Safety Instructions

1、Please read this manual carefully before using this product

2、To ensure safety, please use the factory's original power supply

3、If power damaged, don't repair it by yourself, please look professional man or contact your sales agent.

4、When you connect or remove any device, make sure that all devices have their power cords unplugged before the signal cable is connected.

5、To avoid the risk of electric shock, the ac power supply shall be turned off or the ac power cord shall be removed from the power socket every time the system is unplugged or reconfigured.

6、Before connecting and disconnecting the signal cables on the motherboard, make sure that the power cords of all devices have been unplugged beforehand.

7、Do not pull, bend or place heavy objects on or damage the power cord, which may cause fire or electric shock.

8、Be sure to set the correct power supply voltage, otherwise it may cause personal injury or system damage.

9、To avoid short circuit, keep paper clips, screws, staples and other items away from connectors/interfaces, sockets, sockets and circuits.

10、Please do not use the equipment in damp and dusty environments or in environments where the system or equipment is easily exposed to oil, steam, etc., or it may lead to fire accidents.

11、Make sure the device does not come into contact with water or other liquids, and check whether other objects such as paper clips and pins are left in the system, or they may cause electric shock.

12、To avoid damage to the system or equipment, do not place the equipment on an unsafe surface, or allow the equipment or system to fall or topple under strong impact or impact.

13、Please do not use the equipment or system near the radiator or in a high temperature environment, which may lead to overheating of the system and fire.

14、Do not expose the equipment to direct sunlight.

15、The data and pictures listed in this article are for illustration only and are subject to change without prior notice.

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Chapter 1 Product Introduction

1.1 Product Introduction

D465Z adopts Intel ® Haswell -u I5-4300 - U / 1.9 GHz dual-core processor, USES the Intel ® Haswell -u SOC platform chipset, built-in Intel ® HD core graphics, provide VGA, HDMI display output, VGA and HDMI used at the same time, can realize independent double display. Support SATA, SSD storage, could bring great convenience for the dynamic advertising information release.

D465Z USES all aluminum alloy shell, fanless heat dissipation structure, ultra-low power consumption, compact structure, is a network equipment and control box for digital advertising applications.

1.2 Product Specification

Specification		D465Z
Motherboard	Model No.	ITX-H45_I526L
	Processor	Integrated Intel® Haswell-U I5-4300U/1.9GHz dual core processor
	Chipset	Based on Intel®Haswell-U/Broadwell-U SOC platform
Display	Graphics	Integrated Intel® HD Graphics 4400,support DirectX 11.2/12,OpenGL4.3 support synchronous / asynchronous display.
	Resolution	1*VGA, Support the highest resolution: 1920X1200@60HZ 1*HDMI, Support the highest resolution: 3200X2000@60HZ
Storage	Memory	1*SODIMM slot, support 1600/1333MHz DDR3L/1.35V memory, up to 8GB
	SATA	Support 1* 2.5” HDD expansion

	CF	N/A
	SSD	Support 1*MSATA SSD expansion
Audio	Audio	Integrated ALC662 6-channel high fidelity audio controller, support MIC、Line_out
Network	Ethernet	2*WGI211ATGigabit Ethernet, support Wake On LAN, PXE
	WIFI	Provide 1* Mini-PCIE slot, support WIFI/ 3G module
Front I/O	Serial Port	1* RS232COM port
	USB	2* USB2.0 port
	Power Switch	1* Power Switch
	Audio	1* Line-out,1* MIC
Rear I/O	LAN	2* RJ45 Gigabit LAN port
	USB	2*USB3.0 port
	Serial Port	5* RS232 COM port, COM3 support RS485/422
	Display Port	1* VGA,1* HDMI
	Power	1* 12V DC power input port
	Antenna	2* WIFI/3G SMA antenna（optional）
	Audio	1* Line-out,1* MIC
OS		Support Windows 7, Windows 8, Windows 10, Linux OS
Power Adaptor	Input	AC 110V~ 220V
	Output	DC 12V/5A
	Type	External power adaptor
Chassis	Color	Black
	Dimension	235mm*200mm*52mm（L*W*H）
	Structure	Fanless cooling structure
	Material	Aluminum alloy
Reliability	Installation	Desktop or embedded installation
	Working Temp.	0℃～45℃
	Storage Temp.	-20℃～70℃

	Relative Humidity	5%-95% relative humidity, non-condensing
	Working Vibration	0.5g rms/5-500HZ/random/operating

1.3 Pictures



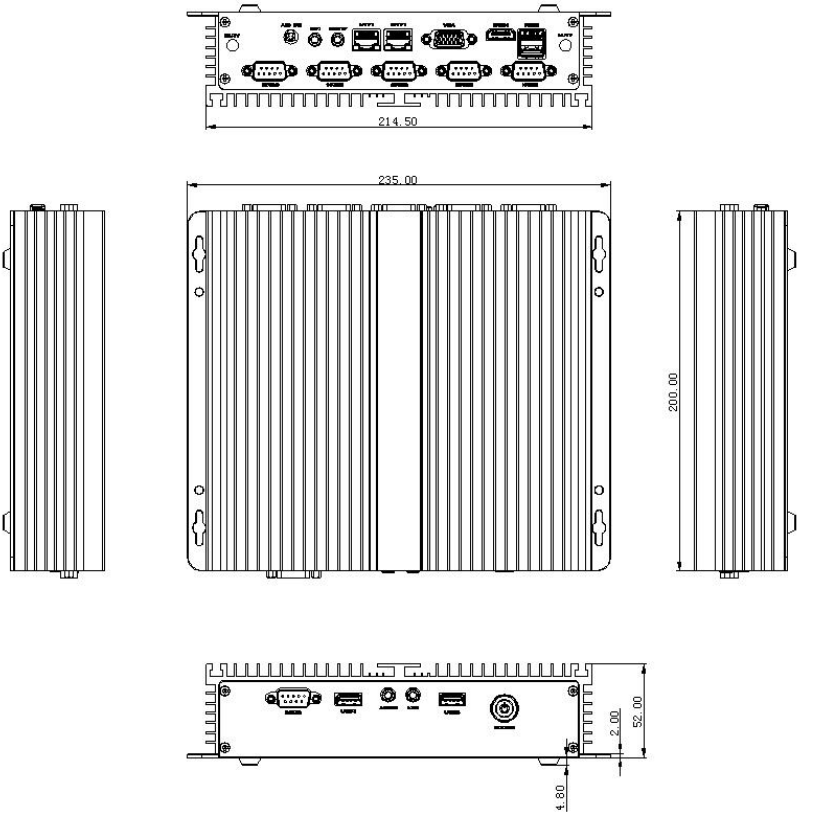
D465Z front panel and lateral



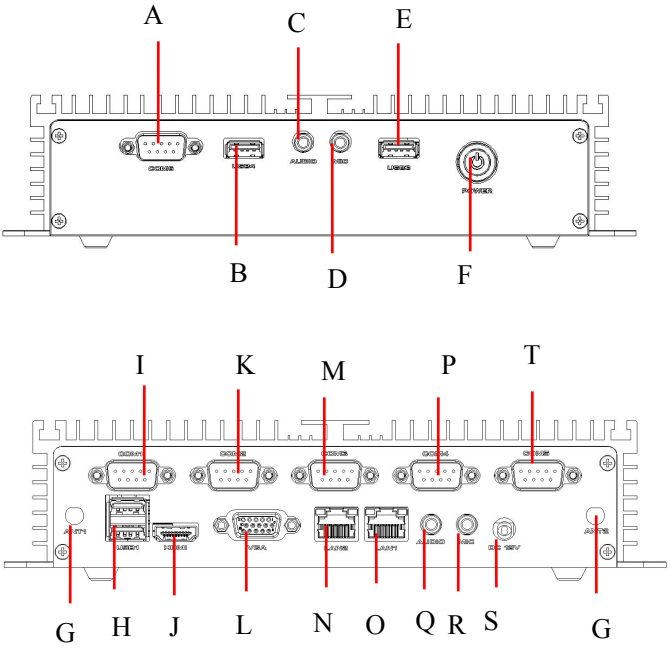
D465Z rear panel and lateral view

Chapter 2 Hardware Installation

2.1 Dimension



2.2 External I/O Image



Front view

A：COM6　　B：USB2.0　　C:Line-out　　D：MIC

E：USB2.0　　F：Power Switch

Rear view

G：WIFI ANT　　H：2*USB3.0　　I:COM1　　J:HDMI

K：COM2　　L：VGA　　M：COM3　　N：LAN

O：LAN　　P：COM4　　Q：Line-out　　R：MIC

S：DC12V　　T：COM5

2.3 Installation Description

2.3.1 Connect Monitor

D465Z provides a VGA and a HDMI port, can connect VGA display or HDMI display. It supports VGA, HDMI dual screen display, you can connect two monitors to achieve dual display.

2.3.2 Connect Network

D465Z provides two Gigabit LAN ports for connection: connect one end of the common network cable to the LAN port of the device and the other end to the switch or router port on the network.

2.3.3 Connect Mouse and Keyboard

D465Z can connect to USB mouse and keyboard, connect the mouse and keyboard USB cable to the USB port.

2.3.4 Connect the headset and microphone

D465Z provides 2 line-out devices and 2 MIC devices. Connect headphones to AUDIO interface (green) and microphone to MIC interface (red) of the device.

2.3.5 Connect COM Devices

D465Z provides 6 RS232 COM port. Please connect one end of the COM device to the COM port.

2.3.6 Connect Power

Please use the original power adapter, DC plug plug into the DC_12V socket. Plug the other end into power socket.

2.3.7 Startup Device

After confirming connected correctly, press the POWER button on the front panel to open the device

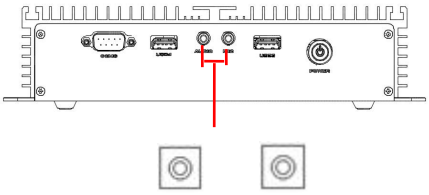
Tips：

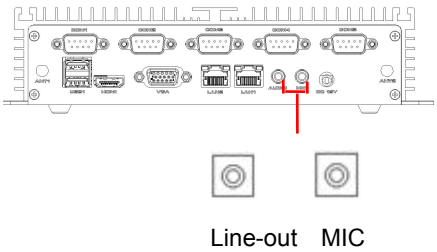
How to identify the alarm sound :(long sound is system memory error; short “beep" is the boot sound).

2.4 External Port Description

2.4.1 Audio Port（Line-out、MIC）

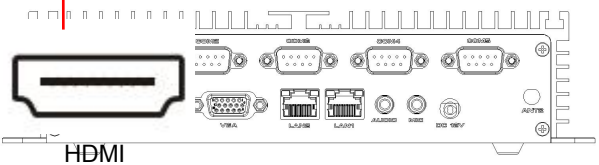
D465Z adopts ALC662 audio decoding chip, which supports 6 channels of high-fidelity audio. The front panel provides 1 line-out interface,1 MIC interface, and the rear panel provides 1 line-out interface and 1 MIC interface, which supports 2 audio outputs and 2 MIC outputs in total.





2.4.2 HD Multimedia Port（HDMI）

D465Z rear panel provides a standard HDMI interface, which can transmit uncompressed audio signal and high resolution video signal, and supports 1080p video and audio signal output.



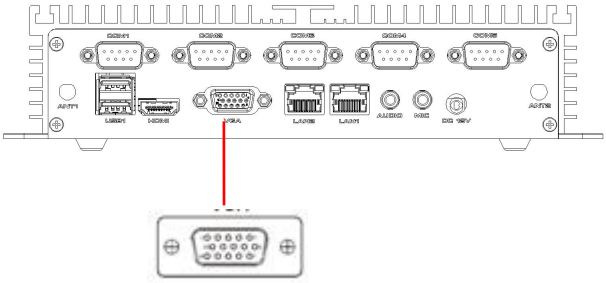
HDMI Definition：

Pin	Signal Name	Pin	Signal Name
1	TMDS Data2+	2	TMDS Data2 Shield
3	TMDS Data2-	4	TMDS Data1+
5	TMDS Data1 Shield	6	TMDS Data1-
7	TMDS Data0+	8	TMDS Data0 Shield
9	TMDS Data0-	10	TMDS Clock+

11	TMDS Clock Shield	12	TMDS Clock_
13	CEC	14	Reserved(N.C.)
15	SCL	16	SDA
17	DDC/CEC Ground	18	+5V Power
19	Hot Plug Detect		

2.4.3 Analog signal output interface（VGA)

D465Z rear panel provides a standard DB15 VGA interface.

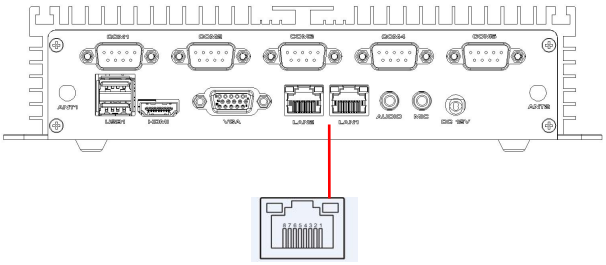


VGA Definition： VGA

Pin	Signal Name	Pin	Signal Name
1	Red	2	Green
3	Blue	4	NC
5	GND	6	GND
7	GND	8	GND
9	NC	10	GND
11	NC	12	DDCDATA
13	HSYNC	14	VSYNC
15	DDCCLK		

2.4.4 LAN Port（LAN1）

D465Z provides 2 RJ-45 gigabit Ethernet interfaces, LILED and ACTLED are green and yellow LED on both sides of the Ethernet interface, which show the LAN's activity status.

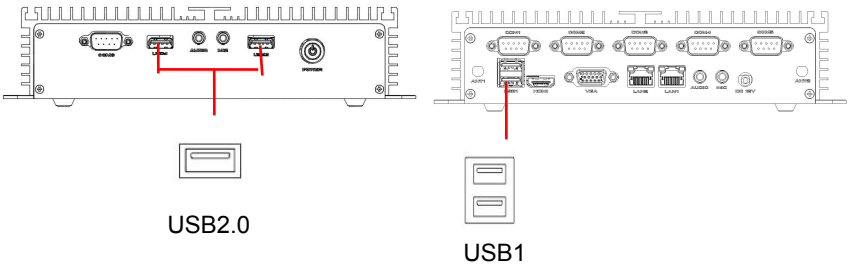


LAN1

LILED(green) State		Function	ACTLED(yellow) State	Function
Light	green（100Mbps）	Effective Connect	Blink	The network is connected and data transfer is in progress
	Orange （1000Mbps ）			
Close		Ineffective connect or closed	Close	No network connection or no data transfer

2.4.5 USB Port (USB1、USB2、USB3、USB4)

D465Z provides two standard USB2.0 interfaces and two standard USB3.0 interfaces



USB2.0

USB1

USB2.0 Definition：

Pin	Signal Name	Pin	Signal Name
1	VCC	2	VCC
3	USB_P -	4	USB_P -
5	USB_P +	6	USB_P +
7	GND	8	GND

USB3.0 Definition：

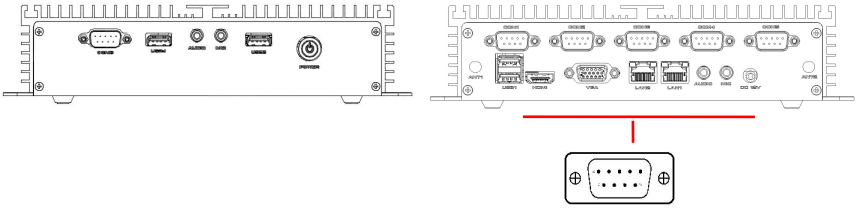
Pin	Signal Name	Pin	Signal Name
1	+5V_USB	2	USB_Data-
3	USB_Data+	4	GND
5	USB_SSRX-	6	USB_SSRX+
7	GND	8	USB_SSTX-
9	USB_SSTX+		

2.4.6 Serial Port（COM1-COM6)

D465Z front panel provides 6 standard DB9 serial ports.

COM3 can support RS485 function, which is realized through the internal jumper.

Please pay attention when ordering



COM1~COM5

COM1~COM6 Definition：

Pin	Signal Name	Pin	Signal Name
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	NC

Chapter 3 BIOS Setting

3.1. BIOS Description

BIOS (Basic Input an Output System), through the CMOS chip on motherboard, recorded parameter settings of each hardware of the system. BIOS contains the BIOS setup program, for users to set system parameters according to their own needs, to make the motherboard work normal or execute specific function.

Through BIOS setup program to modify the settings (except date and time), which are stored in the flash memory of system, the power required to memorize CMOS data are supplied by the battery on board, so when the system power off, the data will not lost, when next time re-open the power, system will read the set data. If needed to restore factory setting at the circumstance when can not enter the Setup interface due to misconduct, please short circuit JBA12,3 pin to clear CMOS data.

Note! BIOS settings directly affect the performance of the computer, wrong set parameters will cause damage to the computer, or even can not boot, please use the BIOS built-in default values to restore the normal operation of the system.

Due to the company's different product, the interface will be slightly different, the flowing image for reference only, it may be not exactly the same with your current using BIOS setup program.

3.2 BIOS basic function setting

3.2.1 Enter the BIOS interface

Follow the below steps to enter into the BIOS interface

1、 Power on,the display screen will appear POST interface.

2、When the screen appears "click <DEL>or<ESC> to enter setup", please click <DEL>or <ESC>, and you can enter the BIOS setup program

3、 Move the arrow key < ↑ ><↓ >< ← >< → > to the options which you want to modify, click <Enter>, and you can enter the sub-screen of the option

4、Use the arrow keys and the <Enter> key to modify the value of the selected items, click the Enter key to select BIOS option and modify.

5、Use the <Esc> key to return to the last picture

6、 <Page Up/+> Add numeric value or change

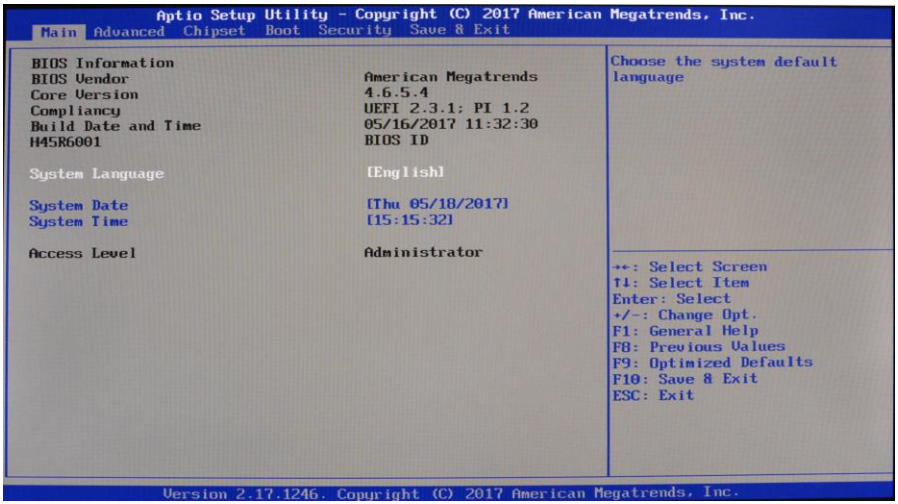
<Page Down/-> Reduce numeric value or change

<F1> Set sub menu help

<F9> Set default values (optimized to factory settings)

<F10> Save BIOS settings

3.2.2 Main manu（BIOS information and time/date）



BIOS Vendor ： American Megatrends

Bios ID ：

Build Date and Time ：

System language：

System Date ：

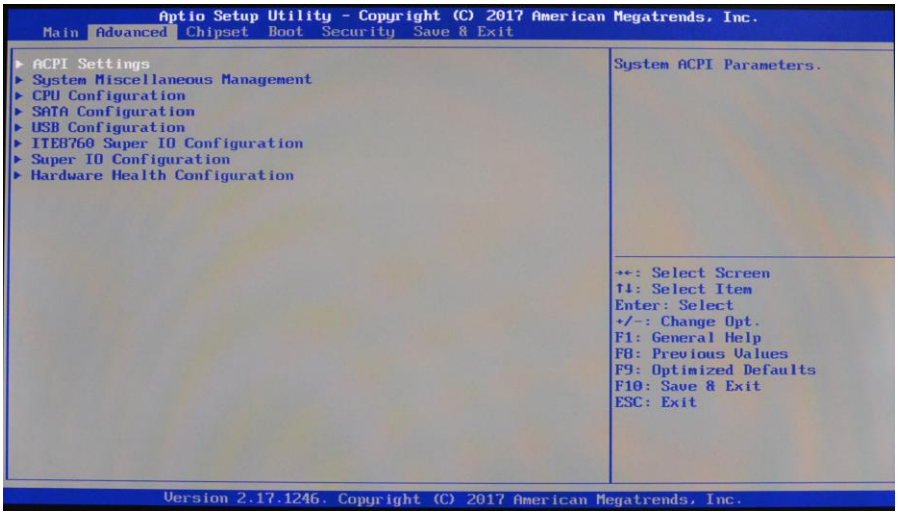
Set the current date. In the form of month / day / year. The setting range is:

Month (Jan.-Dec.)，Date(01-31)，Year(Max to 2099)，Week(Mon.～Sun.).

System Time ：

Set the current time, In the form of time/minute/second, The setting range is: Hour(00-23), Minute(00-59), Second(00-59).

3.2.3 Advance Settings



ACPI Settings ： Advanced configuration and power management interface settings.

ITE8760 Super IO Configuration：Super IO configuration information,contains the COM port interrupt number and address settings

Hardware Health Configuration： System monitoring, hardware monitoring, hardware monitor

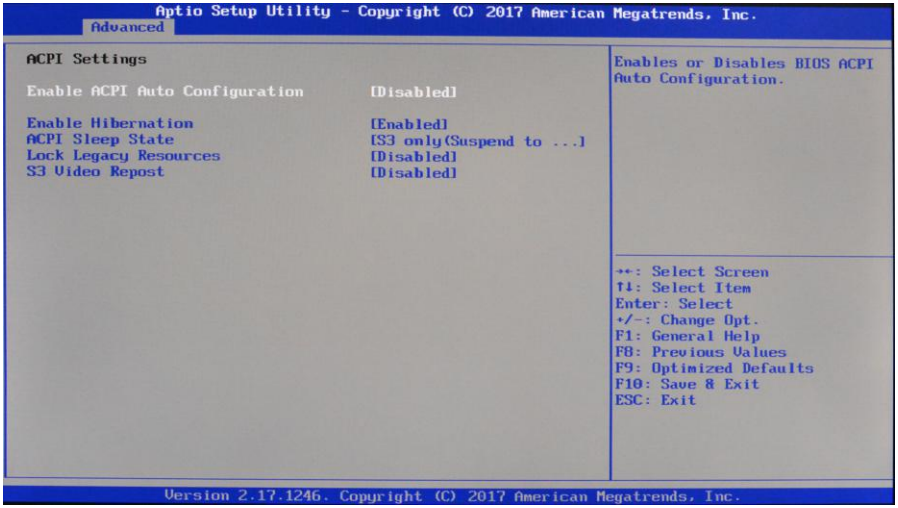
System Miscellaneous r Management：

CPU Configuration：

SATA Configuration：

USB Configuration：

3.2.4 ACPI Settings



Enable ACPI Auto Configuration ： This item is automatically configured for the ACPI,Allow (Enabled) or close (Disabled) BIOS ACPI automatic configuration ,default is close(disabled)

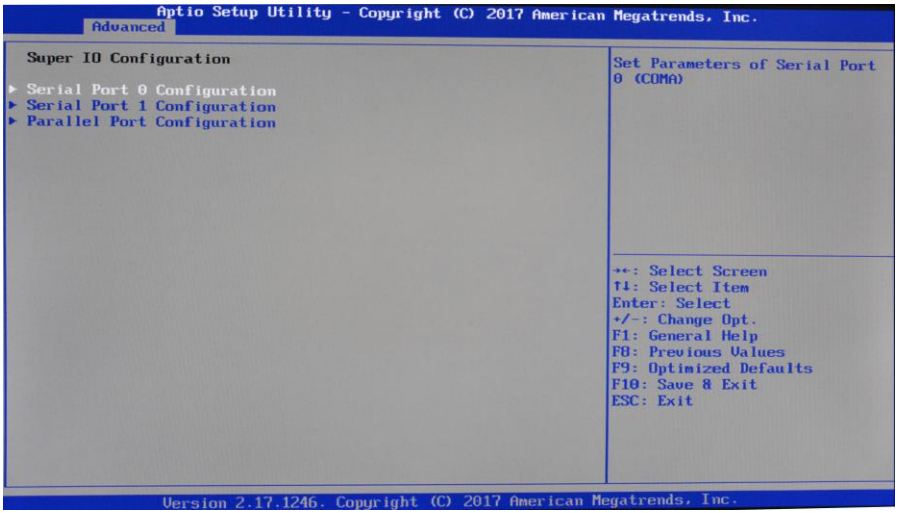
Enable Hibernation ： Enabled or Disabled system sleep function（OS/S4 sleep state）. This option does not take effect under some OS. Default is Enabled.

ACPI Sleep State ： This is used to select the system to enter the power system sleep mode, the pattern is not the same, the system power consumption is not the same degree,Suspend Disabled;close the sleep mode, S1(CPU Stop Clock)：CPU stops working，other devices are still normal power supply;S3(Suspend to Ram): Hang up to memory.

Lock Legacy Resources ： Resource latch，（Enabled）or（Disabled）

S3 video repost: when you wake up the S3/STR sleep mode, turn on VGA' s BIOS POST function,default is Disabled.

3.2.5 Super IO Configuration

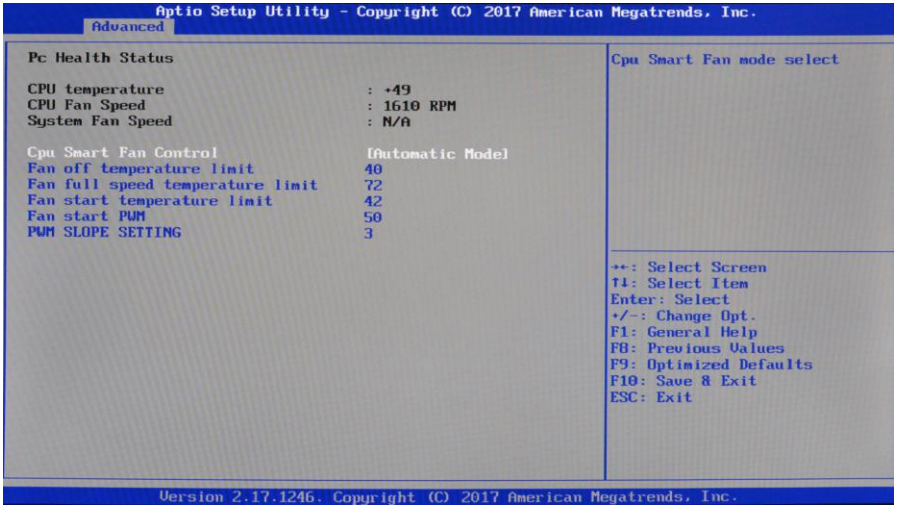


Serial Port 1 Configuration：This is the serial port 1 settings option, IO Super configuration information, including the COM port interrupt number and address settings.

Serial Port 2 Configuration：This is the serial port 2 settings option, IO Super configuration information, including the COM port interrupt number and address settings.

Parallel Port Configuration：This is the parallel port settings option

3.2.6 PC Health Status



PC Health Status ：

the current system temperature, CPU temperature, fan speed, and other relevant voltage value. The above parameters have a certain range, the system can not exceed the scope of the operation.

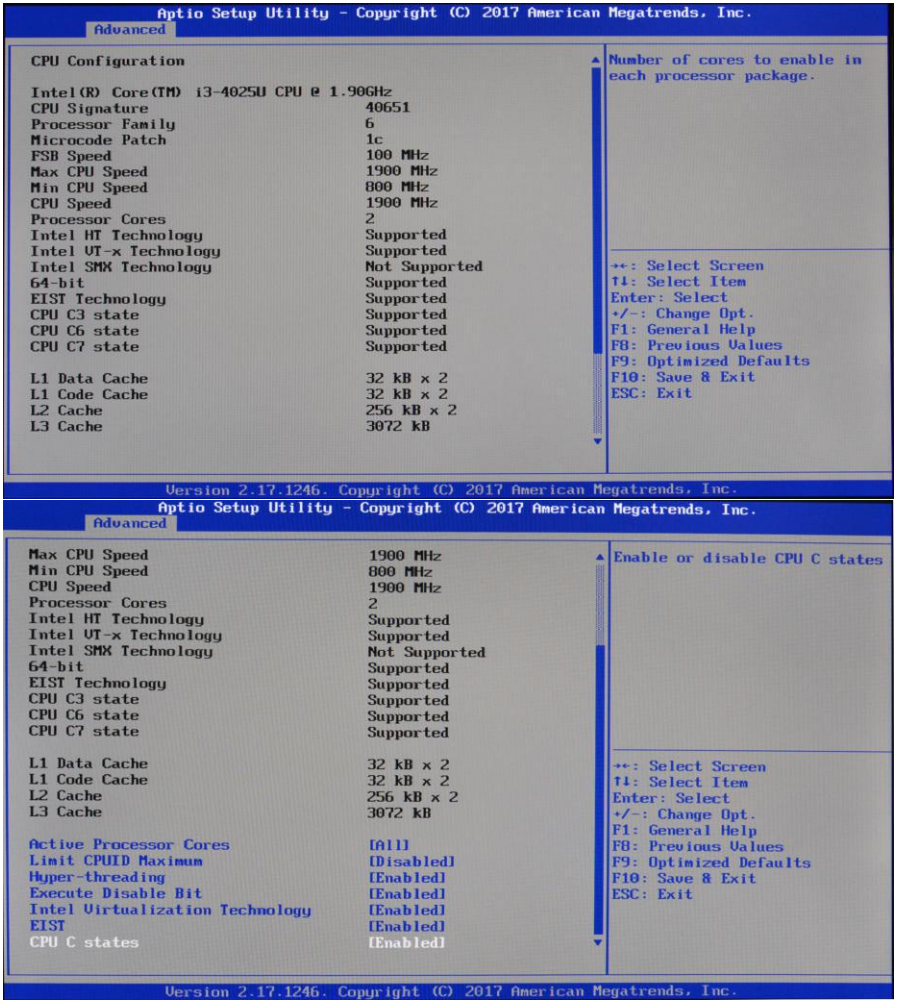
Smart Fan 1 Mode:This option is to open the CPU automatic fan control function, used to automatically adjust the CPU fan speed according to the real-time detection of the CPU temperature, so as to achieve the purpose of saving energy.

Fan off temperature limit：Fan off minimum temperature setting.

Fan start temperature limit ： Fan on minimum temperature setting。

Fan start PWM：The settings of the Fan start PWM。

3.2.7 CPU Configuration



Read only items contain details of the CPU, including the CPU manufacturers, models, frequency, the size of the first level cache size, the size of the two cache and other information.

Active Processor Cores ：

The number of CPU cores adjustment options, can close part of CPU core to improve the

frequency of overclocking. can provide set 1 / 2 / 3 / 4 core work.

Hyper-Threading ：

Set whether to use the CPU hyper threading technology, set the value of [Enabled][Disabled].

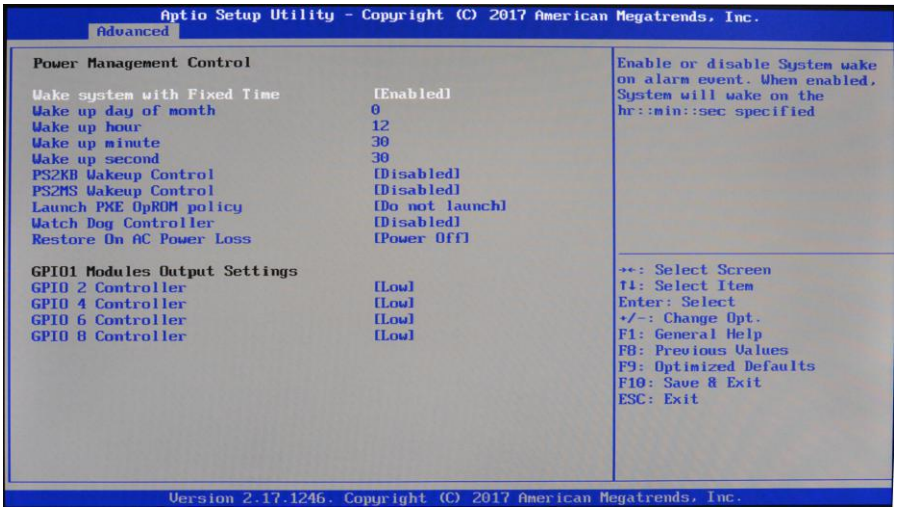
Intel Virtualization Technology ：

Intel Virtualization Technology Is Intel's CPU in the system of virtual technology. It makes it possible to be in a PC running a plurality of OS, VT technology is in various types of processors, including dual core processor play very important role, this technique allows the processor with and / or virtualization technology, using Vanderpool technology, we can run two operating systems simultaneously on the same machine. In which a processor running an operating system, another processor running another operating system.

EIST

This is an enhanced Intel energy saving technology

3.2.8 Power Management Control



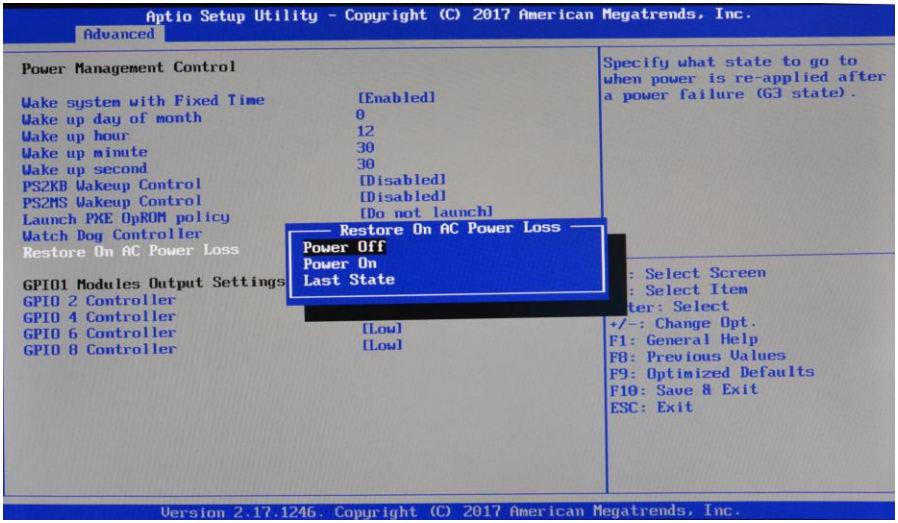
Wake system with Fixed Time: dynamic time wake up system

Wake up day of month：wake up time,unit date,and set to 0,indicating daily

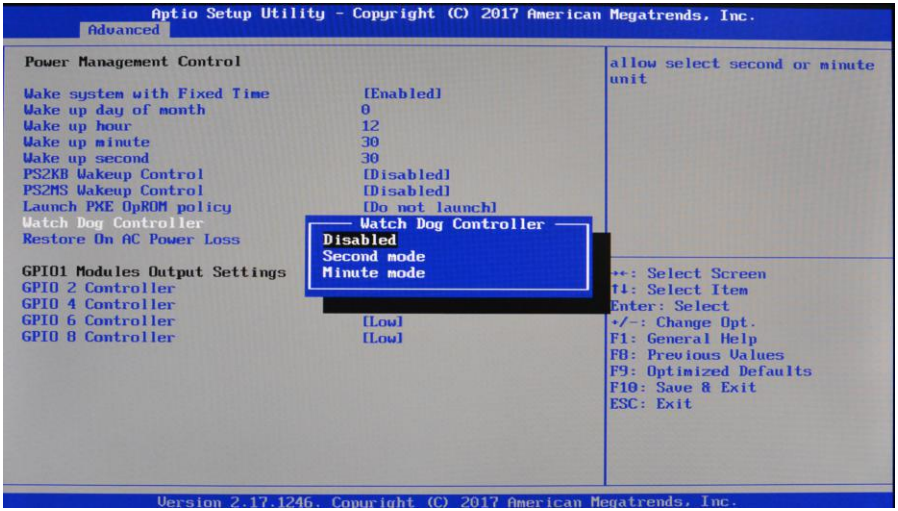
Wake up hour： wake up time unit hour.

Wake up minute：wake up time unit minute.

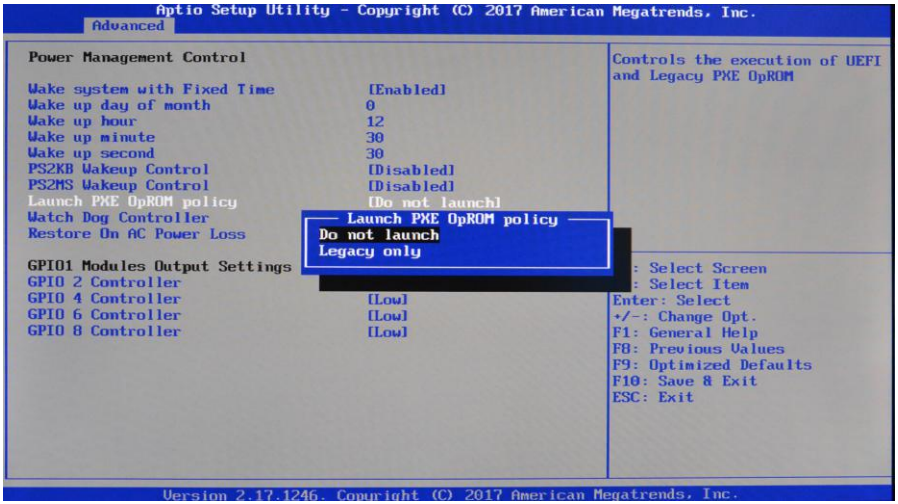
Wake up second ： wake up time unit second.



Restore on AC Power loss：This option is used to set up the Power on (Restore on AC Power loss), choose Power off means need to press the power button to boot when power on,choose Power on means it's direct boot when power on, choose Last State means to decide whether or not to power on according to the value of the last set.

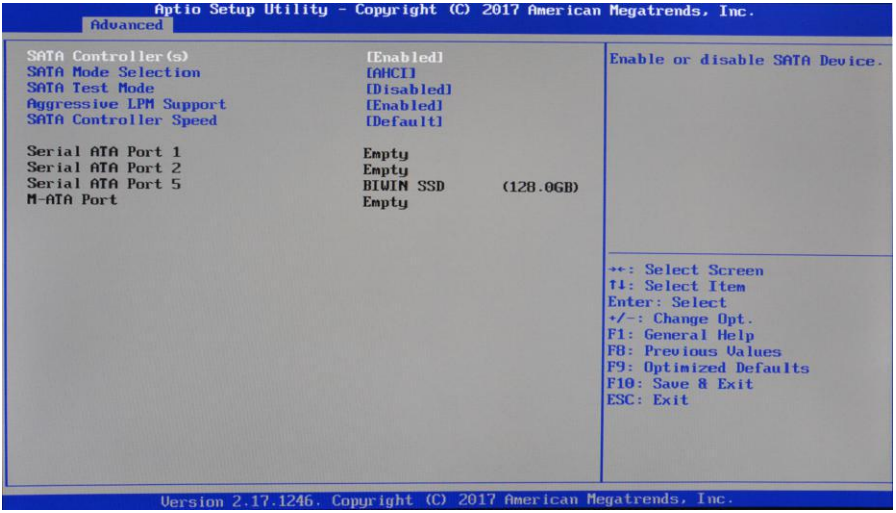


Watch dog Controller:Watch dog settings，[Disabled] or [Second mode] the watchdog is set to the second mode ,[Minute Mode],the watchdog is set to the minute mode.



Launch PXE OpROM policy: set diskless startup mode， Do not Launch: close diskless startup mode，Legacy Only: set the diskless startup mode to Legacy mode.

3.2.9 SATA Conf guration



Serial-ATA (SATA) ： enabled or disabled。

SATA Speed Suport ： Serial interface support speed.

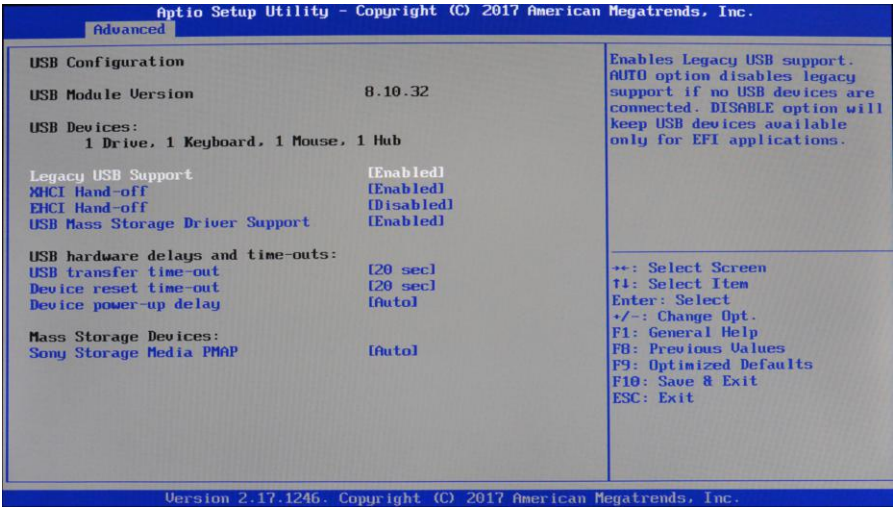
SATA ODD Port ： Configure serial remote transmission ports.

SATA Mode： AHCI or IDE.

Serial-ATA Port 0: enabled or disabled。

Serial-ATA Port 1: enabled or disabled。

3.2.10 USB Configuration



Legacy USB Support ：

The old version of the USB settings, if you need to support USB devices in DOS, such as U disk, USB keyboard, etc., will be set to [Enabled] or [Auto]. on the contrary, the choice of [Disabled].

XHCI Hand-off ：

When the operating system does not support XHCI, whether to allow the XHCI to take over BIOS control

USB Mass Storage Driver Support ：

USB large capacity storage device support switch.

USB Transfer time-out ：

USB transmission timeout: set control, bulk, interrupt transfer timeout. Default is 20 seconds.

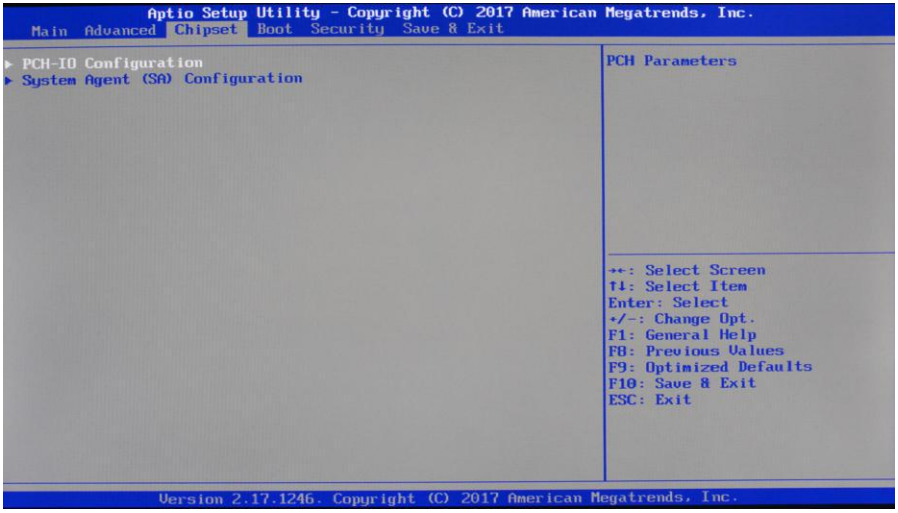
Device reset time-out ：

Device reset timeout: set the bulk USB disk boot command timeout. Default is 20 seconds.

Device Power-up Delay ：

Equipment power delay: set the USB device to the main controller to report the maximum delay time.

3.2.11 Chipset

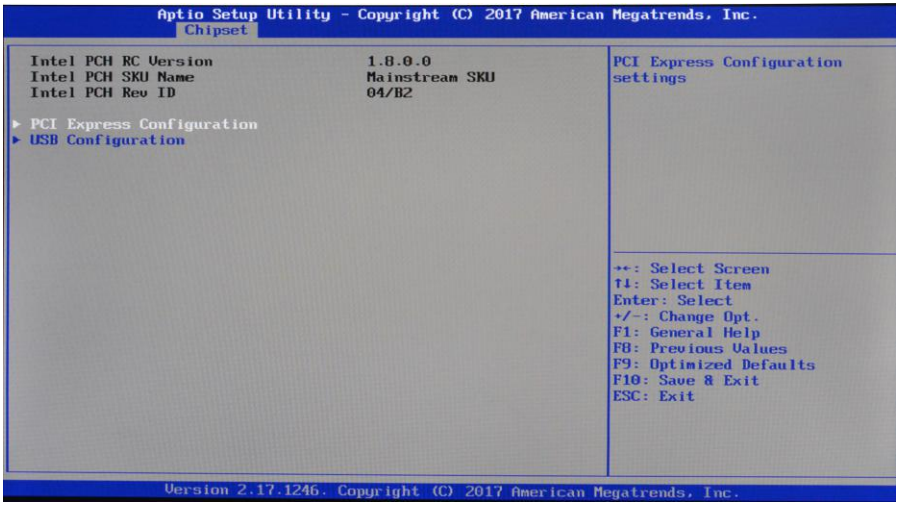


PCH-IO Configuration ：

South Bridge configuration options, Including the sound card,network card and other options.

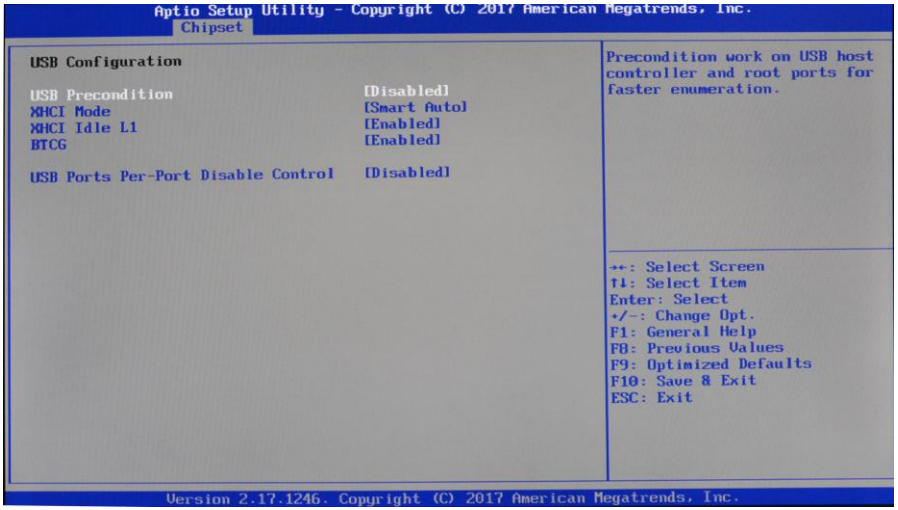
System Agent (SA) Configuration ：

North Bridge configuration options: Including the memory,graphics,LVDS and other options



USB configuration ：

PCI Express Configuration ：



USB Precondition ：

Set USB controller pre-processing function to quickly enumerate devices. Disabled(default value) , Enabled

XHCI Mode：

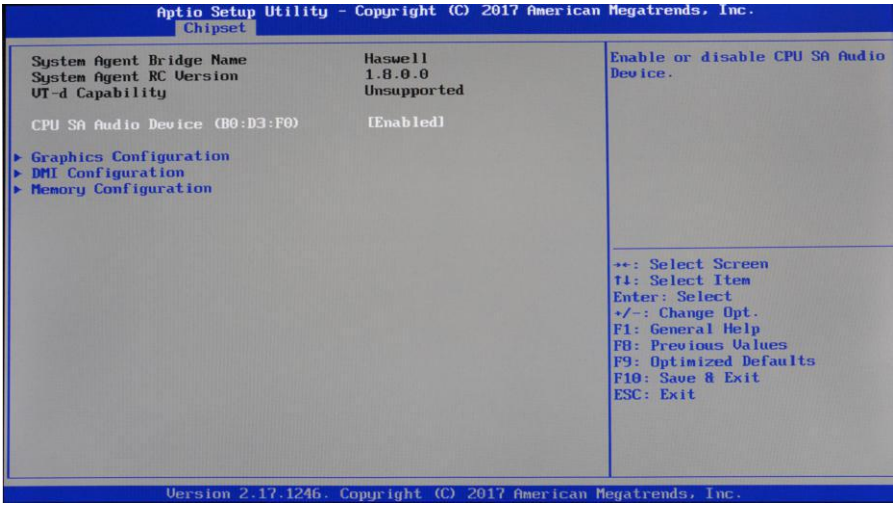
Set XHCI Mode USB to open or NOT

BTCG ：

Set the USB OTG device support function. Disabled(the default value), EnabledUSB Ports

Per-Port Disable Control ：

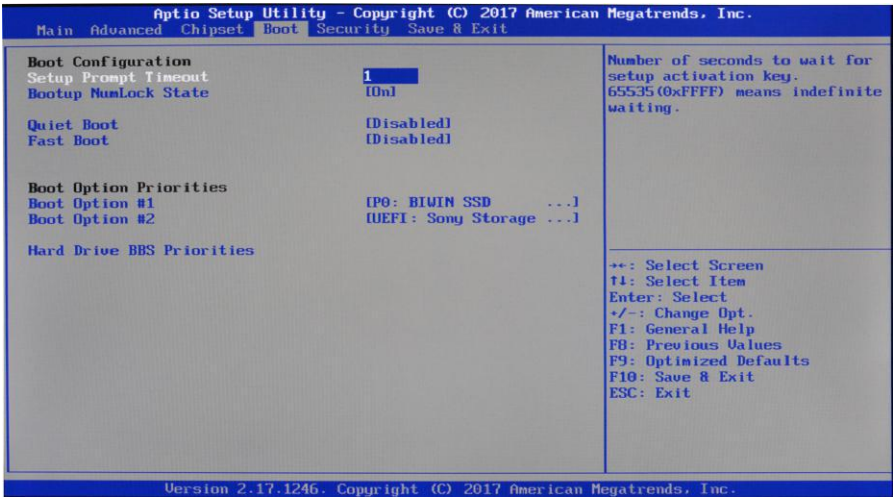
Set the USB port disable function



Graphics Configuration ：

Memory Configuration:

3.2.12 Boot



Setup Prompt Timeout：Set the prompt timeout, press the Setup shortcut key to wait time. If you have not press the Setup shortcut key in the setup time it will continue to start.

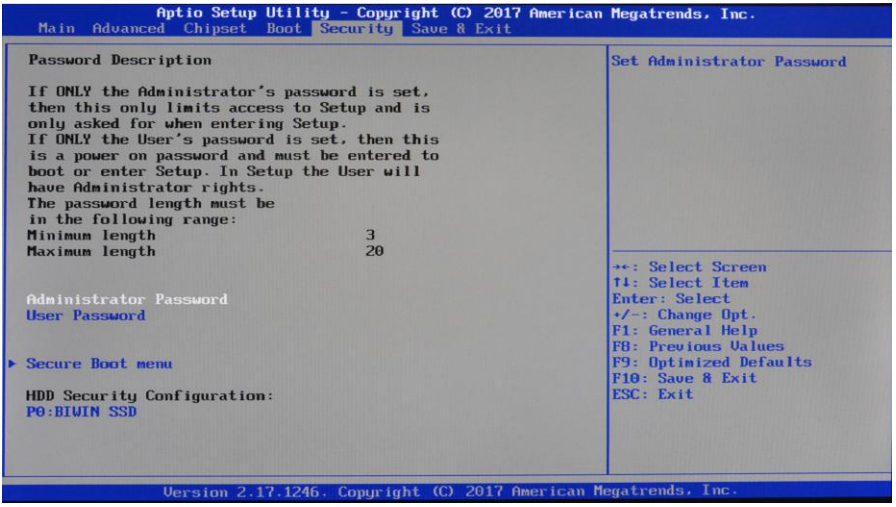
Bootup Numlock State ： This feature allows the system to power to the DOS system after the activation of the keypad of the digital lock function. The default value is On, that is, when the system is in a digital lock open. Set to Off, the small keyboard at the start of the cursor control state.

Quiet Boot：Disabled or ,enable

Fast Boot ： Disabled or ,enable

Boot Option Priorities：System will be in accordance with the set of good order to detect equipment, until it find a device that can be boot, and then from the device to boot. The startup options in the #1 is the most preferred starting equipment.

3.2.13 Security



Password character length hint: the minimum length is 3, the maximum length is 20

Administrator Password ：

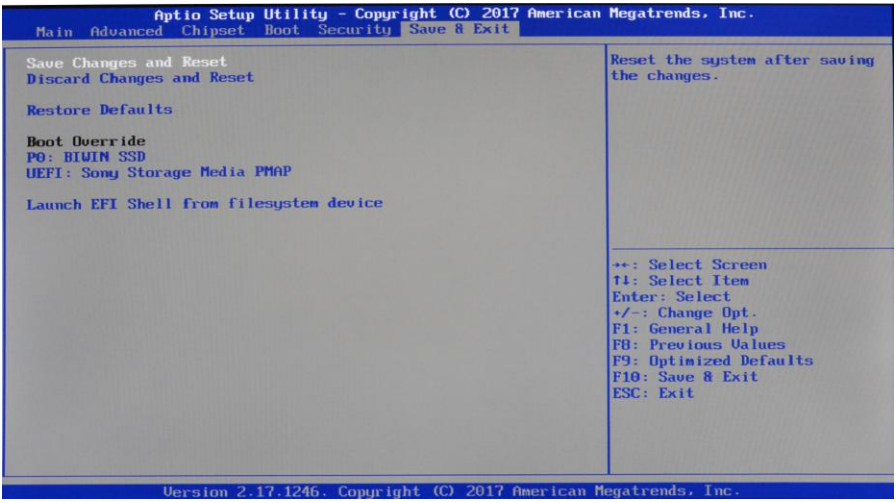
The option is used to set the super user password

User Password ：

The option is used to set the normal user password,Need to set up Administrator Password before you can set

Secure Boot Menu：Secure boot settings

3.2.14 Save&Exit



Save Changes and Exit ： Save the BIOS settings,and exit the settings interface,continue to start the computer

Discard Changes and Reset ： Discard changes and exit setup interface,restart the computer.

Restore Defaults： Load optimization settings,if you choose this ,the system will be set according to the factory's optimal value.

Boot Override ： Select the specified Boot devices, such as SATA hard disk, U disk, Shell EFI, PXE and so on, direct Boot, do not save and exit, press F11 to select the specified device Boot.

Appendix

Appendix one：Glossary of terms

ACPI

Advanced configuration and power management.The ACPI specification allows the operating system to control most of the power of the computer and its additional equipment.

BIOS

Basic input / output system.It's a software that contains all the input/output control code interface in PC When the system starts, it carries out the hardware detection., began to the operation of the operating system, between the operating system and hardware to provide an interface.BIOS is stored in a read-only memory chip.

BUS

in a computer system, the exchange of data between the different parts of the channel, is a set of hardware lines. We refer to the BUS is usually CPU and main memory components within the local circuit.

Chipset

Chipset Is designed to perform one or more functions integrated chip. We refer to is composed of South Bridge and North Bridge System on chip group, It determines the structure and main function of the motherboard.

CMOS

Complementary metal oxide semiconductor. Is a widely used semiconductor type. It has the characteristics of high-speed, low power consumption. We refer to CMOS is on the motherboard CMOS ram reserved space, used to save the date, time, system information and system parameter setting information.

COM

Serial port, a universal serial communication interface, generally use the standard DB9 common interface connection mode.

DIMM

Dual in-line memory module. A memory chip group of small circuit board. The memory bus width of 64bit.

DRAM

Dynamic random access memory. A normal computer general memory types. A transistor and a capacitor is usually used to store a single bit. With the development of technology, type and specification of DRAM has in computer application becomes more and more diverse. For example, are now commonly used are: SDRAM, DDR SDRAM and RDRAM.

LAN

Local area network interface. A small region mutual association of computer is composed of a computer network is generally in a business unit or building. LAN is generally by the server, workstations, some communication links, a terminal can anywhere through the wire access to data and equipment. Many users can be expensive equipment and resource sharing.

LED

Light emitting diode, a semiconductor device, when the current flows through it will be lit,

usually used to represent the information very intuitive, such as the power supply has been turned on or the hard drive is working.

PnP

Plug and play. Allows the PC external devices to be automatically configured, users can not manually operate the system can work on their own specifications. To achieve this feature, BIOS support PnP and a PnP expansion cards are required.

POST

During the start up system, BIOS will perform a continuous testing on the system, including the detection of RAM, keyboard, hard drives, etc., to see whether they are properly connected and whether the normal work.

PS/2

The IBM development of a keyboard and mouse interface specification.PS/2 is a DIN only 6PIN interface can also be used to connect to other devices such as a modem.

USB

Universal serial bus. A suitable for low-speed peripherals hardware interface, typically used to connect the keyboard, mouse, and so on. A PC up to 127 USB devices connected to provide a 12mbit / s transmission bandwidth; USB support hot swap and multiple data stream function, namely in the system can plug in a USB device, the system can automatically identify and allow the insertion of the device normal.

Appendix Two：Common trouble analysis and solution

Common faults	Checkpoint
After the power on is not boot	1.Make sure the power cable is connected properly 2. Please confirm whether the power supply to meet the requirements of the motherboard 3. Try to re plug the memory 4. Try to change the memory 5. Try to clear the CMOS 6. Please confirm whether there is an external card, remove the card is normal or not
VGA not display	1 To see whether the display is open 2 Check that the power cord is properly connected to the monitor and system unit 3 Check whether the display cable is properly connected to the system unit and the display 4 To see whether the display brightness control is set to the dark state, can improve brightness through the brightness control. 5 Display in the "power" mode, press any key on the keyboard can be
BIOS Setup can not be saved	1. Please confirm whether the CMOS battery voltage is lower than 2.8V, if less than 2.8V, please replace the new battery, re set to save 2. BIOS settings are not correct, according to the boot screen prompt button (DEL), adjust the time and date in the Setup BIOS
Could not find the boot device	1. Please confirm the hard drive power cord, the data line is connected to normal 2.Please confirm whether the hard disk has physical damage 3.Please confirm whether the operating system is normally installed on the hard disk
Into the blue screen or crash in the process	1. Please confirm whether the memory card and the card is loose 2. Try to remove the newly installed hardware, uninstall the driver or software 3. Try to replace the memory
Enter the operating system slowly	1. Try to use third party software to check whether the hard disk has bad sectors

	2. Please confirm whether the system is too small to partition the remaining space 3. Please confirm whether the CPU cooling fan is normally rotating
System automatic restart	1. Please confirm whether the CPU cooling fan is normally rotating 2. Please confirm whether or not to trigger the reset button 3. Please use anti-virus software to confirm whether the system is infected with the virus 4. Please confirm whether the memory card and the card is loose 5. Please confirm that the power carrying capacity is sufficient, you can try to replace the power supply
Could not detect USB device	1. Please make sure that the USB device is powered separately 2. Please make sure that the USB interface is not in contact 3. Please confirm whether the USB controller is open in Setup BIOS