

MBC-11001

机器视觉主板

USER' Manual V1.0

USER'S MANUAL

用户手册

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安全须知

1	产品使用前，务必仔细阅读产品说明书。
2	对未准备安装的板卡，应将其保存在防静电保护袋中。
3	在从包装袋中拿板卡前，应将手先置于接地金属物体上一会儿，以释放身体及手中的静电。
4	在拿板卡时，需佩带静电保护手套，并且应该养成只触及边缘部份的习惯。
5	主板与电源连接时，请确认电源电压。
6	为避免人本被电击或产品被损坏，在每次对主板、板卡进行拔插或生新配置时须先关闭交流电源或将交流电源线从电源插座中拔掉。
7	在对板卡进行搬动前，先将交流电源线从电源插座中拔掉。
8	当您需连接或拔除任何设备前，须确定所有的电源线事先已被拔掉。
9	为避免频繁开关机对产品造成不必要的损伤,关机后,应至少等待30秒后再开机。
10	设备在使用过程时出现异常情况，请找专业人员处理。

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第一章 产品介绍

1.1 产品规格

Model		MBC-11001
配置 Item	规格 Specification	描述 Describe
处理器 Processor System	CPU	Intel Skylake / Kaby Lake I3/I5/I7
	插槽 Socket	Intel® Socket LGA1151
	芯片组 Chipset	Intel PCH Q170
	BIOS	AMI 64MBit SPI
内存 Memory	规格 Technology	DDR4 6th 1866/2133MHz 7th 2133/2400MHz
	最大容量 Max. Capacity	32G
	插槽 Socket	2 x SO-DIMM
扩展插槽 Expansion Slot	M.2	1 x M.2 for 3G/4G 1 x M.2(2242 / 2280) for PCIe/SSD
	Mini PCIe	1 x Mini PCIe for 3G/4G 1 x Mini PCIe for USB & PCI-E
	SIM	2 x SIM
	PCI-Express	1 x PCI-E 8x(ZRT define)
存储 Storage	SATA	2 x SATA3.0 SATA 6Gb/s
	mSATA	1 x mSATA for SSD
串口 COM	前面板 Front I/O	1 x RS232/RS422/RS485
	插针 Header Pin	2 x RS232/RS422/RS485 (COM 1/2) 2 x RS232(COM 3/4)
USB / Type-C	后面板 Rear I/O	6 x USB3.0
	插针 Header Pin	2 x USB2.0

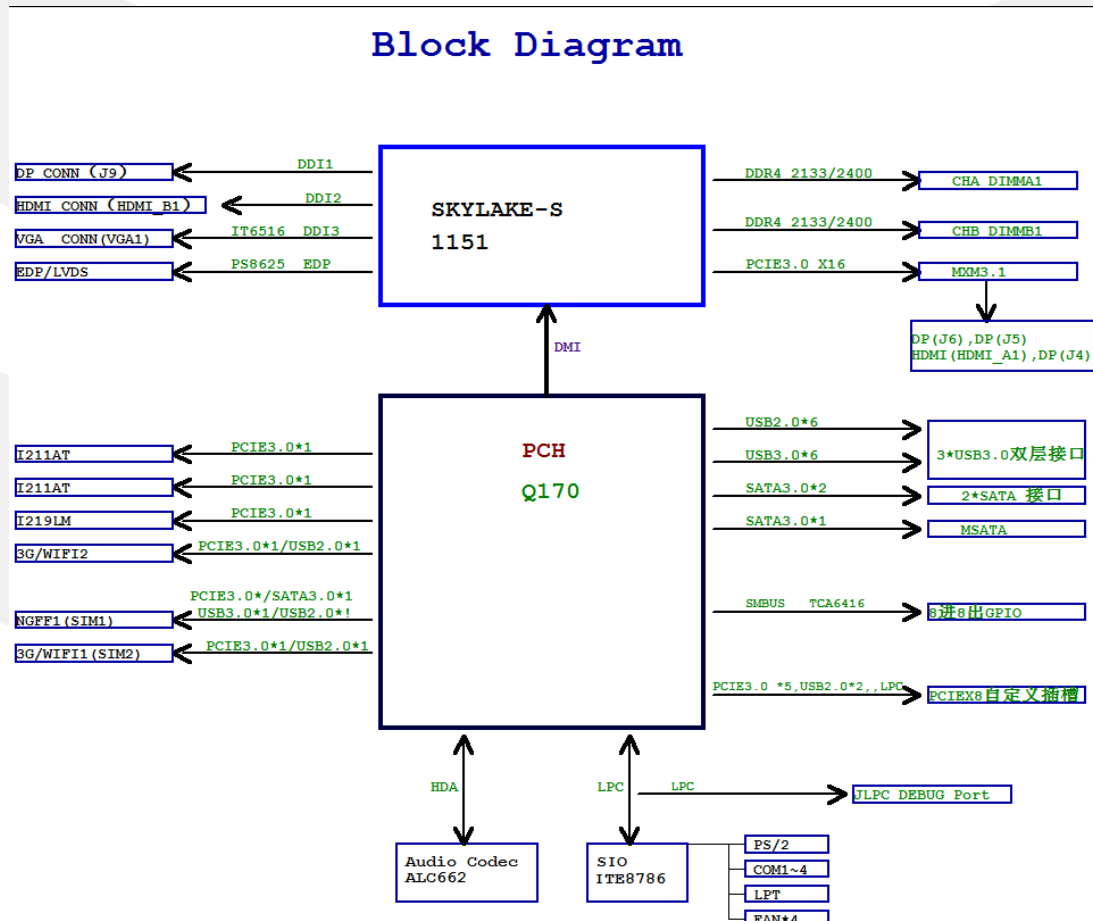
PS2	插针 Header Pin	1 x PS2
显示 Graphics	最多显示 Multiple Display	7 Ports
	插槽 Slot	1 x MXM3.1 by PCI-E x16 support Type A/B DP A: Display Port DP B: Display Port DP C: HDMI 1.4 DP D: Display Port
	前面板 Front I/O	1 x HDMI1.4a (From GPU) 1 x HDMI1.4a (From CPU) 3 x DP (From GPU) 1 x DP (From CPU)
	插针 Header Pin	1 x VGA (From CPU) 1 x LVDS or eDP (From CPU)
	分辨率 Resolution	HDMI:4096*2304@24Hz DP:4096*2160@60Hz eDP:4096*2304@60Hz VGA:1920*1080@60Hz LVDS:1920*1200@60Hz
以太网 Ethernet	控制器 Controller	Integrated 10/100/1000M Adaption (Intel Ethernet Controller I211-AT, I219M)
	后面板 Rear I/O	3 x RJ45 10/100/1000M
GPIO	插针 Header Pin	1 x 16bit GPIO
音频 Audio	芯片 Chipset	Integrated High Definition Audio Stereo (ALC662)
	后面板 Rear I/O	1 x Line Out 1 x MIC In
	插针 Header Pin	1 x Line Out/Line In/MIC In
其它 Others	按钮 Button	1 x Power Button 1 x Reset Button
	插针 Header Pin	1 x SMBUS 1 x LPC 1 x LPT 1 x AT Power for POE
环境 Environment	工作温度 Operating Temperature	-10~60°C
	存储温度 Storage Temperature	-40~85°C
	工作湿度 Operating Humidity	10~90%(non-condensing)

电源 Power Requirements	电源类型 Power Type	1 x Phoenix Port (5P In)
	电源电压 Input Voltage	6V~48V, Max 20A (6~9V lower limit, hold on only 10 second 9~12V without independent graphic card 12~48V full function)
	Consumption	250W
物理特性 Physical	尺寸 Dimensions	228* 218*1.8mm
	PCB 颜色 Color	Green
操作系统 OS	Microsoft	Windows 10 1809(RS5) · Windows 7
	Linux	Yocto 2.4 Rocko

1.2 驱动

Windows 7 64bit: https://pan.baidu.com/s/1V2-Fn_WEwy9AT38aalgJMw?pwd=n2zs

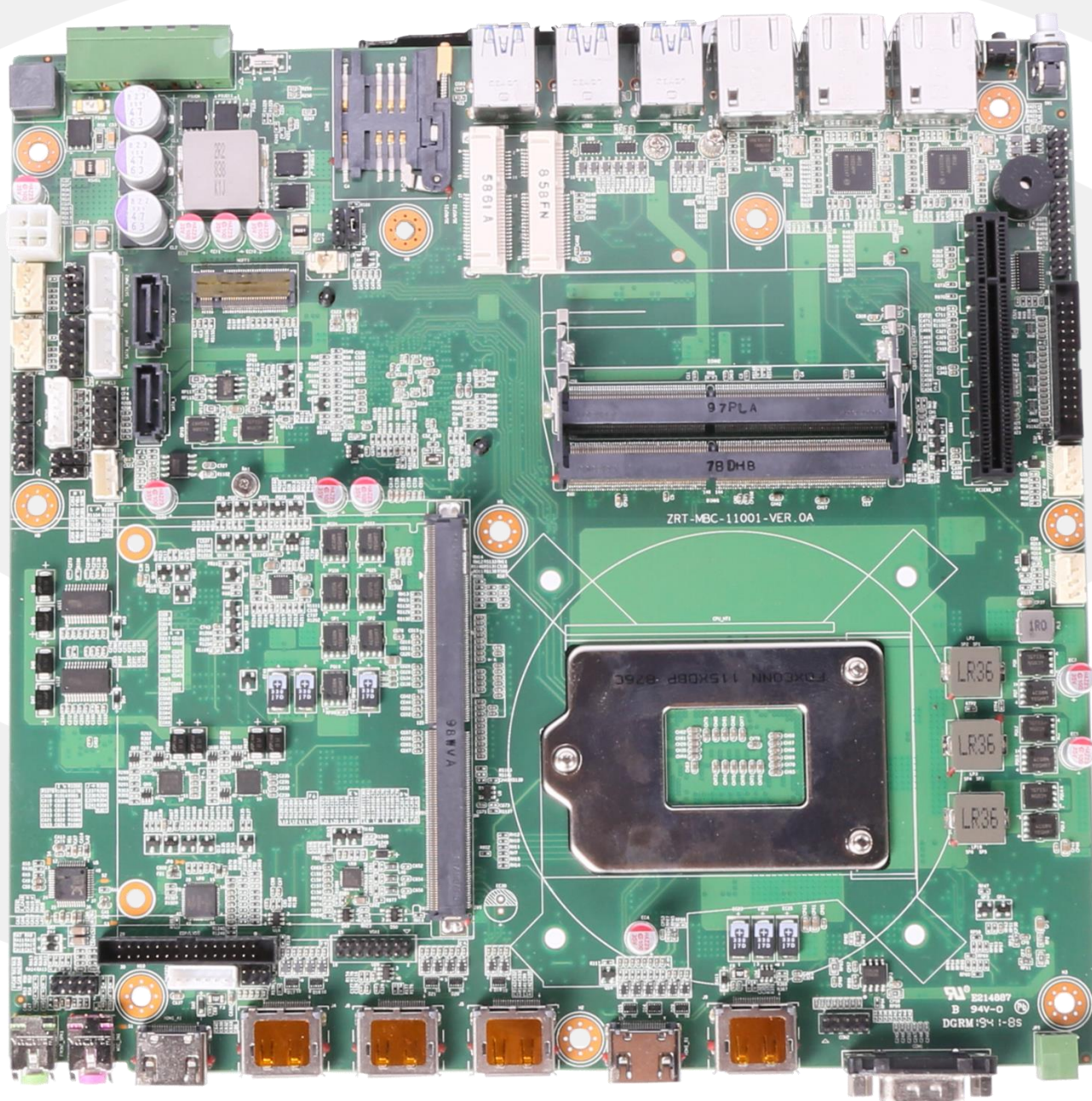
1.3 功能框图

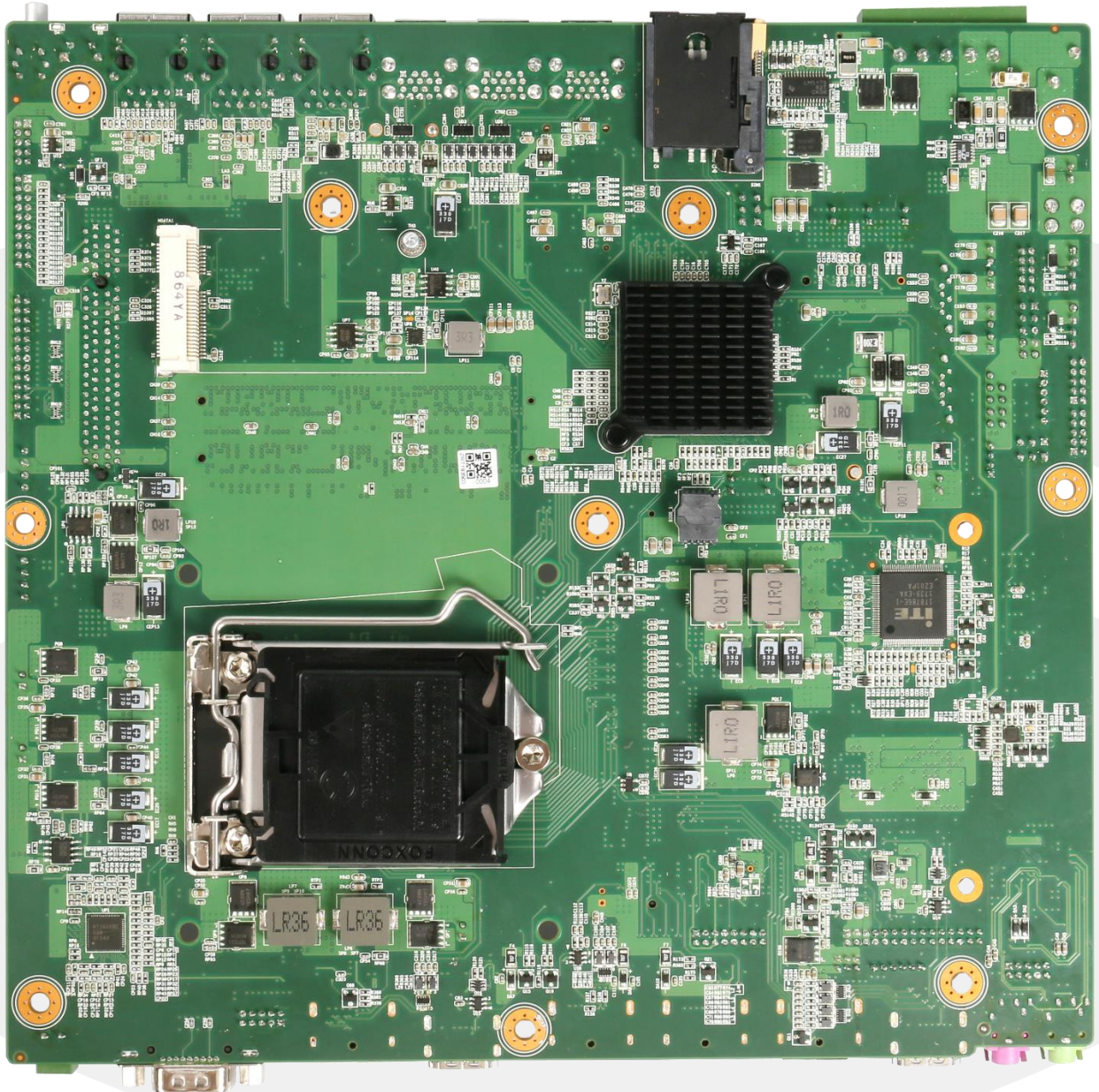


1.4 产品料号

Model Name	Part Number	Specification
MBC-11001(LVDS)	8.ZRT.80-6343-00-LFF	主板-ZRT-MBC-11001、228*218mm、Q170、2*SO-DIMM、3*LAN/5*COM/8*USB/2*HDMI+4*DP、支持LVDS/VGA、6~48V、带凤凰端子-工包
MBC-11001(eDP)	8.ZRT.80-6343-10-LFF	主板-ZRT-MBC-11001、228*218mm、Q170、2*SO-DIMM、3*LAN/5*COM/8*USB/2*HDMI+4*DP、支持eDP/VGA、6~48V、带凤凰端子-工包

1.5 产品照片

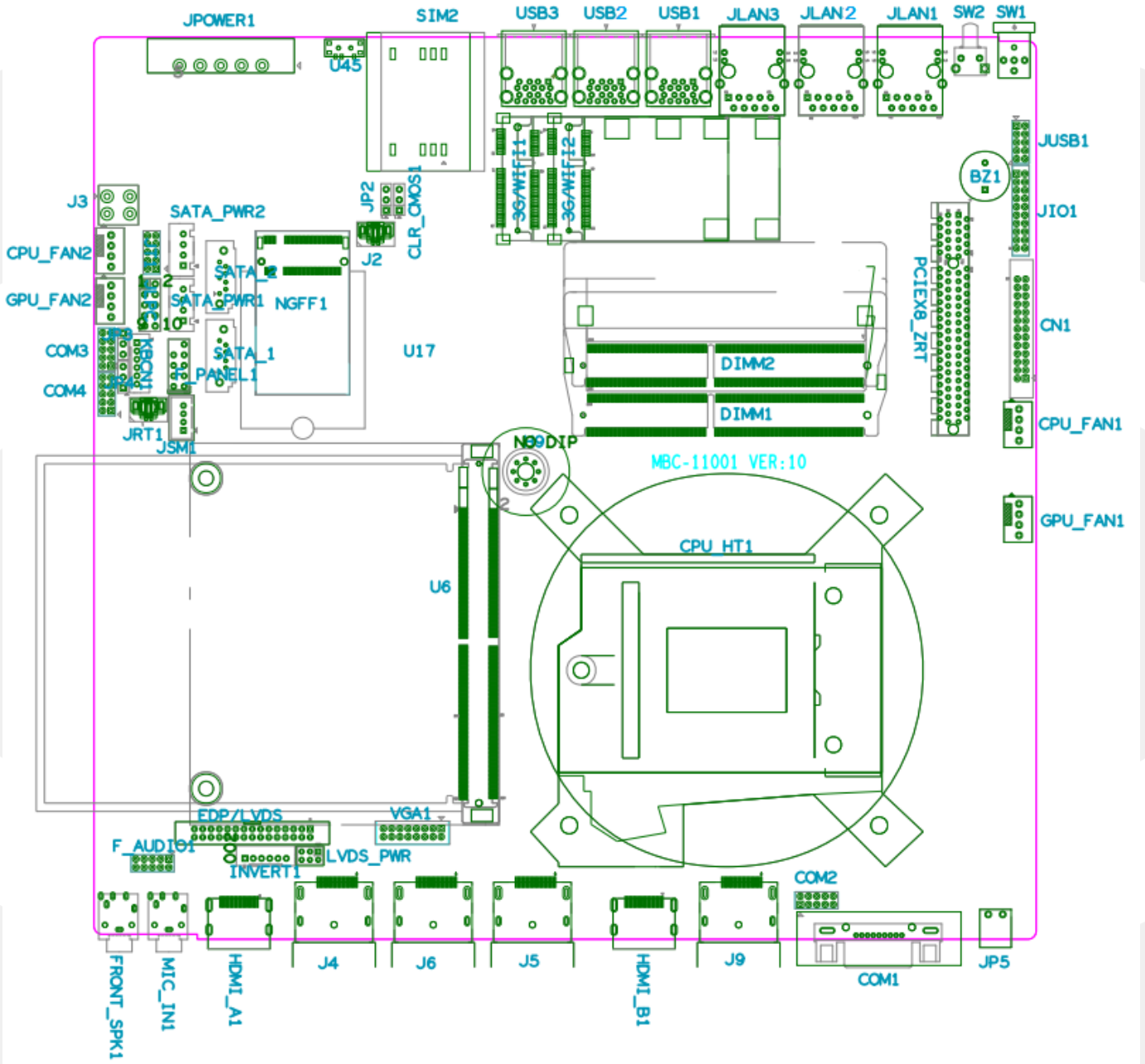




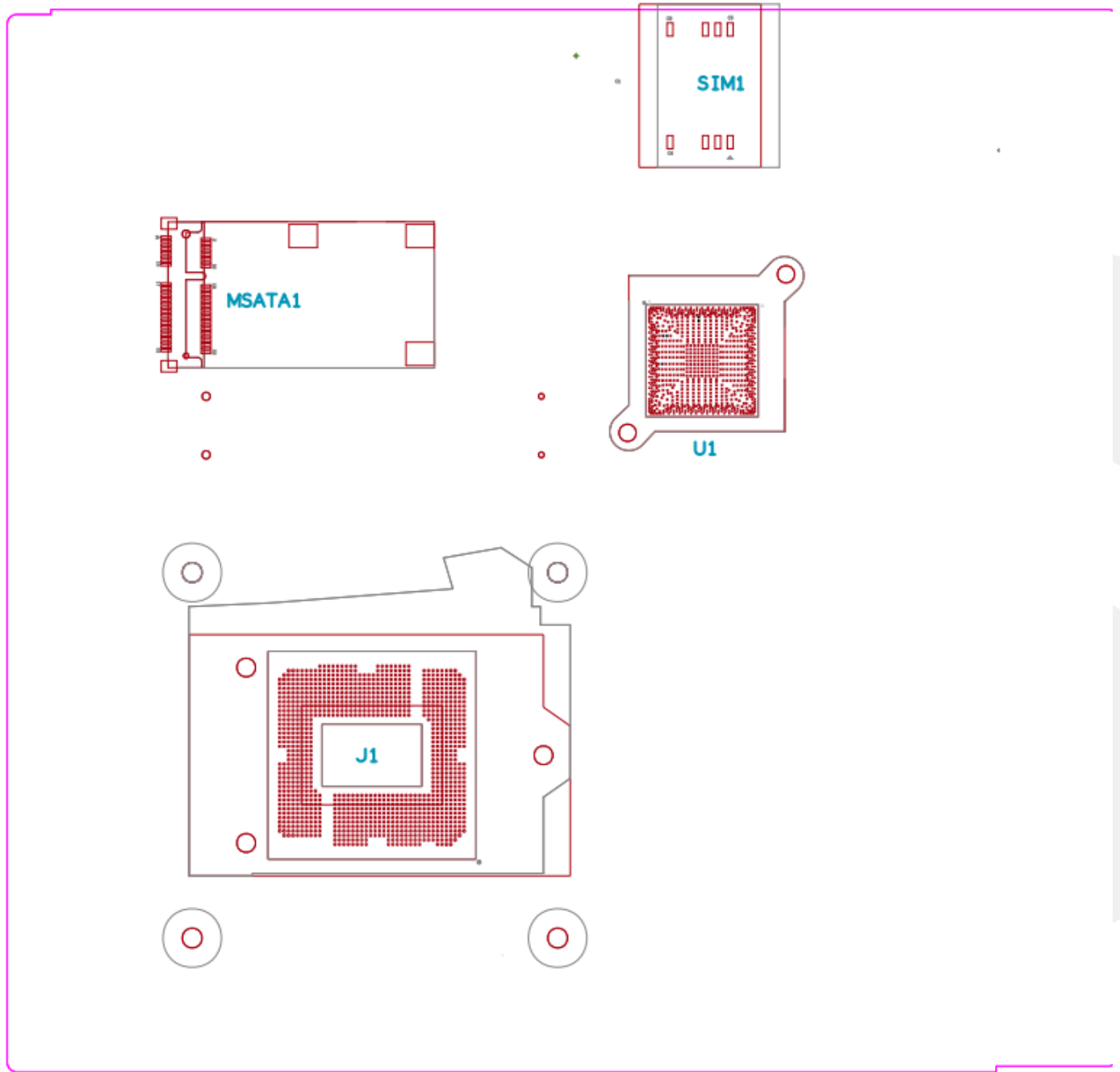
第二章 安装说明

2.1 接口/尺寸图

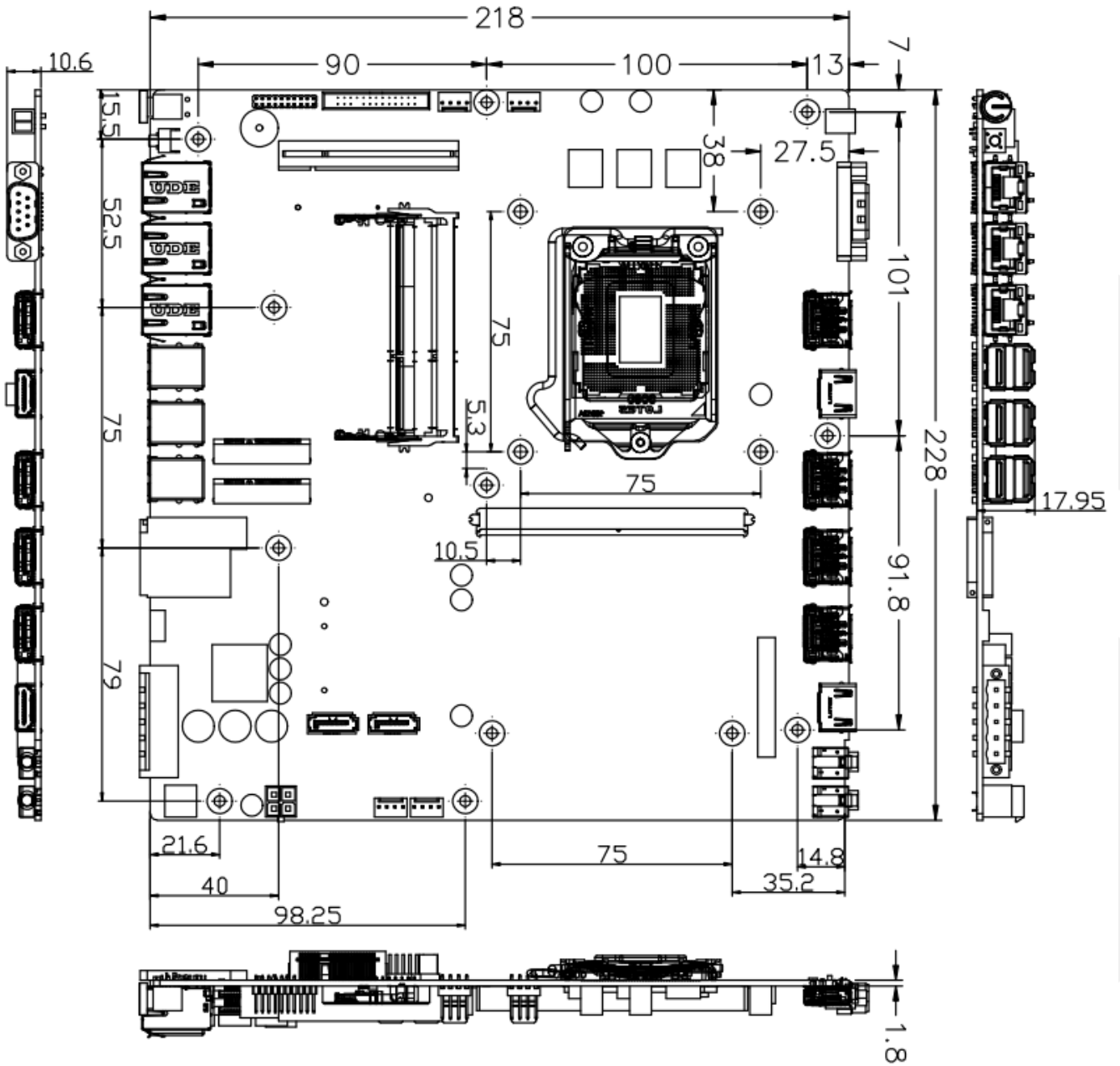
安装设备时，请对照此示意图并仔细阅读下面的说明，安装组件过程中必须小心，对于有些部件，如果安装不正确，设备将不能正常工作。



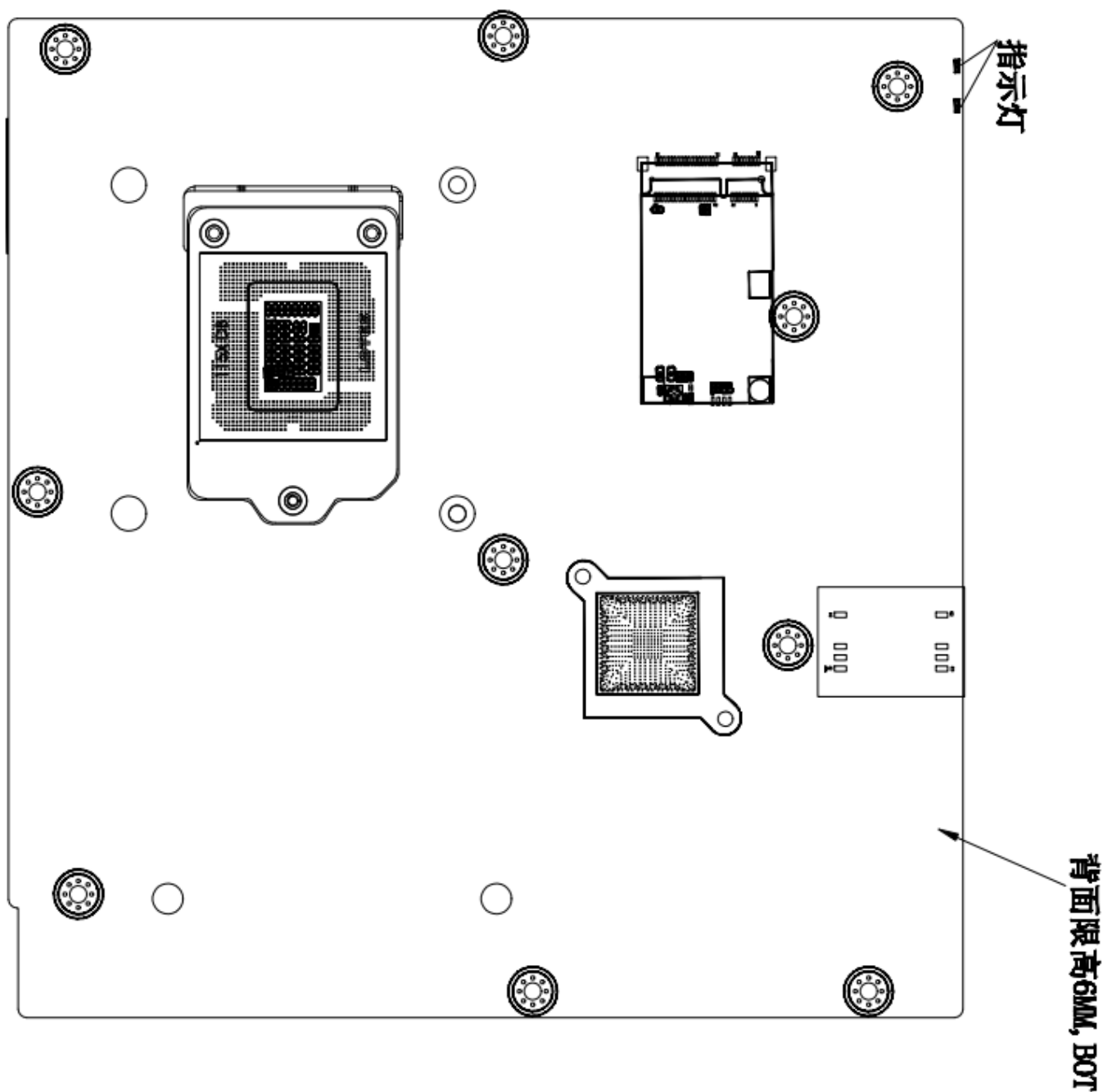
TOP Side



Bottom Side



Mechanical Drawing (TOP Side)



Mechanical Drawing (Bottom Side)

2.2 硬件安装

⚠ 注意：操作时，请戴上防静电手套，因为静电有可能会损坏部件。

本主板关键元器件都是集成电路，而这些元件很容易因为遭受静电的影响而损坏。因此，请在正式安装主板之前，请先做好以下的准备：

1. 拿主板时手握板边，尽可能不触及元器件和插头插座的引脚。
2. 接触集成路元件（如 CPU、RAM 等）时，最好戴上防静电手环/手套。
3. 在集成电路元件未安装前，需将元件放在防静电垫或防静电袋内。
4. 在确认电源的开关处于断开位置后，再插上电源插头。

2.3 跳线功能设置

在进行硬件设备安装之前请按照您的需要对相应的跳线进行设置。

提示：如何识别跳线、接口的第 1 针脚，观察插头插座旁边的文字标记，会用“1”或加粗的线条或三角符号表示；看看背面的焊盘，方型焊盘为第 1 针脚；所有跳线的针脚 1 旁都有 1 个白色箭头。

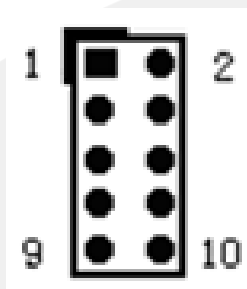
2.3.1 清 CMOS 跳线设置

主板提供插针 CLR_CMOS1 来清 CMOS，CLR_CMOS1 插针定义如下：



设置	功能
1-2 短路	正常工作状态(Default)
2-3 短路	清除 CMOS 内容，所有 BIOS 设置恢复成出厂值

2.3.2 ITPS 模式跳线设置



管脚	信号名称	管脚	信号名称
1	GND	2	BIT0
3	GND	4	BIT1
5	GND	6	BIT2
7	GND	8	MODE_CHOOSE
9	GND	10	RESERVE

首先判断 MODE CHOOSE 和 AUTO_OF_MANUAL 输入高低选择工作模式

MODE CHOOSE	AT/ATX	Mode
1 (不接跳帽)	X	Itps mode
1 (不接跳帽)	X	Itps mode
0 (7-8 短路)	AT	Family auto mode
0 (7-8 短路)	ATX	Family manual mode

Itps mode 开机延时时间设置

DELAY BIT0~2	开机延时时间
111	0S
011	5min
101	15S
110	60S

2.3.3 COM1/2 电压模式选择

COM1 电压模式选择



COM1 SUPPORT RING IN	跳 冒
5V	1-2
12V	2-3

COM2 电压模式选择



COM2 SUPPORT RING IN	跳 冒
5V	1-2
12V	2-3

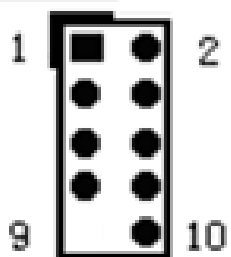
2.3.4 ATX/ATX 选择 default 不上跳帽



设 置	功 能
1-2 短路	硬件开机自动上电

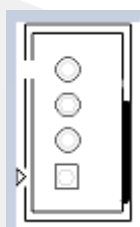
2.4 插针定义

2.4.1 USB 2.0 插针接口, 2.00mm_2x5pin, 位置: JUSB1



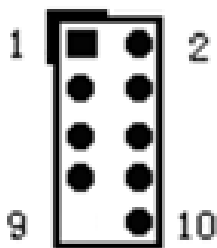
管 脚	信号名称	管 脚	信号名称
1	5V	2	5V
3	USB1_Data-	4	USB2_Data-
5	USB1_Data+	6	USB2_Data+
7	GND	8	GND
9	--	10	GND

2.4.2 SATA_PWR 插针带框, 2.54mm_4x1pin_白色, 位置: SATA_PWR1, SATA_PWR2



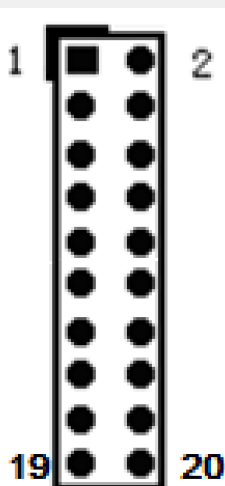
管 脚	信号名称
1	V12
2	GND
3	GND
4	5V

2.4.3 COM 插针, RS232 串口, 2.54mm_2x5pin_第 10pin 空, 位置: COM2, COM3, COM4



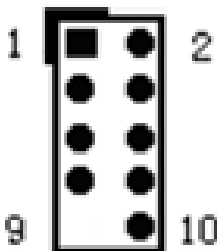
管脚	信号名称	管脚	信号名称
1	DCD	2	SIN
3	SOUT	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	NC

2.4.4 GPIO 接口 16 位 GPIO 接口, 2.00mm_2x10pin, 位置: JIO1



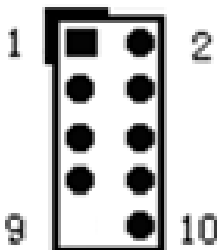
管脚	信号名称	管脚	信号名称
1	VCC_GPIO	2	GND
3	VCC_GPIO	4	GND
5	GPO1	6	GPI1
7	GPO2	8	GPI2
9	GPO3	10	GPI3
11	GPO4	12	GPI4
13	GPO5	14	GPI5
15	GPO6	16	GPI6
17	GPO7	18	GPI7
19	GPO8	20	GPI8

2.4.5 LPC_BUS debug 接口, 2.54mm_2x5pin: 位置: JLPC



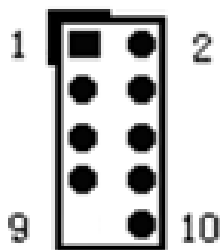
管脚	信号名称	管脚	信号名称
1	CLK	2	DATA0
3	RESET	4	DATA1
5	FRAME	6	DATA2
7	+3.3V	8	DATA3
9	GND	10	GND

2.4.6 FPANEL 前面板状态接口, 2.54mm_2x5pin_第 10pin 空, 位置: F_PANEL1



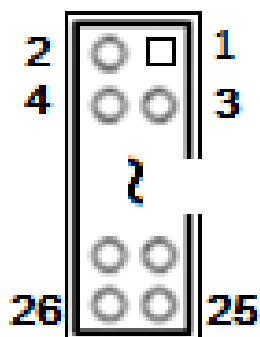
管脚	信号名称	管脚	信号名称
1	HDD LED+	2	PW LED+
3	HDD LED-	4	PW LED-
5	GND	6	PW Button
7	RESET	8	GND
9	BKL SW	10	--

2.4.7 AUDIO 插针接口, 2.54mm_2x5pin_第8pin空, 位置: F_AUDIO



管脚	信号名称	管脚	信号名称
1	MIC_L	2	GND
3	MIC_R	4	VCC
5	LINE_R	6	F_R
7	NC	8	空
9	LINE_L	10	F_L

2.4.8 LPT 插针接口, 2.0mm_2x13pin_黑色带框, 位置: LPT1



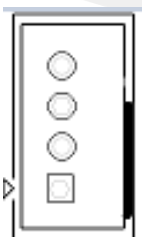
管脚	信号名称	管脚	信号名称
1	STB	2	AFD
3	PPD0	4	ERR
5	PPD1	6	INIT
7	PPD2	8	SLIN
9	PPD3	10	GND
11	PPD4	12	GND
13	PPD5	14	GND
15	PPD6	16	GND
17	PPD7	18	GND
19	ACK	20	GND
21	BUSY	22	GND
23	PE	24	GND
25	SLCT	26	NC

2.4.9 PS/2 插针接口, 2.0mm_1x6pin_白色带框, 位置: KBCN1



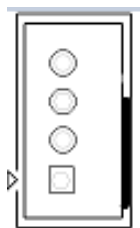
管脚	信号名称
1	VCC
2	KB_DATA
3	KB_CLK
4	MS_DATA
5	MS_CLK
6	GND

2.4.10 FAN 插针接口, 2.54mm_4x1pin_白色, 位置: CPU_FAN,SYS_FAN1,SYS_FAN2



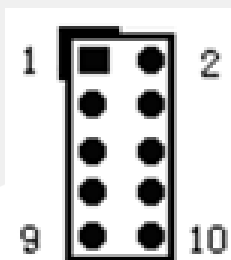
管脚	信号名称
1	GND
2	V12
3	FAN_TAC
4	FAN_CTL

2.4.11 JSM1 插针接口, 2.00mm_4x1pin_白色带框, 位置: JSM1



管脚	信号名称
1	GND
2	SMBDATA
3	SMBCLK
4	3V3

2.4.12 ITPS 插针接口, 2.00mm_2x5pin, 位置: JT1



管脚	信号名称	管脚	信号名称
1	GND	2	BIT0
3	GND	4	BIT1
5	GND	6	BIT2
7	GND	8	MODE_CHOOSE
9	GND	10	RESERVE

2.4.13 串口选电插针, 2.54mm_3x1pin, 位置: JP3,JP4



管脚	信号名称
1	5V
2	RI
3	12V

第三章 BIOS 程序设置

AMI BIOS 刷新

BIOS 提供对硬件资源的底层驱动，是联系硬件和操作系统的桥梁。现在硬件和各种应用软件不断更新，当您的系统遇到问题时，例如系统不支持最新公布的 CPU 时，就需要升级您的 BIOS 了。

注意：

1. **升级 BIOS 只在遇到问题，必要的时候进行。**
2. **升级 BIOS 请使用我们驱动光盘内所附的 BIOS 读写程序，或者在相关网站下载更新版本的程序。**
3. **在升级过程中不要关闭电源或重新启动系统，以免造成您的 BIOS 资料将被损坏，系统也可能不能启动。**
4. **为防止意外发生，请您先备份当前的 BIOS 资料。**

AMI BIOS 描述

开机时，BIOS 会对主板上的硬件进行自我诊断，设定硬件时序参数等工作，最后才将系统控制权交给操作系统。BIOS 是硬件和软件的沟通桥梁，如何正确的设定 BIOS 参数对系统是否稳定的工作及系统是否工作在最佳状态至关重要。

进入 BIOS 参数设置

电脑开机，在完成自我诊断后，屏幕上会显示出如下信息：Del->SETUP，此时您点击一下 Del 键，则 BIOS 在完成 IDE 等设备的侦测后会自动转入 SETUP 设置画面。

1. 打开系统电源或重新启动系统，显示器屏幕将出现自我测试的信息。
2. 当屏幕中间出现“Pressto enter setup”提示时，按下键，就可以进入 BIOS 设定程序。
3. 以方向键移动至您要修改的选项，按下<Enter>键即可进入该选项的子画面。
4. 使用方向键及<Enter>键即可修改所选项目的值，按回车键选择 BIOS 选项并修改。
5. 任何时候按下<Esc>键即可回到上一画面。

Setup Utility User Interface

This document describes BIOS Setup Utility user interface.

3.1 Main Screen

The Main screen is the first screen that is displayed when the BIOS Setup is entered.

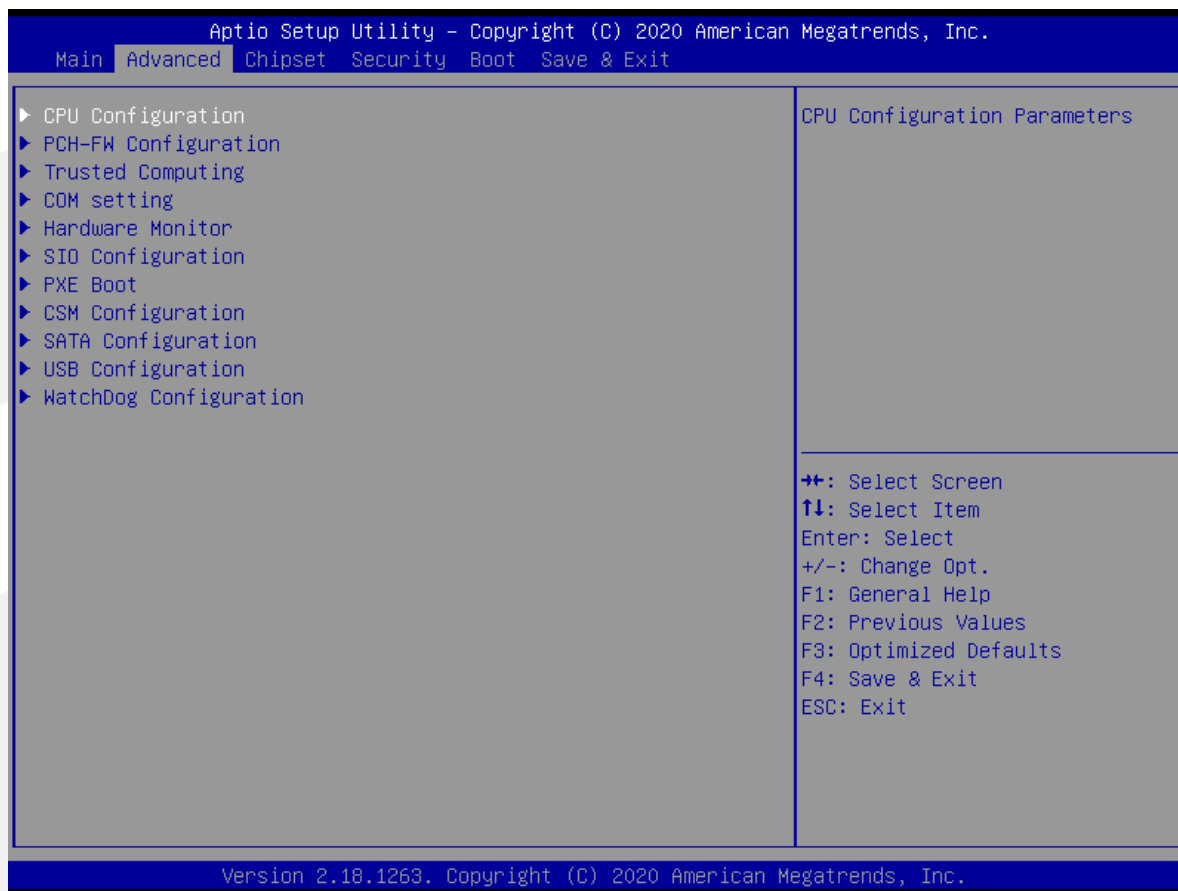


Setup Item	Options	Help Text	Comments
BIOS Information			
BIOS Vendor			Displays BIOS vendor.
Project Version			Displays the current BIOS version: Format: AAAABBC AAAAA = Project name BB = BIOS revision C = Customer number
Build Date and Time			Displays the current BIOS build date.

Setup Item	Options	Help Text	Comments
Access Level			Displays password level that setup is running in: Administrator or User. With no passwords set, Administrator is the default mode.
Process Information			
CPU XXXXX			Displays the CPU BrandString installed in the system.
Memory Information			
Total Memory			Displays the total physical memory installed in the system, MB Unit.
Memory Frequency			
System Language	English	Choose the system default language.	
System Date	[Day of week MM/DD/YYYY]	Set and display the Date.	
System Time	[HH:MM:SS]	Set and display the Time.	

3.2 Advanced Screen

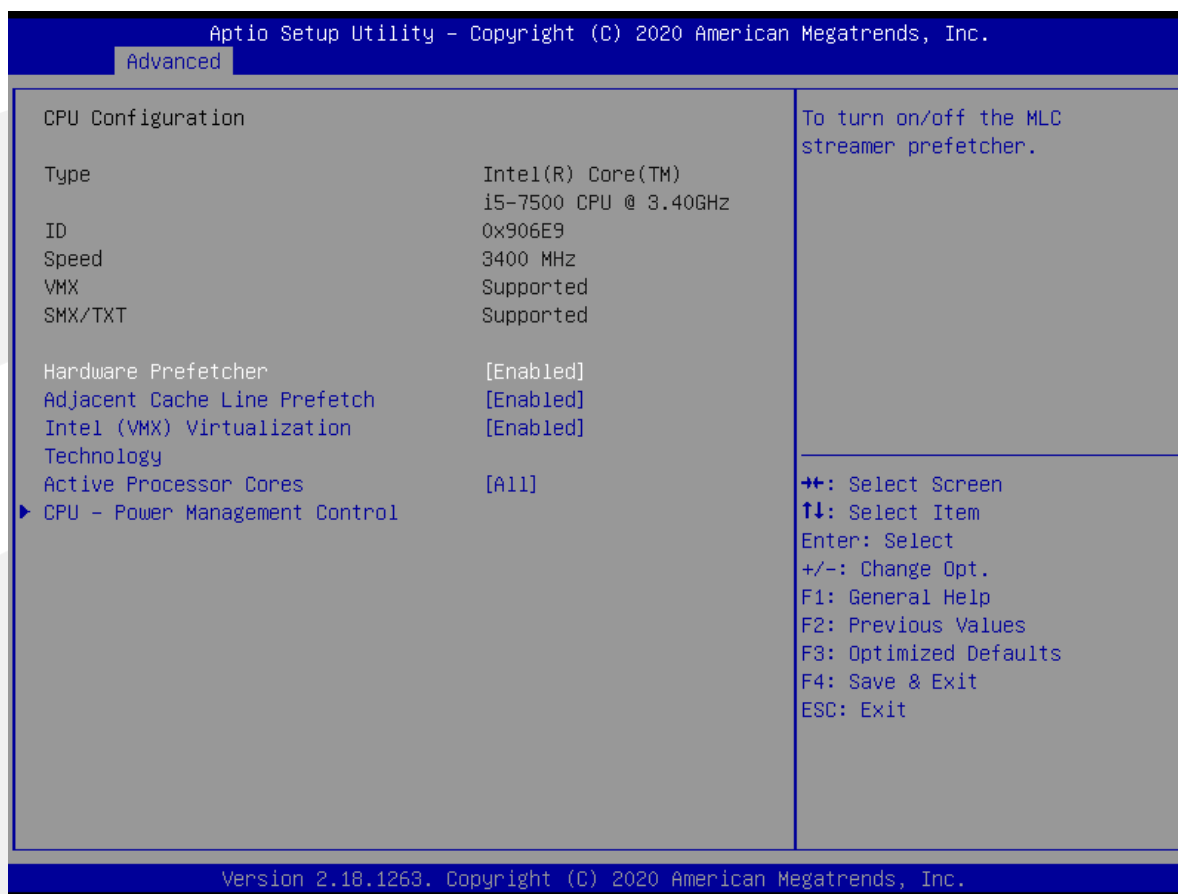
The Advanced screen provides an access point to configure several options. On this screen, the user selects the option that is to be configured.



Setup Item	Options	Help Text	Comments
CPU Configuration		CPU Configuration Parameters.	
PCH-FW configuration		Configure Management Engine Technology Parameters.	
Trusted Computing		Trusted Computing Settings.	
COM Setting		COM setting mode.	
Hardware Monitor		Monitor hardware stats.	
SIO Configuration		System Super IO chip Parameters.	
PXE Boot		Legacy PXE Support Control.	
CSM Configuration		CSM configuration: Enable/Disable, Option ROM execution settings, etc.	
SATA Configuration		SATA Devices Configuration.	
USB Configuration		USB Configuration Parameters.	
Watchdog configuration		Set System WatchDog Parameters.	

3.2.1 CPU Configuration Screen

The CPU Configuration screen allows the user to view the processor information, and to enable or disable processor options. To access this screen from the Main screen, choose **Advanced > CPU Configuration**.

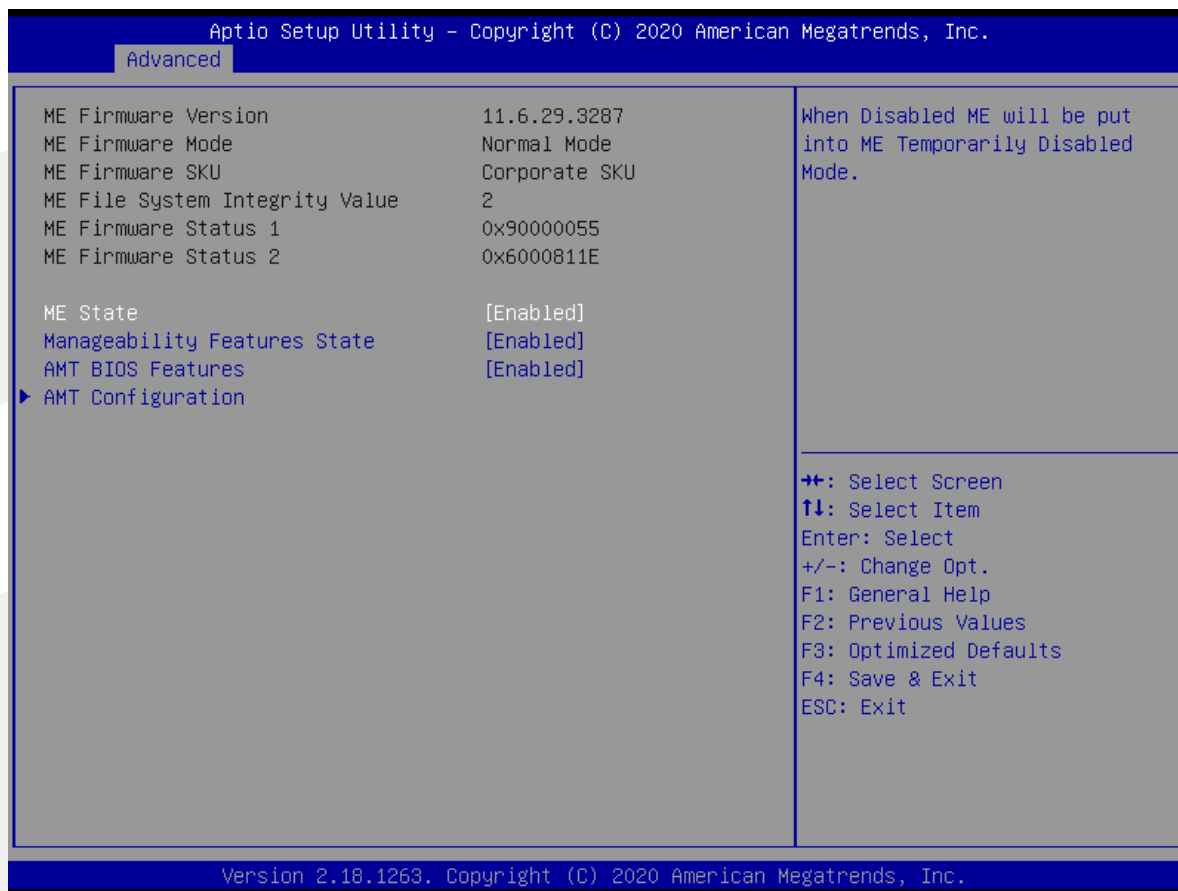


Setup Item	Options	Help Text	Comments
CPU Configuration			
Type			
ID			
Speed			
VMX			
SMX/TXT			
Hardware Prefetcher	Enabled Disabled	To turn on/off the MLC streamer prefetcher.	
Adjacent Cache Line Prefetch	Enabled Disabled	To turn on/off prefetching of adjacent cache lines.	
Intel(VMX) Virtualization Technology	Enabled Disabled	When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool technology.	

Setup Item	Options	Help Text	Comments
Active Processor Cores	All 1 2 3	Number of cores to enable in each processor package.	
CPU - Power Management control			
Boot performance mode	Max Non-Turbo Max battery Turbo Performance	Select the performance state that the BIOS will set starting from reset vector.	
Intel® speedStep™	Enabled Disabled	Allows more than two frequency ranges to be supported.	
Intel® speed shift technology	Enabled Disabled	Enable/Disable Intel® speed shift technology support.	
Turbo Mode	Enabled Disabled	Enable/Disable processor Turbo Mode.(requires EMTTM enabled too).	
C states	Enabled Disabled	Enable/Disable CPU Power Management. Allows CPU to go to C states when it' s not 100% utilized.	

3.2.2 PCH-FW Configuration

The PCH-FW configuration screen allows the user to set Management Engine Technology Parameters. To access this screen from the Main screen, choose **Advanced > PCH-FW configuration**.



Setup Item	Options	Help Text	Comments
PCH-FW Configuration			
ME State	Enabled Disabled	When Disabled ME will be put into ME Temporarily Disabled Mode.	
Manageability Features State	Enabled Disabled	Enable/Disable Intel(R) Manageability features.	
AMT BIOS Features	Enabled Disabled	When disabled AMT BIOS Features are no longer supported and user is no longer able to access MEBx Setup.\n\nNote:\nThis option does not disable Manageability Features in FW.	
AMT Configuration			

3.2.3 Trusted Computing

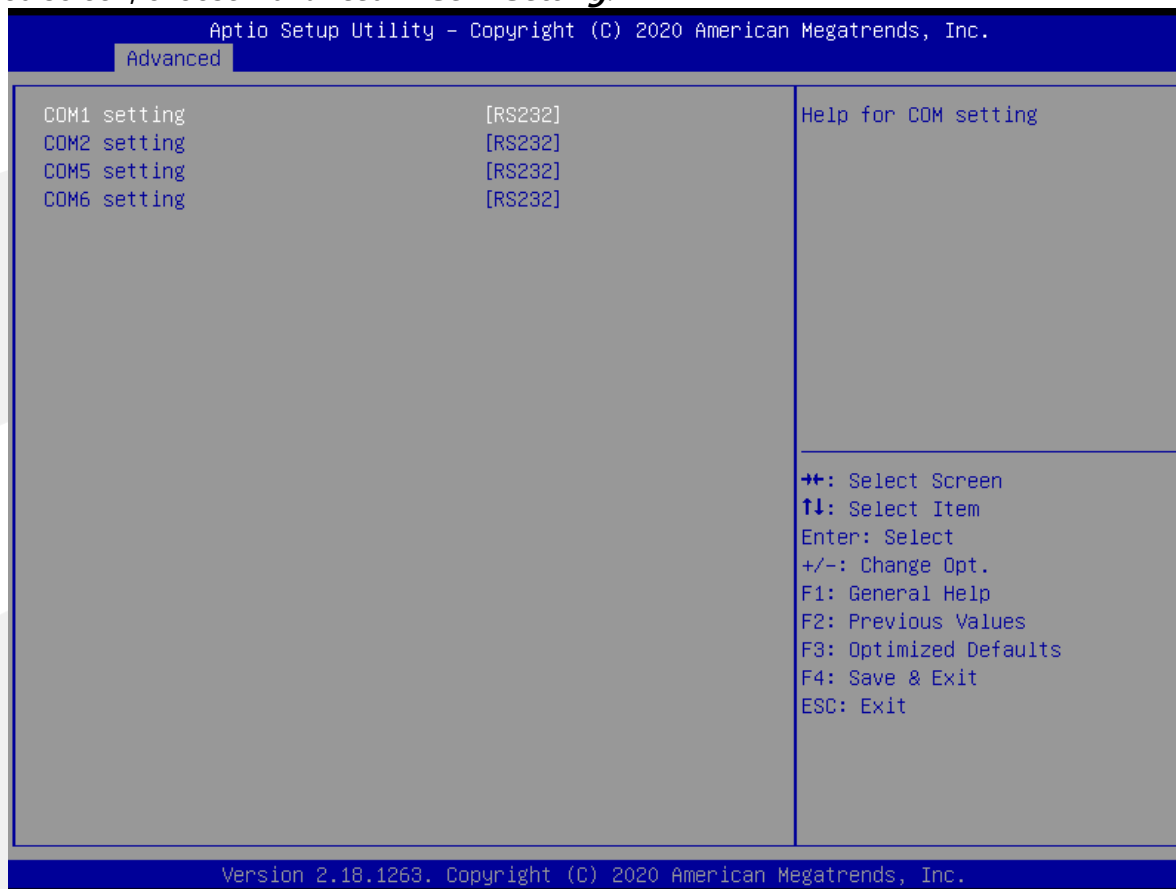
The Trusted Computing screen allows the user to view the trusted Computing setting. To access this screen from the Advanced screen, choose **Advanced > Trusted Computing**.



Setup Item	Options	Help Text	Comments
Trusted Computing			
Security Device Support	Enabled Disabled	Enables or Disables BIOS support for security device.	

3.2.4 COM Setting

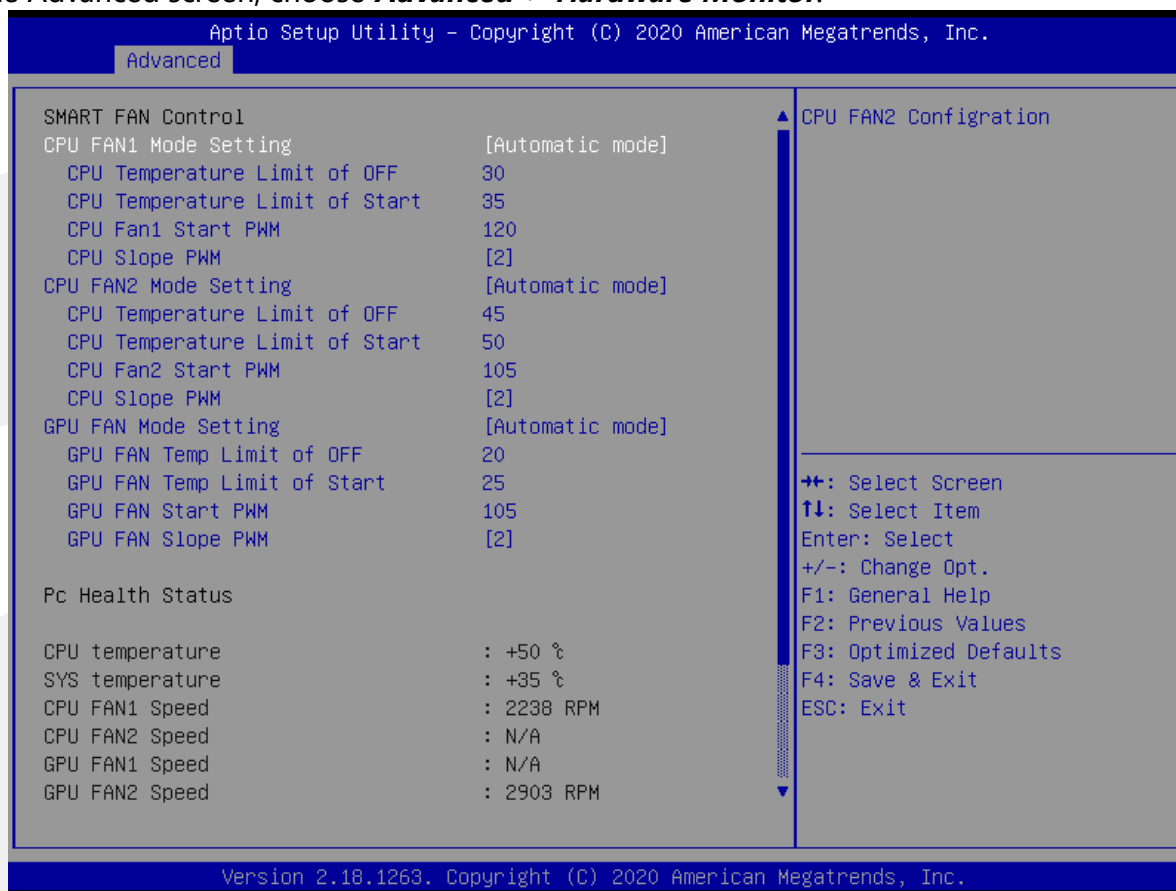
The COM setting screen allows the user to select com mode setting. To access this screen from the Advanced screen, choose **Advanced > COM Setting**.



Setup Item	Options	Help Text	Comments
COM Setting			
COM1 Setting	RS232 RS485 RS422		
COM2 Setting	RS232 RS485 RS422		
COM5 Setting	RS232 RS485 RS422		
COM6 Setting	RS232 RS485 RS422		

3.2.5 Hardware Monitor

The hardware monitor screen allows the user to view the hardware information. To access this screen from the Advanced screen, choose **Advanced-> Hardware Monitor**.

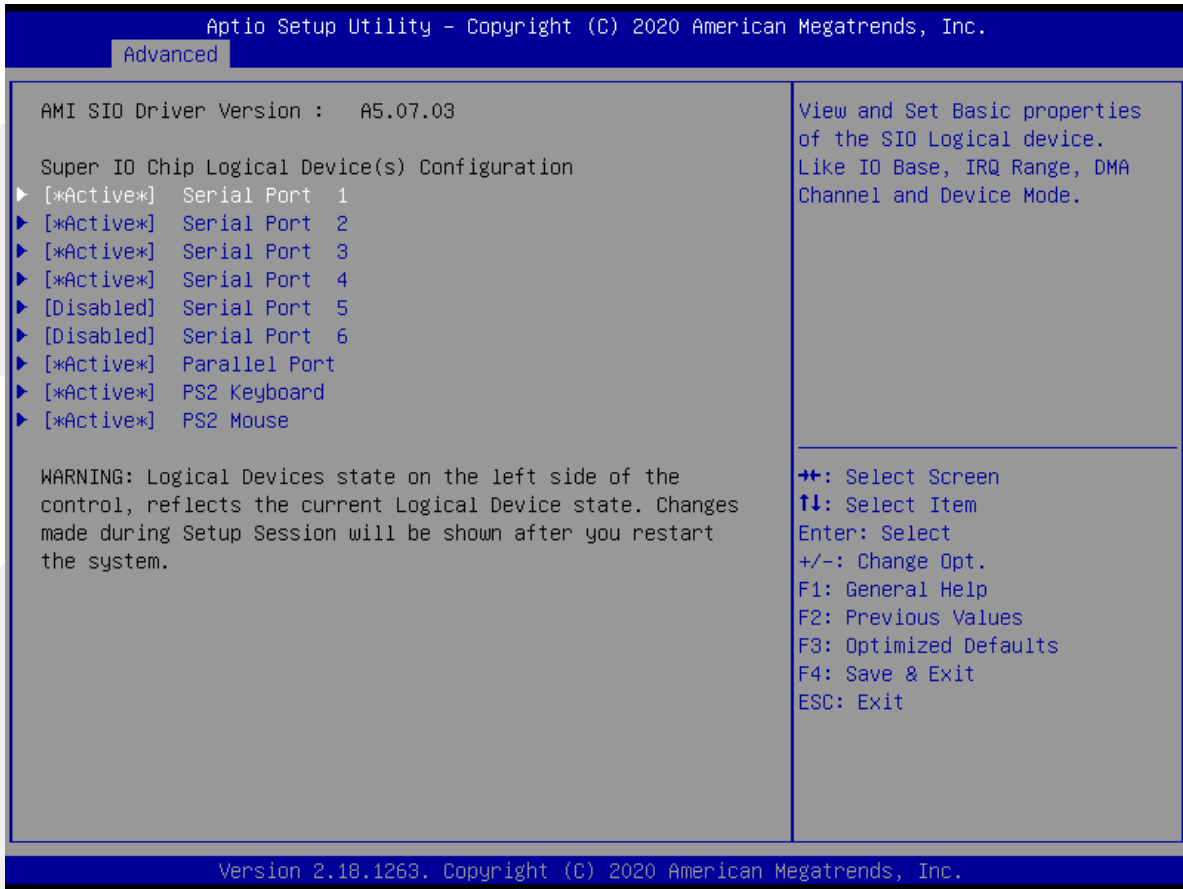


Setup Item	Options	Help Text	Comments
Hardware Monitor			
SMART FAN Control			
CPU FAN1 Mode Setting	Automatic mode Manual mode	CPU Fan control mode select.	When Manual mode selected, Manual PWM Setting shows to set FAN PWM Duty.
CPU Temperature Limit of OFF	30		
CPU Temperature Limit of Start	35		
CPU Fan1 Start PWM	120		
CPU Slope PWM	2		
CPU FAN2 Mode Setting	Automatic mode Manual mode	CPU Fan control mode select.	When Manual mode selected, Manual PWM Setting shows to set FAN PWM Duty.
CPU Temperature Limit of OFF	45		
CPU Temperature Limit of Start	50		
CPU Fan2 Start PWM	105		
CPU Slope PWM	2		

Setup Item	Options	Help Text	Comments
GPU Fan Mode Setting	Automatic mode Manual mode	GPU Fan control mode select.	When Manual mode selected, Manual PWM Setting shows to set FAN PWM Duty.
GPU FAN Temp Limit of OFF			
GPU FAN Temp Limit of Start			
GPU FAN Start PWM			
GPU FAN Slope PWM			
PC Health Status			
CPU temperature		Shows Current CPU temperature.	NOTE1: Sometimes not the actual temperature value, just indicates temperature tolerance limitation.
SYS temperature		Shows current system temperature.	
CPU FAN1 Speed			HW Information.
CPU FAN2 Speed			
GPU FAN1 Speed			
GPU FAN2 Speed			

3.2.6 Super IO Configuration

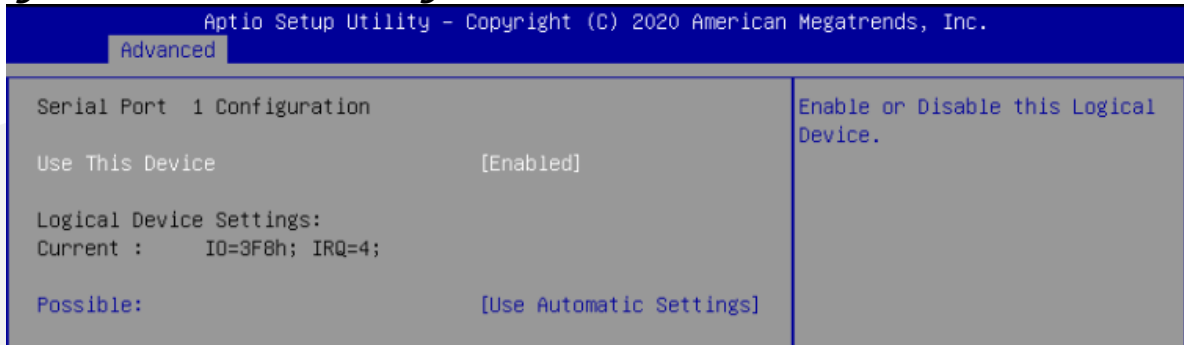
The Super IO Configuration screen allows the user to view the super IO information, and to enable or disable super IO options. To access this screen from the Advanced screen, choose **Advanced > Super IO Configuration**.



Setup Item	Options	Help Text	Comments
Super IO Configuration			
Serial Port 1			Set Parameters of COM1.
Serial Port 2			Set Parameters of COM2.
Serial Port 3			Set Parameters of COM3.
Serial Port 4			Set Parameters of COM4.
Serial Port 5			Set Parameters of COM5.
Serial Port 6			Set Parameters of COM6.
Parallel Port			Set Parameters of LPT.
PS2 Keyboard			
PS2 Mouse			

3.2.6.1 Serial PortX Configuration

The Super IO Configuration screen allows the user to view the super IO information, and to enable or disable serial port options. To access this screen from the Advanced screen, choose **Advanced-> Super IO Configuration->Serial PortX Configuration**.



Setup Item	Options	Help Text	Comments
Serial PortX Configuration			
Use This Device	Enabled Disabled	Enable or Disable Serial Port.(COM)	

3.2.7 PXE Boot

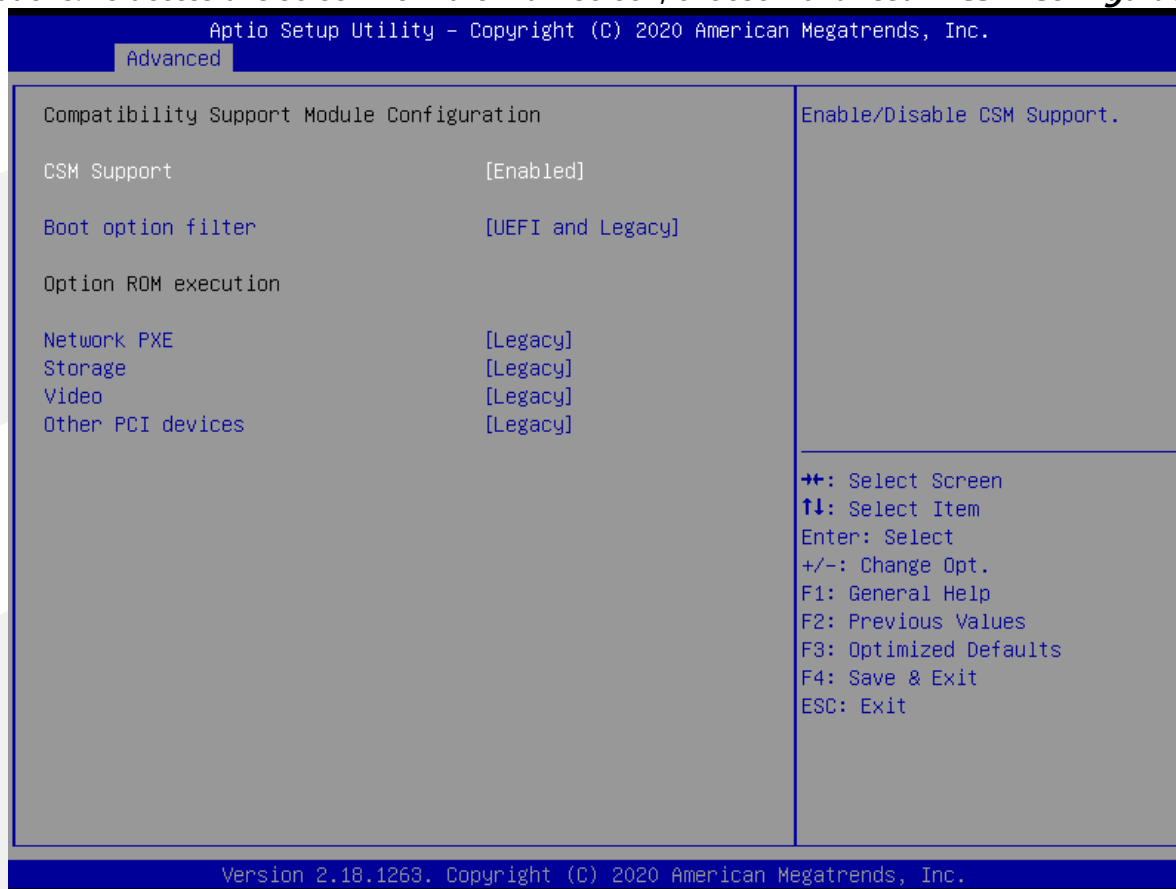
The PXE Boot screen allows the user to Enable or Disable Boot Option for Legacy Network Devices. To access this screen from the Main screen, choose **Advanced > PXE Boot**.



Setup Item	Options	Help Text	Comments
PXE Boot			
PXE Function Support	Disabled Enabled		Legacy PXE Support Control.

3.2.8 CSM Configuration

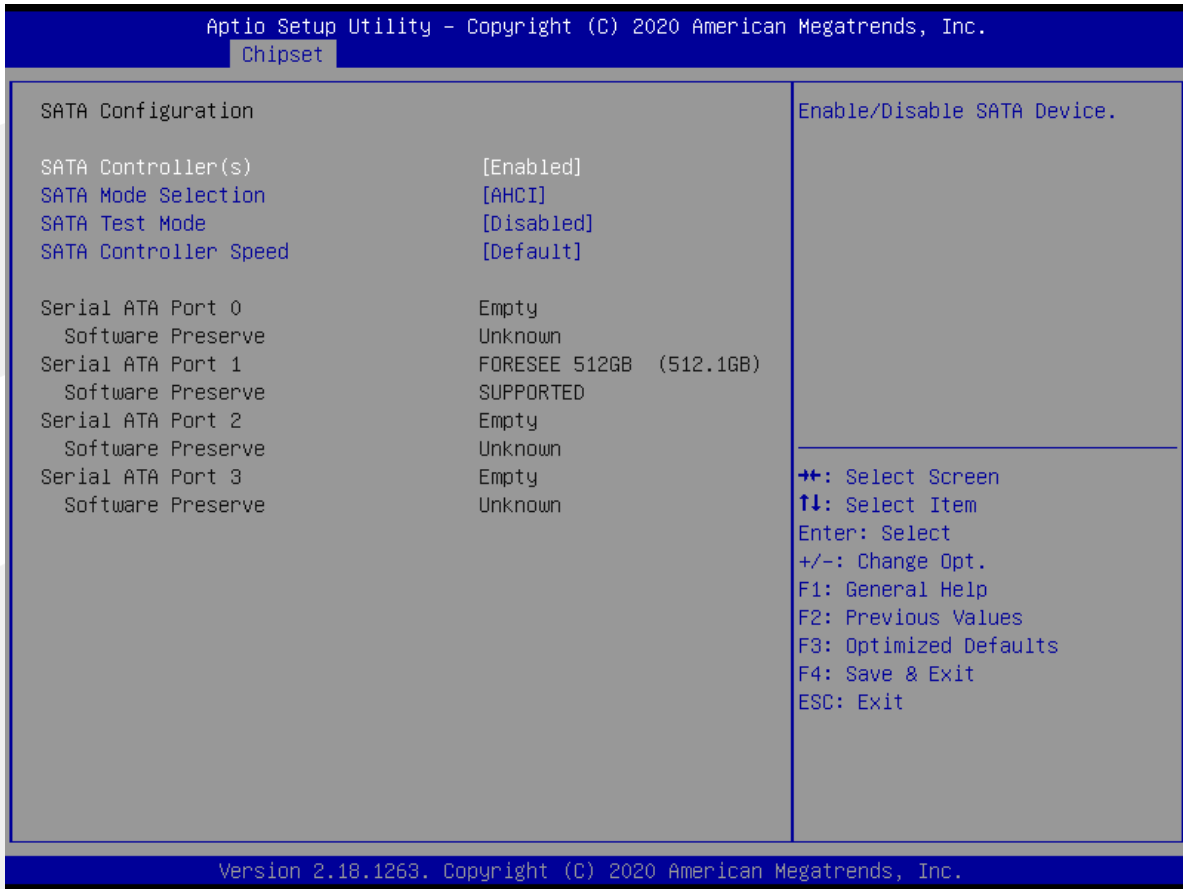
The CSM Configuration screen allows the user to view the CSM information, and to enable or disable CSM options. To access this screen from the Main screen, choose **Advanced > CSM Configuration**.



Setup Item	Options	Help Text	Comments
CSM Configuration			
CSM Support	Enabled Disabled	Enable / Disable CSM support.	
Boot option filter	UEFI and Legacy Legacy only UEFI only	This option control Legacy/UEFI ROMs priority	
Network PXE	Legacy UEFI Do not lunch	Control the execution of UEFI and Legacy PXE OpROM	
Storage	Legacy UEFI Do not lunch	Control the execution of UEFI and Legacy Storage OpROM	
Video	Legacy UEFI Do not lunch	Control the execution of UEFI and Legacy video OpROM	
Other PCI devices	Legacy UEFI Do not lunch	Determines OpROM execution policy for devices other than Network, Storage or video.	

3.2.9 SATA Configuration

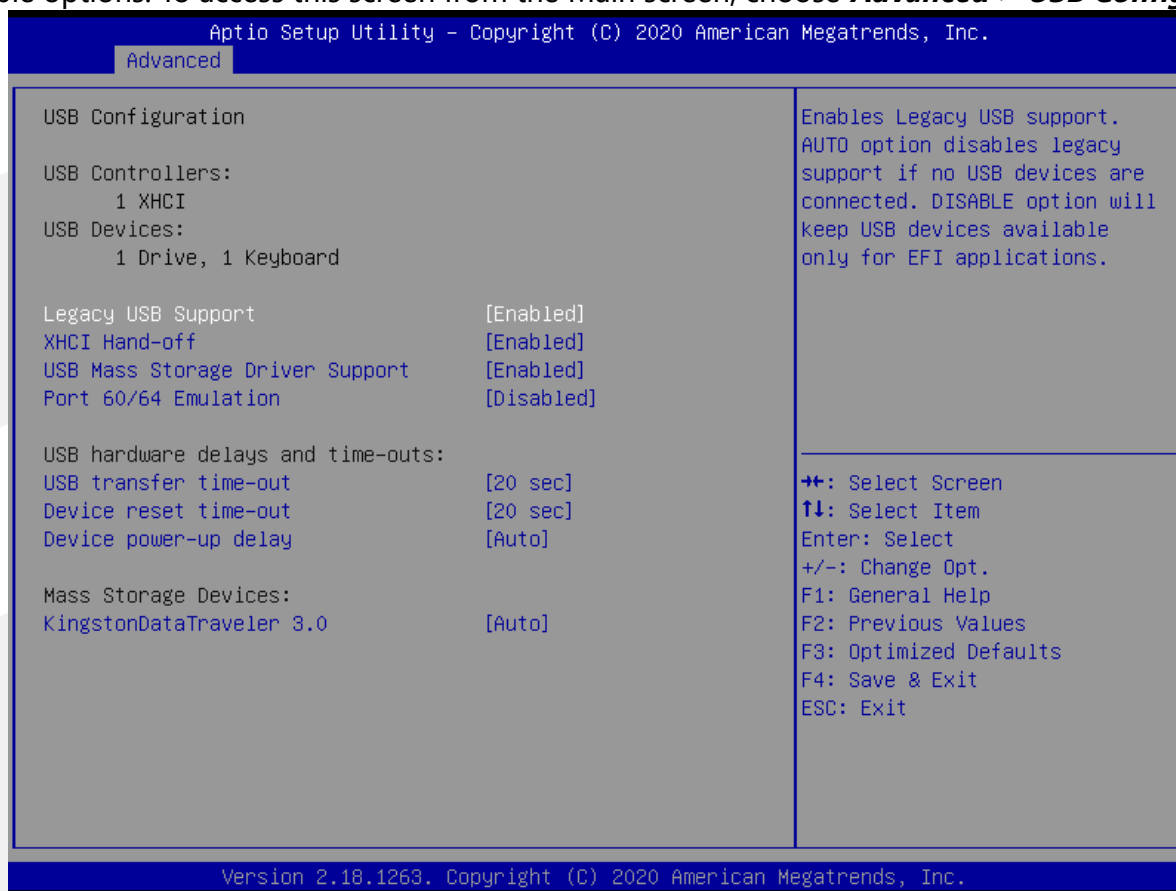
The SATA Configuration screen allows the user to view the SATA Controller information, and to enable or disable SATA Controller options. To access this screen from the Main screen, choose **Advanced > SATA Configuration**.



Setup Item	Options	Help Text	Comments
SATA Configuration			
SATA Controller(s)	Enabled Disabled	Enable / Disable SATA Device.	
SATA Mode	AHCI Mode	Select AHCI.	
SATA Test Mode	Disabled		
SATA Controller Speed	Default Gen1 Gen2 Gen3	SATA port speed settings.	
Serial ATA Port 0			Show HDD information connected.
Serial ATA Port 1			
Serial ATA Port 2			
Serial ATA Port 3			

3.2.10 USB Configuration

The USB Configuration screen allows the user to view the USB Configuration information, and to enable or disable options. To access this screen from the Main screen, choose **Advanced > USB Configuration**.



Setup Item	Options	Help Text	Comments
USB Configuration			
Legacy USB Support	Enabled Disabled	Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.	
XHCI Hand-off	Enabled Disabled	This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.	
USB MASS Storage Driver	Enabled Disabled	Enable/Disable USB Mass Storage Driver Support.	
Port 60/64 Emulation	Disabled		
USB hardware delays and time-outs			

Setup Item	Options	Help Text	Comments
USB transfer time-out	1 sec 5 sec 10 sec 20 sec	The time-out value for Control, Bulk, and Interrupt transfers.	
Device reset time-out	1 sec 5 sec 10 sec 20 sec	USB mass storage device Start Unit command time-out.	
Device power-up delay	Auto Manual	Maximum time the device will take before it properly reports itself to the Host Controller. ' auto' uses default value: for a Root port it is 100ms,for a Hub port the delay is taken from Hub descriptor.	

3.2.11 Watchdog Configuration

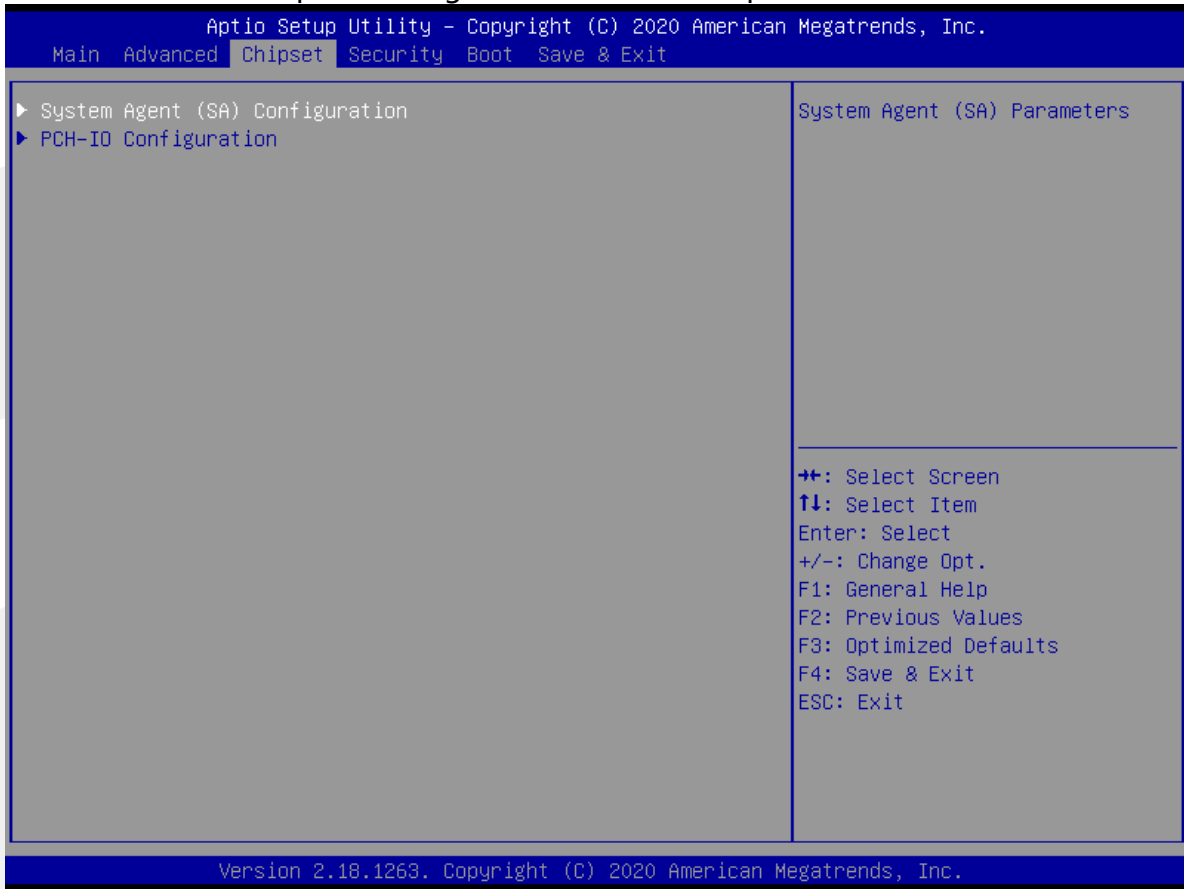
The Watchdog Configuration screen allows the user to Set System WatchDog Parameters. To access this screen from the Main screen, choose **Advanced > Watchdog Configuration**.



Setup Item	Options	Help Text	Comments
Watchdog Configuration			
WatchDog Control	Disabled Enabled		WatchDog function.
WatchDog Count Mode	Minute Second		WatchDog Count Mode Selection.
WatchDog TimeOut Value	1		Fill WatchDog TimeOut (0~255),0 means function disabled.

3.3 Chipset Screen

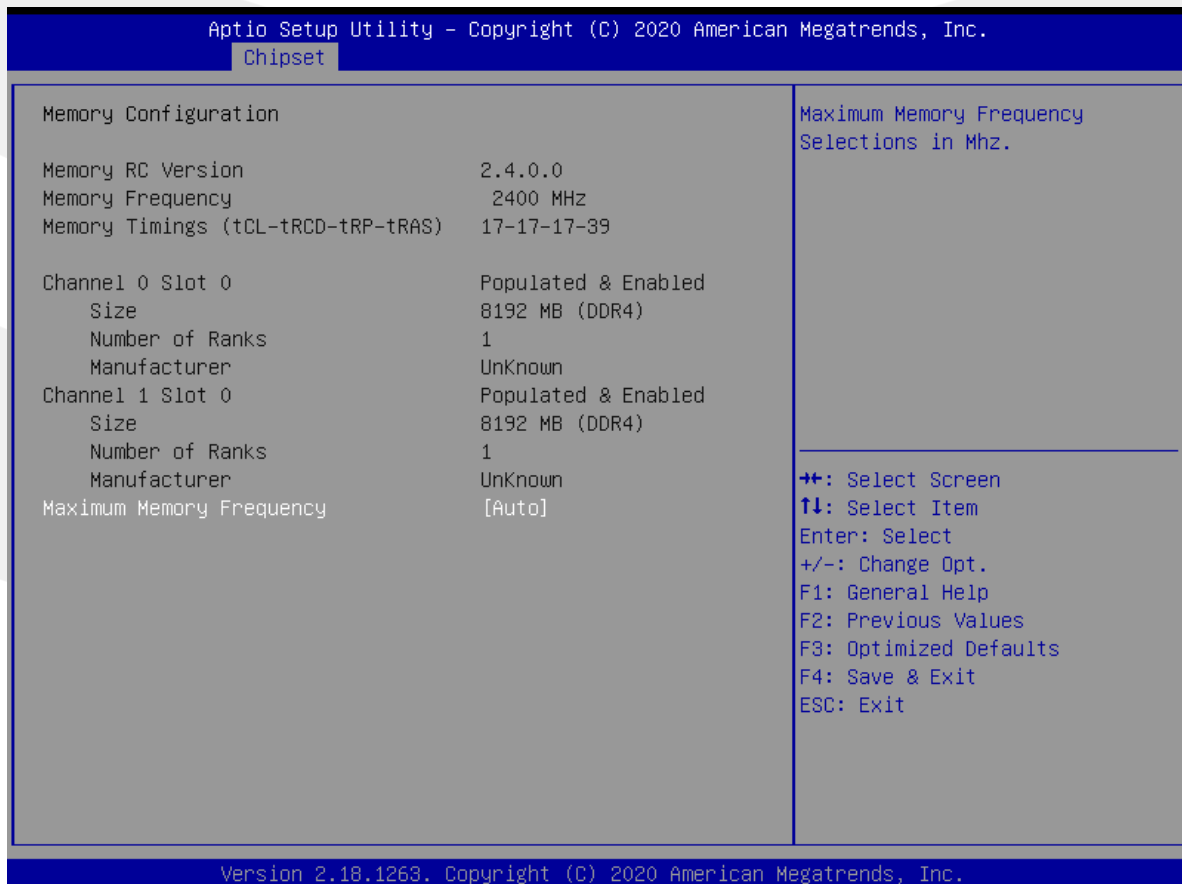
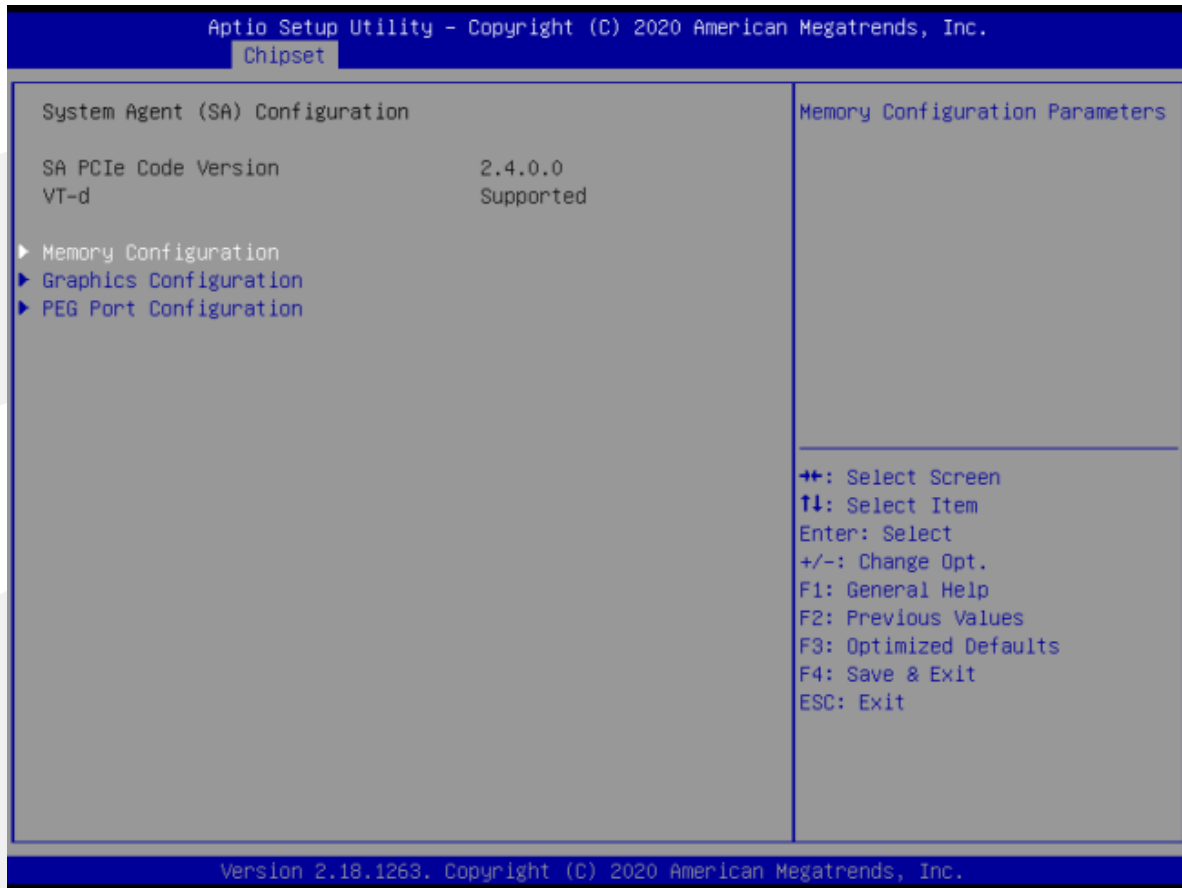
The Chipset screen provides an access point to configure North Bridge and South Bridge. To access this screen from the Main screen, press the right arrow until the Chipset screen is chosen.



Setup Item	Options	Help Text	Comments
Chipset Screen			
System Agent (SA) Configuration		System Agent (SA) Parameters.	
PCH-IO Configuration		PCH Parameters.	

3.3.1 System Agent (SA) Configuration

The North Bridge Screen allows user to set NB chipset configuration. To access this screen, form the Main screen, choose **Chipset> System Agent (SA) Configuration**.



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Chipset

<p>Graphics Configuration</p> <p>Graphics Turbo IMON Current 31</p> <p>Skip Scanning of External Gfx Card [Disabled]</p> <p>Primary Display [Auto]</p> <p>Select PCIE Card [Auto]</p> <p>Internal Graphics [Auto]</p> <p>GTT Size [8MB]</p> <p>Aperture Size [256MB]</p> <p>DVMT Pre-Allocated [32M]</p> <p>DVMT Total Gfx Mem [256M]</p> <p>▶ LCD Control</p>	<p>Graphics turbo IMON current values supported (14-31)</p> <hr/> <p>↔: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</p>
--	--

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Chipset

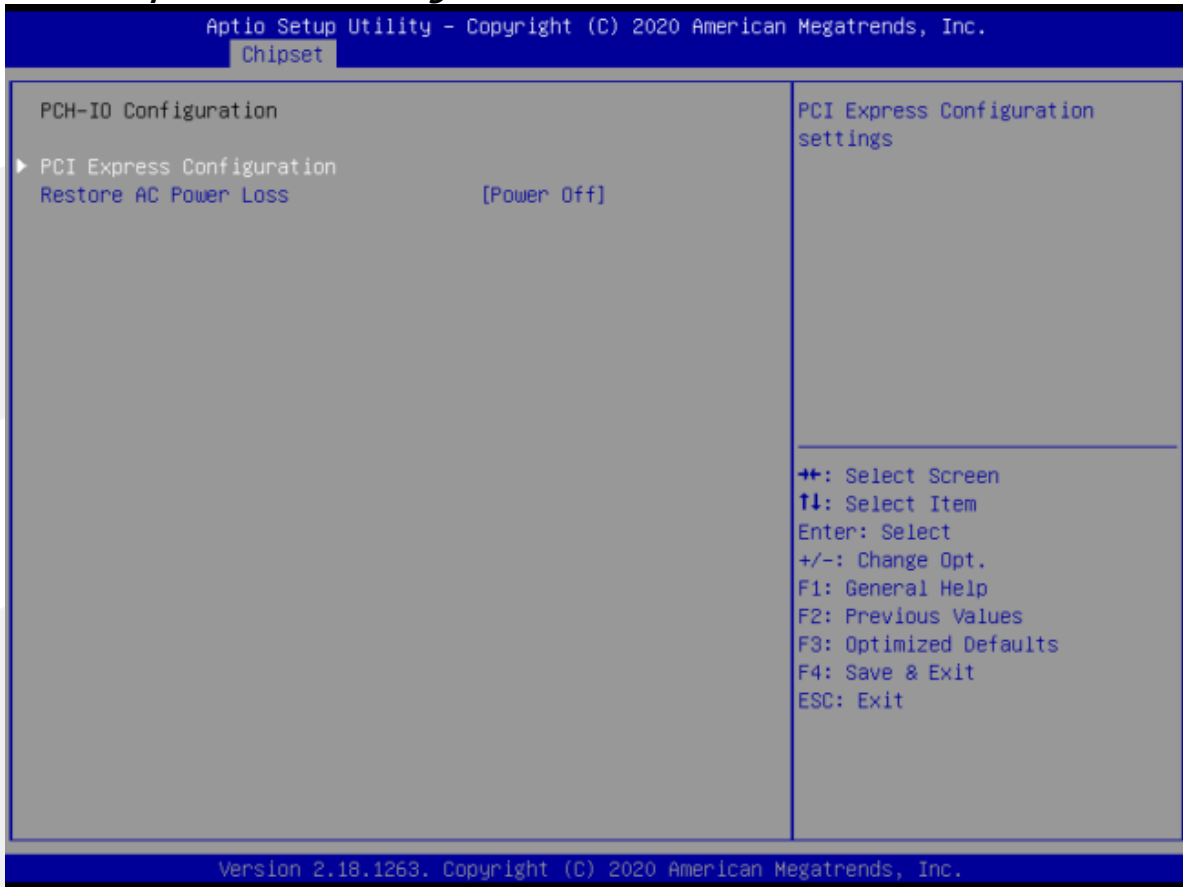
<p>LCD Control</p> <p>Primary IGFX Boot Display [VBIOS Default]</p> <p>LCD Panel Type [VBIOS Default]</p> <p>Panel Scaling [Auto]</p> <p>Backlight Control [PWM Inverted]</p> <p>Active LFP [No eDP]</p> <p>Panel Color Depth [18 Bit]</p> <p>Backlight Brightness 255</p>	<p>Select the Video Device which will be activated during POST. This has no effect if external graphics present. Secondary boot display selection will appear based on your selection. VGA modes will be supported only on primary display</p> <hr/> <p>↔: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</p>
---	---

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Setup Item	Options	Help Text	Comments
System Agent (SA) Configuration			
Memory Configuration			
Memory Information		Show Memory information.	
Maximum Memory Frequency	Auto	Maximum Memory Frequency Selections in Mhz.	
Graphics Configuration			
Primary Display	Auto		
Select PCIE Card	Auto		
Internal Graphics	Auto Disabled Enabled	Keep IGFX enabled based on the setup options.	
GTT Size	2MB 4MB 8MB	Select the GTT Size	
Aperture Size	128MB 256MB 512MB 1024MB 2048MB	Select the Aperture Size. Note: Above 4GB MMIO BIOS assignment is automatically enabled when selecting 2048MB aperture. To use this feature, please disable CSM Support.	
DVMT Pre-Allocated	32M		
DVMT Total Gfx Mem	128M 256M MAX	Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device.	
LCD Control			
Primary IGFX Boot Display	VBIOS Default HDMI EXT DP EXT HDMI DP	Select the Video Device which will be activated during POST. This has no effect if external graphics present.	
LCD Panel Type	VBIOS Default		
Panel Scaling	Auto		
Backlight Control	PWM Inverted		
Active LFP	No eDP		
Panel Color Depth	18 Bit		
Backlight Brightness	255		

3.3.2 PCH-IO Configuration

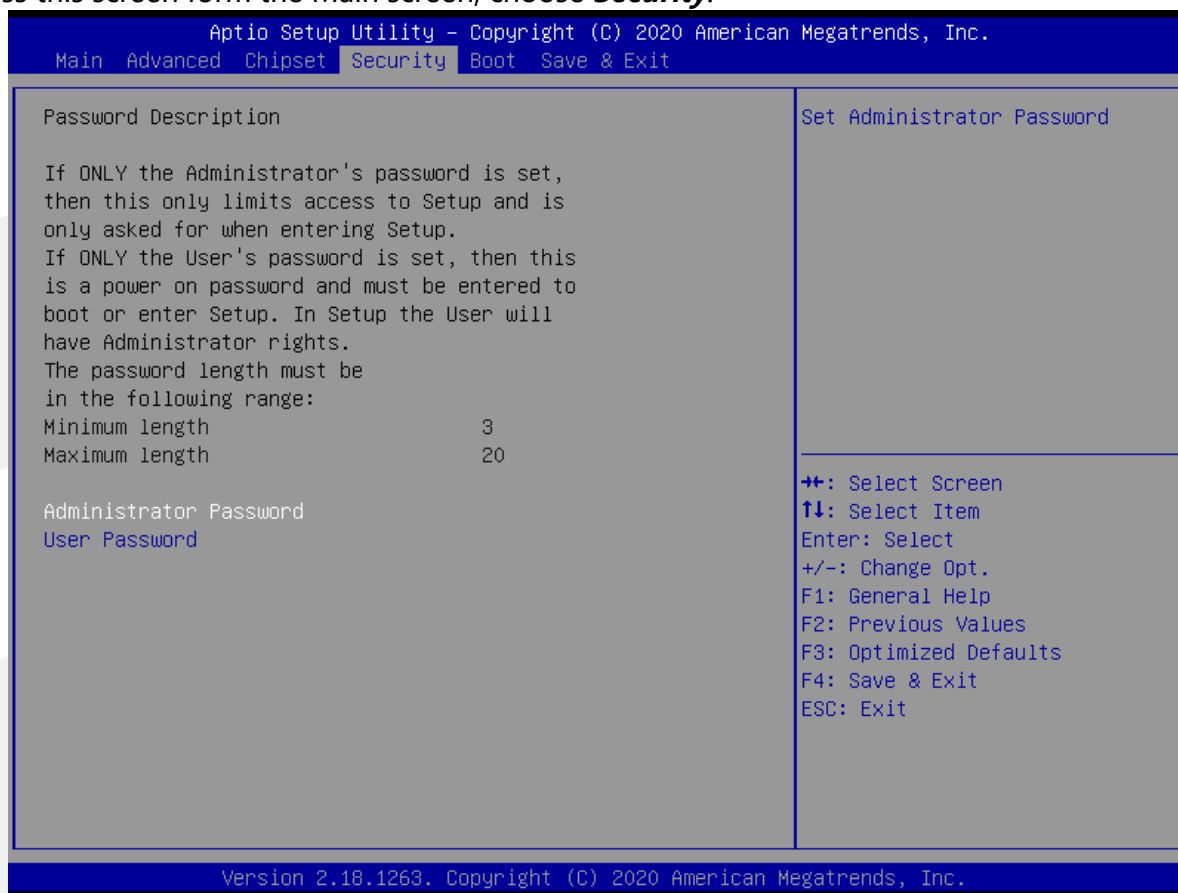
The South Bridge Screen allows user to set SB chipset configuration. To access this screen from the Main screen, choose **Chipset> PCH-IO Configuration**.



Setup Item	Options	Help Text	Comments
PCH-IO Configuration			
PCI Express Configuration			
Restore AC Power Loss	Power off Power on	Select AC power state when power is re-applied after a power failure.	

3.4 Security

To access this screen from the Main screen, choose **Security**.



Setup Item	Options	Help Text	Comments
Security			
Administrator Password		Set Administrator Password.	
User Password		Set User Password.	

3.5 Boot Screen

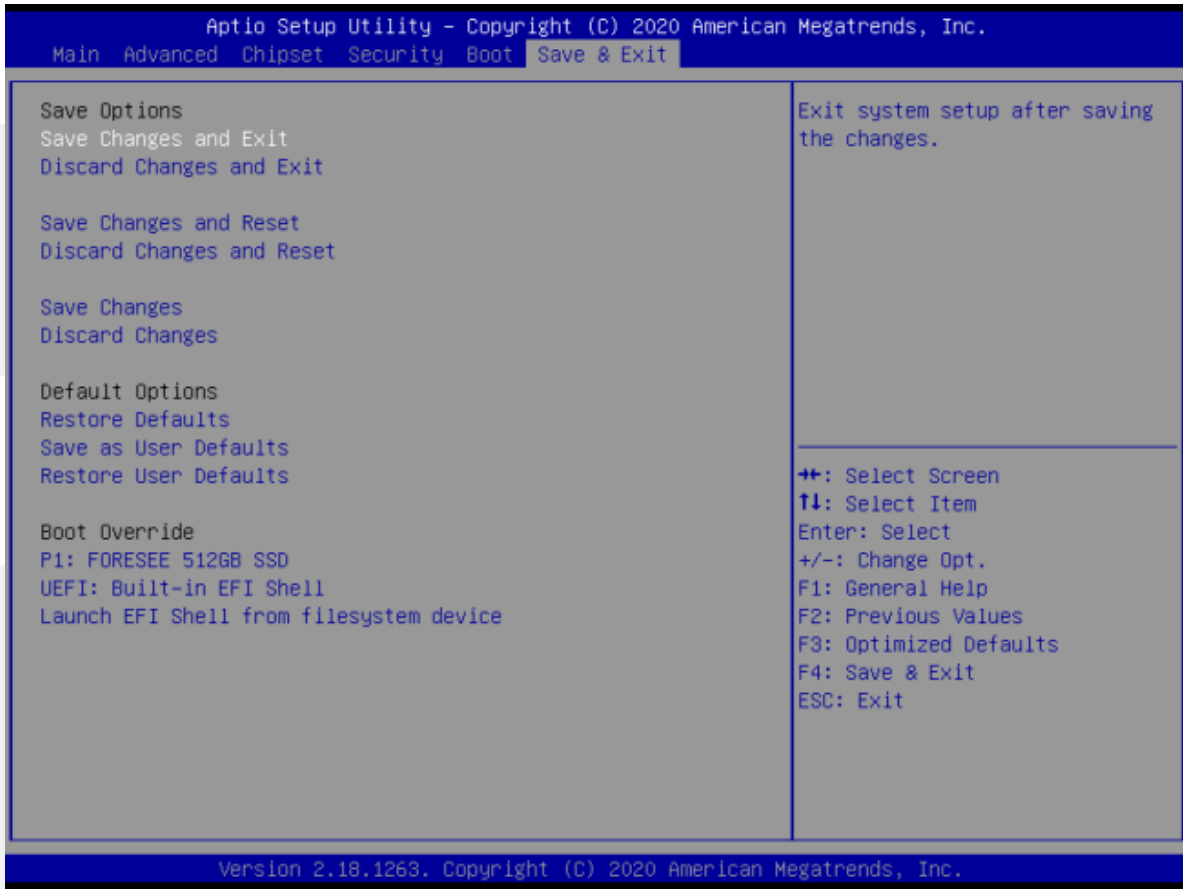
The Boot screen displays any bootable media encountered during POST, and allows the user to configure desired boot device. To access this screen from the Main screen, choose **Boot**.



Setup Item	Options	Help Text	Comments
Boot Screen			
Setup Prompt Timeout	1~65535	Number of seconds to wait for setup activation key.65535(0xFFFF) means indefinite waiting.	
Bootup NumLock State	On off	Select the keyboard Number state.	
Quiet Boot	Disabled Enabled	Enables or disables Quiet Boot option	
Boot Option Priorities			
Boot Option #1		Sets the system boot order.	<i>Note : Showed When boot devices existed.</i>
Boot Option #2		Sets the system boot order.	
Fast Boot	Disabled		
New Boot Option Policy	Default		
Hard Drive BBS Priorities		Set the order of the legacy devices in this group.	Set boot order in each group of the same kind, such as HDD, network.

3.6 Save & Exit Screen

The Save & Exit screen allows the user to choose whether to save or discard the configuration changes made on the other screens. It also allows the user to restore the server to the factory defaults or to save or restore them to set of user-defined default values.



Setup Item	Options	Help Text	Comments
Save & Exit Screen			
Save Changes and Exit		Exit system setup after saving the changes.	User is prompted for confirmation only if any of the setup fields were modified.
Discard Changes and Exit		Exit system setup without saving any changes.	
Save Changes and Reset		Reset the system after saving the changes.	
Discard Changes and Reset		Reset system setup without saving and changes.	
Save Changes		Save Changes done so far to any of the setup options.	
Discard Changes		Discard Changes done so far to any or the setup options.	
Default Options			
Restore Defaults		Restore/Load Default values for all the setup options.	
Save as User Defaults		Save the changes done so far as User Defaults.	

Setup Item	Options	Help Text	Comments
Restore User Defaults		Restore the User Defaults to all the setup options.	
Boot Override			
Shows the Device can boot			<i>Note : Showed When boot devices existed.</i>

第四章 故障问题排除

故障	排除
BIOS 下设置 Power Off 还会上电自启	主板 JT1 默认跳 9-10pin, 改 7-8pin

附录

附一：Watchdog 编程指引

watchdog 参考代码 (ASM)

我们可以操作端口来实现对看门狗的操作。可以通过对相应端口写数据来操作端口，实现 Watchdog Timer 的不同功能。

```
void main()
{
intindexp = 0x2e,datap = 0x2f;

outportb(indexp,0x87);
outportb(indexp,0x01); //unlock
outportb(indexp,0x55);
outportb(indexp,0x55);

outportb(indexp,0x07);
outportb(datap,0x07);

outportb(indexp,0x72);
outportb(datap,0xc0); //set second
/*outportb(datap,0x40); set minute*/

outportb(indexp,0x73);
outportb(datap,0x03); //set 3 seconds

outportb(indexp,0x02);
outportb(datap,0x02); //lock

}
```

附二：术语表

ACPI

高级配置和电源管理。ACPI 规范允许操作系统控制计算机及其附加设备的大部份电能。

BIOS

基本输入/输出系统。是在 PC 中包含所有的输入/输出控制代码界面的软件。它在系统启动时进行硬件检测，开始操作系统的运作，在操作系统和硬件之间提供一个界面。BIOS 是存储在一个只读存储器芯片内。

BUS

总线。在计算机系统中，不同部件之间交换数据的通道，是一组硬件线路。我们所指的 BUS 通常是 CPU 和主内存元件内部的局部线路。

Chipset

芯片组。是为执行一个或多个相关功能而设计的集成芯片。我们指的是由南桥和北桥组成的系统级芯片组，他决定了主板的架构和主要功能。

CMOS

互补金属-氧化物半导体。是一种被广泛应用的半导体类型。它具有高速、低功耗的特点。我们指的 CMOS 是在主板上的 CMOS RAM 中预留的一部份空间，用来保存日期、时间、系统信息和系统参数设定信息等。

COM

串口。一种通用的串行通信接口，一般采用标准 DB9 公头接口连接方式。

DIMM

双列直插式内存模块。是一个带有内存芯片组的小电路板。提供 64bit 的内存总线宽度。

DRAM

动态随机存取存储器。是一个普通计算机的通用内存类型。通常用一个晶体管和一个电容来存储一个位。随着技术的发展, DRAM 的类型和规格已经在计算机应用中变得越来越多样化。例如现在常用的就有 SDRAM、DDR SDRAM 和 RDRAM。

L2c

Inter-Integrated Circuit 总线是一种由 PHILIPS 公司开发的两线式串行总线，用于连接微控制器及其外围设备。

LAN

局域网络接口。一个小区域内相互关联的计算机组成的一个计算机网络，一般是在一个企事业单位或一栋建筑物。局域网一般由服务器、工作站、一些通信链接组成，一个终端可以通过电线访问数据和设备的任何地方，许多用户可以共享昂贵的设备和资源。

LED

发光二极管，一种半导体设备，当电流流过时它会被点亮，通常用来把信息非常直观地表示出来，例如表示电源已经导通或硬盘驱动器正在工作等。

PnP

即插即用。允许 PC 对外接设备进行自动配置，不用用户手动操作系统就可以自己工作的一种规格。为实现这个特点，BIOS 支持 PnP 和一个 PnP 扩展卡都是必需的。

POST

上电自检。在启动系统期间，BIOS 会对系统执行一个连续的检测操作，包括检测 RAM，键盘，硬盘驱动器等，看它们是否正确连接和是否正常工作。

PS/2

由 IBM 发展的一种键盘和鼠标连接的接口规范。PS/2 是一个仅有 6PIN 的 DIN 接口，也可以用以连接其他的设备，比如调制解调器。

USB

通用串行总线。一种适合低速外围设备的硬件接口，一般用来连接键盘、鼠标等。一台 PC 最多可以连接 127 个 USB 设备，提供一个 12Mbit/s 的传输带宽；USB 支持热插拔和多数数据流功能即在系统工作时可以插入 USB 设备，系统可以自动识别并让插入的设备正常。

深圳智锐通科技有限公司
Shenzhen Zrt Co., Ltd.



智锐通公众号

&



智锐通抖音号

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 - 北京分公司：北京市昌平区科兴西路106号院2号楼5层
 - 南京分公司：南京市江宁区万科都荟天地B2栋7楼
 - 苏州分公司：苏州市虎丘区港龙城市广场4栋13楼
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