol style="list-style-type: none"> <li>1. Please check if the CPU cooling fan is rotating normally.</li> <li>2. Please confirm if you accidentally press the reset button of the industrial mini computer.</li> <li>3. Please use anti-virus software to confirm whether the system is infected with a virus.</li> <li>4. Please confirm whether the memory and external card are loose.</li> <li>5. Please confirm whether the power supply carrying capacity is sufficient. Please try to replace the power supply.</li> <li>6. Please try to replace the memory.</li> </ol>

<p><b>Unable to detect USB device.</b></p>	<ol style="list-style-type: none"> <li>1. Please confirm if the USB device needs to be powered separately.</li> <li>2. Please confirm if the USB interface is in imperfect contact.</li> <li>3. Please confirm if the USB controller is turned on in the BIOS Setup.</li> </ol>
<p><b>LVDS screen does not display.</b></p>	<ol style="list-style-type: none"> <li>1.Connect VGA, start the computer, enter the BIOS to confirm whether the LVDS switch is turned on.Whether the resolution is adjusted to the corresponding demand.</li> <li>2.Please confirm whether “LVDS_PWR” is adjusted to the corresponding working voltage.</li> <li>3.Please check if the backlight power ON/OFF pin is plugged in and has voltage.</li> <li>4.Please confirm if the monitor cable is plugged in correctly.</li> </ol> <p style="text-align: center;">Please confirm whether the monitor is working properly.</p>
<p><b>The LVDS screen appears blurred or image tail.</b></p>	<ol style="list-style-type: none"> <li>1.Please try to enter the BIOS to set the corresponding number of bits for the screen (the number of bits:18bit or 24bit).</li> <li>2.Please confirm whether the screen cable is damaged.</li> <li>3.Please confirm whether the monitor is working properly.</li> <li>4.Please try to exchange the cable order of the screen.</li> <li>5.Please try to replace the memory.</li> </ol>