



EMA-7112

7" MXM 主板
USER Manual V1.9

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

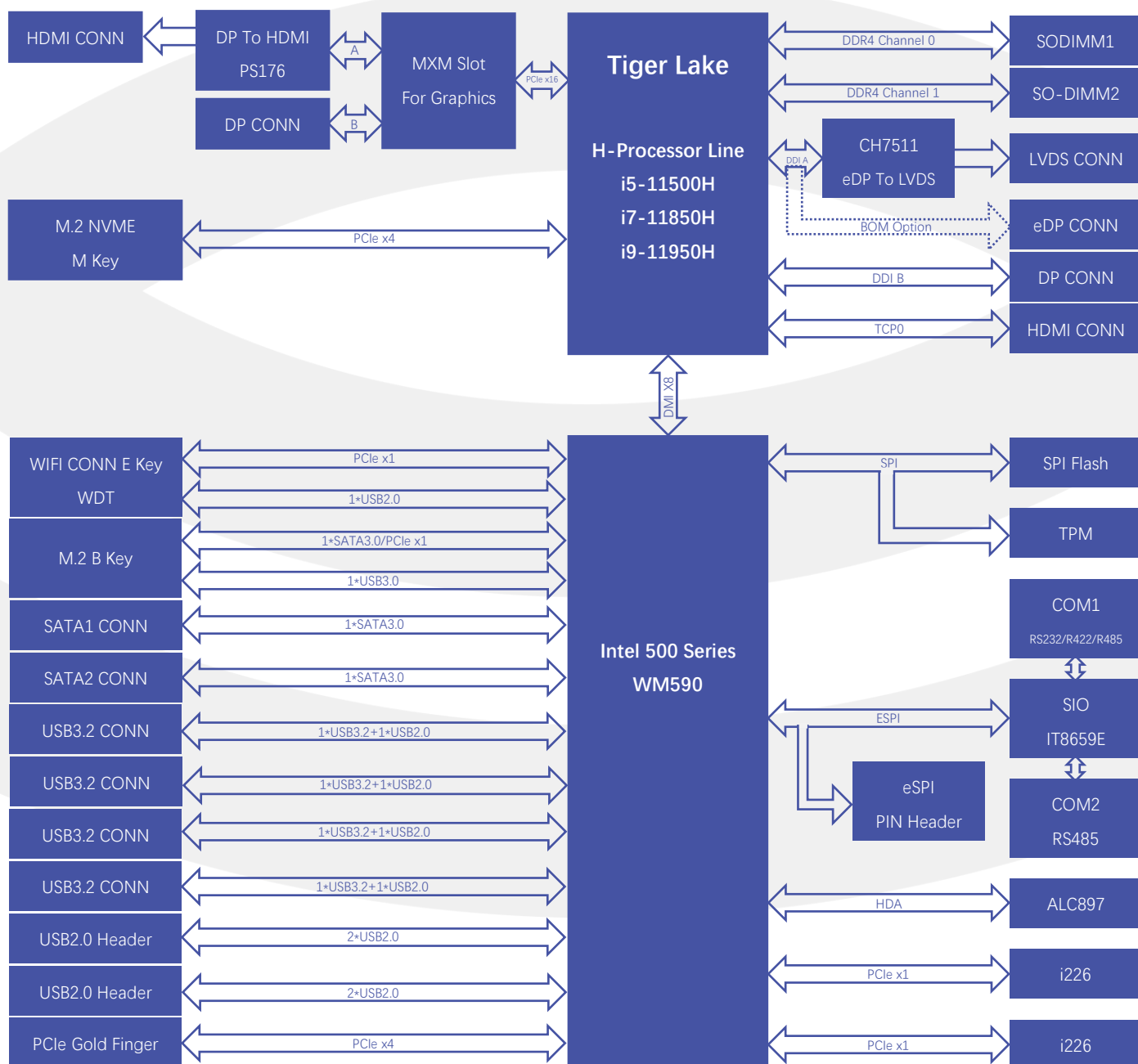
1.1 产品规格

Model		EMA-7112		
配置 Item	规格 Specification	描述 Describe		
处理器 Processor System	CPU	Intel Tiger Lake-H i5/i7/i9 FCBGA1787		
	处理器 CPU	i5-11500H	i7-11850H	i9-11950H
	内核数 Core Number	6	8	8
	基本主频 Base Frequency	2.4/2.9GHz	2.1/2.5GHz	2.1/2.6GHz
	最高主频 Max. Speed	4.60GHz	4.90GHz	5.00GHz
	二级缓存 L2 Cache	12MB	24MB	24MB
	功耗 TDP (W)	35/45W	35/45W	35/45W
	芯片组 Chipset	Intel PCH WM590		
	BIOS	128Mb SPI FLASH		
内存 Memory	规格 Technology	DDR4 3200MHz		
	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 1*M.2 Key-B for PCIe x1&SATA(2242/2280)&4G/5G(3042/3052) 1*M.2 Key-E(2230) for Wifi		
	SIM	1*SIM		
	MXM	1*MXM3.1 Support Type A/B <130W		
	PCI-Express (金手指)	1*PCIe x4(非标准金手指定义)		
存储 Storage	SATA	2*SATA3.0(7 Pins)		

USB	I/O		4*USB3.0
	插针 Header Pin		4*USB2.0(2.00mm_2*4Pin)
显示 Graphics	最多显示 Multiple Display		5Ports
	I/O	From GPU	1*HDMI(DP_A DP to HDMI) 1*DP++(DP_B)
		From CPU	1*HDMI 1*DP++
	插针 Header Pin		1*LVDS(From CPU)
	金手指 Goldfinger Connector		1*eDP(Option by BOM)
	分辨率 Resolution		HDMI2.0:4096*2160@60Hz DP:3840*2160@60Hz eDP:3840*2160@60Hz LVDS:1920*1200@60Hz
串口 COM	插针 Header Pin		1*RS232(2.0mm_2*5Pin)(Option RS485/RS422) 1*RS485(2.0mm_2*5Pin)
以太网 Ethernet	控制器 Controller		Integrated 10/100/1000M/2.5GB Adaption (Intel® Ethernet Controller i226-V)
	I/O		2*RJ45
音频 Audio	芯片 Chipset		Integrated High Definition Audio Stereo(ALC897)
	I/O		1*MIC&Earphone Jack(Normally open cantact)
	插针 Header Pin		1*Loud Speaker(Right and left vocal tract with power amplifier)
其它 Others	F_Panel		1*F_Panel(2.0mm_2*5Pin)
	eSPI		1*eSPI Bus
	TPM		1*TPM
电源 Power Requirements	电源类型 Power Type		1*DC In(4P In) 1*ATX 2*2Pin(Option)
	电源电压 Input Voltage		18~26V
环境 Environment	工作温度 Operating Temperature		0~60℃
	存储温度 Storage Temperature		-20~70℃

	工作湿度 Operating Humidity	10~95%(non-condensing)
物理特性 Physical	尺寸 Dimensions	mITX(170*170mm)
	PCB 颜色 Color	Green
操作系统 OS	Microsoft	Windows 10 LTSC/1809(RS5)
	Linux	Red Hat 8.4 Ubuntu 20.04 Yocto 4.0xLTS

1.2 设计原理框图



1.3 驱动

Windows 10: <https://pan.baidu.com/s/1KTXtCRqviNz-Q4LPpbMxYA?pwd=9lmb>

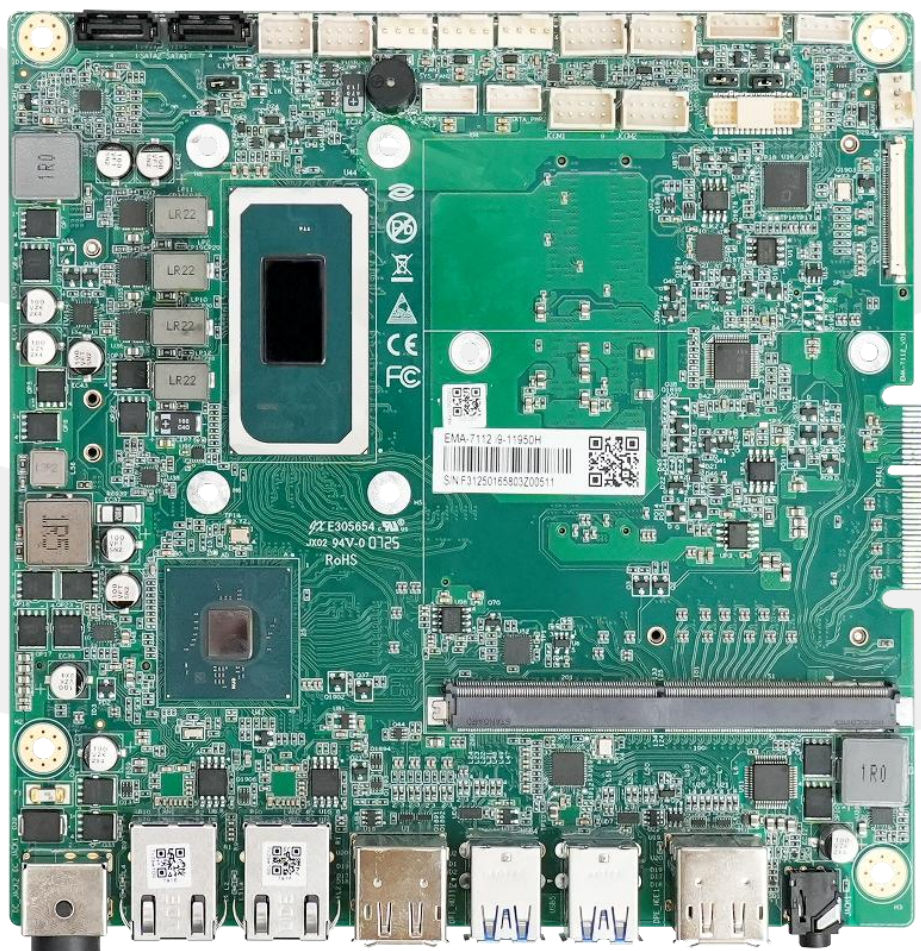
1.4 产品配件

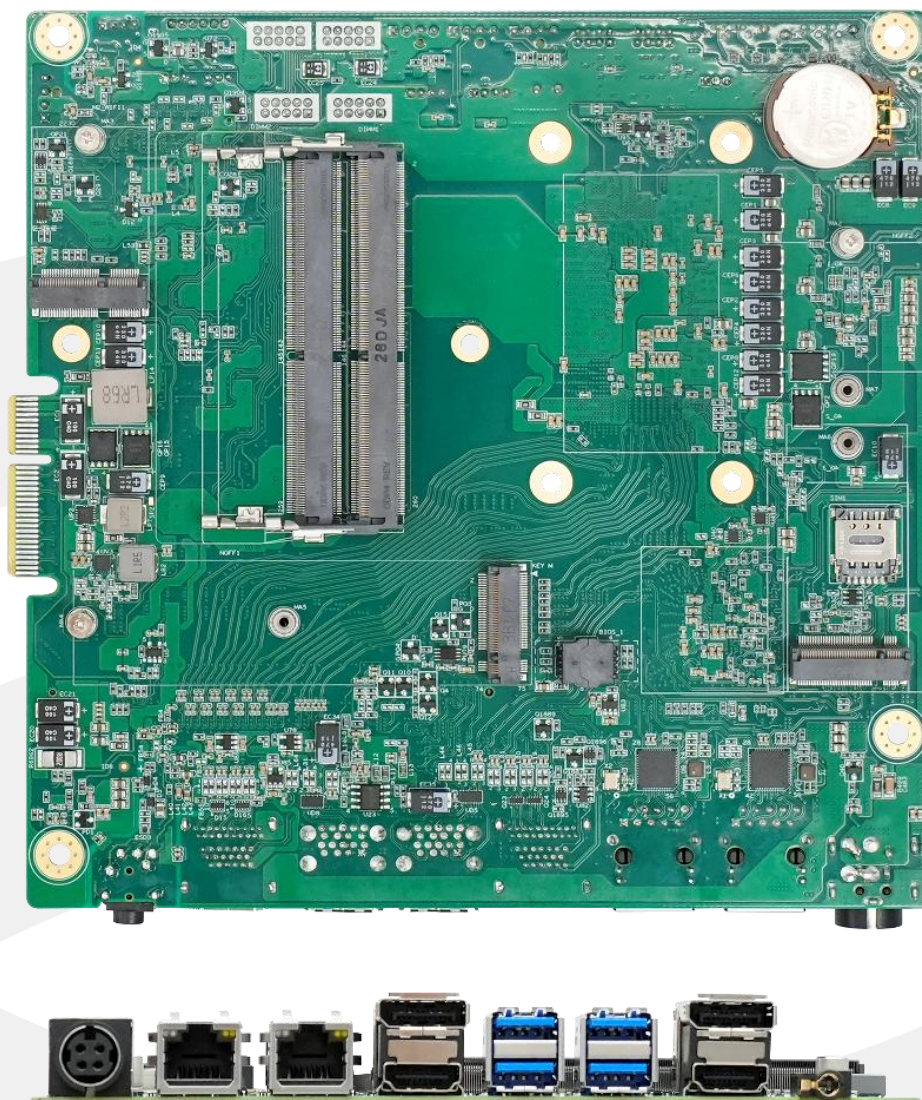
Model Name	Part Number	Quantity	Specification
转接板	8.ZRT.50-1646-01-LEF	选配	Riser01,VER:0A,PCIEx4 switch 2 PCIEx2-DIP

1.5 产品料号

Model Name	Part Number	Specification
EMA-7112 (i7-18500H)	8.ZRT.50-1658-05-LEF	EMA-7112_V10,mITX 主板,TGL_H,Intel i7-11850H,wm590,IT8659+2*LAN+2*DP+2*HDMI+4*USB3.2+1*RS232+1*复合串口+LVDS,DIP
EMA-7112 (i5-11500H)	8.ZRT.50-1658-04-LEF	EMA-7112_V10,mITX 主板,TGL_H,Intel i5-11500H,wm590,IT8659+2*LAN+2*DP+2*HDMI+4*USB3.2+1*RS232+1*复合串口+LVDS,DIP

1.6 产品照片

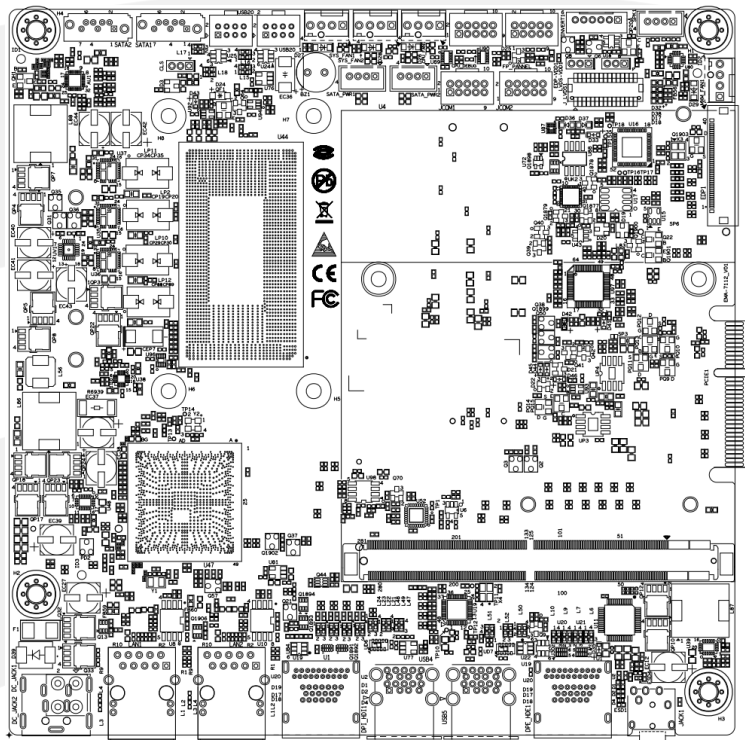




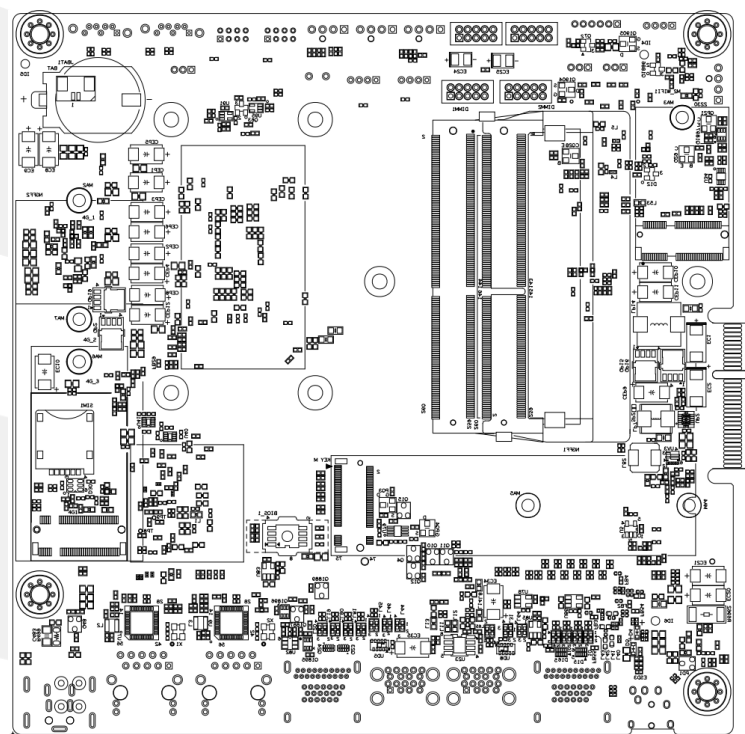
第二章 安装说明

2.1 接口图

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。



正面接口



反面接口

3D File(CPU Cooling): <https://drive.weixin.qq.com/s?k=AAAADgeKABA3oIEqdN>

3D File: <https://drive.weixin.qq.com/s?k=AAAADgeKABAzctbuot>

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。

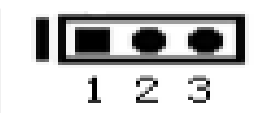
CLS: 2.0mm_1*3Pin, 清 CMOS 跳线设置

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

LVDS-VDD1: 2.0mm_1*3Pin, J_LVDS 屏电压选择

	设 置	功 能
	1-2 短路	+5V
	2-3 短路	+3.3V(Default)

EDP-VDD1: 2.0mm_1*3Pin, EDP1 屏电压选择

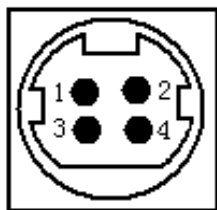
	设 置	功 能
	1-2 短路	+5V
	2-3 短路	+3.3V(Default)

2.4 插针接口定义

SATA_PWR1/SATA_PWR2: SATA 电源接口, 2.0mm_1*4Pin, 180 度带框插针

	管 脚	信号名称
	1	12V
	2	GND
	3	GND
	4	5V

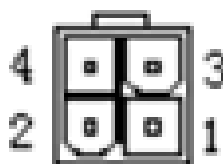
DC_JACK2: 供电接口 1, DC 端子



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
若接 MXM 显卡, 推荐使用 19V/24V 供电, 并保证电源功率及显卡散热良好

DC_JACK1: 供电接口 2, ATX 2*2Pin, 孔直径 1.3mm, 与 DC_JACK2 二选一, 默认未上件



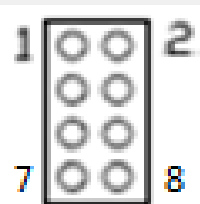
管 脚	信号名称
1	GND
2	GND
3	VCC
4	VCC

SPK1: 扬声器接口, 2.0mm_1*4Pin, 180 度带框插针



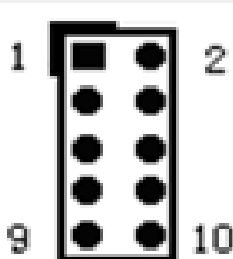
管 脚	信号名称
1	AMP_L+
2	AMP_L-
3	AMP_R-
4	AMP_R+

USB20_1/USB20_2: USB2.0 接口, 2.0mm_2*4Pin 插针



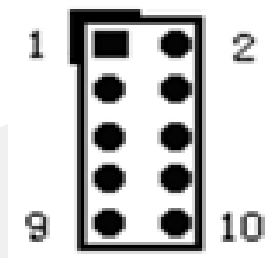
管 脚	信号名称	管 脚	信号名称
1	+5V	2	+5V
3	USB1_Data-	4	USB2_Data-
5	USB1_Data+	6	USB2_Data+
7	GND	8	GND

F_PANEL1: 前面板状态接口, 2.0mm_2*5Pin 插针



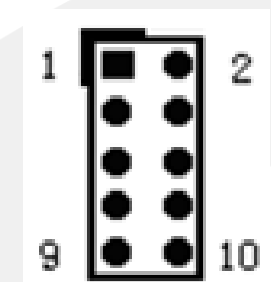
管 脚	信号名称	管 脚	信号名称
1	HDD LED+	2	PW LED+
3	HDD LED-	4	PW LED-/GND
5	GND	6	PWR Button
7	RESET	8	GND
9	BKL SW	10	+5VS(Optional)

JCOM1: RS232/RS422/RS485 复合串口, 2.0mm_2*5Pin 插针



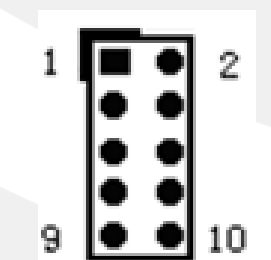
管脚	信号名称		
	RS-232	RS-422	RS-485
1	DCD#	TXD-	DATA-
2	RXD	TXD+	DATA+
3	TXD	RXD+	NC
4	DTR#	RXD-	NC
5	GND	GND	GND
6	DSR#	NC	NC
7	RTS#	NC	NC
8	CTS#	NC	NC
9	RI#	NC	NC
10	NA	NA	NA

JCOM2: RS485 串口, 2.0mm_2*5pin 插针



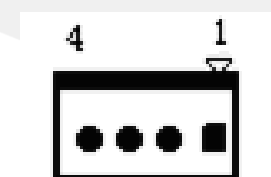
管 脚	信号名称	管 脚	信号名称
1	DATA+	2	DATA-
3	NC	4	NC
5	GND	6	NC
7	NC	8	NC
9	NC	10	NA

CPU_DEBUG: 插针串口, 2.0mm_2*5pin 插针



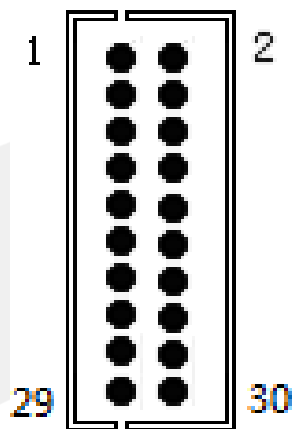
管 脚	信号名称	管 脚	信号名称
1	3.3V	2	ESPI_RESET
3	ESPI_CLK	4	ESPI_DATA0
5	ESPI_CS	6	ESPI_DATA1
7	ESPI_DATA3	8	ESPI_DATA2
5	GND	10	NA

CPU_FAN1/MXM_FAN1/SYS_FAN1/SYS_FAN2: CPU、MXM 和系统风扇座子, 2.54mm_1*4Pin



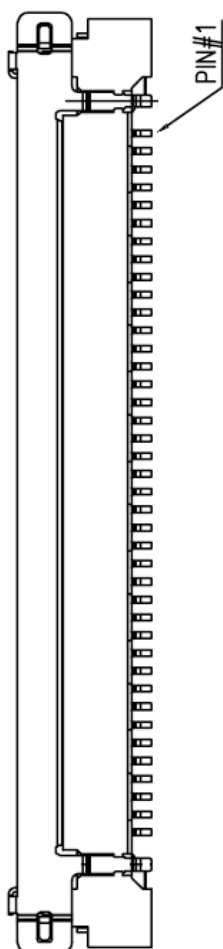
管 脚	信号名称
1	GND
2	+12V
3	FAN_IO
4	FAN_PWM

J_LVDS: LVDS 显示接口, SHD1.0mm_2*15P, 配合跳冒 LVDS-VDD1 使用



管 脚	信号名称	管 脚	信号名称
1	VDD	2	VDD
3	VDD	4	GND
5	GND	6	GND
7	LVDS_TX_L0N	8	LVDS_TX_L0P
9	LVDS_TX_L1N	10	LVDS_TX_L1P
11	LVDS_TX_L2N	12	LVDS_TX_L2P
13	GND	14	GND
15	LVDS_TX_CLKLN	16	LVDS_TX_CLKLP
17	LVDS_TX_L3N	18	LVDS_TX_L3P
19	LVDS_TX_U0N	20	LVDS_TX_U0P
21	LVDS_TX_U1N	22	LVDS_TX_U1P
23	LVDS_TX_U2N	24	LVDS_TX_U2P
25	GND	26	GND
27	LVDS_TX_CLKUN	28	LVDS_TX_CLKUP
29	LVDS_TX_U3N	30	LVDS_TX_U3P

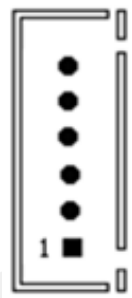
EDP1: EDP 显示输出接口, 0.5mm 间距 1*40Pin, 配合跳冒 EDP-VDD1 使用



管 脚	信号名称	管 脚	信号名称
1	NC	21	VCC_EDP
2	GND	22	NC
3	EDP_TX3_DN	23	GND(VDD)
4	EDP_TX3_DP	24	GND(VDD)
5	GND	25	GND(VDD)
6	EDP_TX2_DN	26	GND(VDD)
7	EDP_TX2_DP	27	EDP_HPD_CN
8	GND	28	GND(BKL)
9	EDP_TX1_DN	29	GND(BKL)
10	EDP_TX1_DP	30	GND(BKL)
11	GND	31	GND(BKL)
12	EDP_TX0_DN	32	ENABKL
13	EDP_TX0_DP	33	PWM_OUT0
14	GND	34	NC
15	EDP_AUX_DP	35	NC
16	EDP_AUX_DN	36	Backlight_VCC
17	GND	37	Backlight_VCC
18	VCC_EDP	38	Backlight_VCC
19	VCC_EDP	39	Backlight_VCC
20	VCC_EDP	40	NC

备注: 插座参考型号: I-PEX,20455-040E-12、THD,THD0510-40LV-GF 等

INVERT1: LVDS 屏背光及背光调节, 2.0mm_1*6pin



管 脚	信号名称
1	+12V
2	+12V
3	BK EN(背光使能)
4	BK PWM(亮度调节)
5	GND
6	GND

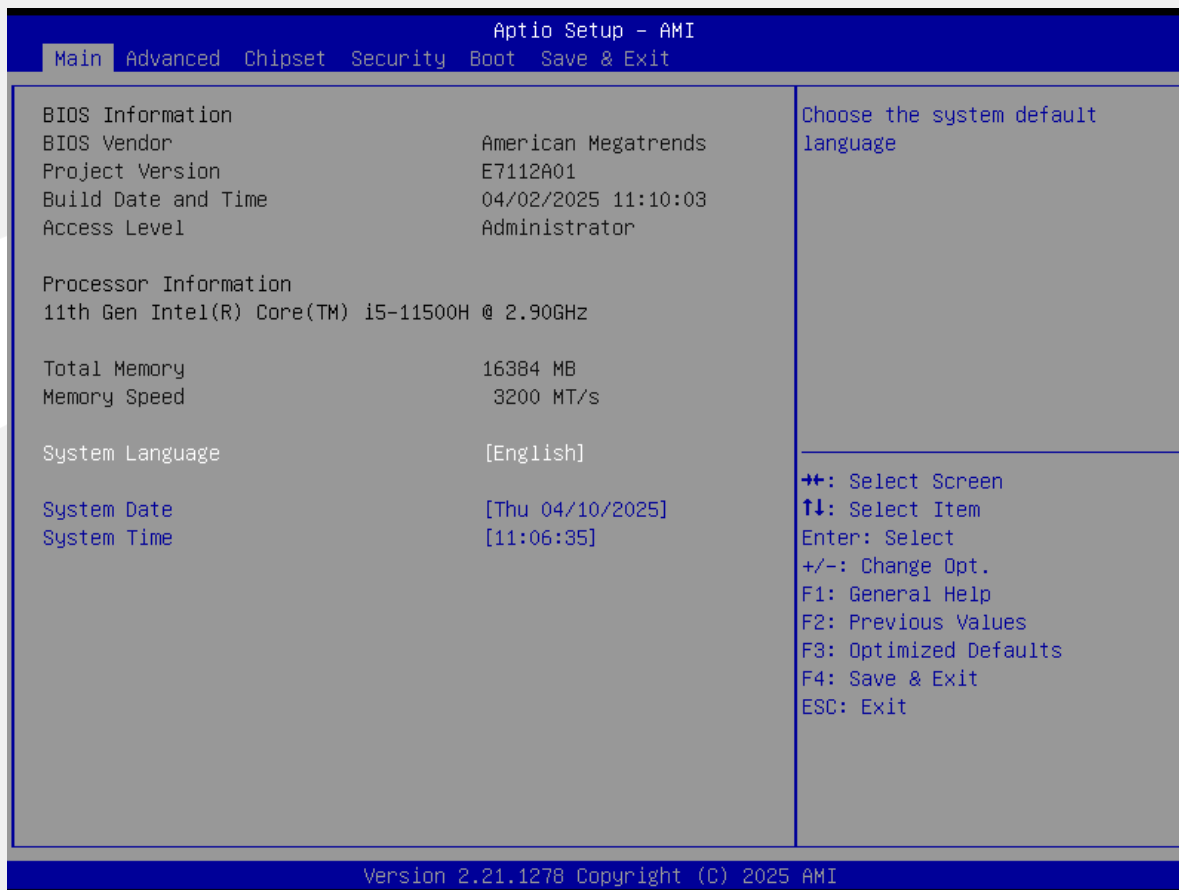
第三章 BIOS 设置说明

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.

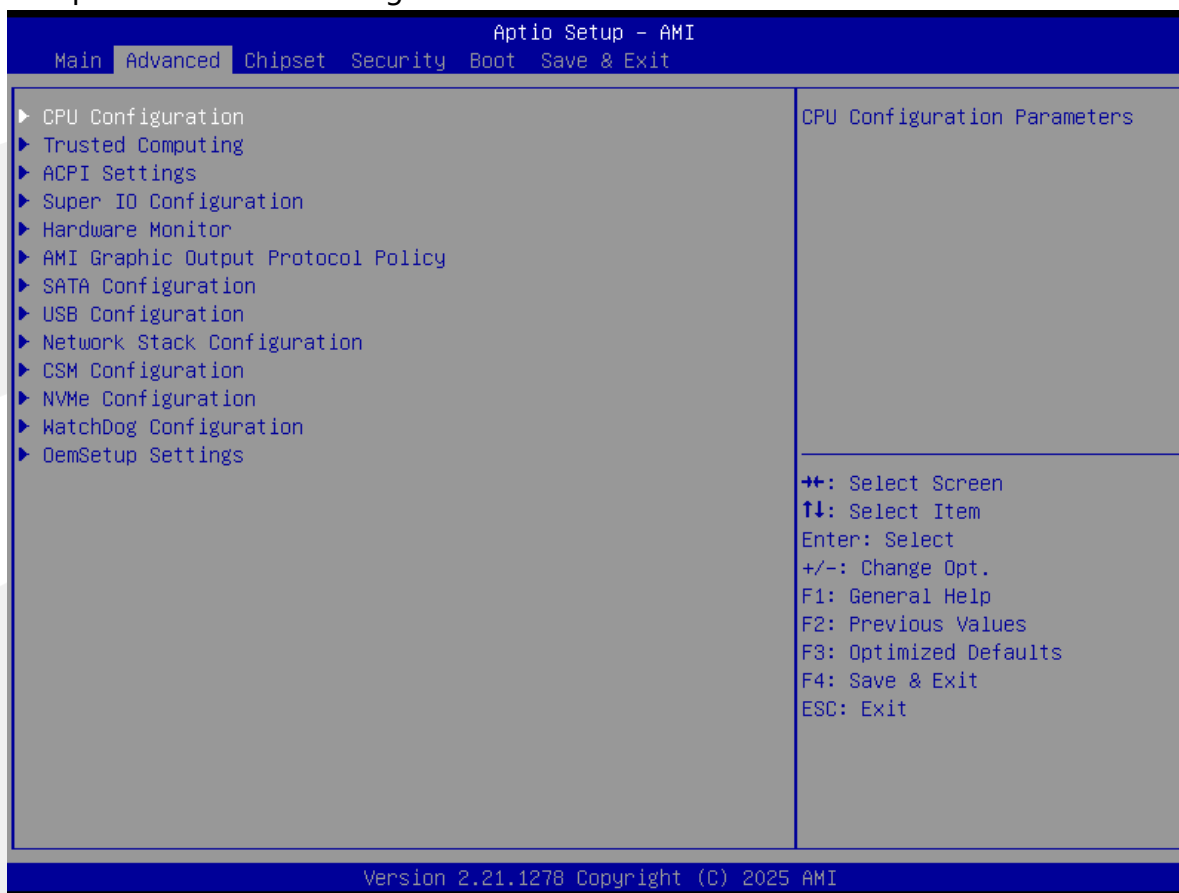


Setup Item	Options	Help Text	Comments
BIOS Information			
BIOS Vendor			Displays BIOS vendor.
Project Version			Displays the current BIOS version: Format: AAAABCC AAAAA = Project name B = Customer number CC = BIOS revision
Build Date and Time			Displays the current BIOS build date.
Access Level			Displays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

Setup Item	Options	Help Text	Comments
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 Speed			
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.	
Trusted Computing		Trusted Computing Settings.	
ACPI Settings		System ACPI Parameters.	
Super IO Configuration		System Super IO chip Parameters.	
Hardware Monitor		Monitor hardware stats.	
AMI Graphic Output Protocol Policy			
SATA Configuration		SATA Devices Configuration.	
USB Configuration		USB Configuration Parameters.	
Network Stack configuration		Enable/Disable UEFI Network Stack.	
CSM Configuration		CSM configuration: Enable/Disable, Option ROM execution settings, etc.	
NVMe Configuratioin		NVMe Device Options Settings.	
Watchdog configuration		Set System WatchDog Parameters.	
OemSetup Settings		OemSetup 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**.

Aptio Setup - AMI

Advanced

CPU Configuration		To turn on/off the MLC streamer prefetcher.
Type	11th Gen Intel(R) Core(TM) i5-11500H @ 2.90GHz	
ID	0x806D1	
Speed	2900 MHz	
VMX	Supported	
SMX/TXT	Supported	
Hardware Prefetcher	[Enabled]	
Adjacent Cache Line Prefetch	[Enabled]	
Intel (VMX) Virtualization Technology	[Enabled]	
AVX	[Enabled]	
AVX3	[Enabled]	++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Active Processor Cores	[All]	
Hyper-Threading	[Enabled]	
▶ CPU - Power Management Control		

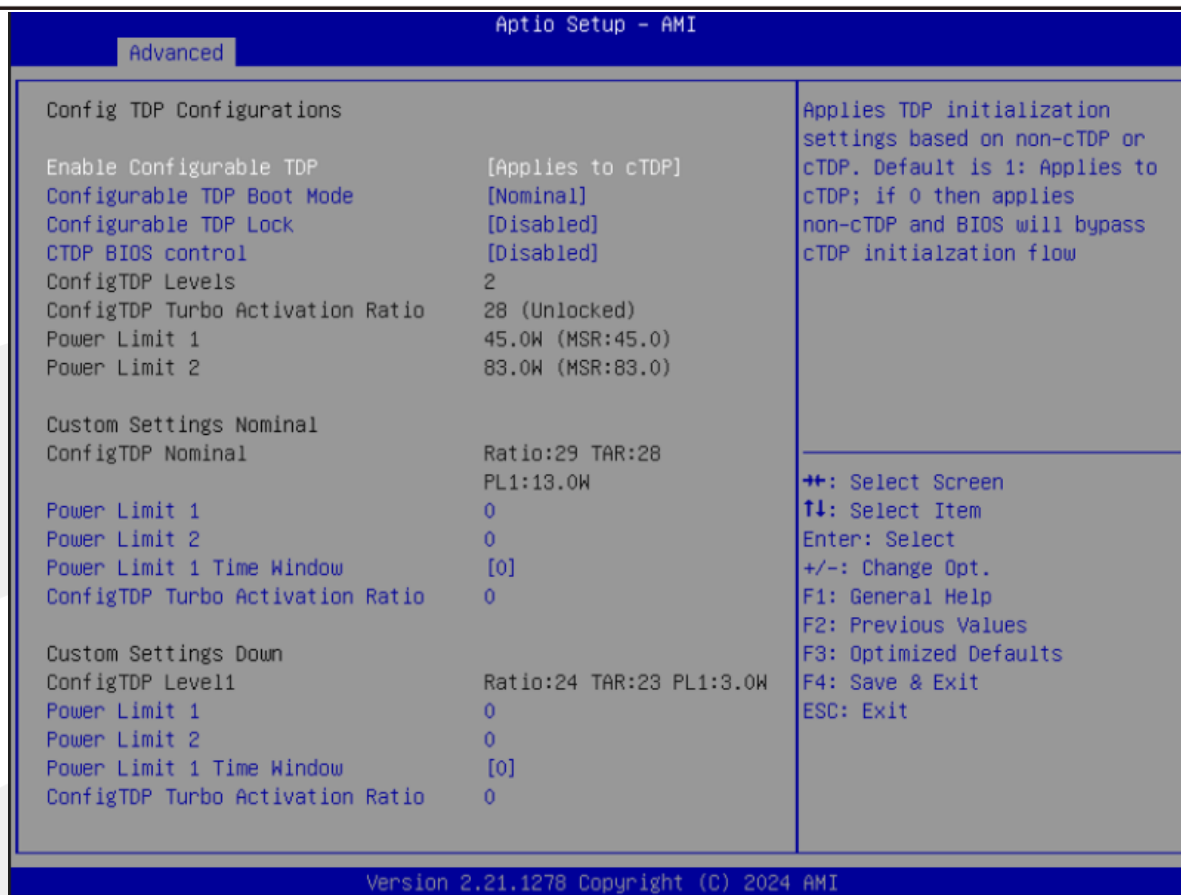
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Aptio Setup - AMI

Advanced

CPU - Power Management Control		Select the performance state that the BIOS will set starting from reset vector.
Boot performance mode	[Max Non-Turbo]	
Intel(R) SpeedStep(tm)	[Enabled]	
Turbo Mode	[Enabled]	
▶ Config TDP Configurations		
C states	[Disabled]	++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Tcc Activation Offset	15	

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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) Technology	Enabled Disabled	When enabled, a VMM can utilize the additional hardware capabilities provided by vanderpool technology.	
AVX	Enabled		
AVX3	Enabled		
Active Processor Cores	All 1 2 3 ...	Number of cores to enable in each processor package.	
Hyper-Threading	Enabled		

Setup Item	Options	Help Text	Comments
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.	
Turbo Mode	Enabled Disabled	Enabled/Disabled processor Turbo Mode.	
Config TDP configurations			
C states	Disabled		
Tcc Activation Offset	15		

3.2.2 Trusted Computing

The screen allows the user to set the Trusted Computing(TPM)parameters. To access this screen from the Main screen, choose **Advanced > Trusted Computing**.

Aptio Setup - AMI		
Advanced		
TPM 2.0 Device Found		Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.
Firmware Version:	600.7	
Vendor:	INTC	
Security Device Support	[Enable]	
Active PCR banks	SHA256	
Available PCR banks	SHA-1,SHA256,SHA384,SM3	
SHA-1 PCR Bank	[Disabled]	
SHA256 PCR Bank	[Enabled]	
SHA384 PCR Bank	[Disabled]	
SM3_256 PCR Bank	[Disabled]	
Pending operation	[None]	++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Platform Hierarchy	[Enabled]	
Storage Hierarchy	[Enabled]	
Endorsement Hierarchy	[Enabled]	
TPM 2.0 UEFI Spec Version	[TCG_2]	
Physical Presence Spec Version	[1.3]	
TPM 2.0 InterfaceType	[CRB]	
Device Select	[Auto]	
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3.2.3 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 Hibernation	Enabled		
ACPI Sleep State	Suspend Disabled S3 (Suspend to RAM)	Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.	Sleep supported optionally.

3.2.4 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 Configuration			Set Parameters of Serial Port 1(COMA).
Serial Port 2 Configuration			Set Parameters of Serial Port 1(COMB).

3.2.4.1 Serial PortX Configuration

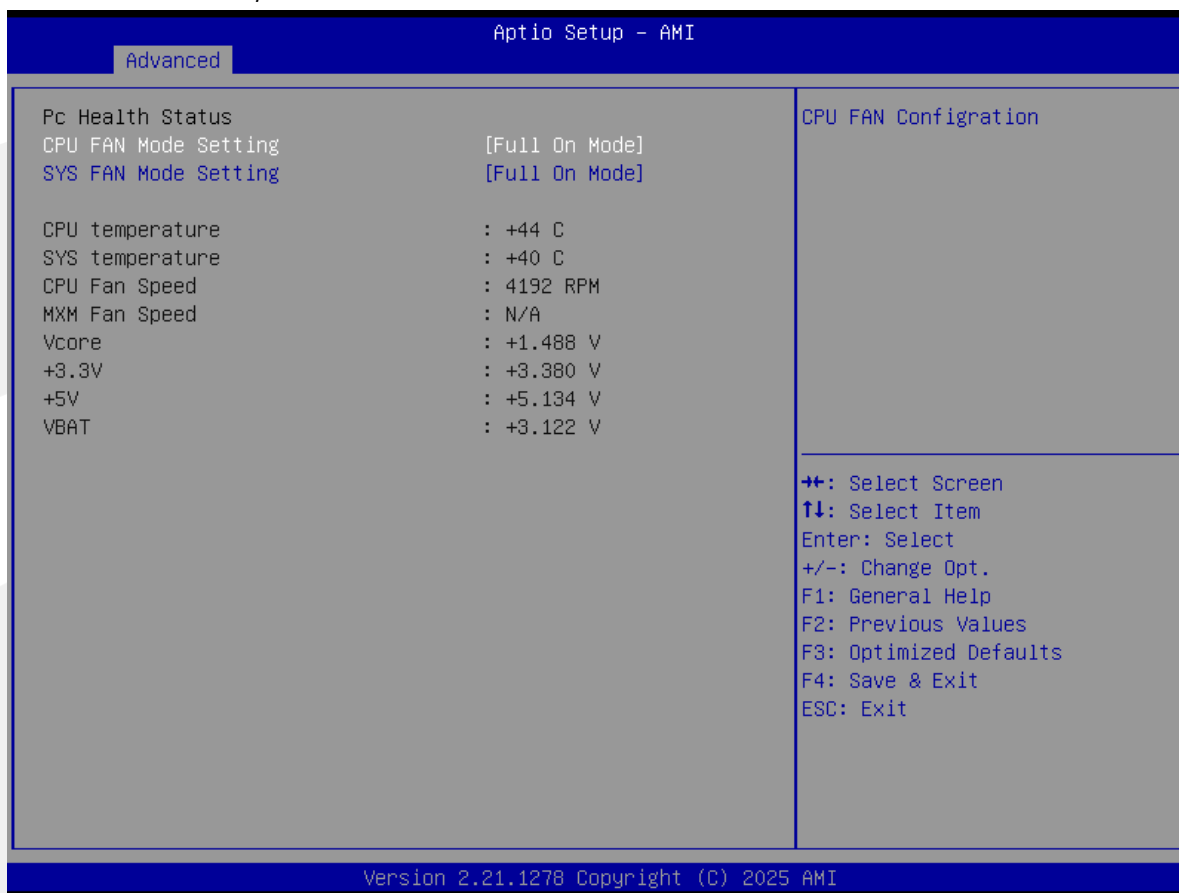
The Super IO Configuration screen allows the user to view the super IO information, and to enable or disable serial port options. To access this screen from the Advanced screen, choose **Advanced-> Super IO Configuration->Serial PortX Configuration**.



Setup Item	Options	Help Text	Comments
Serial PortX Configuration			
Serial Port	Enabled/Disabled	Enabled or Disabled Serial Port(COM).	
Device Settings			
COMx mode	RS232 RS422 RS485	COMx mode configuration.	

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**.

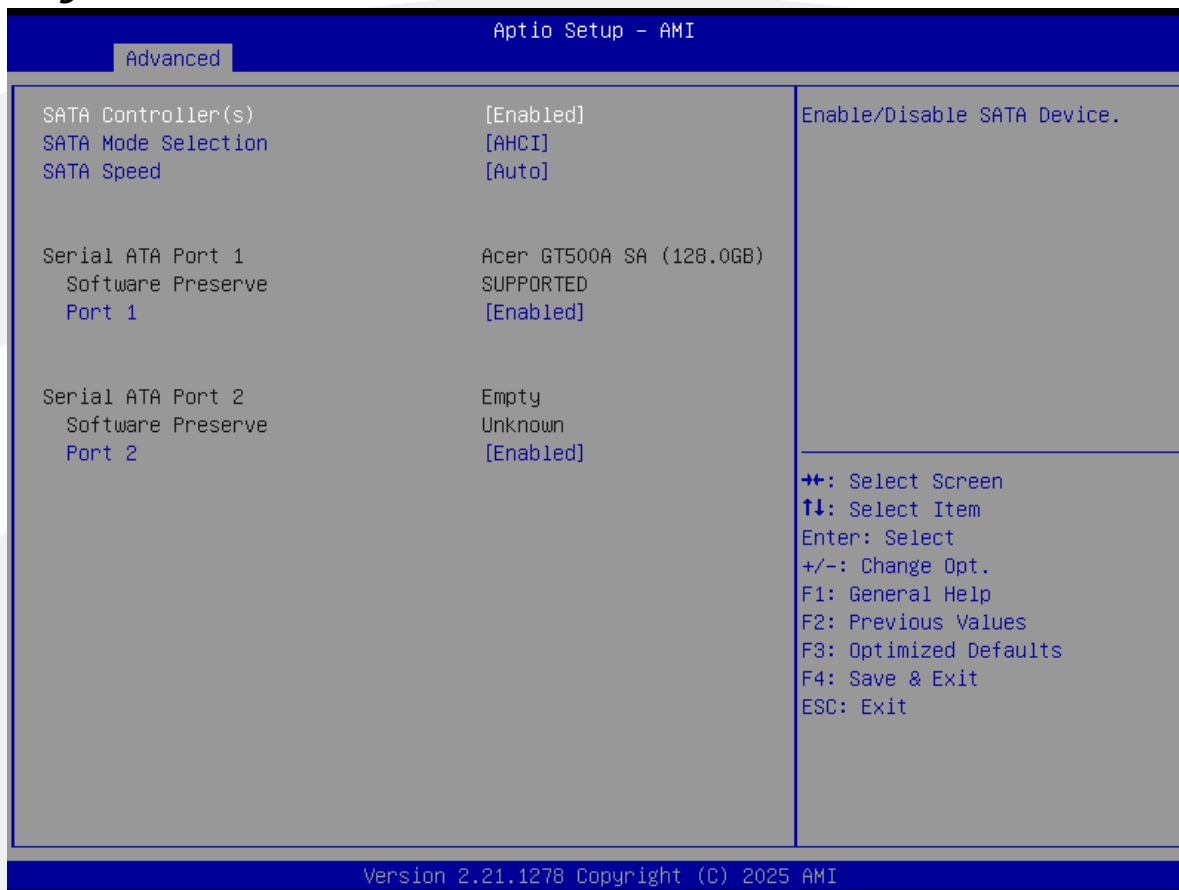


Setup Item	Options	Help Text	Comments
SMART FAN Control			
CPU FAN Mode Setting	Full On mode Automatic mode Manual mode	Fan control mode select.	When Manual mode selected, Manual PWM Setting shows to set FAN PWM Duty.
SYS FAN Mode Setting	Full On mode Automatic mode Manual mode	Fan control mode select.	When Manual mode selected, Manual PWM Setting shows to set FAN PWM Duty.
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 SYS temperature.	
CPU FAN Speed			HW Information.
MXM FAN Speed			
Vcore			
+3.3V			

Setup Item	Options	Help Text	Comments
+5V			
VBAT			

3.2.6 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**.

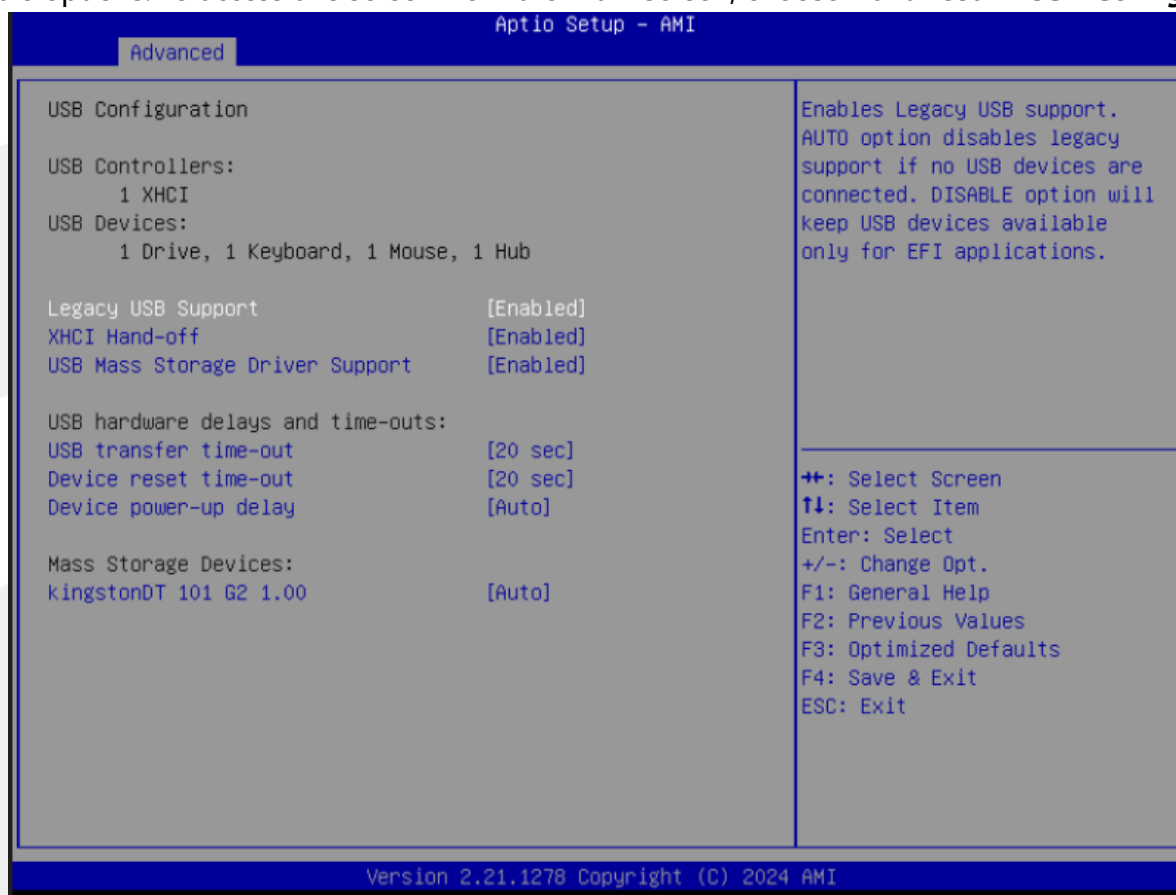


Setup Item	Options	Help Text	Comments
SATA Configuration			
SATA Controller(s)	Enabled Disabled	Enable/Disable SATA Device.	
SATA Mode Selection	AHCI Mode	Select AHCI.	
SATA Speed	Auto Gen1 Gen2 Gen3	Configure SATA Speed.	SATA Speed.
Serial ATA Port 1			Show HDD information connected.
Serial ATA Port 2			

Note: If SATA or PCIe RAID groups are configured separately, contact technical support.

3.2.7 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**.

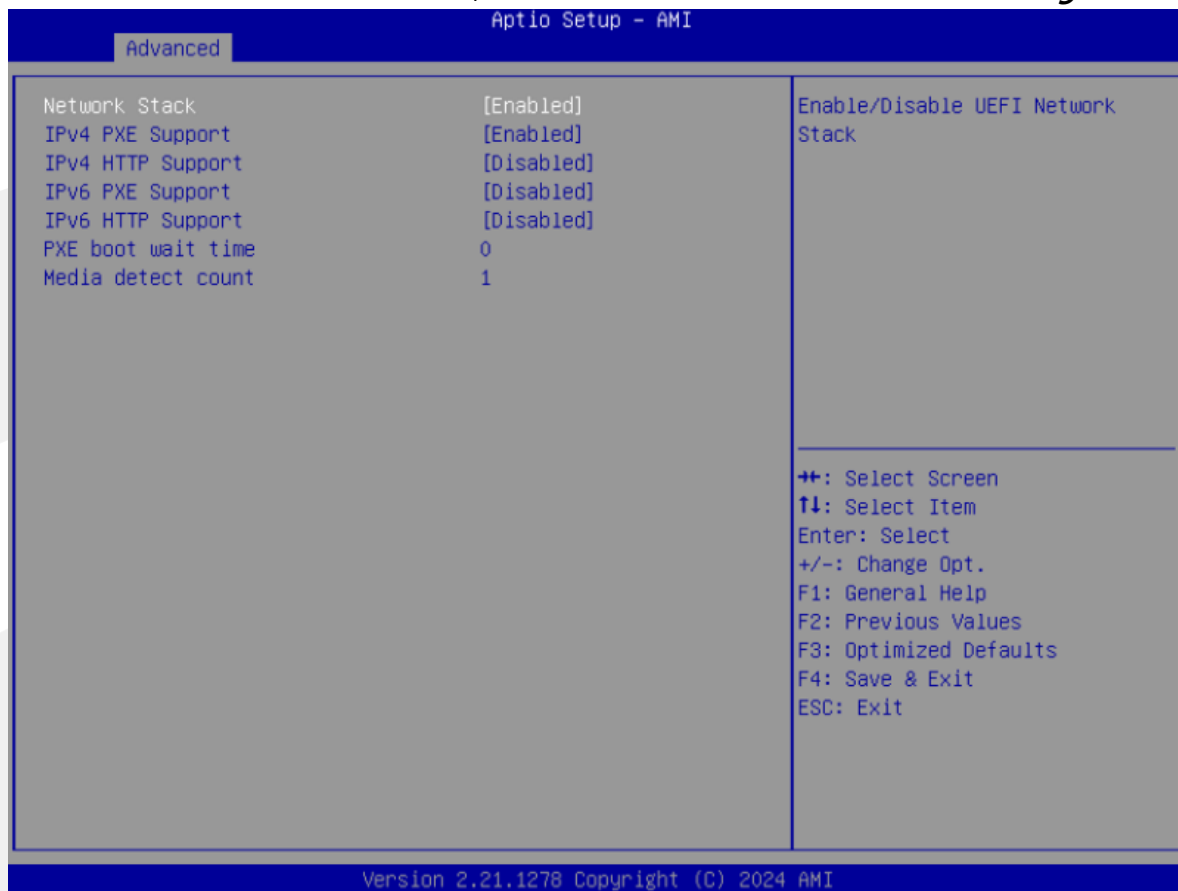


Setup Item	Options	Help Text	Comments
USB Configuration			
Legacy USB Support	Enabled Disabled	Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.	Legacy USB Support
XHCI Hand-off	Enabled Disabled	This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.	XHCI Hand-off
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 Network Stack Configuration

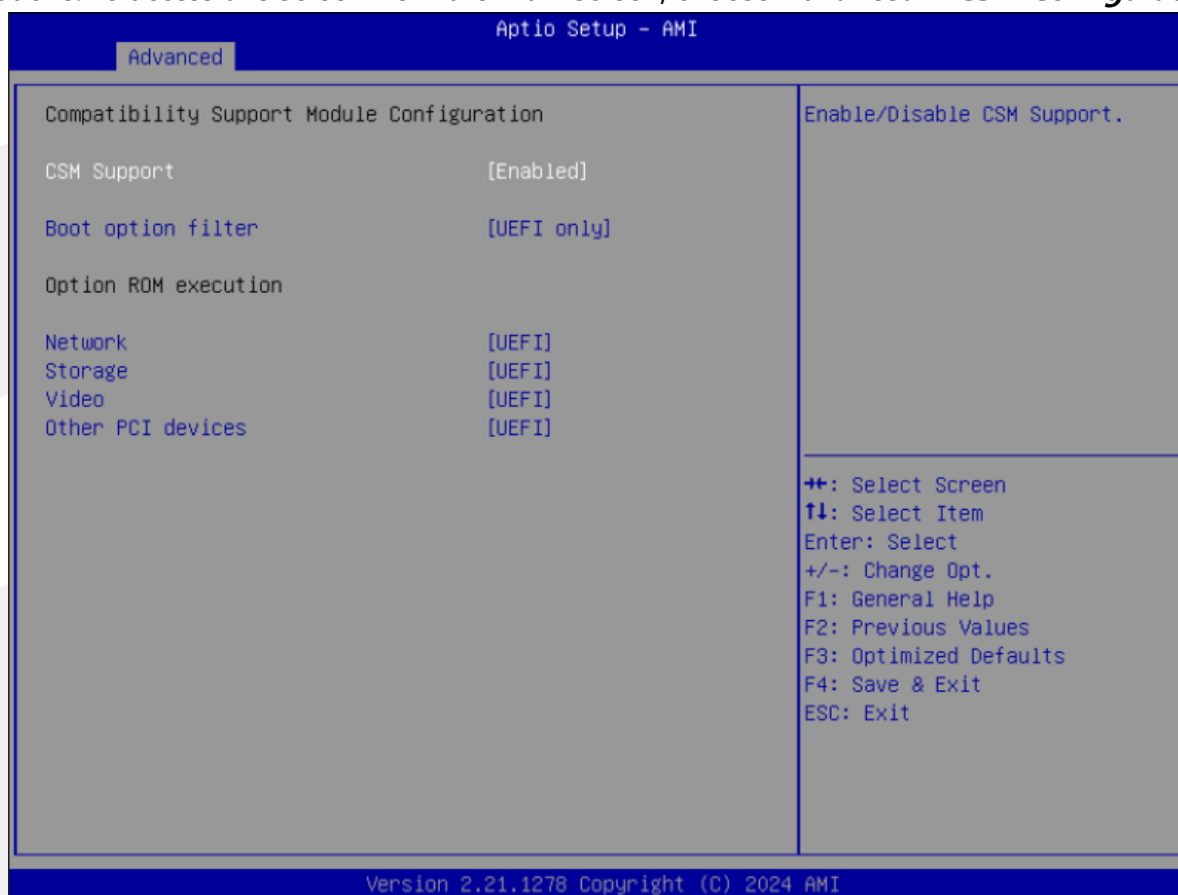
To access this screen from the Main screen, choose **Advanced > Network Stack Configuration**.



Setup Item	Options	Help Text	Comments
Network Stack Configuration			
Network Stack	Disabled Enabled		Enable/Disable UEFI Network Stack
IPv4 PXE Support	Disabled Enabled		Enable/Disable IPv4 PXE boot support
IPv4 HTTP Support	Disabled Enabled		Enable/Disable IPv4 HTTP boot support.
IPv6 PXE Support	Disabled Enabled		Enable/Disable IPv6 PXE boot support
IPv6 HTTP Support	Disabled Enabled		Enable/Disable IPv6 HTTP boot support.
PXE boot wait time	0		
Media detect count	1		

3.2.9 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.	CSM Support.
Boot option filter	UEFI and Legacy Legacy only UEFI only	This option control Legacy/UEFI ROMs priority.	Boot option filter.
Option ROM execution			
Network	Legacy UEFI Do not launch	Control the execution of UEFI and Legacy PXE OpROM.	Network.
Storage	Legacy UEFI Do not launch	Control the execution of UEFI and Legacy Storage OpROM.	Storage.
Video	Legacy UEFI Do not launch	Control the execution of UEFI and Legacy video OpROM.	Video.

Setup Item	Options	Help Text	Comments
Other PCI devices	Legacy UEFI Do not launch	Determines OpROM execution policy for devices other than Network, Storage or video.	Other PCI devices.

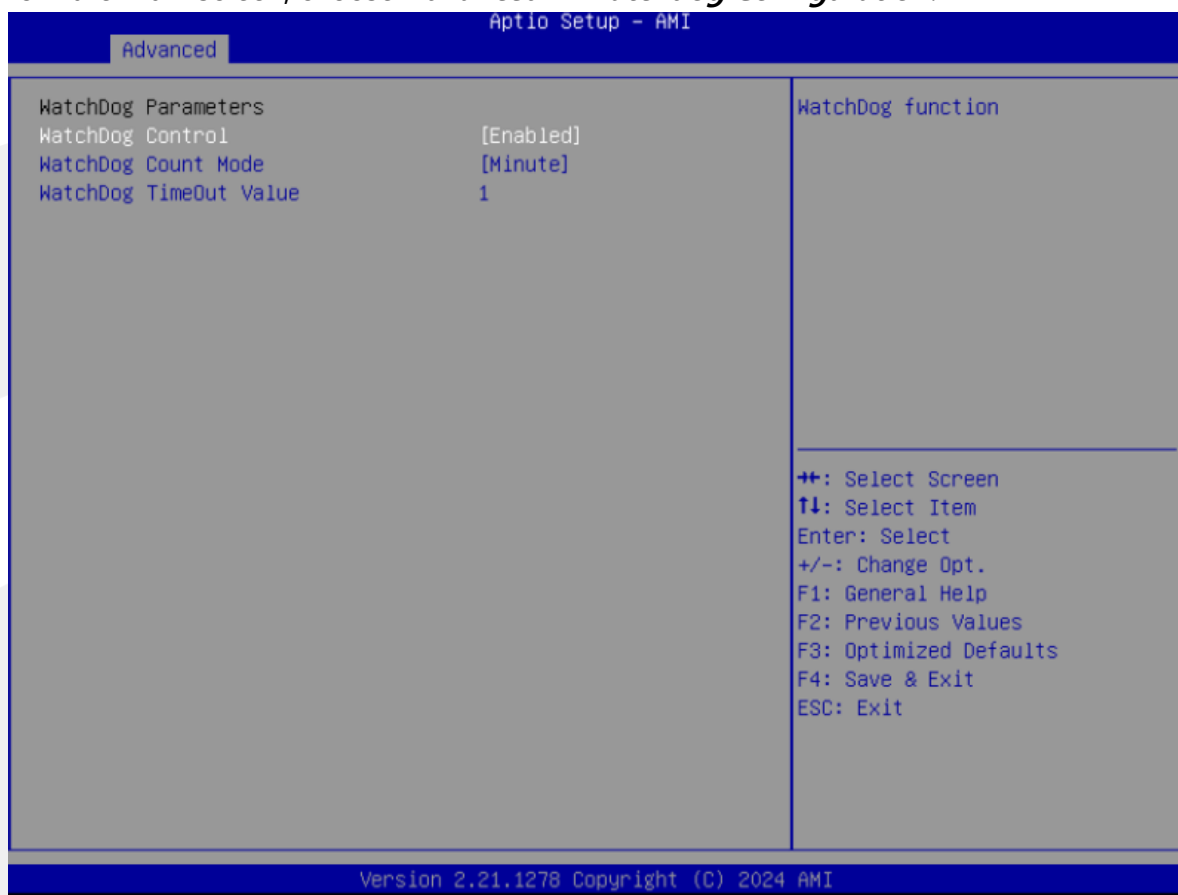
3.2.10 NVMe Configuration

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**.

Aptio Setup - AMI		
Advanced		
NVMe Configuration ▶ ADATA SX6000LNP		++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.21.1278 Copyright (C) 2024 AMI		
Aptio Setup - AMI		
Advanced		
Seg:Bus:Dev:Func Model Number Total Size Vendor ID Device ID Namespace: 1 Device Self Test: Self Test Option Self Test Action Run Device Self Test Short Device Selftest Result Extended Device Selftest Result	00:02:00:00 ADATA SX6000LNP 256.0 GB 1E4B 1202 Size: 256.0 GB [Short] [Controller Only Test] [Not Available] [Not Available]	Select either Short or Extended Self Test. Short option will take couple of minutes and extended option will take several minutes to complete. ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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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.

3.2.12 OemSetup Settings

To access this screen from the Main screen, choose **Advanced > OemSetup Settings**.



Setup Item	Options	Help Text	Comments
OemSetup Settings			
LVDS Control	Disabled Enabled		Enable or Disable for LVDS control. (Only Support LVDS bom)
LVDS Panel	1366*768/18/Single		WatchDog Count Mode Selection.
HeartBeat Default	LOW High	HeartBeat Default value, as high, low.	

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.	

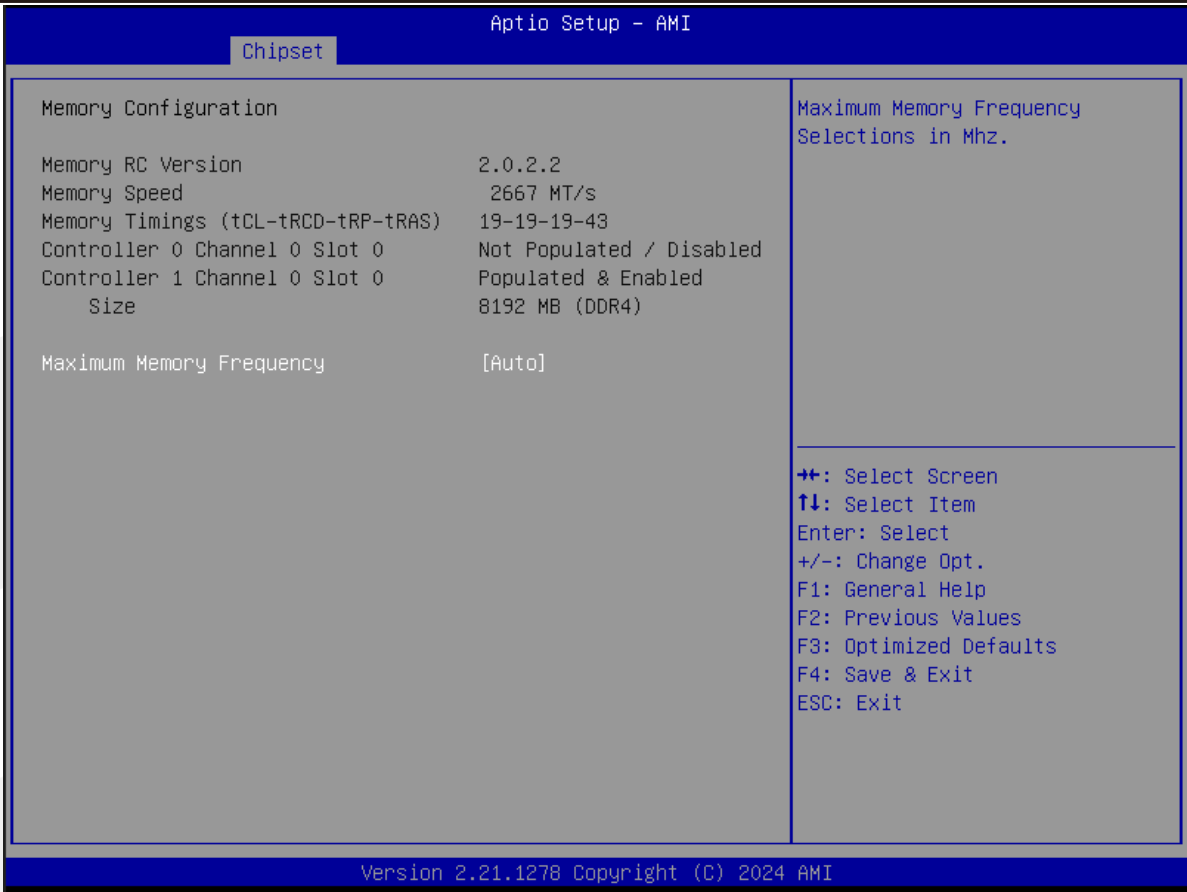
3.3.1 System Agent(SA)Configuration

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		Show Memory information.	
Graphics Configuration		Graphics Configuration.	
PEG Port Configuration		PEG Port Options.	
VMD setup menu			
Above 4GB MMIO BIOS assignment	Disabled Enabled	Enable/Disable above 4GB MemoryMappedIO BIOS assignment.	



Setup Item	Options	Help Text	Comments
Memory Configuration			
Maximum Memory Frequency	Auto	Maximum Memory Frequency Selections in Mhz.	



Setup Item	Options	Help Text	Comments
Graphics Configuration			
Primary Display	Auto IGFX PEG Slot PCH PCI	Select which of IGFX/PEG/PCI Graphics device should be Primary Display Or select HG for Hybrid Gfx.	
Select PCIE Card	Auto Elk Creak 4 PEG Eval	Select the card used on the platform" Auto: Skip GPIO based Power Enable to dGPU Elk Creek 4: DGPU Power Enable = ActiveLow PEG Eval: DGPU Power Enable = ActiveHigh".	
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.	

Setup Item	Options	Help Text	Comments
DVMT Pre-Allocated			
DVMT Total Gfx Mem	128M 256M MAX	Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device.	
LCD Control			



Setup Item	Options	Help Text	Comments
PEG Port Configuration			
PEG 0:1:0			
Enable Root Port	Auto Disabled Enabled	Enable or Disable the Root Port.	
Power Down Unused Lanes	Auto Disabled	Power Down Unused Lanes.	
ASPM	Disabled Enabled	Control ASPM support for the PEG 0.	
OBFF	Disabled Enabled	CPU PEG0(0,1,0) OBFF Enable/Disable.	
LTR	Enabled		

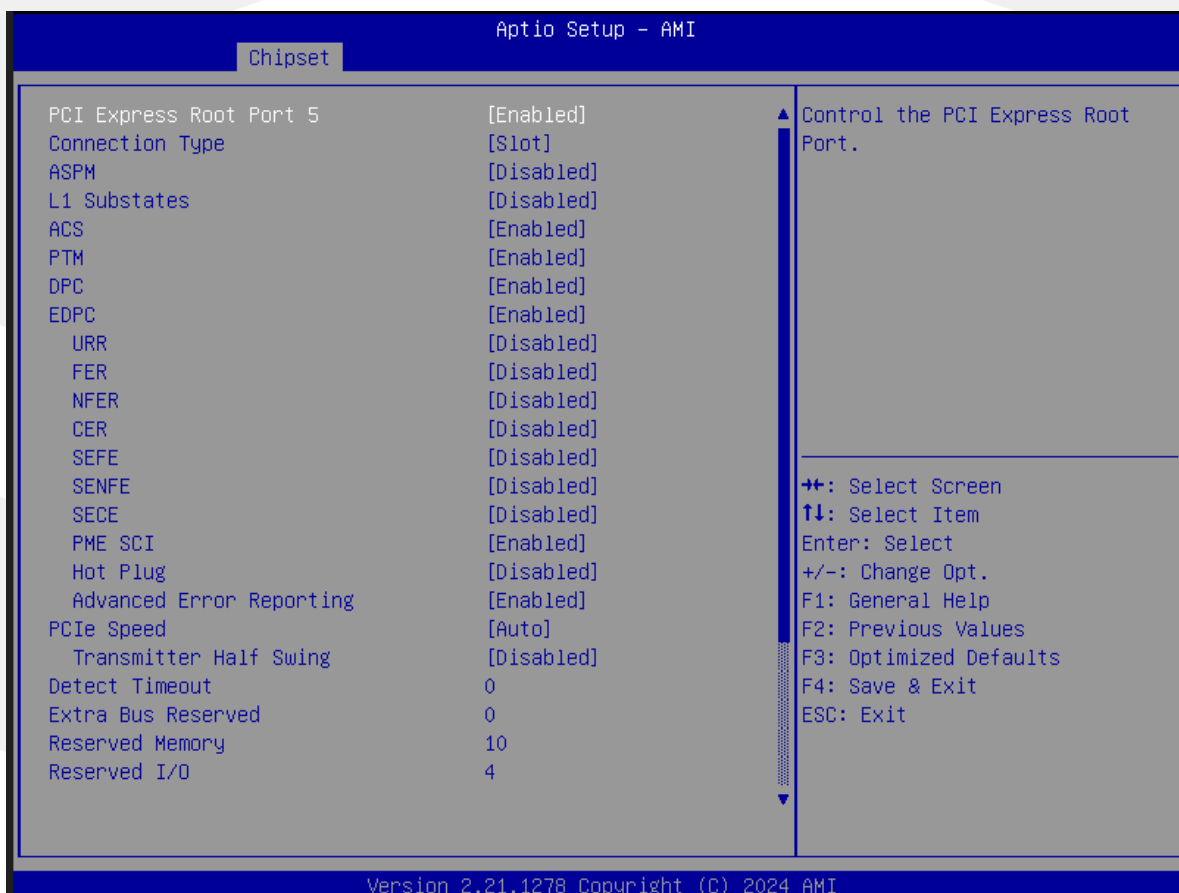
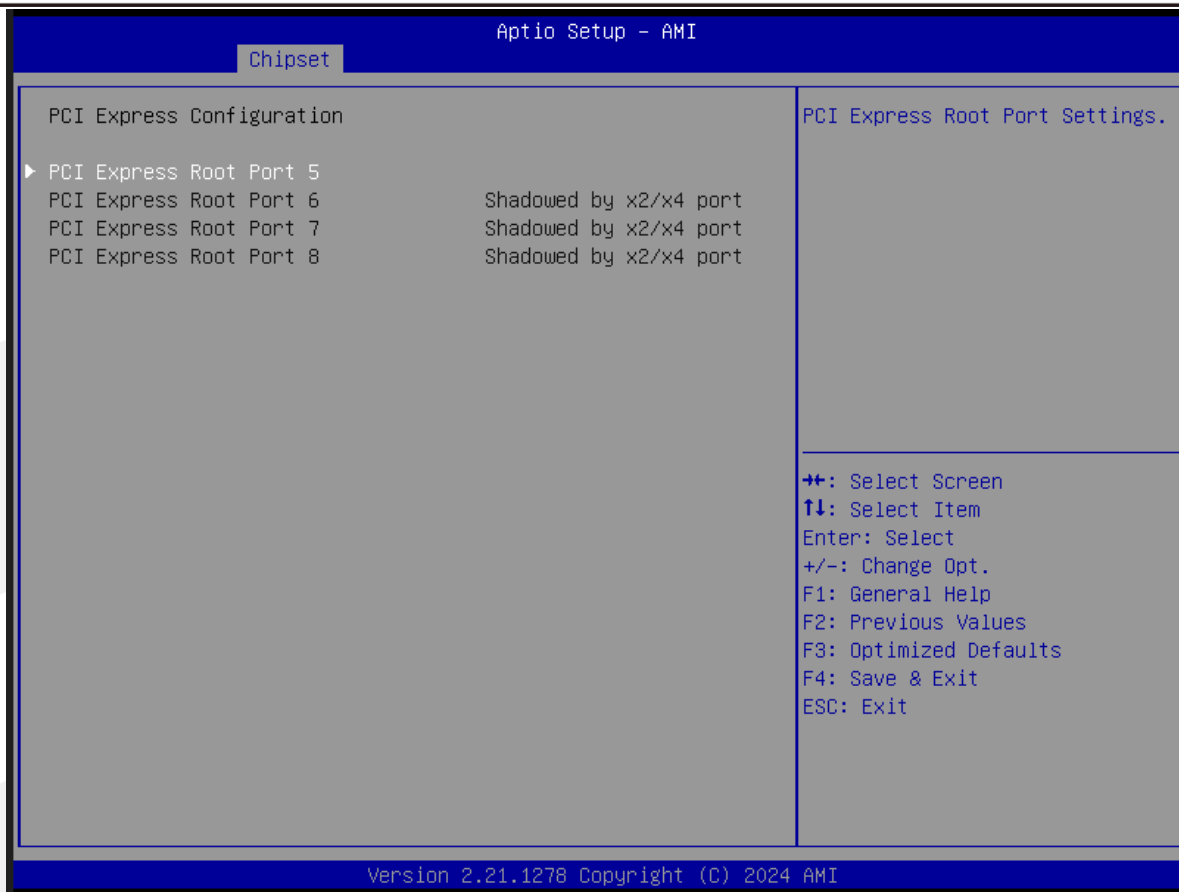
3.3.2 PCH-IO Configuration

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			
Restore AC Power Loss	Power on Power off	Select AC power state when power is re-applied after a power failure.	
PCI Express Configuration			
PCI Express Root Port 5			



3.4 Security

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

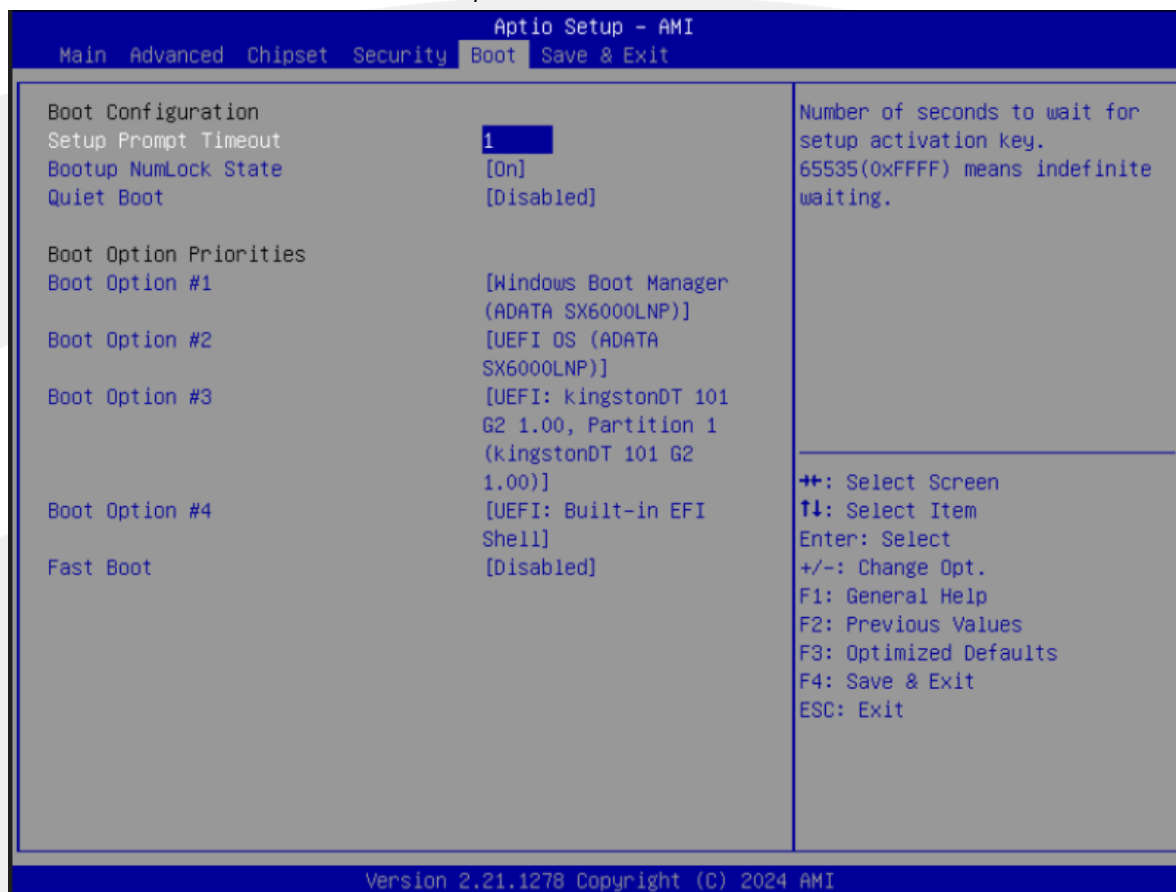


Setup Item	Options	Help Text	Comments
Security			
Administrator Password		Set Administrator Password	
User Password		Set User Password	

3.5 Boot Screen

The Boot screen displays any bootable media encountered during POST, and allows the user to configure desired boot device.

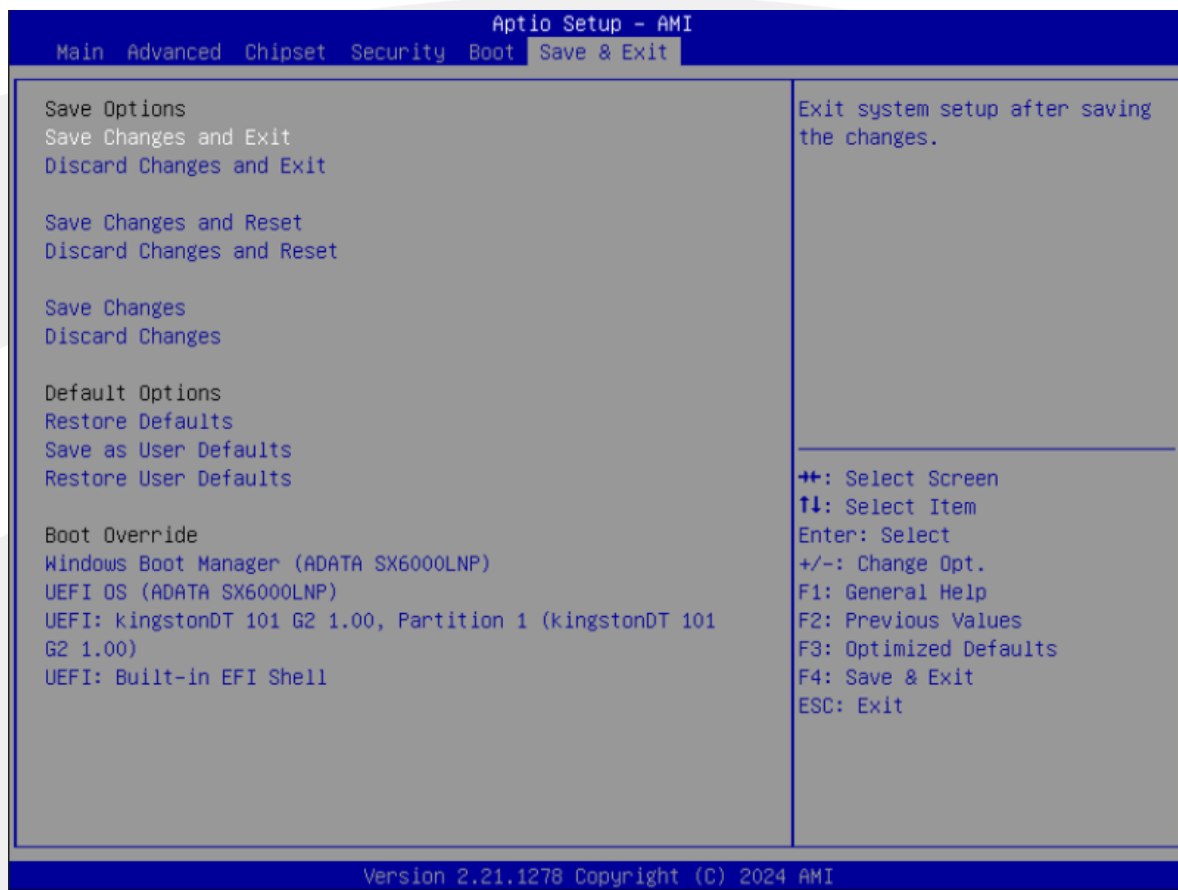
To access this screen from the Main screen, choose **Boot**.



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.	
Boot Option 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.	
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.	

Setup Item	Options	Help Text	Comments
Save as User Defaults		Save the changes done so far as User Defaults.	
Restore User Defaults		Restore the User Defaults to all the setup options.	
Boot Override			
Shows the Device can boot.			Note : Showed When boot devices existed.

第四章 故障问题排除

故障	排除
硬盘启动项设置	1、开机时按 DEL 进 BIOS 设置选 Advanced。 2、选 CSM Configuration 回车。 3、选 CSM Support 打开 Enabled。 4、选 Boot option filter 回车。 5、UEFI and Legacy 是两种不同的系统引导方式，可以实现网络启动，UEFI 只支持 64 位操作系统。 6、Legacy only Legacy 启动是 BIOS 之前的启动方式，不能实现网络启动。但它可以引导 32 位操作系统，也可以引导 64 位操作系统。
设置来电开机	开机时按 DEL 进 BIOS 设置 Chipset→PCH-I/O Configuration 回车。 1) AC Power loss 将 Power off→Power ON 上电开机。 2) State After G3 选 S5 State S0 State 上电开机。
开机时核显可以正常显示，但独显不显示 拼接设置	开机时按 DEL 进 BIOS 设置选 Chipset。 1、选 System Agent(SA) Configuration 回车。 2、选 Graphics Configuration 回车。 3、选 Primary Display 回车。 3.1)Auto 独显。 3.2)IGFX 核显。(做分屏拼接选 IGFX 模式)

深圳智锐通科技有限公司
Shenzhen Zrt Co., Ltd.



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&



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