YENTEK EUROPE

USER MANUAL

C6850S-C6 V1.2(7360U)

This manual suitable for all C6850Z-C6 V1.2 series

WWW.YENTEK.EU

Disclaimer

Except for the accessories attached to the product as specified herein, what is contained in this user manual does not represent the commitments of Hanzsung Company. Hanzsung Company reserves the right to revise this User Manual, without prior notice, and will not be held liable for any direct, indirect, intended or unintended losses and/or hidden dangers due to installation or improper operation.

Before ordering the products, please learn about the product performance from the distributors to see if it is in line with your needs. The ownership of other trademarks involved in this manual is owned by its respective owners.

For more information, please contact：

Support：info@yentek.eu

Catalog

Chapter 1 Product Introduction 4
1.1 Product Photo: 4
1.2 External I/O View 5
1.3 Dimension 5
1.4 Specification 6
1.5 Packing 8
1.6 Order Information 8
Above order information just for referenceChapter 2 Interface Definition 8
2.1 Installation Steps 9
2.1.1 Display (VGA/HDMI) 9
2.1.2 Network (LAN1-2) 10
2.1.3 Audio Port (MIC and Speaker) 10
2.1.4 Power Button / Reset Button / ACLOSS 10
2.1.5 COM Port (COM1-6) 10
2.1.6 Power (9-36V) 12
2.1.7 Expansino Slot (MiniPCIE) 13
2.1.8 Phoenix Connector (GPIO) 13
Chapter 3 BIOS Setting 15
3.1. BIOS Description 15
3.2 BIOS Basic Function Setting 15
3.2.1Enter Into BIOS Interface 15
<F10> Save BIOS settings 16
3.2.2 Main Manu (BIOS information and time date) 16
3.2.3 Advance 17
3.2.4 ACPI Settings 18
3.2.5 Miscellaneous Configuration 19
3.2.6 Super IO Configuration 20
3.2.7 PC Health Status 21
3.2.8 CPU Configuration 22
3.2.9 CSM Configuration 23
3.2.10 USB Configuration 23

3.2.11 Chipset 24
3.2.12 Boot 26
3.2.13 Security 27
3.2.14 Save&Exit 28
Appendix 29
Appendix one : Glossary of Terms 29
Appendix Two: Common issue analysis and solution 31

Chapter 1 Product Introduction

1.1 Product Photo:

Image 1：C6850S-C6 V1.2 Front IO

Image 2：C6850S-C6 V1.2 Rear IO

Image 3：C6850S-C6 V1.2 Internal

1.2 External I/O View

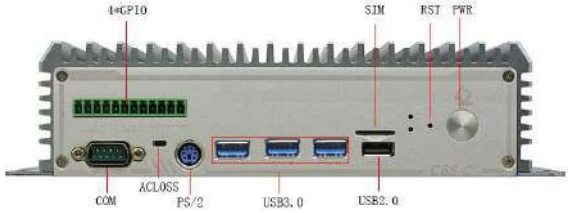


Image 1：Front IO View

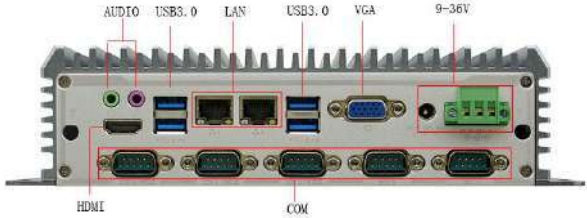
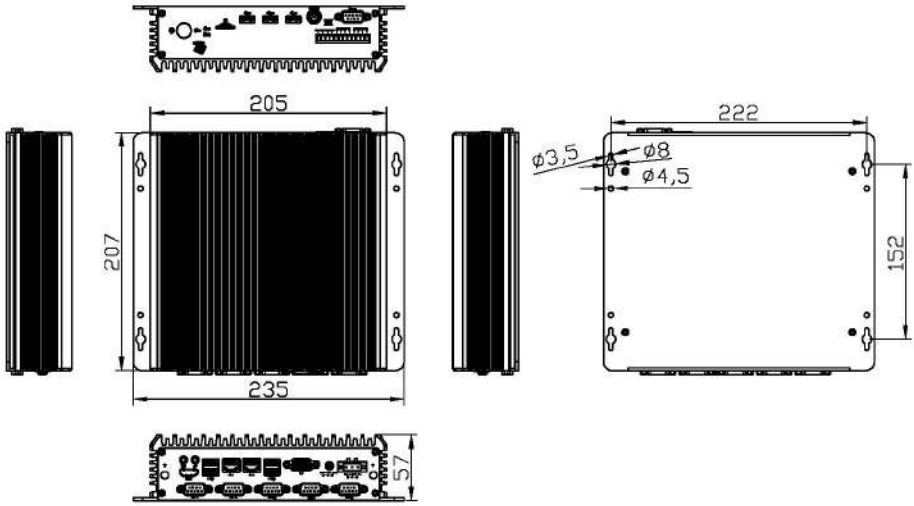


Image 2：Rear IO View

1.3 Dimension



C6850S-C6 Dimension

1.4 Specification

- Processor

  Onboard Intel®i5-7360U/2.30GHz dual cores 4-thread processor, TDP 15W

- Chipset

  Intel®SOC

- Memory

  2*DDR4 2133MHz SODIMM RAM slot, up to 32GB

- Display

  1*VGA

  1*HDMI

  Support dual display：HDMI + VGA

- LAN

  2*Intel I210AT Gigabit Ethernet, support Wake On LAN

- Audio

  1*MIC, 1*Line out

- COM Port

  6*DB9 RS232; COM1~2 support pin9 charging function (5V/12V); COM3~6 RS232/485 selectable, COM5~6 support CAN (need install CAN module)

- Expansion Slot

  1*MiniPCIE/4G, support 4G module

- Storage

  1*2.5” SATA port

  1*MSATA SSD port, transfer speed up to 6Gbp

- Front IO Port

  1*Power button，1*one-key recovery，1*ACLOSS(electric auto power ON/OFF)

  1*Power LED，1*SATA HDD

  3*USB3.0，1*USB2.0，1* Internal USB2.0

  1*SIM slot

1*12pin Phoenix connector (include 4*GPIO/1*power button signal/1*VCC5V)

1*PS2

1*RS232 DB9 COM port, RS232/485 selectable, CAN optional(need install CAN module)

- Rear IO Port

1*VGA

1*HDMI

4*USB3.0

1*Mic, 1*Line out

5*RS232 DB9 COM port；COM1~2 support pin9 charging (5V/12V)；COM3-5 RS232/485 selectable, COM5 support CAN (need install CAN module)

2*Intel I210AT, support Wake On LAN

1*DC adaptor port, 1*3pin Phoenix power connector, support 9-36V input

- Cooling System

Fanless design

- Watchdog

Support hardware reset function (L256，0~255 seconds)

- Power Port

1*DC power adaptor port, 1*3pin Phoenix power connector port, support 9-36V

- Chassis

Dimension：L205mm x W191.2mm x H57mm

Installatino: Decktop/Embedded

- Working Environment

Operating Temp.：-10℃～50℃

Relative Humidity：5～90% relative humidity, non-condensing

Storage Temp.：-20℃～60℃

1.5 Packing

- Packing Size：L300mm x W30mm x H135mm
- N.W.：1.92KG
- G.W.：2.5KG
- Accessory List：

Name	Qty
Screws	4pcs

1.6 Order Information

No.	Model	CPU	Memory	GPIO	HDMI	VGA	LAN	COM	USB	power
1	C6850S-C6V1.2(J1900)	J1900/2.0GHz	1*SODDR3L	4-in 4-out	1	1	2	6	8	9-36V
2	C6850S-C6 V1.2(3865U)	3865U/1.8GHz	2*SODDR4	4-in 4-out	1	1	2	6	8	9-36V
3	C6850S-C6 V1.2(5205U)	5205U/1.9GHz	2*SODDR4	4-in 4-out	1	1	2	6	8	9-36V
4	C6850S-C6 V1.2(4300U)	i5-4300U/1.9GHz	2*SODDR4	4-in 4-out	1	1	2	6	8	9-36V
5	C6850S-C6 V1.2(5020U)	i3-5020U/2.2GHz	1*SODDR3L	4-in 4-out	1	1	2	6	8	9-36V
6	C6850S-C6 V1.2(6650U)	i7-6650U/2.2GHz	2*SODDR4	4-in 4-out	1	1	2	6	8	9-36V
7	C6850S-C6 V1.2(7200U)	i5-7200U/2.5GHz	2*SODDR4	4-in 4-out	1	1	2	6	8	9-36V
8	C6850S-C6 V1.2(7360U)	i5-7360U/2.3GHz	2*SODDR4	4-in 4-out	1	1	2	6	8	9-36V
9	C6850S-C6 V1.2(8145U)	i3-8145U/2.1GHz	2*SODDR4	4-in 4-out	1	1	2	6	8	9-36V
10	C6850S-C6 V1.2(8265U)	i5-8265U/1.6GHz	2*SODDR4	4-in 4-out	1	1	2	6	8	9-36V
11	C6850S-C6 V1.2(8565U)	i7-8565U/1.8GHz	2*SODDR4	4-in 4-out	1	1	2	6	8	9-36V
12	C6850S-C6 V1.2(10210U)	i5-10210U/1.6GHz	2*SODDR4	4-in 4-out	1	1	2	6	8	9-36V
13	C6850S-C6 V1.2(1135G7)	i5-1135G7/2.4GHz	2*SODDR4	4-in 4-out	1	1	2	6	8	9-36V

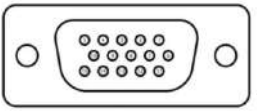
Above order information just for reference

Chapter 2 Interface Definition

2.1 Installation Steps

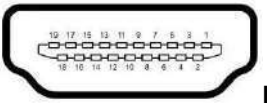
2.1.1 Display (VGA/HDMI)

1*VGA, 1*HDMI dual independent display



VGA Signal Definition

Pin	Signal Name	Pin	Signal Name
1	RED	2	GREEN
3	BLUE	4	ID2
5	GND	6	RGND
7	GGND	8	BGND
9	KEY	10	GND
11	ID0	11	ID1
13	HSYNC	14	VSYNC
15	ID3		

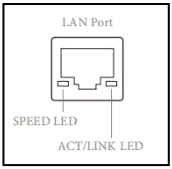


HDMI Signal Definition

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	HRC Data-
15	SCL	16	SDA
17	GND	18	+5V
19	Hot Plug Detect		

2.1.2 Network (LAN1-2)

2*Intel I210AT Gigabit Ethernet



Network LED Definition

Active/Link LED		SPEED LED	
State	Description	State	Description
Off	No Link	Off	10Mbs Connection
Blinking	Data Activity	Orange	100Mbs Connection
On	Link	Green	1Gbps Connection

2.1.3 Audio Port (MIC and Speaker)

Provide 1*Line-out speaker（green） and 1* MIC（red）port

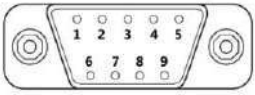
2.1.4 Power Button / Reset Button / ACLOSS

1* Power button [PWR], 1*Reset button [RST], 1*Power LED [PWRLED]，

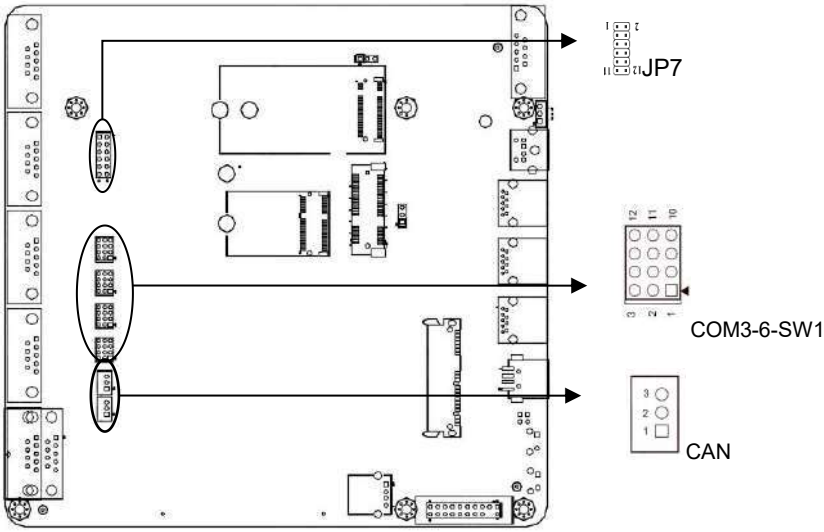
1*HDDLED，1*ACLOSS switch [ON/OFF] (electric auto power ON/OFF)

2.1.5 COM Port (COM1-6)

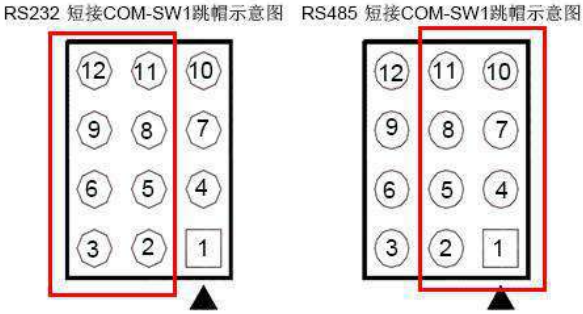
COM1~6 RS232，COM1-2 support the pin9 charging function, setting via JP1 jumper on C69-C6 expansion board；COM3~6 RS232/485 selectable， isolated, RS232/485 selectable via COM-SW jumper on C69-C6 expansion board.



(COM Port Graphics)



(C69-C6 Graphics)



RS232 Jumper Setting **RS485 Jumper Setting**

COM 1~6 Signal Definition

Pin	Signal Name	Pin	Signal Name
1	485P/DCD	2	485N/RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	NC

COM 3~6 RS232/485 Setting

	COM3/4/5/6-SW1
RS232	short 2-3,5-6,8-9,11-12 pin
RS485	short 1-2,4-5,7-8,10-11 pin

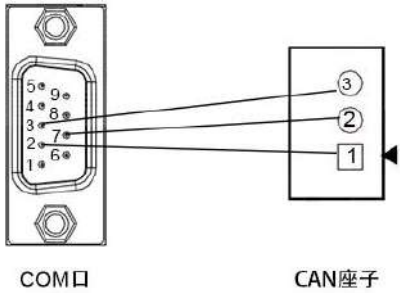
JP7 (COM1~2 5V/12V) Setting

Setting	Function (JP1)	
short 1-2 pin	RS232	COM1
short 3-4 pin	+5V	
short 5-6 pin	+12V	
short 7-8 pin	RS232	COM2
short 9-10 pin	+5V	
short 11-12 pin	+12V	

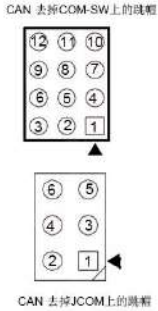
CAN Port Definition

Pin	Signal Name	Pin	Signal Name
1	RXD (DB9 pin2)	2	RTS (DB9 pin7)
3	TXD (DB9 pin3)		

Remark：To use CAN signal, need install MINIPCIE CAN module, and remove JCOM and COM-SW jumper.



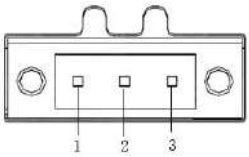
(CAN signal pin on DB9COM)



(CAN port jumper setting: remove the jumper)

2.1.6 Power (9-36V)

Provide 1*DC adaptor port and 1*3pin Phoenix connector, support 9-36V input

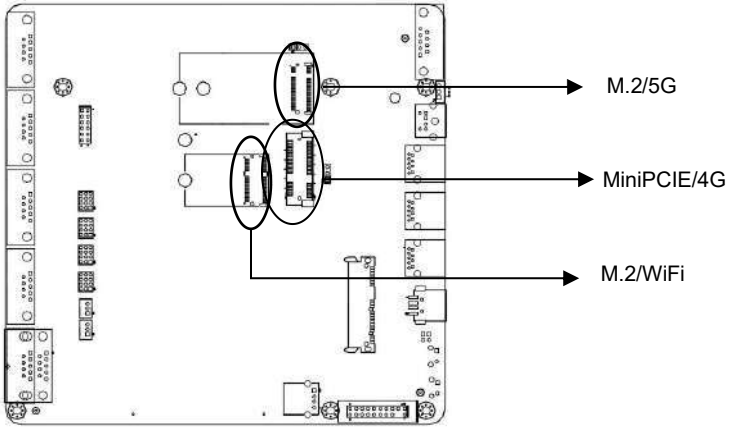


1*3pin Phoenix Connector

Pin	Signal Name	Pin	Signal Name
1	VCC	2	GND
3	GND		

2.1.7 Expansino Slot (MiniPCIE)

1*MINIPCIE support 4G module, 1*M.2 5G，1*M.2 WiFi



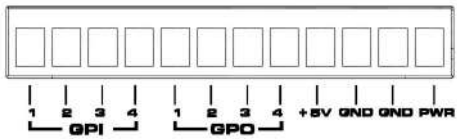
(C69-C6 Graphics)

Tips：

Please use a dedicated power adapter. After confirming that the interface is connected correctly, press the POWER button on the front panel of the computer to turn on the device. How to identify the alarm sound: (a long beep is system memory error; a short beep" is boot sound).

2.1.8 Phoenix Connector (GPIO)

1*12pin Phoenix connector, include 4-in 4-out GPIO，5V，GND，PWR



Pin	Signal Name	Pin	Signal Name
1	FP_SPSW	2	GND
3	GND	4	+5V
5	GPIO36	6	GPIO37
7	GPIO51	8	GPIO52
9	GPI10	10	GPI23
11	GPI80	12	GPI81

Chapter 3 BIOS Setting

3.1. BIOS Description

BIOS（Basic Input and Output System），via CMOS chip on motherboard, it 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

3.2.1Enter Into BIOS Interface

Following below steps to enter into 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 (optimize to factory settings)

<F10> Save BIOS settings

3.2.2 Main Menu (BIOS information and time date)

Bios ID ：

Build Date and Time ：

Access Level：

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

ACPI Settings ： Advanced configuration and power management interface settings.

IT8786 Super IO Configuration：contains COM port interrupt number and address settings

Hardware Monitor： system monitoring, hardware monitoring, hardware monitor

Miscellaneous Configuration ： include timing start up, power on auto start-up, watchdog, etc.

CPU Configuration:

USB Configuration:

CSM Configuration:

3.2.4 ACPI Settings

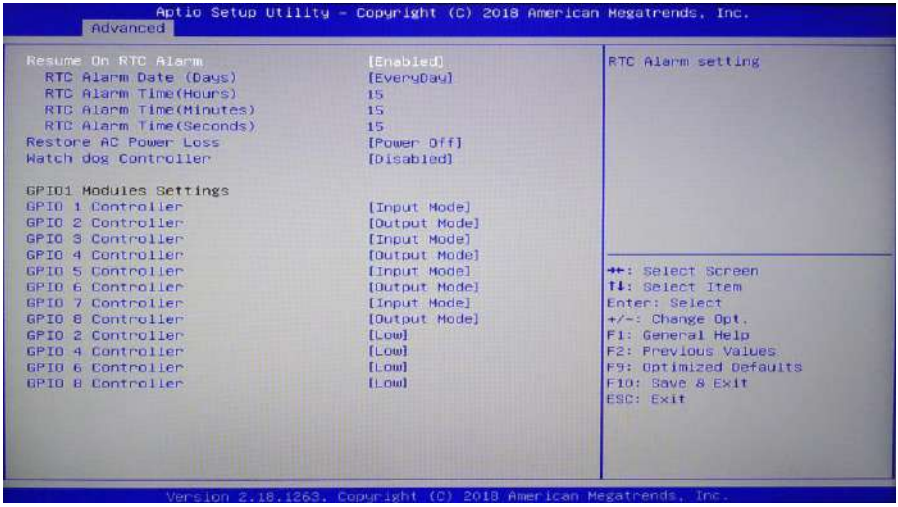
Enable ACPI Auto Configuration ：This item is automatically configured for the ACPI, Allow (Enabled) or close (Disabled) BIOS ACPI automatic configuration, default is close (disabled).

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) resource latch function.

3.2.5 Miscellaneous Configuration



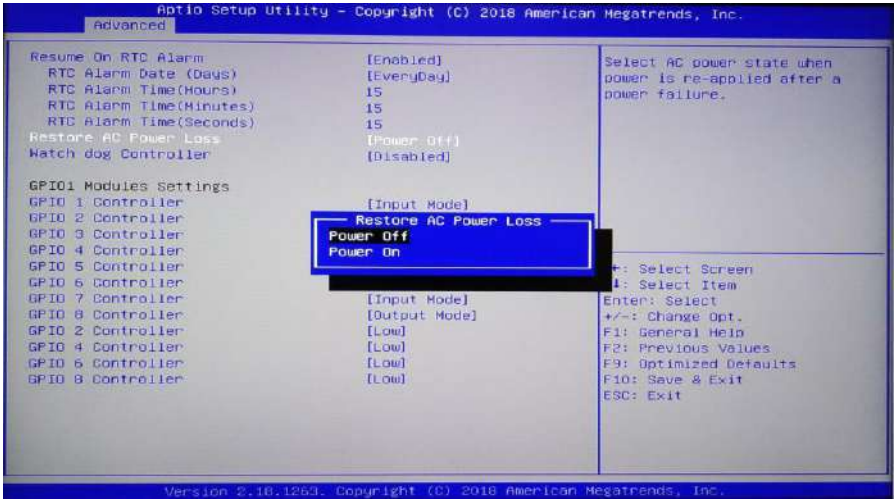
Resume On RTC Alarm :

RTC Alarm Date(Days):

RTC Alarm Time(Hours):

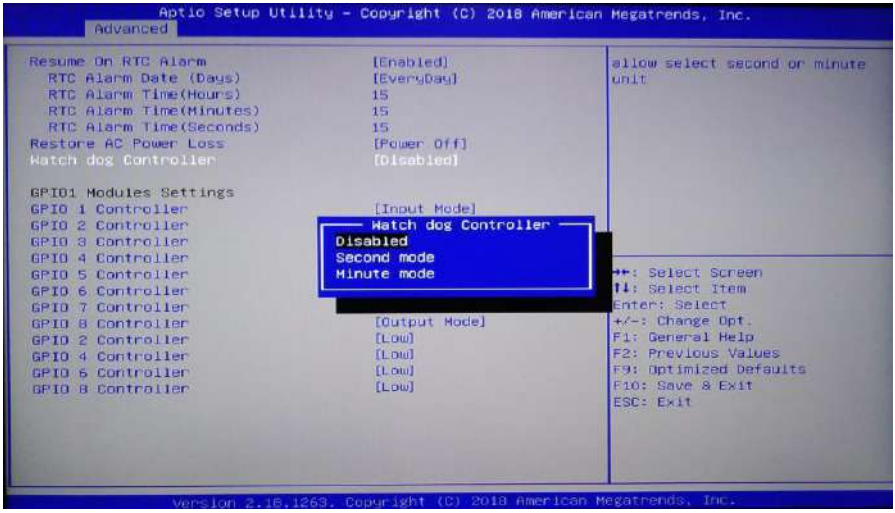
RTC Alarm Time(Minutes):

RTC Alarm Time(Seconds):



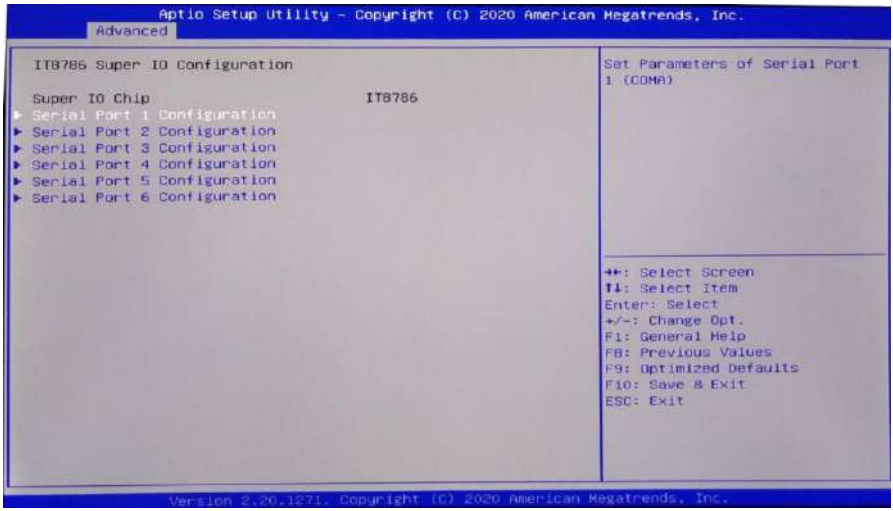
Restore AC Power Loss: this option is used to set the power on condition after connecting to electric. Power Off: need to press power button to power on; Power

On: Power on directly after connecting to electric; Last State: keep previous state after connecting to electric.



Watch dog controller: [Disabled] disable watchdog, [Second mode] set the watchdog to seconds mode, [Minute Mode], set the watchdog to minute mode.

3.2.6 Super IO Configuration



Serial Port 1 Configuration：Super IO configuration information, including COM port

interrupt number and address setting.

Serial Port 2 Configuration：

Serial Port 2 Configuration：

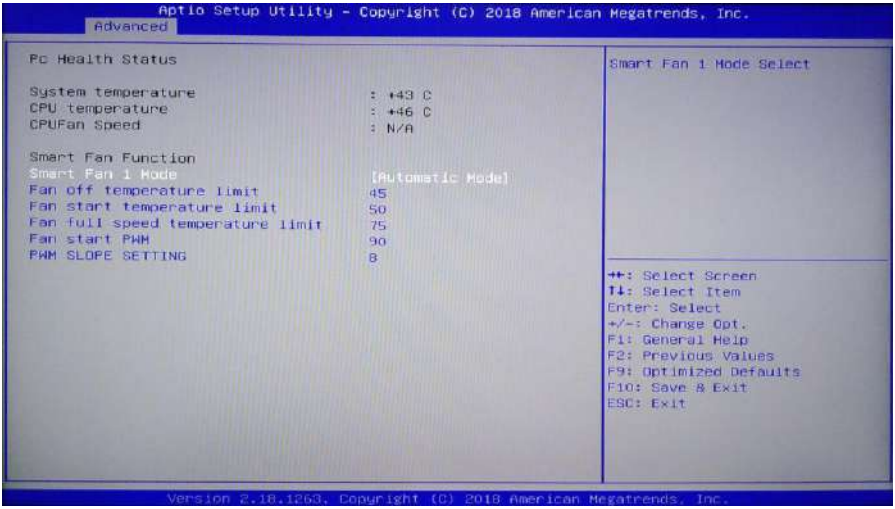
Serial Port 3Configuration：

Serial Port 4 Configuration：

Serial Port 5 Configuration：

Serial Port 6 Configuration：

3.2.7 PC Health Status



PC Health Status：shows the current system temperature, CPU temperature, fan speed, and other relevant voltage value. The above parameters have a certain range, system cannot operate beyond the scope.

Smart Fan 1 Mode：This option is whether or not open the CPU automatic fan control function, used to adjust CPU fan speed automatically according to the real-time detected CPU temperature, to achieve the purpose of saving energy.

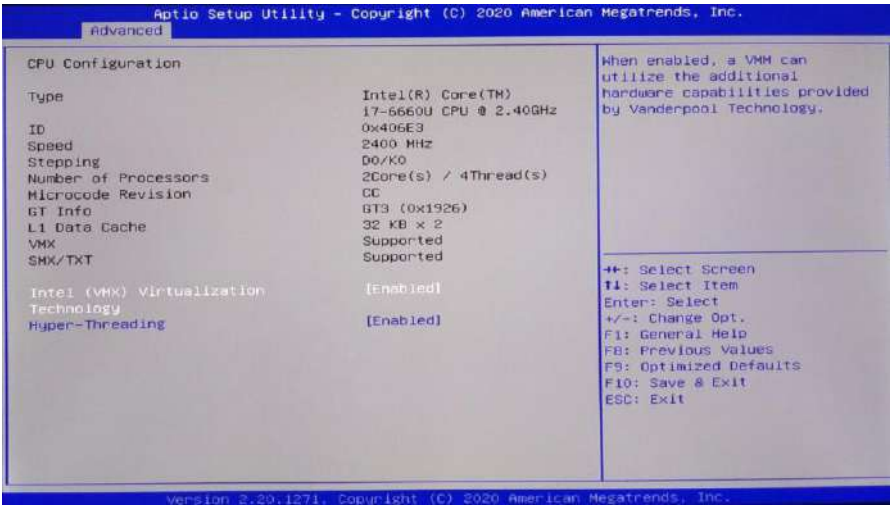
Fan off temperature limit：Fan stop minimum temperature setting.

Fan start temperature limit：Fan start minimum temperature setting.

Fan start PWM：Fan start PWM value setting.

PWM slope setting：

3.2.8 CPU Configuration

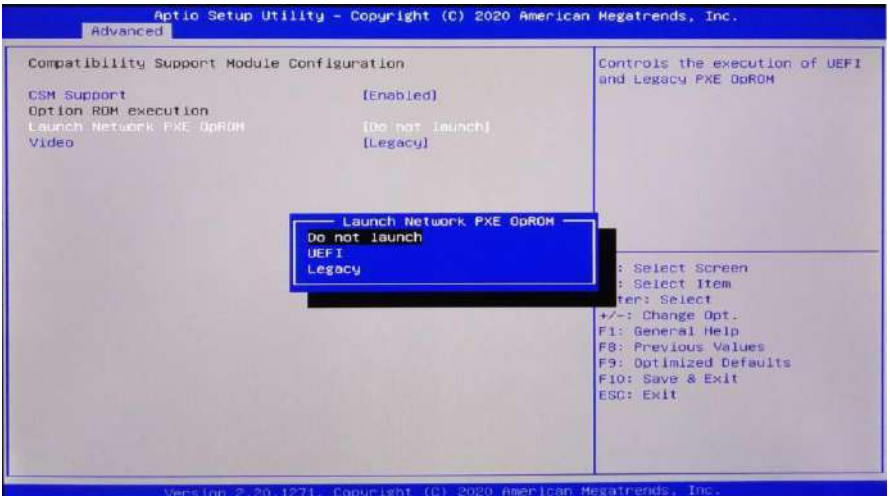


Read only items contain details of the CPU, including the CPU manufacturers, models, frequency, the first level cache size, the second level cache size and other information.

Intel Virtualization Technology ：

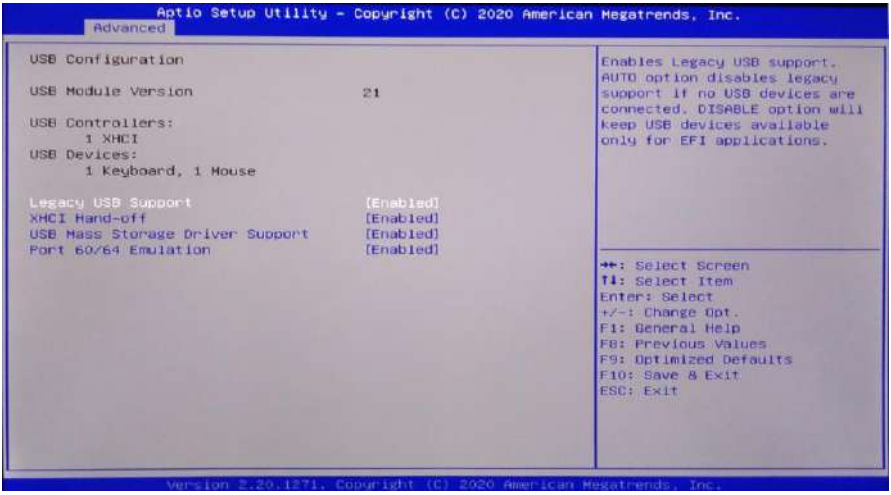
Intel Virtualization Technology Is Intel's CPU in the system of virtual technology. It makes it possible to enable a PC running a plurality of OS, VT technology is in various types of processors, including dual core processor play very important role, this technique allows the processor with and / or 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.

3.2.9 CSM Configuration



Launch Network PXE OpRom: set None-Disk boot; Do not launch: close None-disk boot; UEFI: set non-disk boot mode as UEFI; Legacy: set None-Disk boot as Legacy mode.

3.2.10 USB Configuration



Legacy USB Support ：

This is used for old version USB setting, if need to support USB devices in DOS,

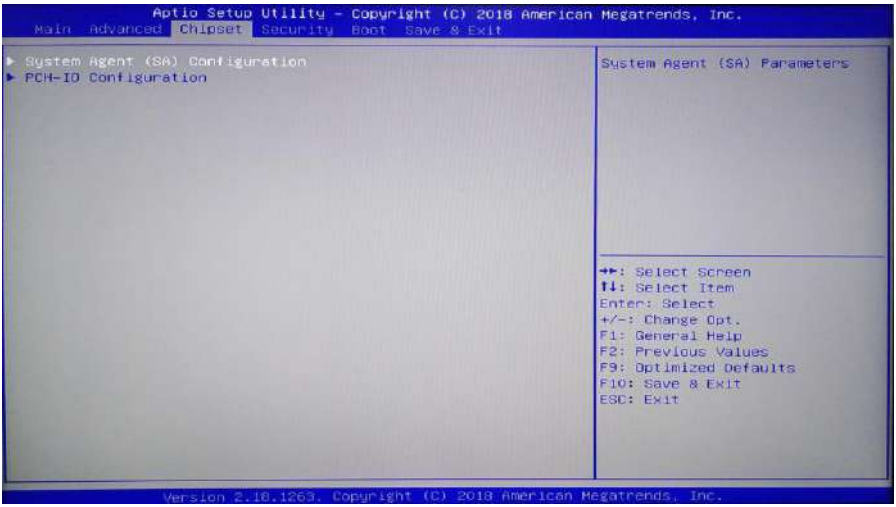
such as U disk, USB keyboard, etc., choose the option [Enabled] or [Auto]. on the contrary, choose [Disabled].

XHCI Hand-off ：

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

USB Mass Storage Driver Support ：

3.2.11 Chipset



PCH-IO Configuration ：

South bridge configuration option, include audio card, LAN card options, etc.

System Agent (SA) Configuration ：

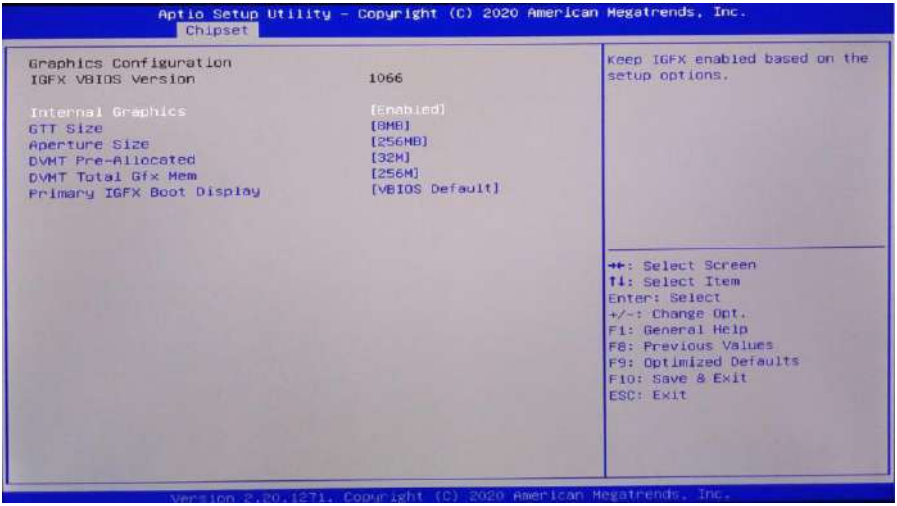
North bridge configuration options, include video memory, display device, LVDS, etc.

VT-d ：

Intel's I/O virtualization technology, need chipset to support it, some chipset support, some don’t. The BIOS will show or hide this option according to different chipset. Please enable it when installing virtual computer.

Memory Configuration:

Graphics Configuration:



DVMT Pre-Allocated：Dynamically allocate the value of video memory.

DVMT Total Gfx Mem：Dynamically allocate the value of the total graphics card.

Aperture Size：

GTT Size:

Primary IGFX Boot Display ： Vbios selection, Graphics boot configuration.

3.2.12 Boot

Setup Prompt Timeout：click the Setup shortcut key to wait time. If have not click the setup shortcut key in the setup time it will continue to boot.

Quiet Boot：（Disabled or, enabled）.

Fast Boot ：（Disabled or, enabled）.

Boot Option Priorities： system will inspect device in accordance with the set procedure, until find a device that can be boot, and then boot from this device. Boot option #1 is the most preferred boot device.

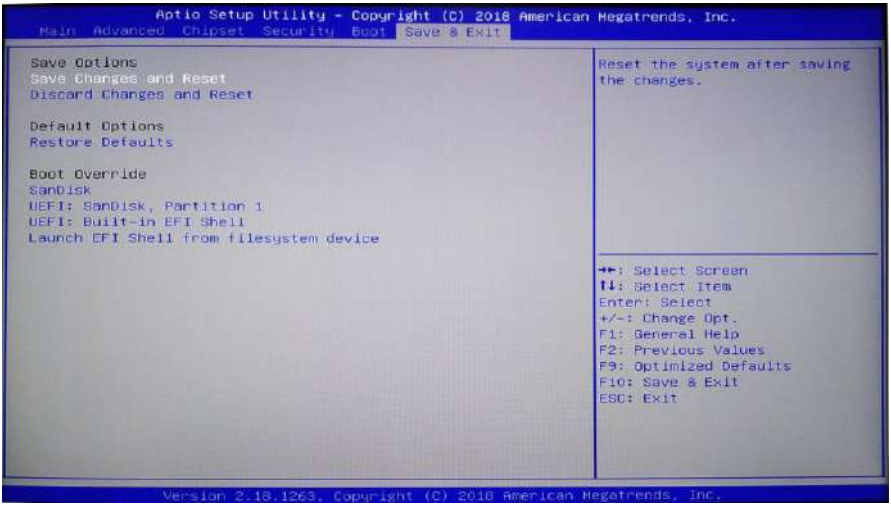
3.2.13 Security

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.

3.2.14 Save&Exit



Save Changes and Reset ： 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 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 issue analysis and solution

Common Faults	Check Points
No start up after connecting power	1. Make sure the power cable is connected properly 2. Please confirm all the power supply can 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 according to motherboard manual 6. Please confirm whether there is an external card, remove the card and check again
VGA no display after power on	1 To check whether the monitor is open 2 Check whether the power cable 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 Check whether the display brightness control is set to the dark state, can improve brightness through the brightness control. 5 Display in the "power save" mode, press any key on the keyboard
BIOS Setup can not be saved	1. Please check whether the CMOS battery voltage is lower than 2.8V, if so, please replace a new battery, set again and save 2. BIOS settings are not correct, according to the boot screen prompt button (DEL), adjust the time and date in the Setup BIOS
Prompt message cannot find bootable device	1. Please check whether the hard drive power cord, data cable is connected normally 2. Please check whether the hard disk has physical damage

	3. Please check whether the operating system is normally installed on the hard disk
Blue screen or crash when enter into OS	1. Please check 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
Slow speed to enter into OS	1. Try to use third party software to check whether the hard disk has bad sectors 2. Please check whether the hard disk remaining space is too small for operating system. 3. Please check whether the CPU cooling fan is rotating normally
System restart automatically	1. Please check whether the CPU cooling fan is rotating normally 2. Please check whether triggered reset button wrongly 3. Please use anti-virus software to confirm whether the system is infected with the virus 4. Please check whether the memory card and the card is loose 5. Please confirm that the power capacity is sufficient, can try to replace the power supply
Can not detect USB device	1. Please check whether the USB device needs separate power supply 2. Please check whether the USB interface has bad contact 3. Please check whether the USB controller is open in BIOS Setup