ZRT 智锐通

EMA-7132

Mini-ITX 主板
USER Manual V1.1

USER 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其边缘部份的习惯。
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。

目录

第一章 产品介绍

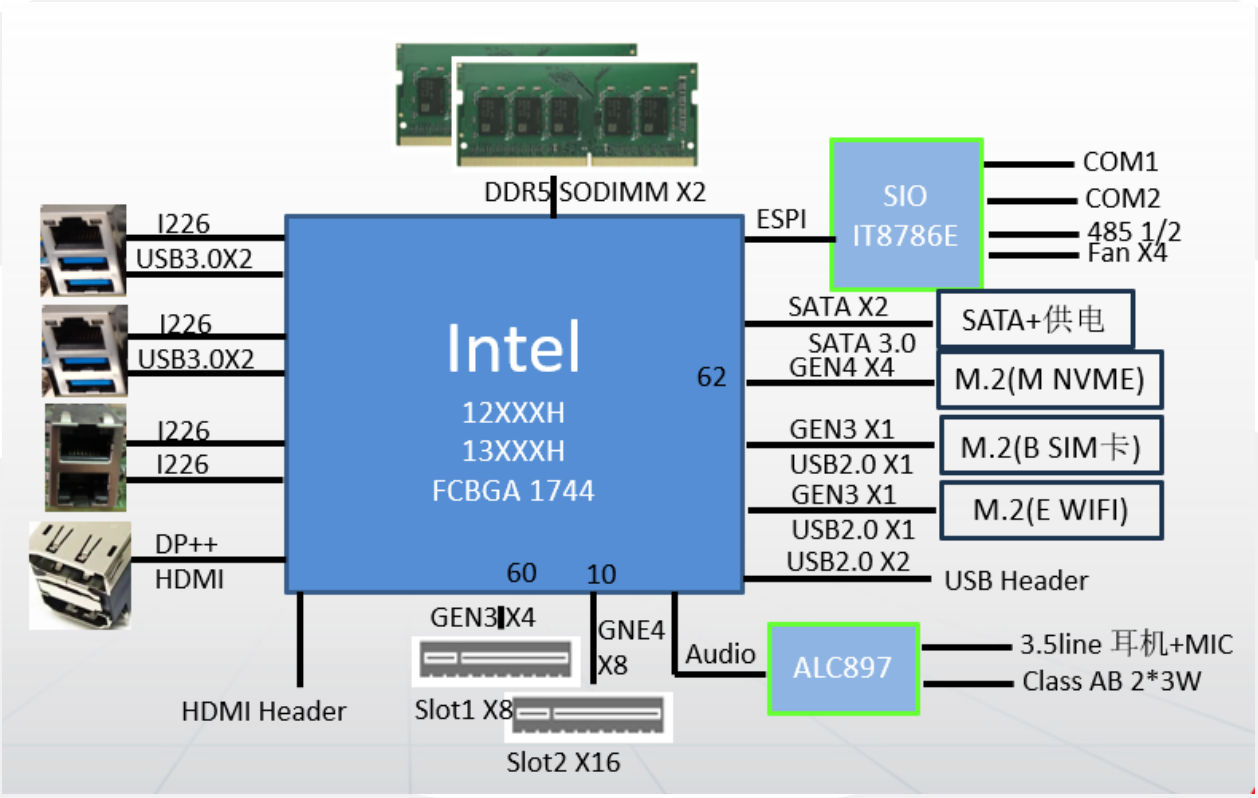
1.1 产品规格

Model		EMA-7132					
配置 Item	规格 Specification	描述 Describe					
处理器 Processor System	CPU	Intel 12/13th Alder Lake-H 、 Raptor Lake-H i3/i5/i7/i9 FCBGA1744					
	处理器 CPU	i5-12450H	i7-12700H	i9-12900H	i5-13500H	i7-13700H	i9-13900H
	内核数 Core Number	4+4	6+8	6+8	4+8	6+8	6+8
	基准主频 Base Frequency	2.0GHz	2.3GHz	2.5GHz	2.6GHz	2.4GHz	2.6GHz
	P-core 最高主频 Max. Speed	4.4GHz	4.7GHz	5.0GHz	4.7GHz	5.0GHz	5.4GHz
	二级缓存 L2 Cache	12MB	24MB	24MB	24MB	24MB	24MB
	功耗 TDP (W)	45W	45W	45W	45W	45W	45W
	芯片组 Chipset	SoC					
	BIOS	128Mb SPI FLASH					
内存 Memory	规格 Technology	DDR5 13th 5600MT/s 12th 4800MT/s					
	最大容量 Max. Capacity	64G					
	插槽 Socket	2*SO-DIMM					
扩展插槽 Expansion Slot	M.2	1*M.2 Key-M(2242/2280) for PCIe x4 NVMe 1*M.2 Key-B(3042/3052) for 4G/5G 1*M.2 Key-E(2230) for WIFI					
	SIM	1*SIM					
	PCI-Express	1*PCIe 16x(by x4) 1*PCIe 16x(by x8)					
存储 Storage	SATA	2*SATA3.0(7 Pins)					
串口 COM	插针 Header Pin	2*RS232(2*2.0mm_2*5Pin) 2*RS485(1*2.0mm_2*5Pin)					

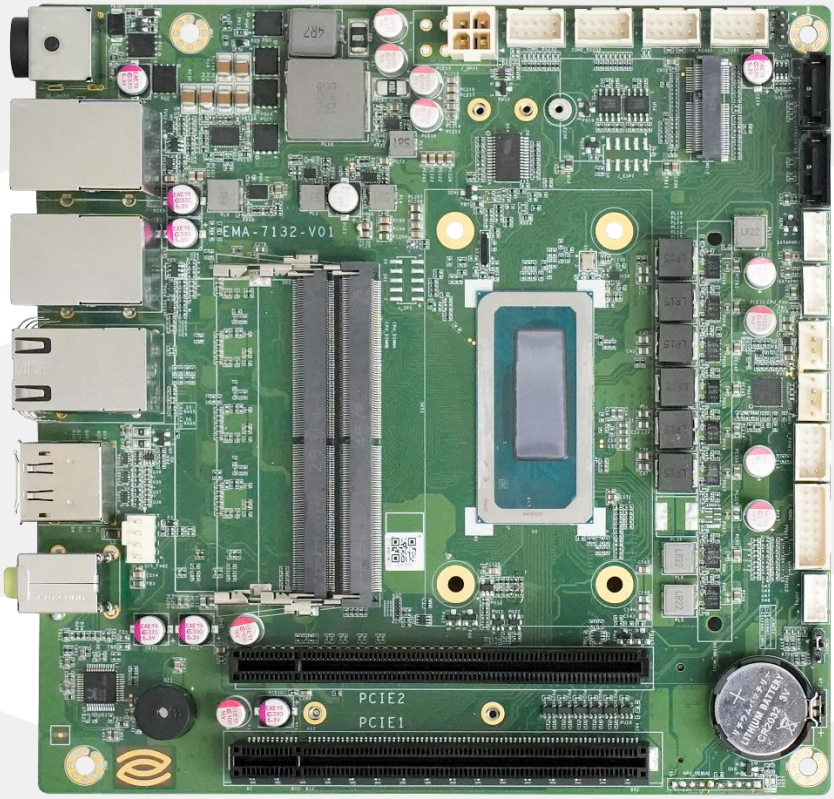
显示 Graphics	**最多显示 Multiple Display**	3 Ports
	I/O	1*DP++ 1*HDMI
	插针 Header Pin	1*HDMI
	分辨率 Resolution	HDMI2.0:4096*2160@60Hz DP:7680*4096@60Hz
USB / Type-C	**I/O**	4*USB3.1
	插针 Header Pin	2*USB2.0(1*2.54mm_2*5Pin)
以太网 Ethernet	**控制器 Controller**	Integrated 10/100/1000M/2.5G Adaption (Intel® Ethernet Controller i226-V)
	I/O	4*RJ45
音频 Audio	**芯片 Chipset**	Integrated High Definition Audio Stereo(ALC897)
	I/O	1*Line Out 1*MIC In
	插针 Header Pin	2*喇叭输出(Class-AB 功放，最高 3W*2@4Ω)
其它 Others	**按钮 Button**	1*RESET Button(Header Pin) 1*POWER Button(Header Pin)
	LED	1*HDD LED 1*PWR LED
电源 Power Requirements	**电源类型 Power Type**	1*DC In(4P In)
	电源电压 Input Voltage	19V or 24V
	GPU 电源 GPU Power	ATX 座子 2*4，满足 200W 显卡单独供电
环境 Environment	**工作温度 Operating Temperature**	-10~60℃ at 0.7m/s air flow
	存储温度 Storage Temperature	-20~70℃，10～90%(non-condensing)
	工作湿度 Operating Humidity	10~90%(non-condensing)
物理特性 Physical	**尺寸 Dimensions**	mITX(170*170mm)
	PCB 颜色 Color	Green

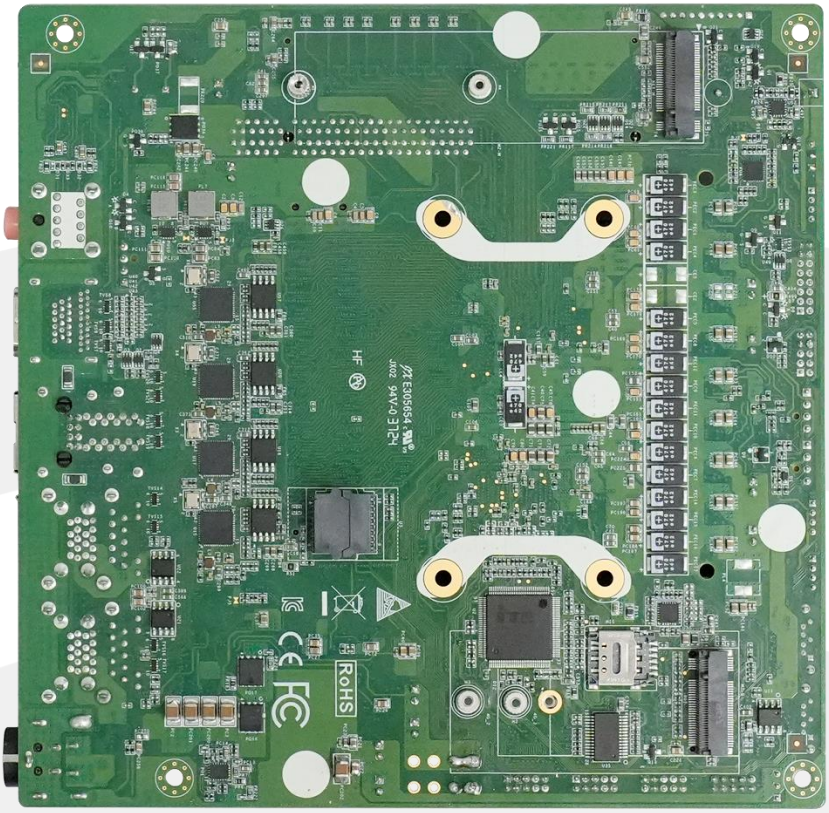
操作系统 OS	**Windows**	Windows 10 1809(RS5)/1607(RS1)、Window 11
	Linux	Yocto YP3.1xLTS

1.2 功能框图



1.3 产品照片

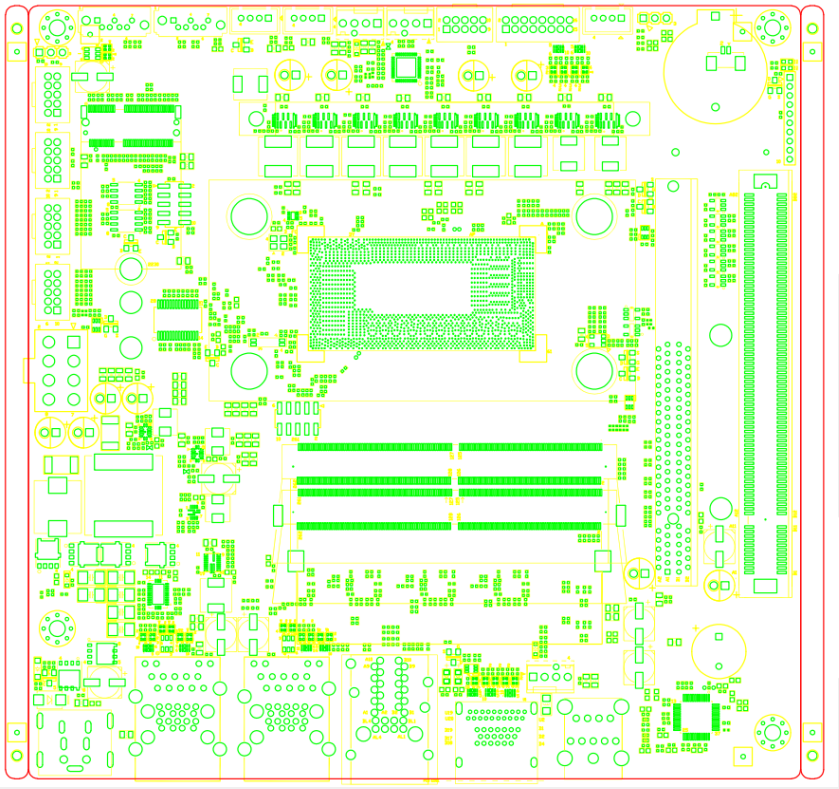




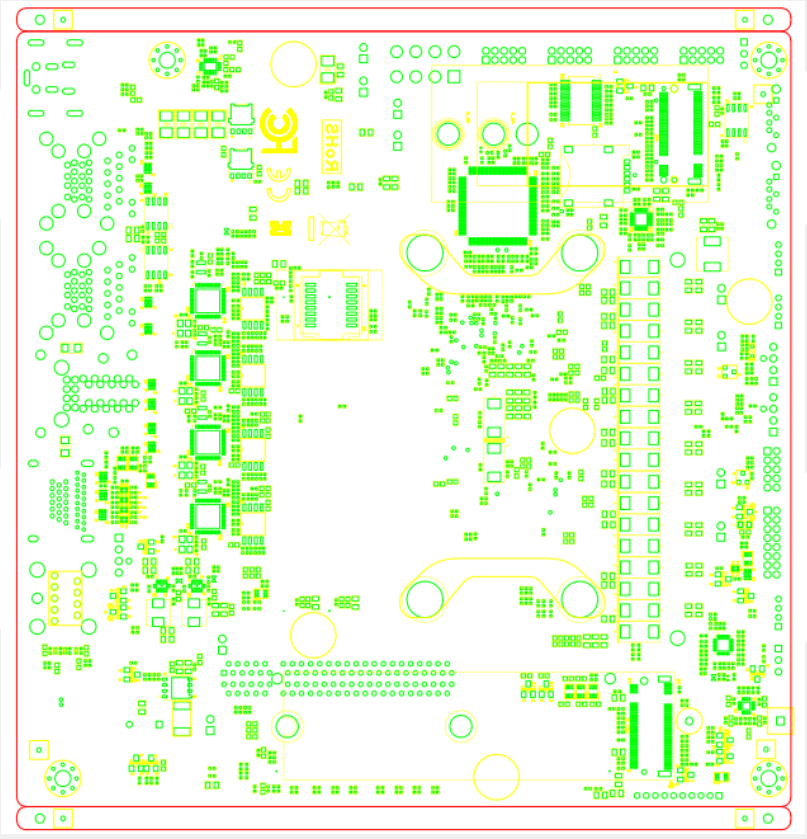
第二章 安装说明

2.1 接口/尺寸图

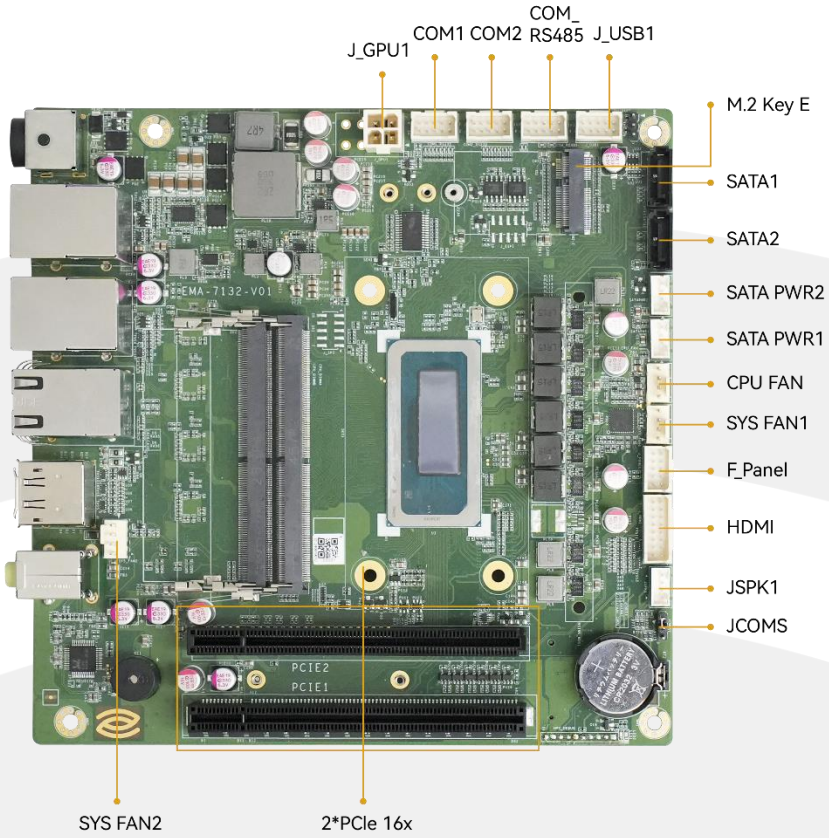
安装设备时，请对照此示意图并详细阅读下面的说明，安装组件过程中必须小心，对于有些部件，如果安装不正确，设备将不能正常工作。

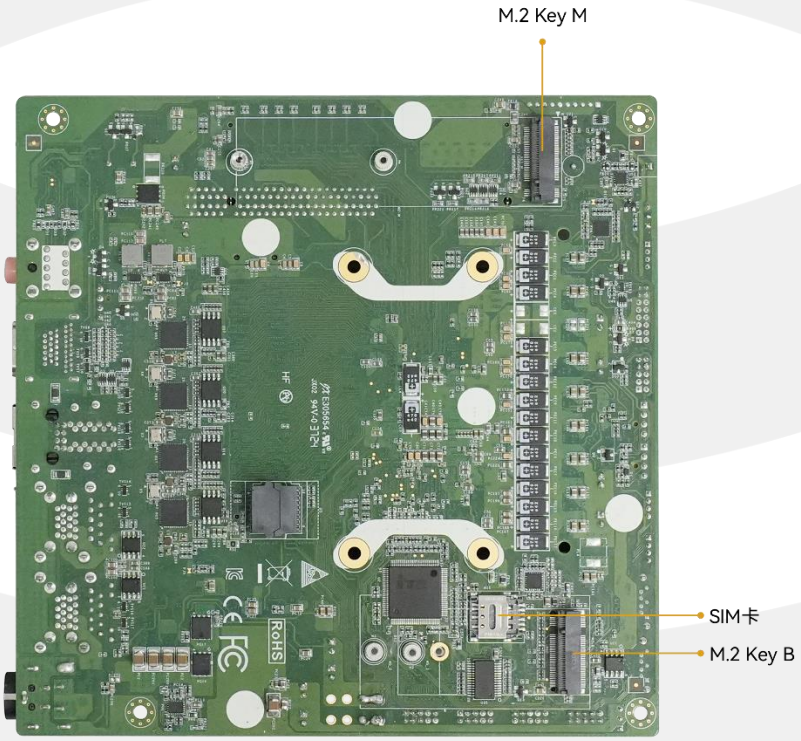


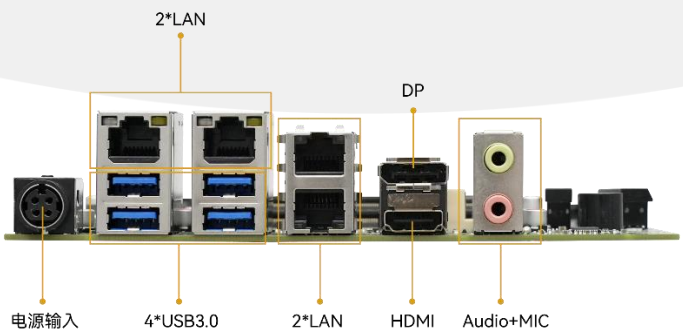
安装尺寸图（正面）



安装尺寸图（反面）


J_GPU1
COM1
COM2
COM_ RS485
J_USB1
M.2 Key E
SATA1
SATA2
SATA PWR2
SATA PWR1
CPU FAN
SYS FAN1
F_Panel
HDMI
JSPK1
JCOMS
EMA-7132-V01
PCIE2
PCIE1
SYS FAN2
2*PCIe 16x


M.2 Key M
SIM卡
M.2 Key B


2*LAN
DP
电源输入
4*USB3.0
2*LAN
HDMI
Audio+MIC

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. 在集成电路元件未按装前，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。

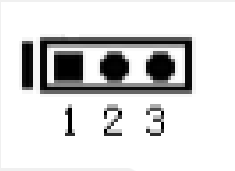
2.3 跳线功能设置

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

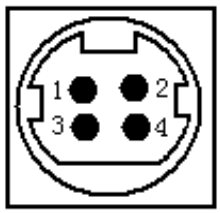
JCMOS1 清 CMOS，J1 插针定义：



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

2.4 插针接口定义

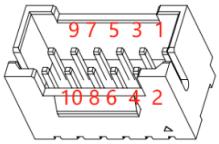
DC_JACK1 供电接口定义：



管 脚	信号名称
1	VCC
2	VCC
3	GND
4	GND

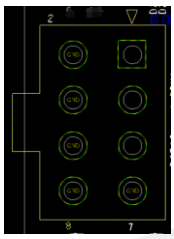
备注：DC_JACK1 和 DC_JACK2 为同一功能，同一时间仅需使用一个。

J_USB1 USB 2.0 接口，2.0mm 间距插针定义：



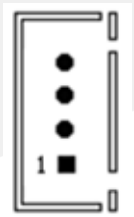
管 脚	信号名称	管 脚	信号名称
1	+5V	2	+5V
3	USB1_Data-	4	USB2_Data-
5	USB1_Data+	6	USB2_Data+
7	GND	8	GND
9	GND	10	GND

J_GPU1 供电接口，ATX 2*4 8pin 定义：



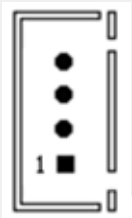
管 脚	信号名称	管 脚	信号名称
1	12V	2	GND
3	12V	4	GND
5	12V	6	GND
7	GND	8	GND

JSPK1 喇叭接口，2.0mm，1*4pin 定义：



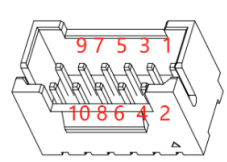
管 脚	信号名称
1	SPK_L-
2	SPK_L+
3	SPK_R+
4	SPK_R-

SATAPWR1/SATAPWR2 电源接口，2.0mm 间距，180 度带框插针定义：



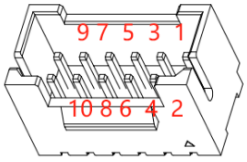
管 脚	信号名称
1	12V
2	GND
3	GND
4	5V

FPANEL 前面板状态接口，2.0mm 间距插针定义：



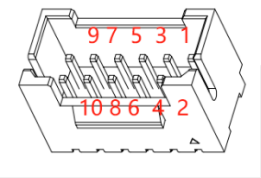
管 脚	信号名称	管 脚	信号名称
1	HDD LED+	2	PW LED+
3	HDD LED-	4	PW LED-
5	GND	6	PW Buttom
7	RESET	8	GND
9	NC	10	--

J_HDMI 插针，显示输出接口，2.0mm 间距 2*8pin 插针定义：



管 脚	信号名称	管 脚	信号名称
1	HDMI_DATA0_DP	2	HDMI_DATA1_DP
3	HDMI_DATA0_DN	4	HDMI_DATA1_DN
5	GND	6	GND
7	HDMI_DATA2_DP	8	HDMI_CLK_DP
9	HDMI_DATA2_DN	10	HDMI_CLK_DN
11	GND	12	DONGLE_DET
13	DDC_CLK	14	P5V_HDMI
15	DDC_DATA	16	HDMI_HPD

COM1_RS232/ COM2_RS232，RS232 串口，2.0mm 间距 2*5 插针定义：



管 脚	信号名称
1	DCD#
2	RXD
3	TXD
4	DTR#
5	GND
6	DSR#
7	RTS#
8	CTS#
9	RI#

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. ***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。***
3. ***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。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。

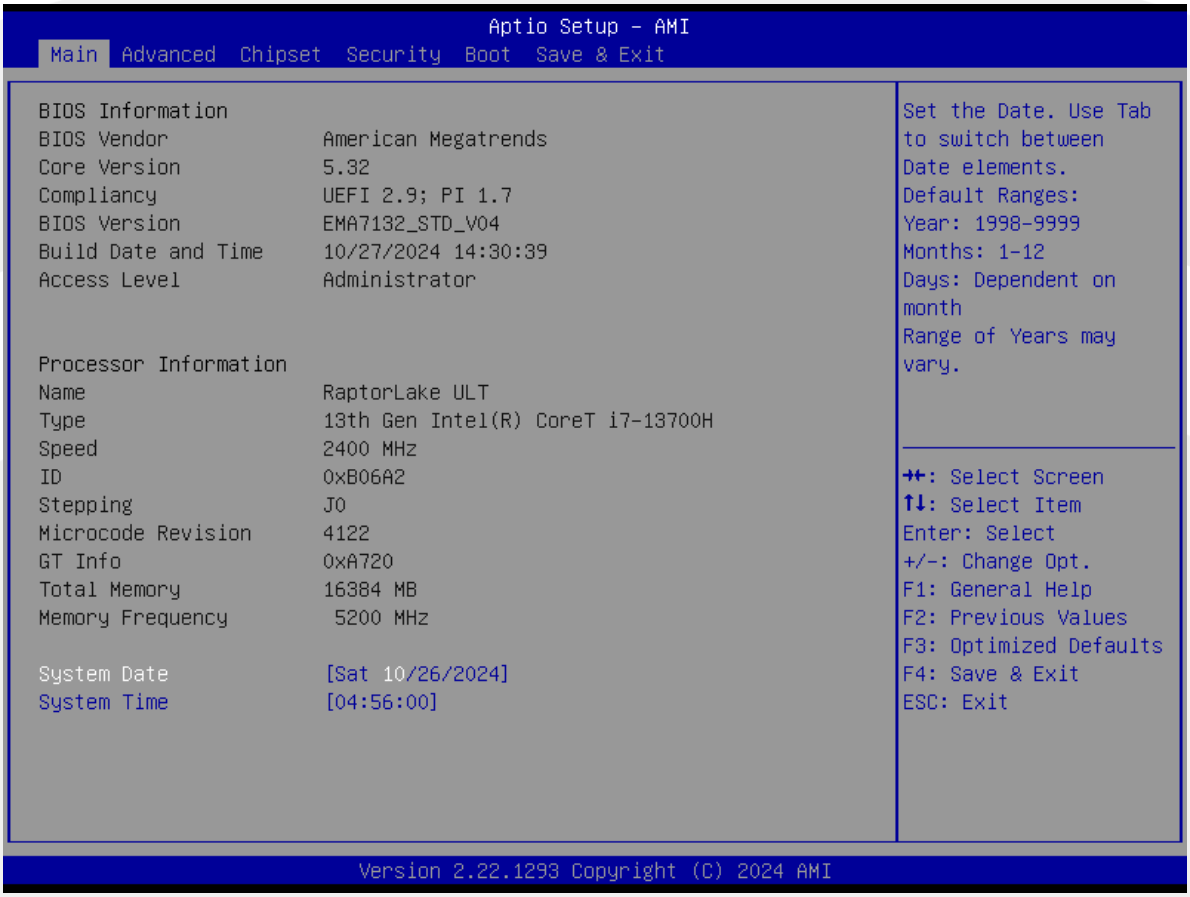
1. 打开系统电源或重新启动系统，显示器屏幕将出现自我测试的信息。
2. 当屏幕中间出现〝Press<Del>to enter setup〞提示时，按下<Del>键，就可以进入 BIOS 设定程序。
3. 以方向键移动至您要修改的选项，按下<Enter>键即可进入该选项的子画面。
4. 使用方向键及<Enter>键即可修改所选项目的值，按回车键选择 BIOS 选项并修改。
5. 任何时侯按下<Esc>键即可回到上一画面。

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.

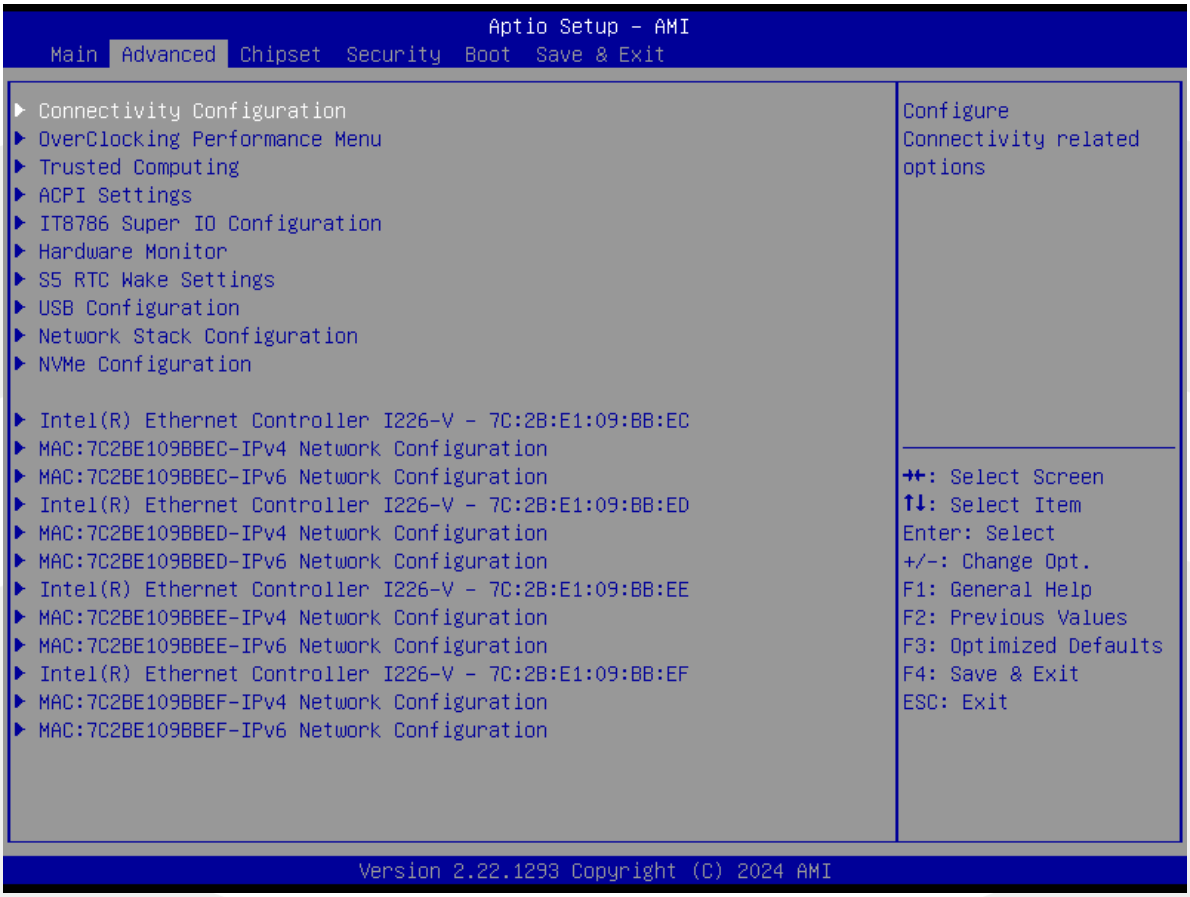


Setup Item	Options	Help Text	Comments
BIOS Information			
BIOS Vendor			Displays BIOS vendor.
Core Version			
Compliancy			
BIOS Version			Displays the current BIOS version: Format: AAAABBC **AAAAA = Project name** **BB = BIOS revision** **C = Customer number**
Build Date and Time			Displays the current BIOS build date.
Access Level			Displays password level that setup is running in: Administrator or User. With no passwords set, Administrator is the default mode.

Setup Item	Options	Help Text	Comments
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 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

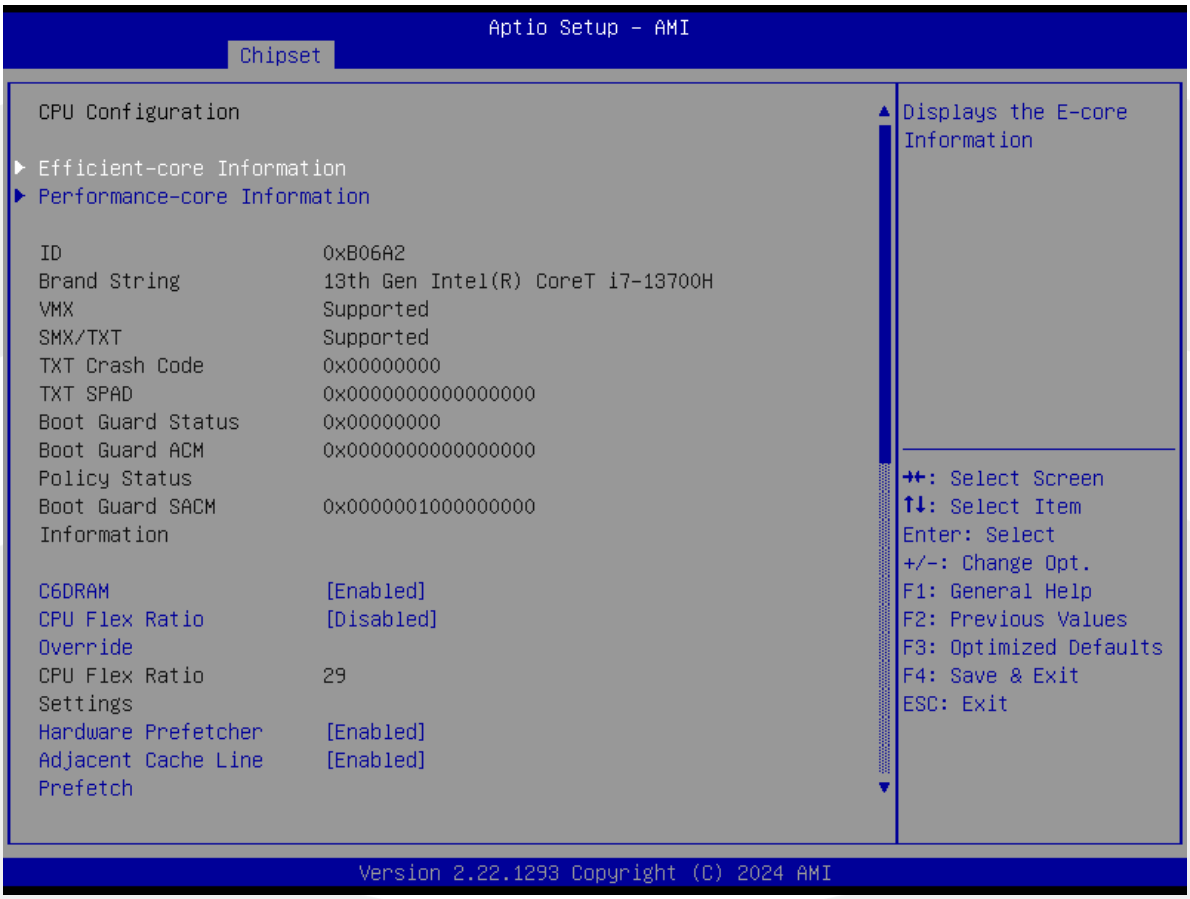
The Advanced screen provides an access point to configure several options. On this screen, the user selects the option that is to be configured.



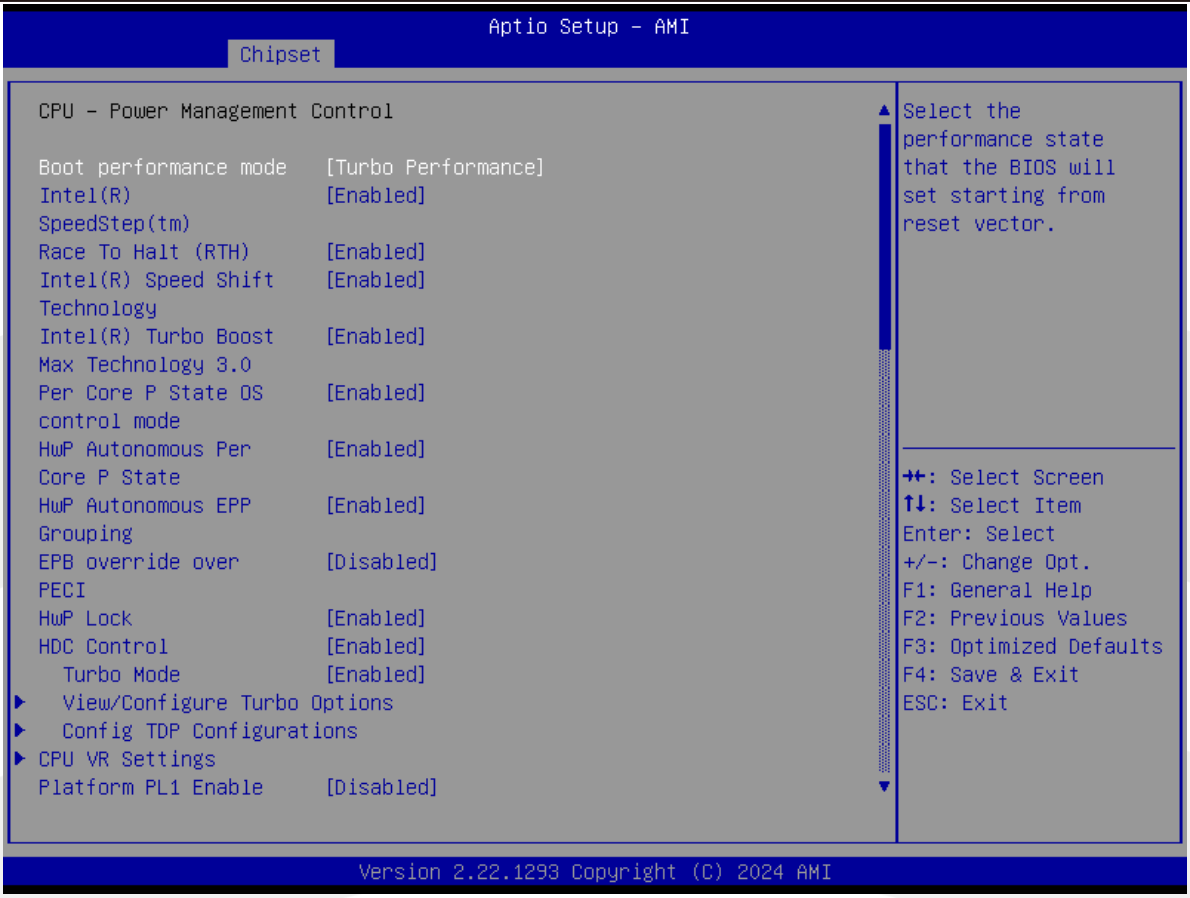
Setup Item	Options	Help Text	Comments
Advanced Screen			
Connectivity Configuration			
OverClocking Performance Menu			
Trusted Computing			
ACPI Settings		System ACPI Parameters.	
IT8786 Super IO Configuration		System Super IO chip Parameters.	
Hardware Monitor		Monitor hardware stats.	
S5 RTC Wake Settings			
USB Configuration		USB Configuration Parameters.	
Network Stack Configuration		CSM configuration: Enable/Disable, Option ROM execution settings, etc.	
NVMe Configuratioin		NVMe Device Options Settings.	

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***.



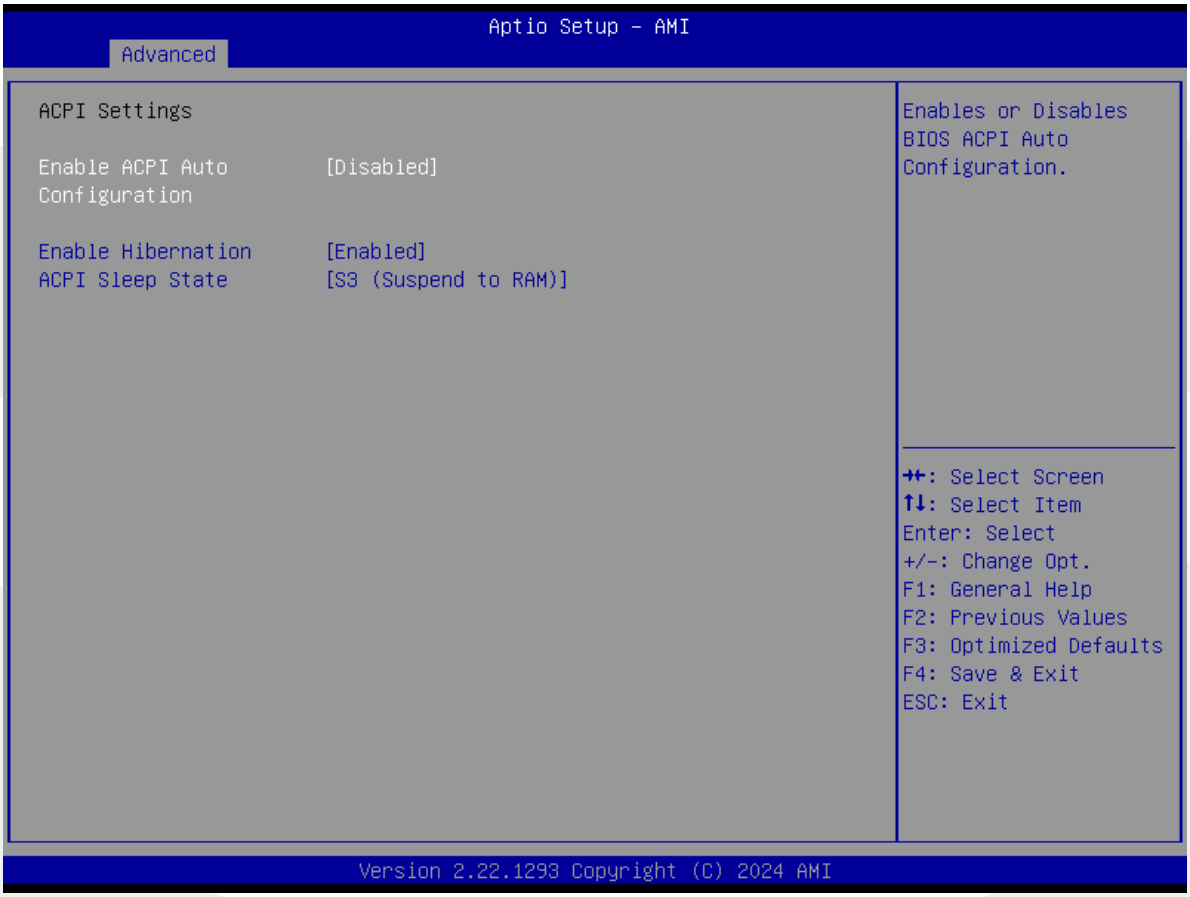
Setup Item	Options	Help Text	Comments
CPU Configuration			
Efficient-core Information			
Performance-core Information			
ID			
Brand String			
VMX			
SMX/TXT			
TXT Crash Code			
TXT SPAD			
Boot Guard Status	=	=	
Boot Guard ACM			
Policy Status			
Boot Guard SACM			
Information			



Setup Item	Options	Help Text	Comments
CPU - Power Management Control			
Boot performance mode	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.	
Race To Halt(RTH)	Enabled		
Intel® Speed Shift Technology	Enabled Disabled	Enable/Disable Intel® speed shift technology support.	
Intel® Turbo Boost Max Technology 3.0	Enabled		
Per Core P State OS control mode	Enabled		
HwP Autonomous Per Core P State	Enabled		
HwP Autonomous EPP Grouping	Enabled		
EPB override over PECI	Disabled		
HwP Lock	Enabled		
HDC Control	Enabled		
Turbo Mode	Enabled		
View/Configure Turbo Options			
Config TDP Configurations			
CPU VR Settings			
Platform PL1 Enable	Disabled		

3.2.2 ACPI Settings Screen

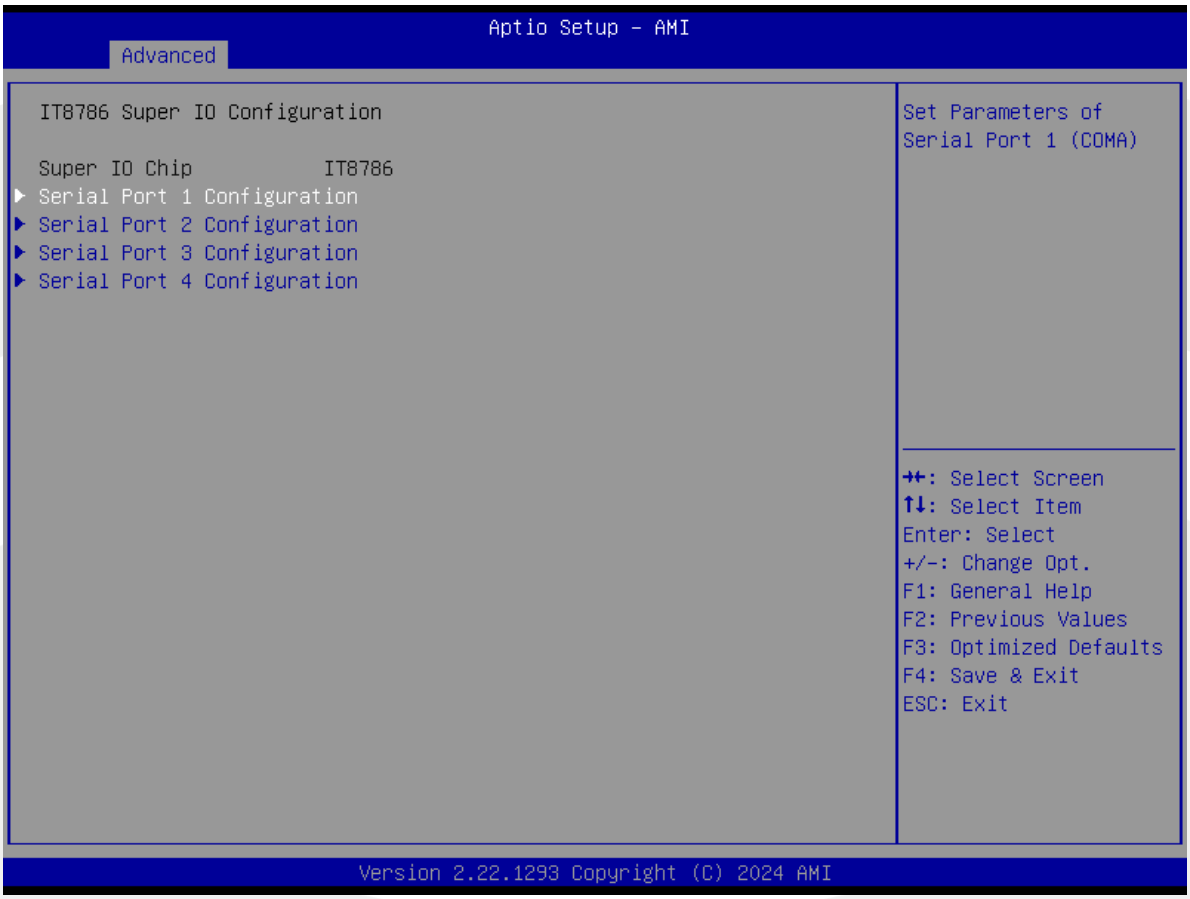
The ACPI Settings screen allows the user to set the system ACPI parameters. To access this screen from the Main screen, choose ***Advanced > ACPI Settings***.



Setup Item	Options	Help Text	Comments
ACPI Settings			
Enable ACPI Auto Configuration	Disabled		
Enable Hibernation	Enabled		
ACPI Sleep State	S3 (Suspend to RAM)	Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.	Sleep supported optionally.

3.2.3 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
IT8786 Super IO Configuration			
Serial Port 1 Configuration			Set Parameters of Serial Port 1 (COM1).
Serial Port 2 Configuration			Set Parameters of Serial Port 2 (COM2).
Serial Port 3 Configuration			Set Parameters of Serial Port 3 (COM3).
Serial Port 4 Configuration			Set Parameters of Serial Port 4 (COM4).

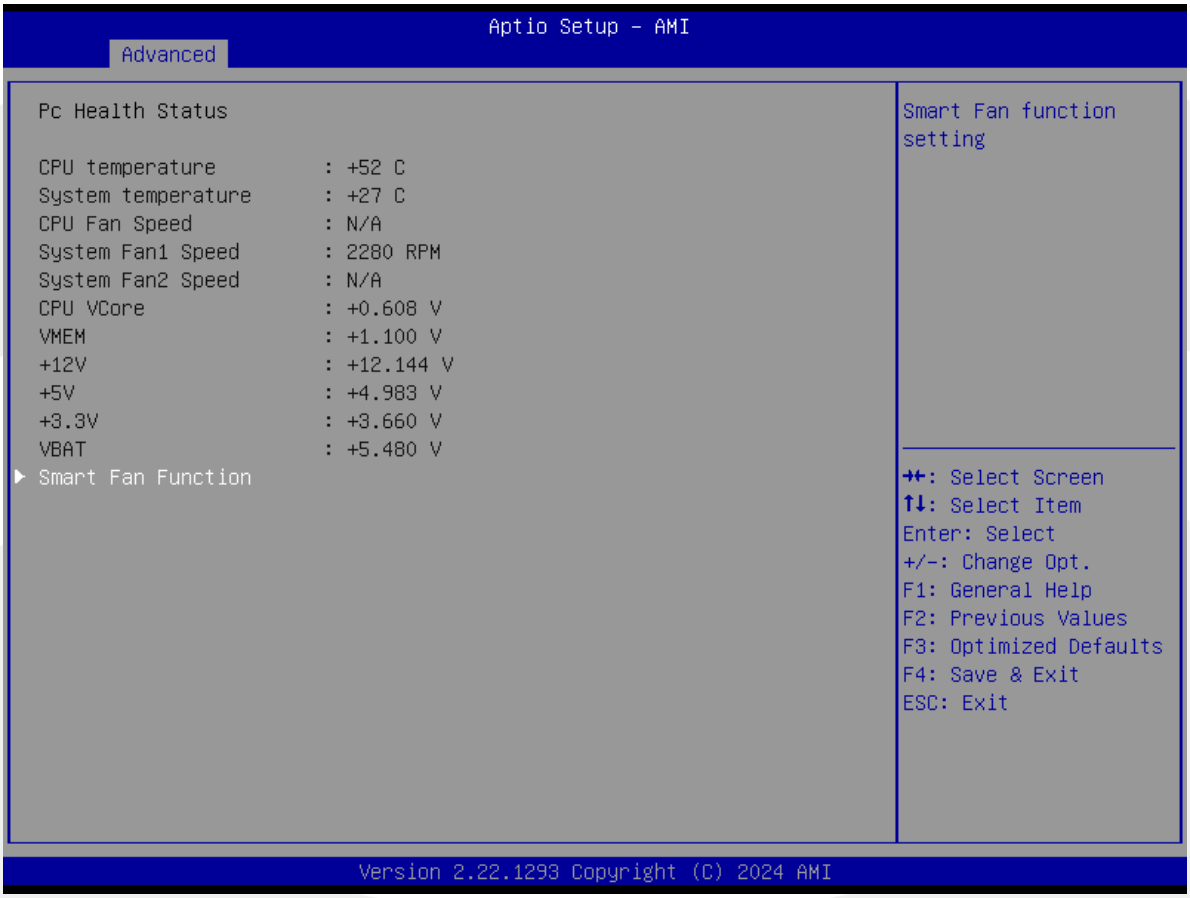
3.2.3.1 Serial PortX Configuration

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			
Serial Port	Enabled Disabled	Enable or Disable Serial Port (COM).	
Change Settings	Auto IO=3F8h; IRQ=4 IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12 IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12 IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12 IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12	Select an optimal settings for Super IO Device.	

3.2.4 Hardware Monitor

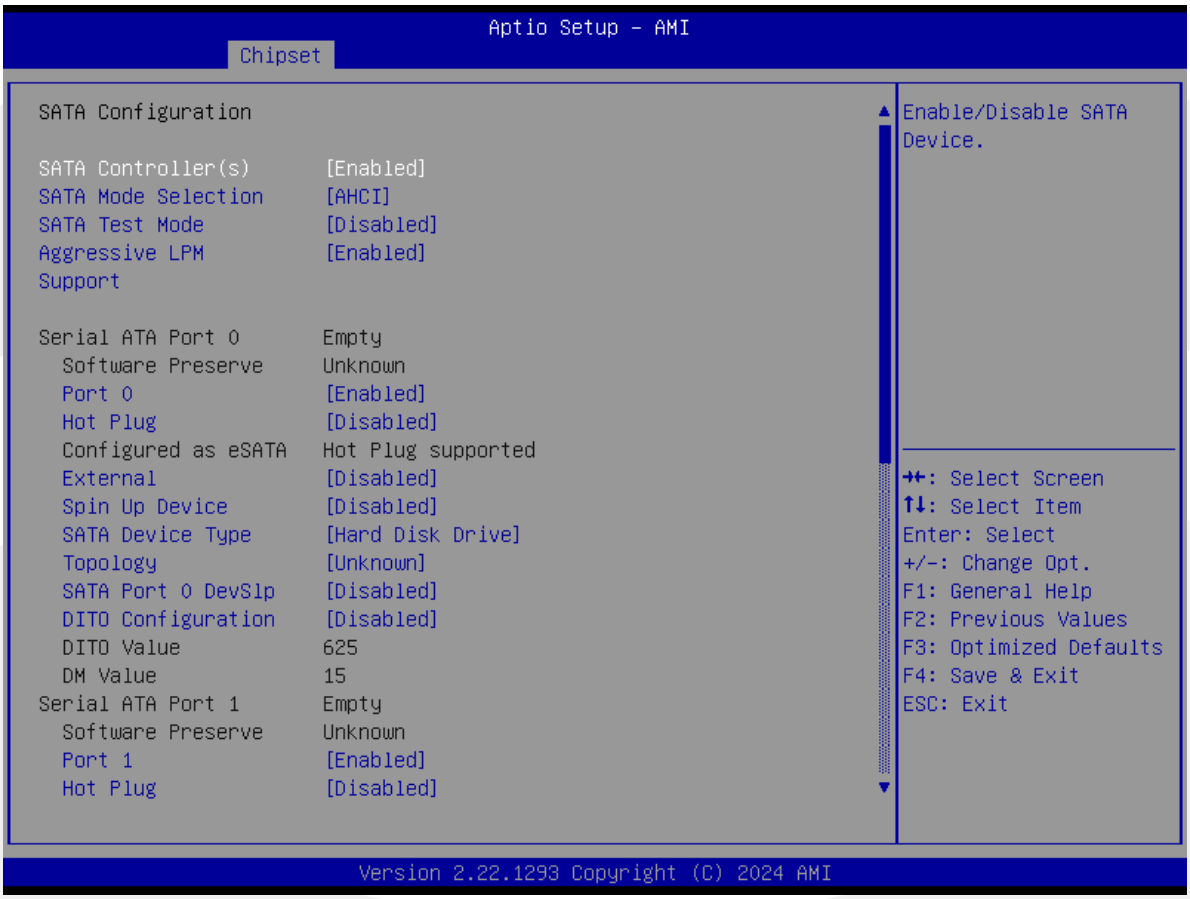
The hardware monitor screen allows the user to view the hardware information. To access this screen from the Advanced screen, choose ***Advanced-> Hardware Monitor***.



Setup Item	Options	Help Text	Comments
Hardware Monitor			
PC Health Status			
CPU temperature		Shows Current CPU temperature.	NOTE1:Sometimes not the actual temperature value, just indicates temperature tolerance limitation.
System temperature			
CPU Fan Speed			HW Information.
System Fan1 Speed			
System Fan2 Speed			
Cpu Vcore			
VMEN			
+12V			
+5V			
+3.3V			
VBAT			
Smart Fan Function			

3.2.5 SATA Configuration

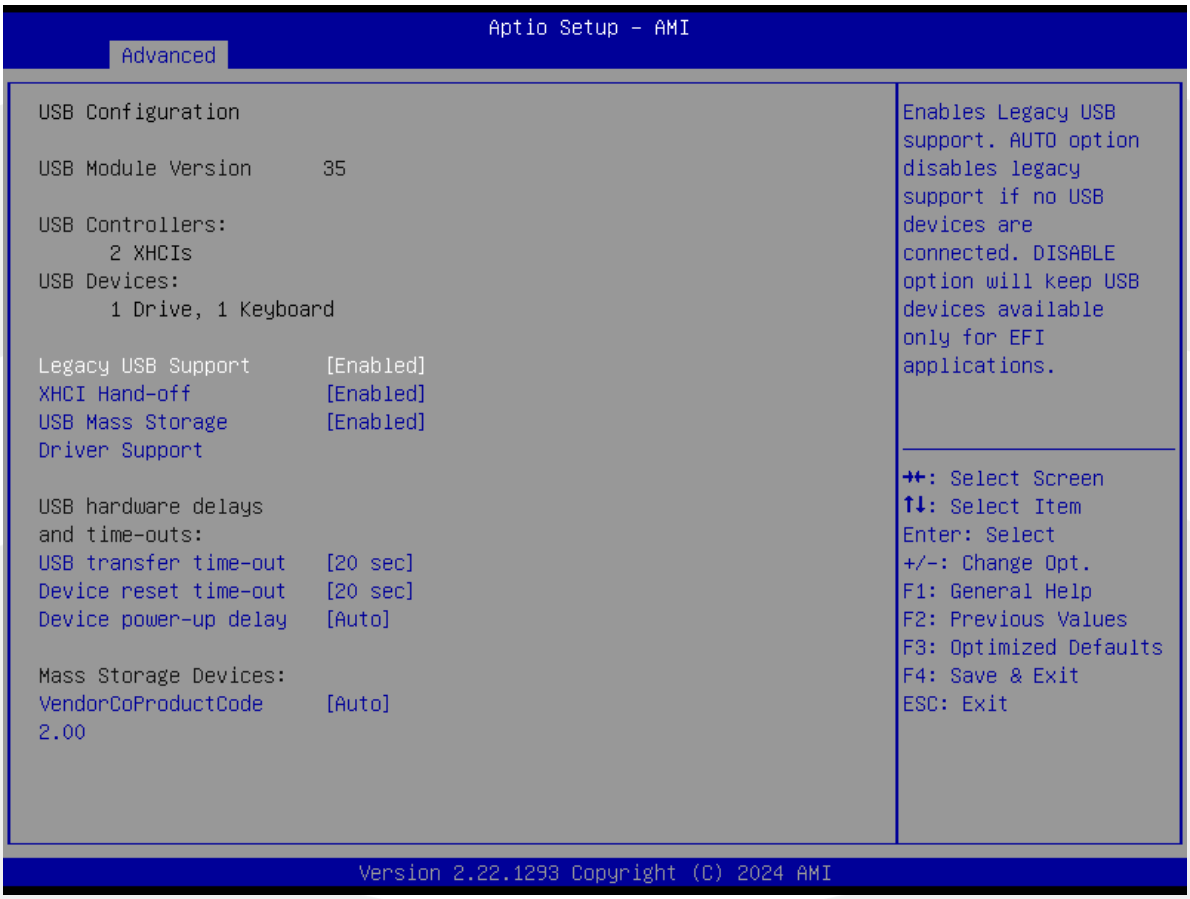
The SATA Configuration screen allows the user to view the SATA Controller information, and to enable or disable SATA Controller options. To access this screen from the Main screen, choose ***Advanced > SATA Configuration.***



Setup Item	Options	Help Text	Comments
SATA Configuration			
SATA Controller(s)	Enabled Disabled	Enable / Disable SATA Device.	
SATA Mode Selection	AHCI Mode	Select AHCI.	
SATA Test Mode	Disabled		
Aggressive LPM Support	Enabled		
Serial ATA Port 0			Show HDD information connected.
Serial ATA Port 1			

3.2.6 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***.

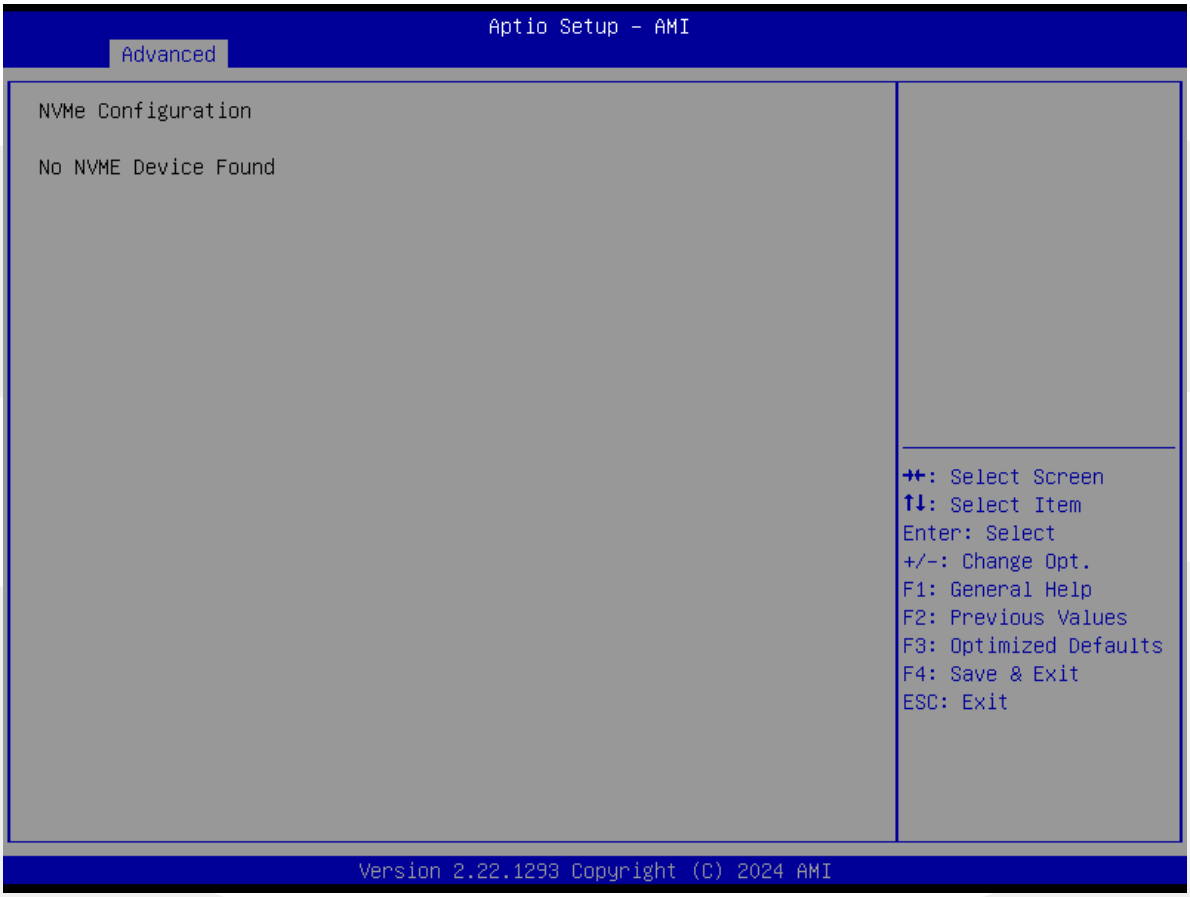


Setup Item	Options	Help Text	Comments
USB Configuration			
Legacy USB Support	Enabled Disabled	Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.	
XHCI Hand-off	Enabled Disabled	This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.	
USB MASS Storage Driver Support	Enabled Disabled	Enable/Disable USB Mass Storage Driver Support.	
USB hardware delays and time-outs:			
USB transfer time-out	1 sec 5 sec 10 sec 20 sec	The time-out value for Control, Bulk, and Interrupt transfers.	

Setup Item	Options	Help Text	Comments
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.	

3.2.8 NVMe Configuration

The NVMe Configuration screen allows the user to view the NVMe device information. To access this screen from the Main screen, choose ***Advanced > NVMe Configuration***.



Setup Item	Options	Help Text	Comments
NVMe Configuration			
Controller 0			Show NVMe device information connected.

3.2.9 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 Parameters			
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.

3.2.10 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&LVDS Panel			
Launch LAN1 PXE OpROM	Disabled Enabled		Legacy PXE Support Control.
Launch LAN2 PXE OpROM	Disabled Enabled		Legacy PXE Support Control.
LVDS Control	Disabled Enabled		LVDS control.

3.3 Chipset Screen

The Chipset screen provides an access point to configure SA Configuration and PCH-IO configuration. 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.	

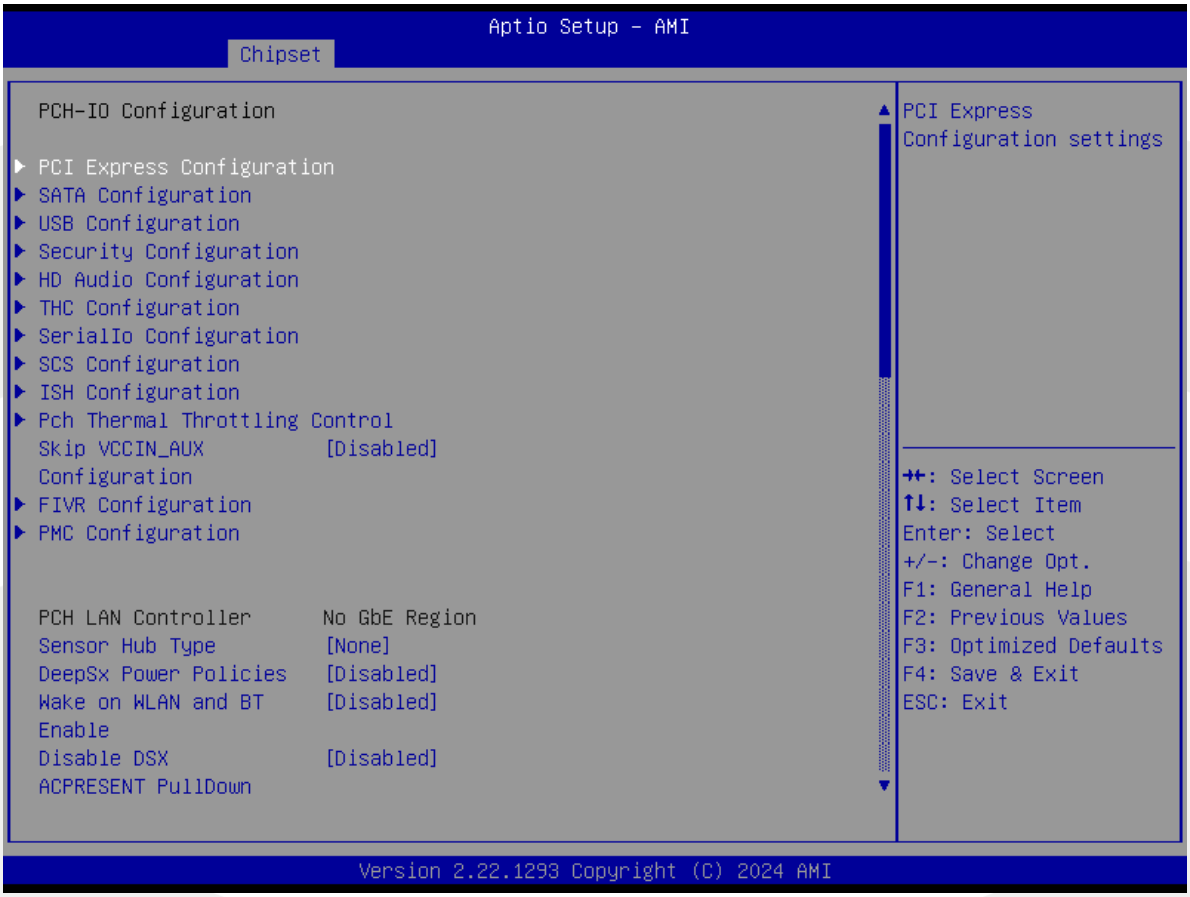
3.3.1 System Agent (SA) Configuration

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***.

Setup Item	Options	Help Text	Comments
System Agent (SA) Configuration			
Memory Configuration			
Memory Information		Show Memory information.	Memory Information.
Graphics Configuration			
Primary Display	Auto		
Internal Graphics	Auto Disabled Enabled	Keep IGFX enabled based on the setup options.	Internal Graphics.
GTT Size	2MB 4MB 8MB	Select the GTT Size.	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.	Aperture Size.
DVMT Pre-Allocated	32M		
DVMT Total Gfx Mem	128M 256M MAX	Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device.	DVMT Total Gfx Mem.
LCD Control			
PEG Port Configuration			

3.3.2 PCH-IO Configuration

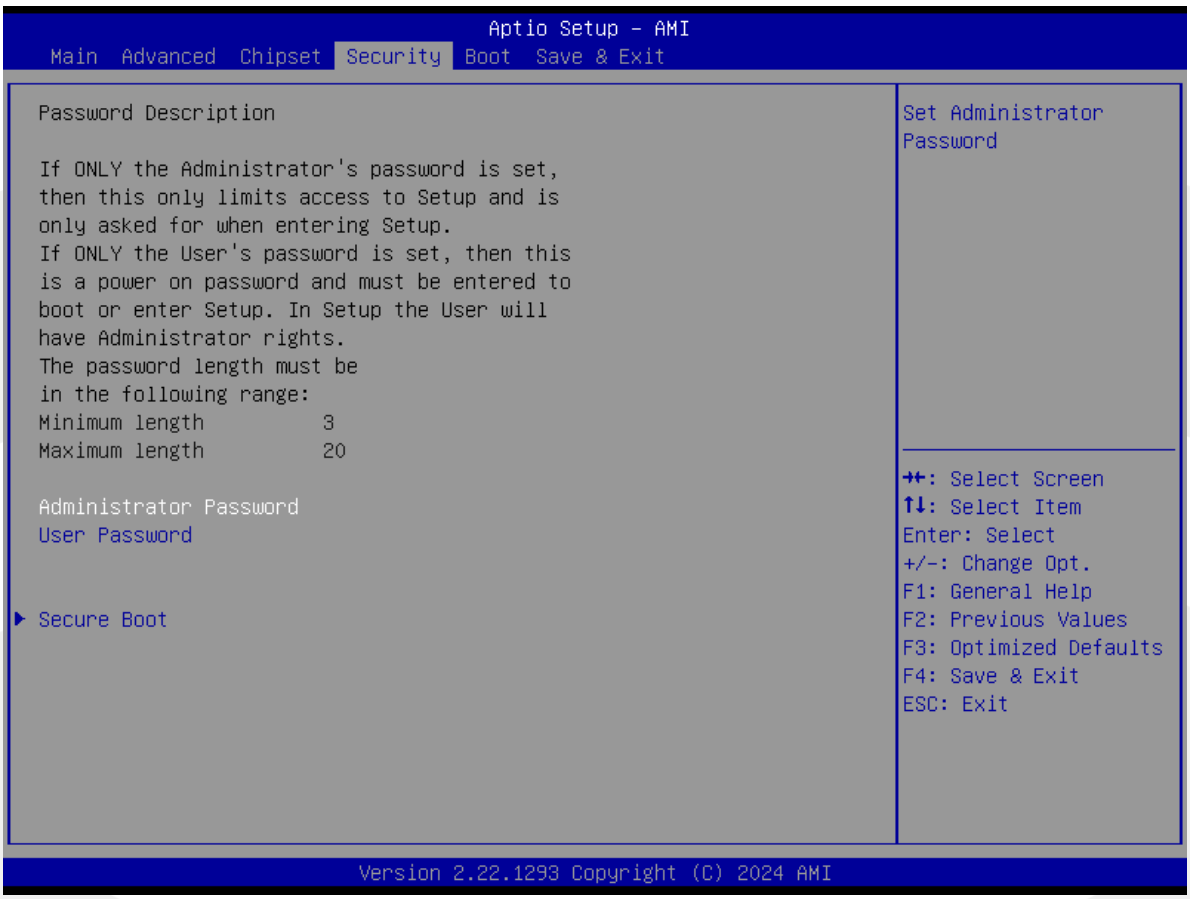
The South Bridge Screen allows user to set SB chipset configuration. To access this screen form the Main screen, choose ***Chipset> PCH-IO Configuration***.



Setup Item	Options	Help Text	Comments
PCH-IO Configuration			
PCI Express Configuration			
SATA Configuration			
USB Configuration			
Security Configuration			
HD Audio Configuration			
THC Configuration			
SerialIo Configuration			
SCS Configuration			
ISH Configuration			
Pch Thermal Throtting			
Skip VCCIN_AUX Configuration	Disabled		
FIVR Configuration			
PMC Configuration			
Sensor Hub Type	None		
DeepSx Power Policies	Disabled		
Wake on WLAN and BT Enable	Disabled		
Disabled DSX ACPRESENT PullDown			

3.4 Security

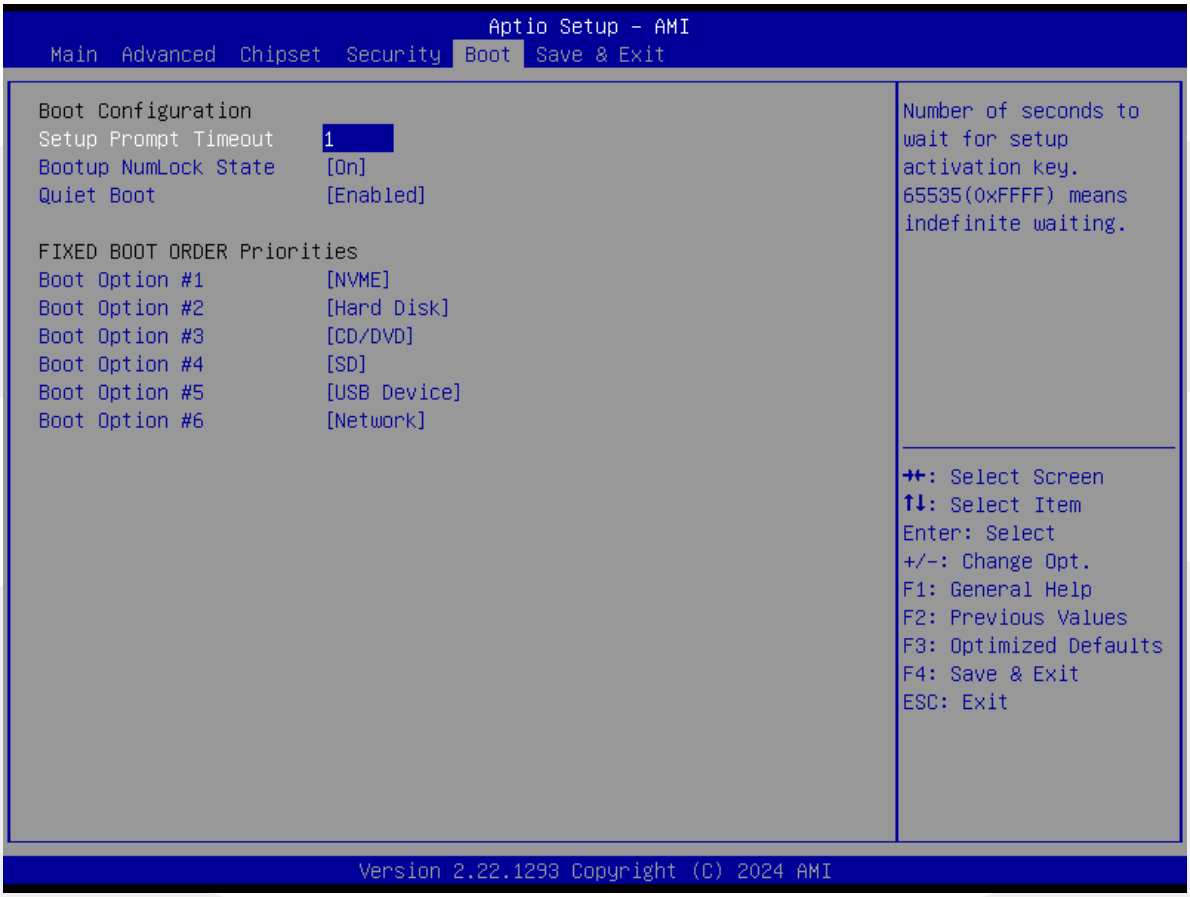
To access this screen form the Main screen, choose ***Security.***



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

3.5 Boot Screen

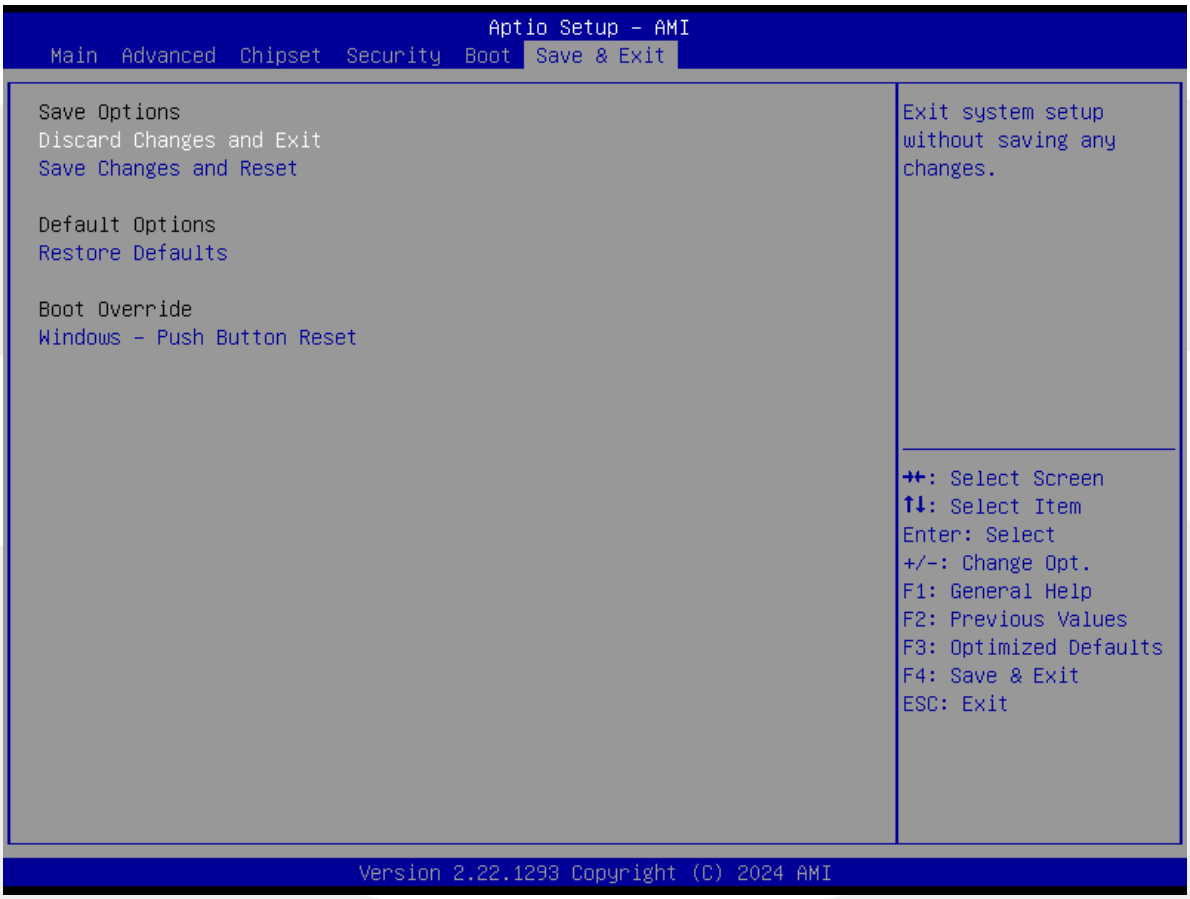
The Boot screen displays any bootable media encountered during POST, and allows the user to configure desired boot device. To access this screen from the Main screen, choose ***Boot***.



Setup Item	Options	Help Text	Comments
Boot Configuration			
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.	
FIXED Boot ORDER Priorities			
Boot Option #1		Sets the system boot order.	Note：Showed When boot devices existed.
Boot Option #2		Sets the system boot order.	
Boot Option #3		Sets the system boot order.	
Boot Option #4		Sets the system boot order.	
Boot Option #5		Sets the system boot order.	
Boot Option #6		Sets the system boot order.	

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 Options			
Discard Changes and Exit		Exit system setup without saving any changes.	User is prompted for confirmation only if any of the setup fields were modified.
Save Changes and Reset		Reset the system after saving the changes.	
Default Options			
Restore Defaults		Restore/Load Default values for all the setup options.	

第四章 故障问题排除

故障	排除
解决内置 HDMI 进系统黑屏与不支持热插拔	把内置 HDMI 与外置 HDMI 同时接上显示器，然后正常安装显卡驱动

附录

附一：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。

i2c

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的表示出来，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。

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