

ECM-6202

COM-Express Type10 核心板
USER' Manual V1.1

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

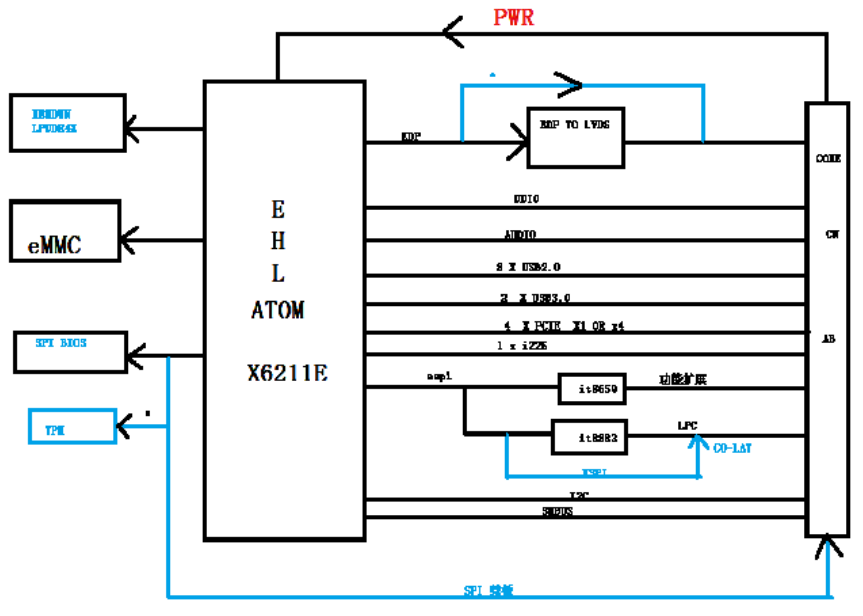
Model		ECM-6202		
配置 Item	规格 Specification	描述 Describe		
处理器 Processor System	处理器 CPU	X6211E	J6426	J6412
	内核数 Core Number	2	4	4
	线程 Total Threads	2	4	4
	最高主频 Max. Speed	3.0GHz	3.0 GHz	2.6GHz
	二级缓存 L2 Cache	1.5M	1.5M	1.5MB
	功耗 TDP (W)	6W	10W	10W
	BIOS	32Mbit AMI EFI BIOS		
内存 Memory	规格 Technology	LPDDR4x		
	最大容量 Max. Capacity	8G 3200MT/s(Option 16G)		
	插槽 Socket	On Board		
扩展插槽 Expansion Slot	PCI Express	1 x PCIe x4 Bitfurcate to 1x4, 4x1		
存储 Storage	eMMC	On Board 64GB		
	SATA	2 x SATA3.0(6Gbps)		
显示 Display	最多显示 Multiple Display	2 Ports		
	控制器 Controller	1 x LVDS Single Chanel(Option eDP) 1 x DDI configurable DisplayPort++		
	分辨率 Resolution	LVDS:1920*1200@60Hz DP1.4a:4096*2304@60Hz 36bpp eDP:4096*2304@60Hz 24bpp		
以太网 Ethernet	控制器 Controller	Intel®I225-v		
	速度 Speed	10M/100M/1000M/2.5Gbps		

IO	GPIO	8-bits GPIO(Default 4-I 4-O)
	UART	2 x UART(TX/RX)
内部接口 Internal Connector	音频 Audio	1 x HDA
	USB 3.0	2 x USB 3.0
	USB 2.0	8 x USB2.0
	其他 Others	1、1 x LPC 2、1 x SMBUS 3、1 x eSPI(定制) 4、1 x Smart Fan 2 Ports 5、1 x Power Button 6、1 x Reset
	拓展 Connector	1 x COM-E 220Pin 连接器
电源 Power Requirements	电源类型 Power Type	ATX Vin AT(9~21V)
	连接器 Connector type	底板供电
环境 Environment	工作温度 Operating Temperature	-10~50°C
	存储温度 Storage Temperature	-40~80°C
	工作湿度 Operating Humidity	5~95%@40°C Relative Humidity, Non-condensing
	存储湿度 Storage Humidity	60°C@95% Relative Humidity, Non-condensing
物理特性 Physical	尺寸 Dimensions	84*55mm
	PCB 颜色 Color	Green
操作系统 OS	Microsoft	Support
	Linux	Support

1.2 驱动

Windows 10: https://pan.baidu.com/s/1ppIKmWgrAkhJ4_o_ChbNSQ?pwd=x2od

1.3 功能框图

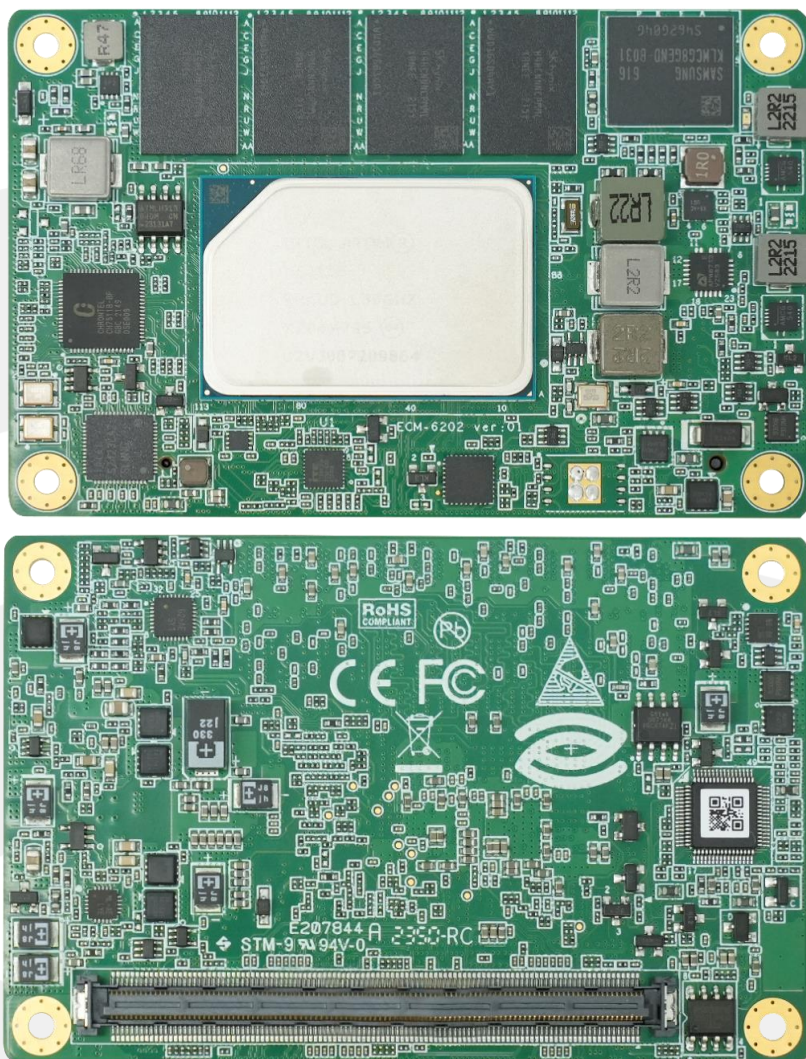


1.4 产品照片

eDP

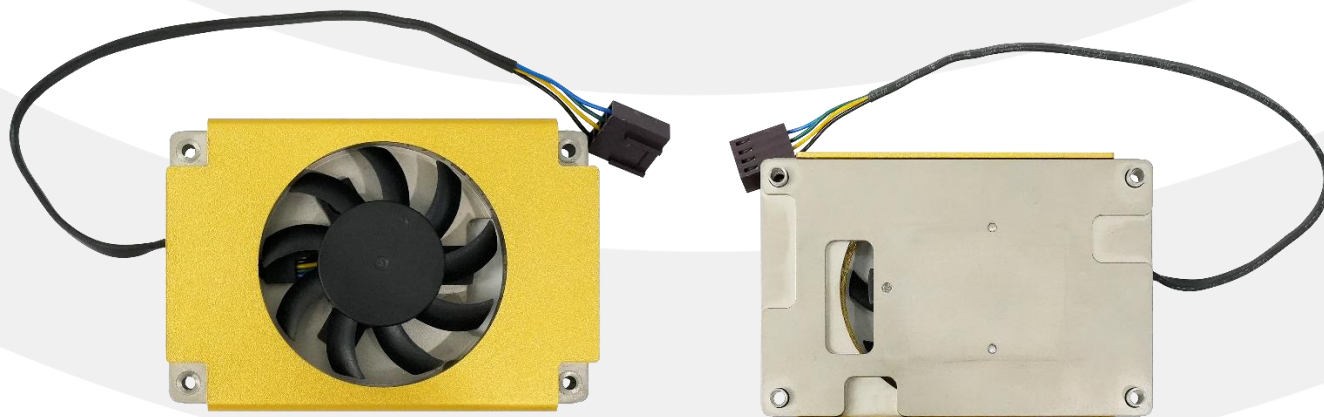


LVDS



1.5 散热器

Part Number: 1.ZRT.48-6374-00-A00

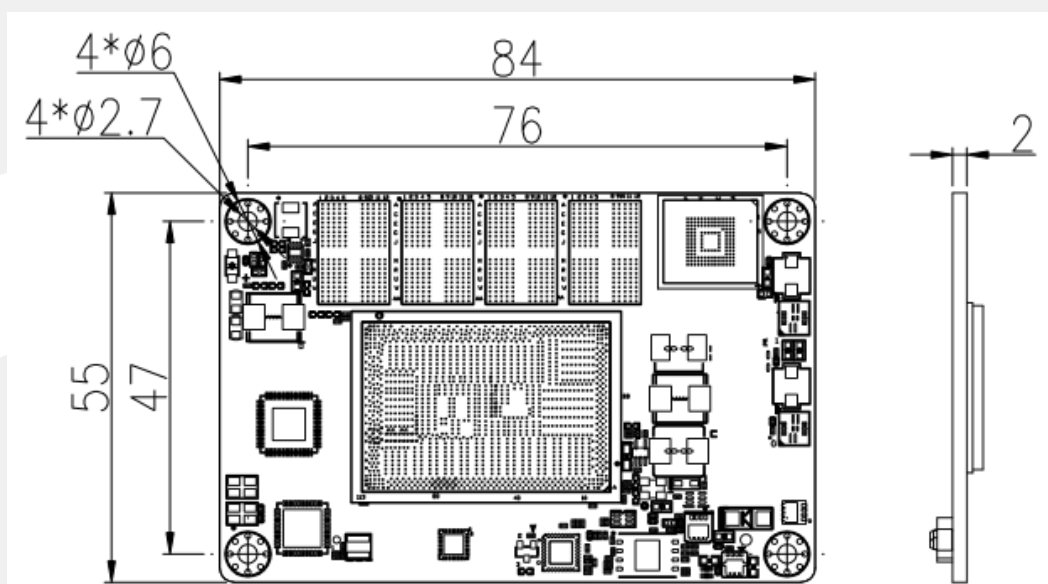


第二章 安装说明

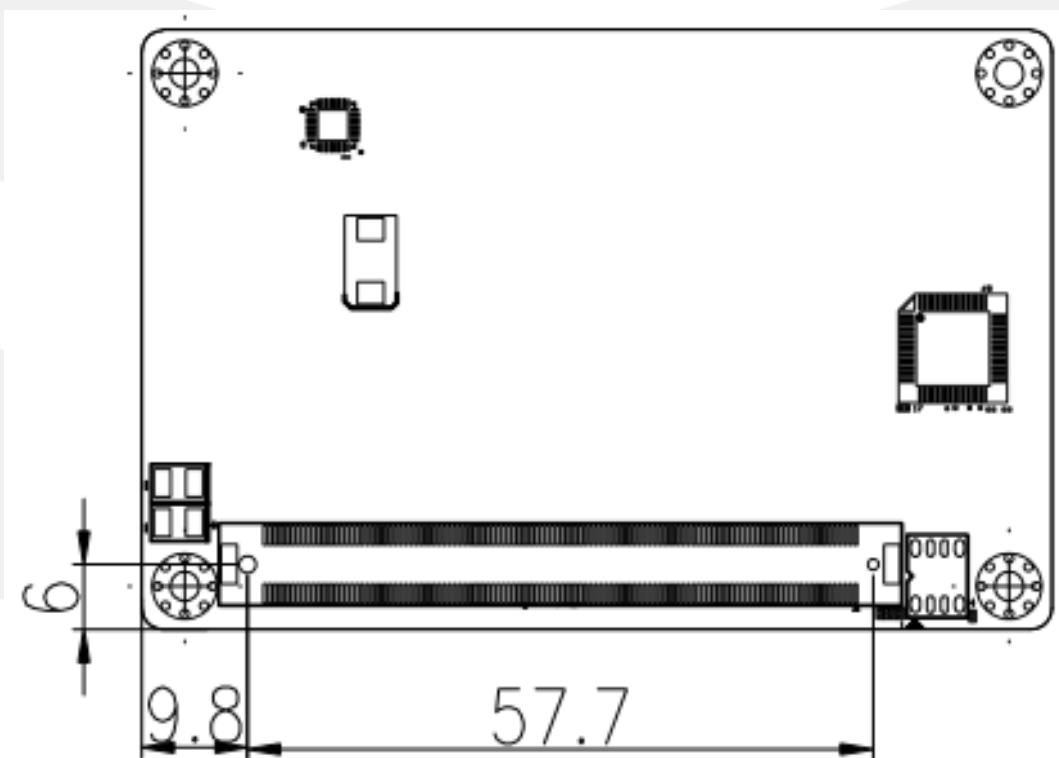
2.1 接口和尺寸图

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。

COM Express® Module Type 10(84mm*55mm)



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 COM Express® Type10 PIN-OUT

Pin	Signal Name	Difference	Pin	Signal Name	Difference
A1	GND		B1	GND	
A2	GBE0_MDI3-		B2	GBE0_ACT#	
A3	GBE0_MDI3+		B3	LPC_FRAME# / ESPI_CS0#	eSPI is option
A4	GBE0_LINK100#		B4	LPC_AD0 / ESPI_IO_0	eSPI is option
A5	GBE0_LINK1000#		B5	LPC_AD1 / ESPI_IO_1	eSPI is option
A6	GBE0_MDI2-		B6	LPC_AD2 / ESPI_IO_2	eSPI is option
A7	GBE0_MDI2+		B7	LPC_AD3 / ESPI_IO_3	eSPI is option
A8	GBE0_LINK#	NC	B8	LPC_DRQ0#/ESPI_ALERT0#	eSPI is option
A9	GBE0_MDI1-		B9	LPC_DRQ1#/ESPI_ALERT1#	NC
A10	GBE0_MDI1+		B10	LPC_CLK/ESPI_CK	eSPI is option
A11	GND		B11	GND	
A12	GBE0_MDI0-		B12	PWRBTN#	
A13	GBE0_MDI0+		B13	SMB_CK	
A14	GBE0_CTREF	NC	B14	SMB_DAT	
A15	SUS_S3#		B15	SMB_ALERT#	
A16	SATA0_TX+		B16	SATA1_TX+	
A17	SATA0_TX		B17	SATA1_TX	
A18	SUS_S4#		B18	SUS_STAT#/ESPI_RESET#	eSPI is option
A19	SATA0_RX+		B19	SATA1_RX+	
A20	SATA0_RX		B20	SATA1_RX	
A21	GND		B21	GND	
A22	USB_SSRX0+-		B22	USB_SSTX0-	
A23	USB_SSRX0+		B23	USB_SSTX0+	
A24	SUS_S5#		B24	PWR_OK	
A25	USB_SSRX1-		B25	USB_SSTX1-	
A26	USB_SSRX1+		B26	USB_SSTX1+ -	
A27	BATLOW#	NC	B27	WDT	
A28	(S)ATA_ACT#		B28	HDA_SDIN2	NC
A29	HDA_SYNC		B29	HDA_SDIN1	NC
A30	HDA_RST#		B30	HDA_SDIN0	

Pin	Signal Name	Difference	Pin	Signal Name	Difference
A31	GND		B31	GND	
A32	HDA_BITCLK		B32	SPKR	
A33	HDA_SDOUT		B33	I2C_CK	
A34	BIOS_DIS0#/ESPI_SAFS	NC	B34	I2C_DAT	
A35	THRMTRIP#		B35	THRM#	NC
A36	USB6-		B36	USB7-	
A37	USB6+		B37	USB7+	
A38	USB_6_7_OC#		B38	USB_4_5_OC#	
A39	USB4-		B39	USB5-	
A40	USB4+		B40	USB5+	
A41	GND		B41	GND	
A42	USB2-		B42	USB3-	
A43	USB2+		B43	USB3+	
A44	USB_2_3_OC#		B44	USB_0_1_OC#	
A45	USB0-		B45	USB1-	
A46	USB0+		B46	USB1+	
A47	VCC_RTC		B47	ESPI_EN#	NC
A48	RSVD	PROCHOT_N	B48	USB0_HOST_PRSENT	NC
A49	GBE0_SDP	NC	B49	SYS_RESET#	
A50	LPC_SERIRQ/ESPI_CS1#	eSPI is option	B50	CB_RESET#	
A51	GND		B51	GND	
A52	RSVD	H_LPC_PD	B52	RSVD	H_LSMI#
A53	RSVD		B53	RSVD	CLKRUN#_OUT
A54	GPI0		B54	GPO1	
A55	RSVD	H_LPCPME#	B55	RSVD	
A56	RSVD	KBRST_IN	B56	RSVD -	
A57	GND		B57	GPO2	
A58	PCIE_TX3+		B58	PCIE_RX3+	
A59	PCIE_TX3-		B59	PCIE_RX3-	
A60	GND		B60	GND	
A61	PCIE_TX2+		B61	PCIE_RX2+	
A62	PCIE_TX2-		B62	PCIE_RX2-	
A63	GPI1		B63	GPO3	
A64	PCIE_TX1+		B64	PCIE_RX1+	
A65	PCIE_TX1-		B65	PCIE_RX1-	
A66	GND		B66	WAKE0#	
A67	GPI2		B67	WAKE1#	
A68	PCIE_TX0+		B68	PCIE_RX0+	
A69	PCIE_TX0-		B69	PCIE_RX0-	
A70	GND		B70	GND	

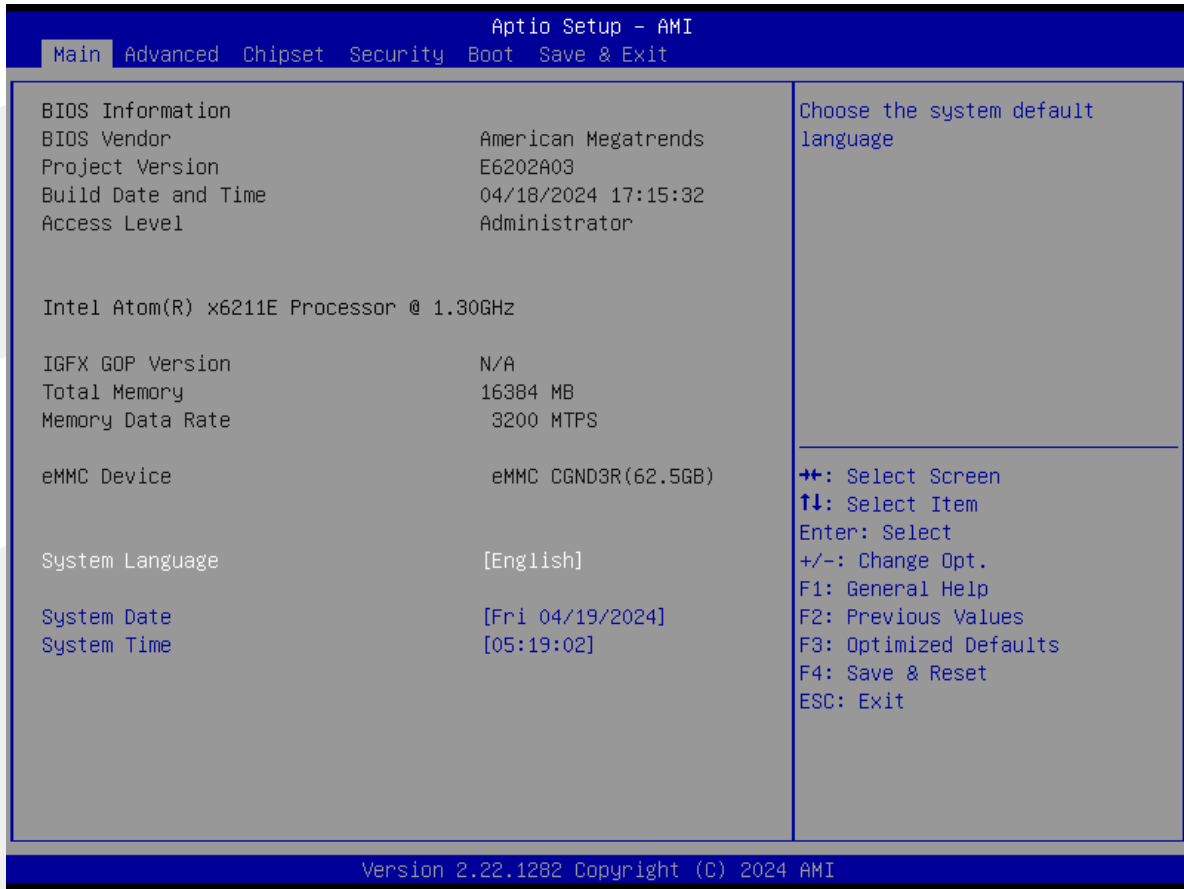
Pin	Signal Name	Difference	Pin	Signal Name	Difference
A71	LVDS_A0+ / eDP_TX2+	eDP is option	B71	DDIO_PAIR0+	
A72	LVDS_A0- / eDP_TX2-	eDP is option	B72	DDIO_PAIR0-	
A73	LVDS_A1+ / eDP_TX1+	eDP is option	B73	DDIO_PAIR1+	
A74	LVDS_A1- / eDP_TX1-	eDP is option	B74	DDIO_PAIR1-	
A75	LVDS_A2+ / eDP_TX0+	eDP is option	B75	DDIO_PAIR2+	
A76	LVDS_A2- / eDP_TX0-	eDP is option	B76	DDIO_PAIR2-	
A77	LVDS_VDD_EN/ eDP_VDD_EN	eDP is option	B77	DDIO_PAIR4+	NC
A78	LVDS_A3+		B78	DDIO_PAIR4-	NC
A79	LVDS_A3-		B79	LVDS_BKLT_EN/ eDP_BKLT_EN	eDP is option
A80	GND		B80	GND	
A81	LVDS_A_CK+/ eDP_TX3+	eDP is option	B81	DDIO_PAIR3+	
A82	LVDS_A_CK-/ eDP_TX3-	eDP is option	B82	DDIO_PAIR3-	
A83	LVDS_I2C_CK/ eDP_AUX+	eDP is option	B83	LVDS_BKLT_CTRL/ eDP_BKLT_CTRL	eDP is option
A84	LVDS_I2C_DAT/ eDP_AUX-	eDP is option	B84	VCC_5V_SBY	
A85	GPI3		B85	VCC_5V_SBY	
A86	RSVD		B86	VCC_5V_SBY	
A87	eDP_HPDP		B87	VCC_5V_SBY	
A88	PCIE_CLK_REF+		B88	BIOS_DIS1#	NC
A89	PCIE_CLK_REF-		B89	DDIO_HPDP	
A90	GND		B90	GND	
A91	SPI_POWER		B91	DDIO_PAIR5+	NC
A92	SPI_MISO		B92	DDIO_PAIR5-	NC
A93	GPO0		B93	DDIO_PAIR6+	NC
A94	SPI_CLK		B94	DDIO_PAIR6-	NC
A95	SPI_MOSI		B95	DDIO_DDC_AUX_SEL	
A96	TPM_PP		B96	USB7_HOST_PRSNP	NC
A97	TYPE10#		B97	SPI_CS#	
A98	SER0_TX		B98	DDIO_CTRLCLK_AUX+	
A100	GND		B100	GND	
A101	SER1_TX/CAN_TX	SER1_TX	B101	FAN_PWMOUT	
A102	SER1_RX/CAN_RX	SER1_TX	B102	FAN_TACHIN	

Pin	Signal Name	Difference	Pin	Signal Name	Difference
A103	LID#	NC	B103	SLEEP#	NC
A104	VCC_12V		B104	VCC_12V	
A105	VCC_12V		B105	VCC_12V	
A106	VCC_12V		B106	VCC_12V	
A107	VCC_12V		B107	VCC_12V	
A108	VCC_12V		B108	VCC_12V	
A109	VCC_12V		B109	VCC_12V	
A110	GND		B110	GND	

第三章 BIOS Setup Utility Specification

3.1 Main Screen

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

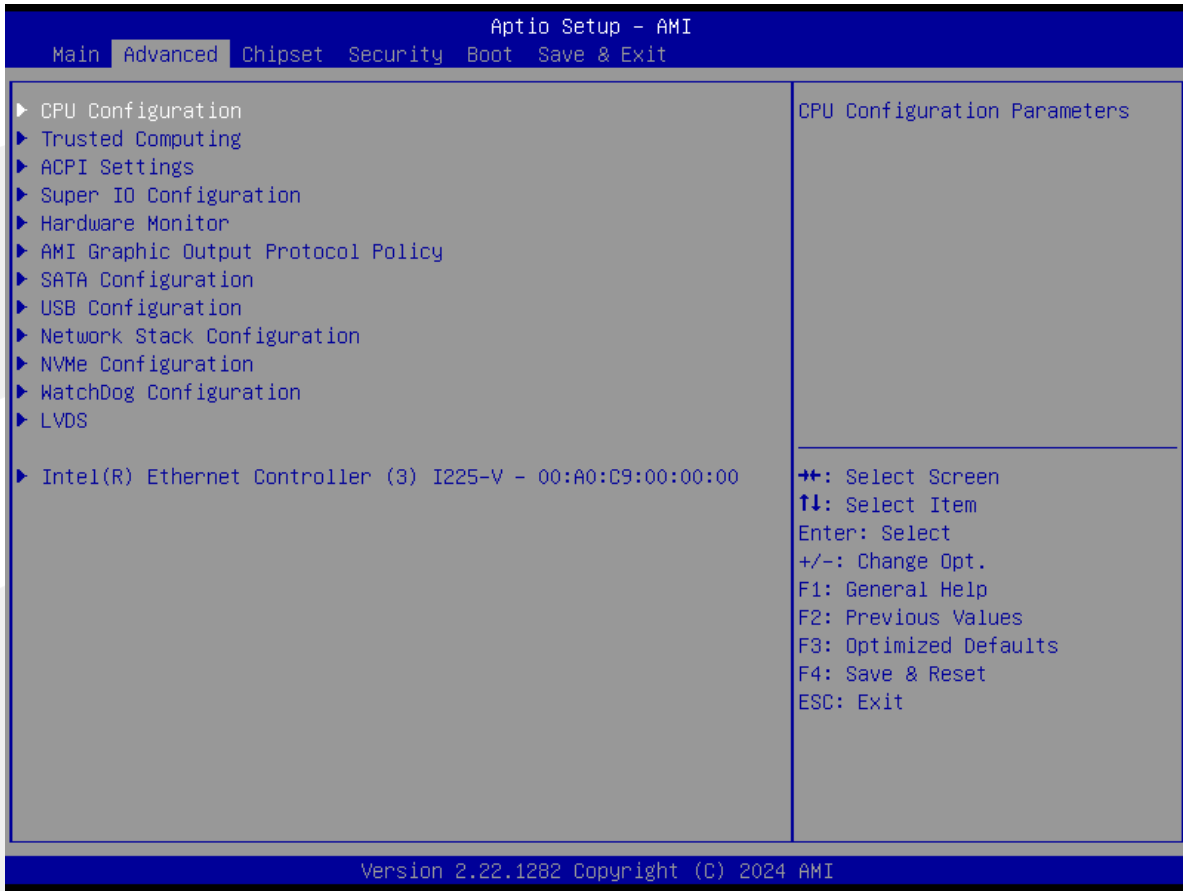


Setup Item	Options	Help Text	Comments
BIOS Information			
BIOS Vendor			Displays BIOS vendor.
Project Version			Displays the current BIOS version: Format: AAAABCC AAAAA = Project name B = Customer number CC = BIOS revision
Build Date and Time			Displays the current BIOS build date.
Access Level			Displays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

Setup Item	Options	Help Text	Comments
Memory Information			
Total Memory			Displays the total physical memory installed in the system, MB Unit.
Memory Data Rate			Displays the Frequency of Memory.
eMMC Device			Display eMMC device information.
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

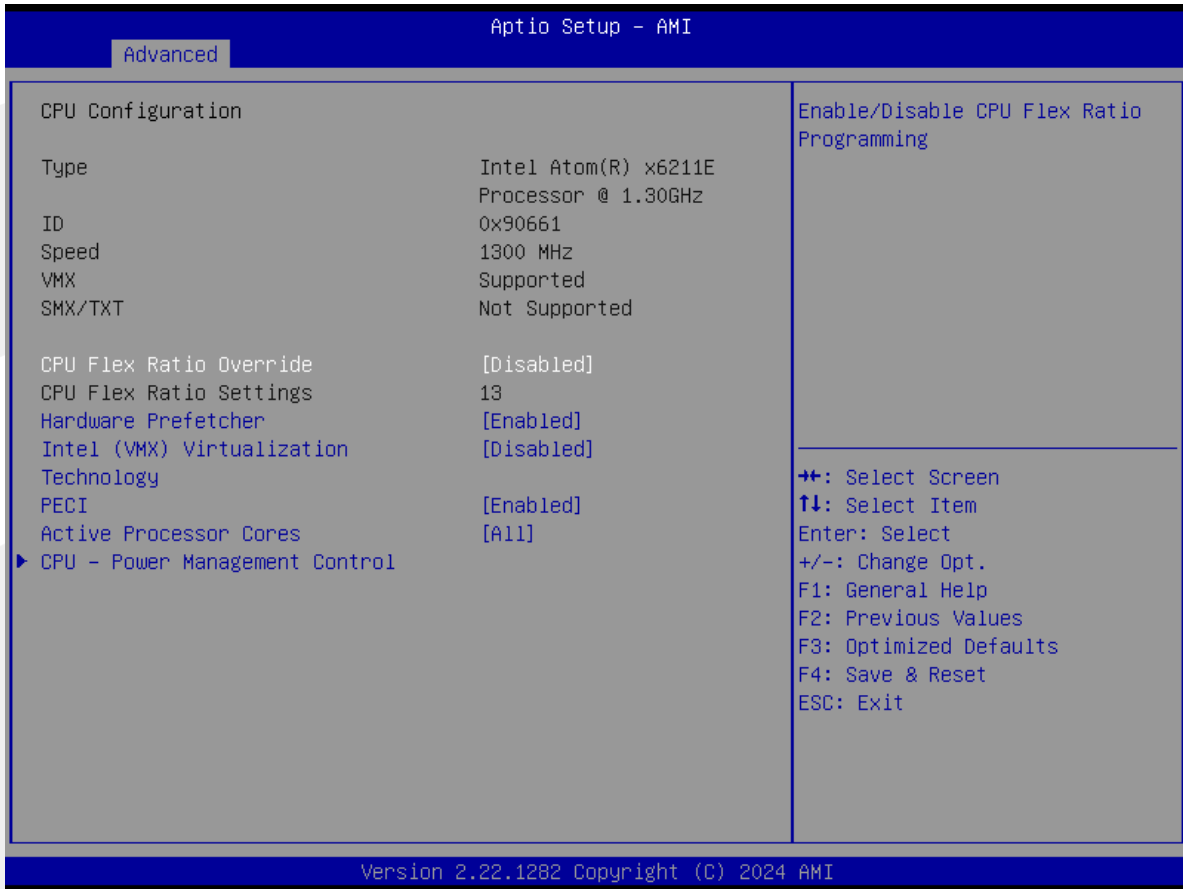
The Advanced screen provides an access point to configure several options. On this screen, the user selects the option that is to be configured.



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 status.	
AMI Graphic Output Protocol Policy		User Select Monitor Output by Graphic Output Protocol.	
SATA Configuration		SATA Devices Options Settings.	
USB Configuration		USB Configuration Parameters.	
Network Stack Configuration		Network Stack Settings.	
NVME Configuration		NVME Device Options Settings.	
WatchDog Configuration		Set System WatchDog Parameters.	
LVDS		LVDS setting.	

3.2.1 CPU Configuration

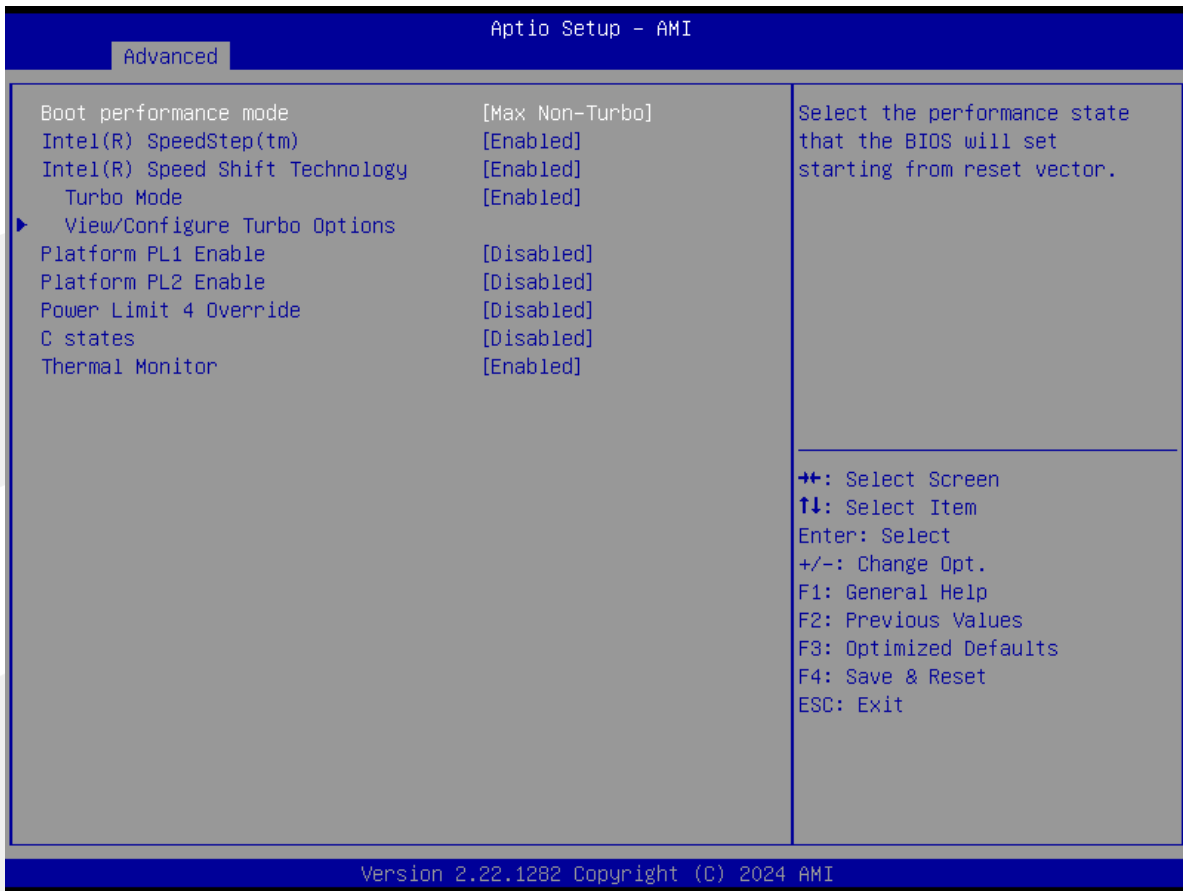
The CPU Configuration screen allows the user to view the processor information, and to enable or disable processor options. To access this screen from the Main screen, choose **Advanced > CPU Configuration**.



Setup Item	Options	Help Text	Comments
CPU Configuration			
Type			Displays the Processor Type.
ID			Displays the Processor ID.
Speed			Displays the Processor Speed.
VMX			VMX Supported or Not.
SMX/TXT			SMX/TXT Supported or Not.
CPU Flex Ratio Override	Disabled Enabled	Enable/Disable CPU Flex Ratio Programming	

Setup Item	Options	Help Text	Comments
CPU Flex Ratio Settings	0-63	This value must be between Max Efficiency Ratio (LFM) and Maximum non-turbo ratio set by Hardware (HFM).	
Hardware Prefetcher	Enabled Disabled	To turn on/off the MLC streamer prefetcher.	
Intel (VMX) Virtualization Technology	Disabled Enabled	When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.	
PECI	Enabled Disabled	Enable/Disable Peci.	
Active Processor Cores	All 1	Number of cores to enable in each processor package.	
CPU-Power Management Control		CPU-Power Management Control Options	

3.2.1.1 CPU-Power Management Control



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(R) SpeedStep(tm)	Disabled Enabled	Allows more than two frequency ranges to be supported.	
Intel(R) Speed Shift Technology	Enabled Disabled	Enable/Disable Intel(R) Speed Shift Technology support. Enabling will expose the CPPC v2 interface to allow for hardware controlled P-states.	
Turbo Mode	Enabled Disabled	Enable/Disable processor Turbo Mode (requires EMTTM enabled too). AUTO means enabled.	
View/Configure Turbo Options		View/Configure Turbo Options.	

Setup Item	Options	Help Text	Comments
Platform PL1 Enable	Disabled Enabled	Enable/Disable Platform Power Limit 1 programming. If this option is enabled, it activates the PL1 value to be used by the processor to limit the average power of given time window.	
Platform PL2 Enable	Disabled Enabled	Enable/Disable Platform Power Limit 2 programming. If this option is disabled, BIOS will program the default values for Platform Power Limit 2.	
Power Limit 4 Override	Disabled Enabled	Enable/Disable Power Limit 4 override. If this option is disabled, BIOS will leave the default values for Power Limit 4.	
C states	Disabled Enabled	Enable/Disable CPU Power Management. Allows CPU to go to C states when it's not 100% utilized.	
Thermal Monitor	Enabled Disabled	Enable/Disable Thermal Monitor.	

3.2.2 Trusted Computing

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

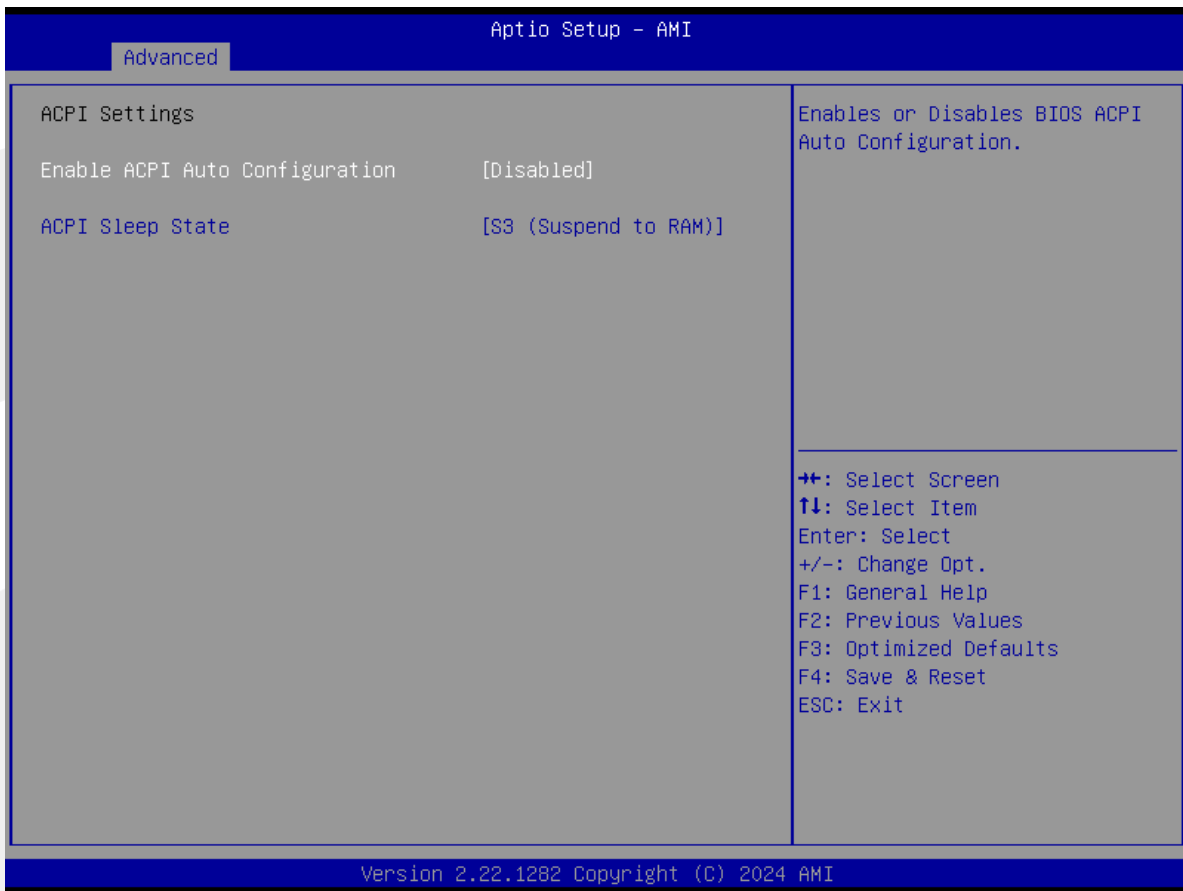


Setup Item	Options	Help Text	Comments
Trusted Computing			
Security Device Support	Enabled Disabled	Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.	
SHA256 PCR Bank	Enabled Disabled	Enable or Disable SHA256 PCR Bank.	
SHA384 PCR Bank	Enabled Disabled	Enable or Disable SHA384 PCR Bank.	
SM3_256 PCR Bank	Enabled Disabled	Enable or Disable SM3_256 PCR Bank.	
Pending operation	None TPM Clear	Schedule an Operation for the Security Device. <i>NOTE: Your Computer will reboot during restart in order to change State of Security Device.</i>	
Platform Hierarchy	Disabled Enabled	Enable or Disable Platform Hierarchy.	

Setup Item	Options	Help Text	Comments
Storage Hierarchy	Disabled Enabled	Enable or Disable Storage Hierarchy.	
Endorsement Hierarchy	Disabled Enabled	Enable or Disable Endorsement Hierarchy.	
Physical Presence Spec Version	1.2 1.3	Select to Tell O.S. to support PPI Spec Version 1.2 or 1.3. Note some HCK tests might not support 1.3.	
TPM 2.0 InterfaceType	CRB	Select the Communication Interface to TPM 20 Device.	
Device Select	TPM 1.2 TPM 1.3 AUTO	TPM 1.2 will restrict support to TPM 1.2 devices, TPM 2.0 will restrict support to TPM 2.0 devices, Auto will support both with the default set to TPM 2.0 devices if not found, TPM 1.2 devices will be enumerated.	

3.2.3 ACPI Settings Screen

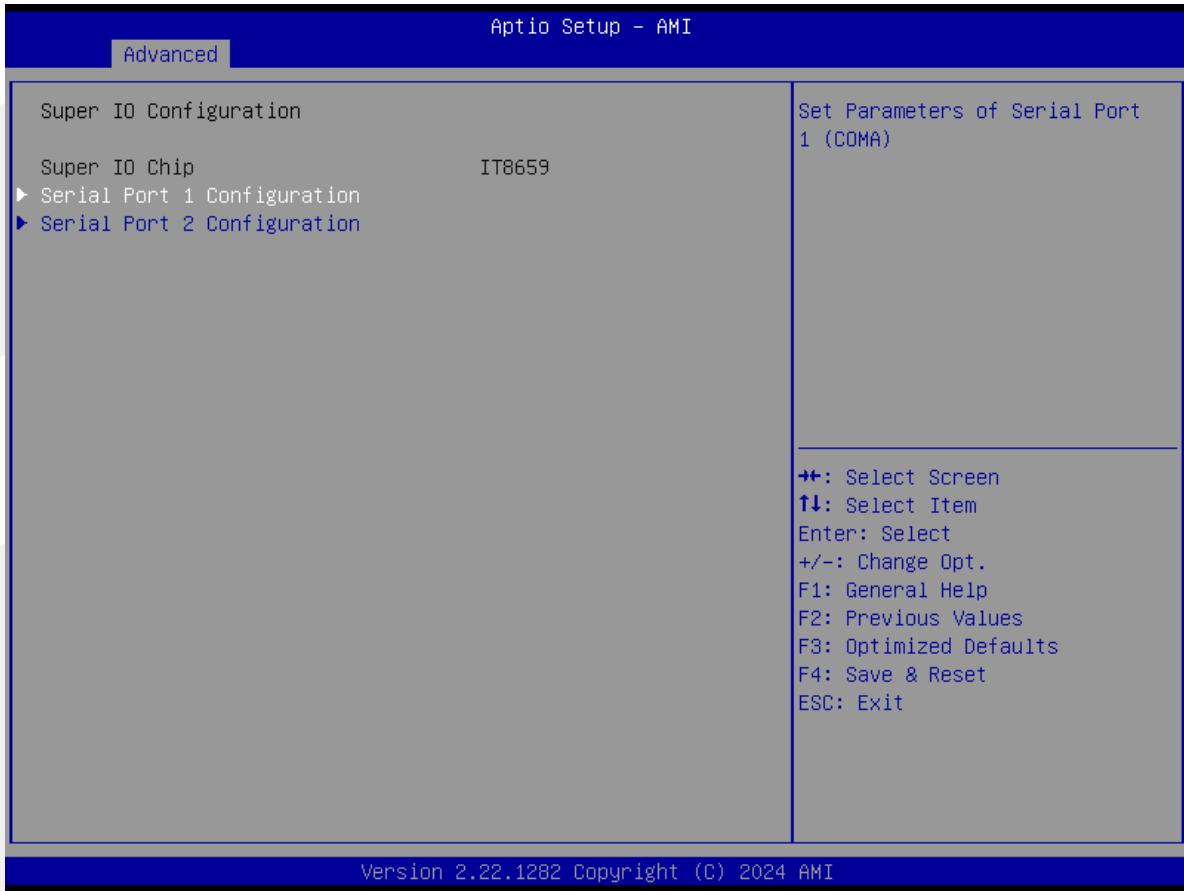
The ACPI Settings screen allows the user to set the system ACPI parameters. To access this screen from the Main screen, choose **Advanced > ACPI Settings**.



Setup Item	Options	Help Text	Comments
ACPI Settings			
Enable ACPI Auto Configuration	Disabled Enabled	Enables or disables BIOS ACPI Auto Configuration.	
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

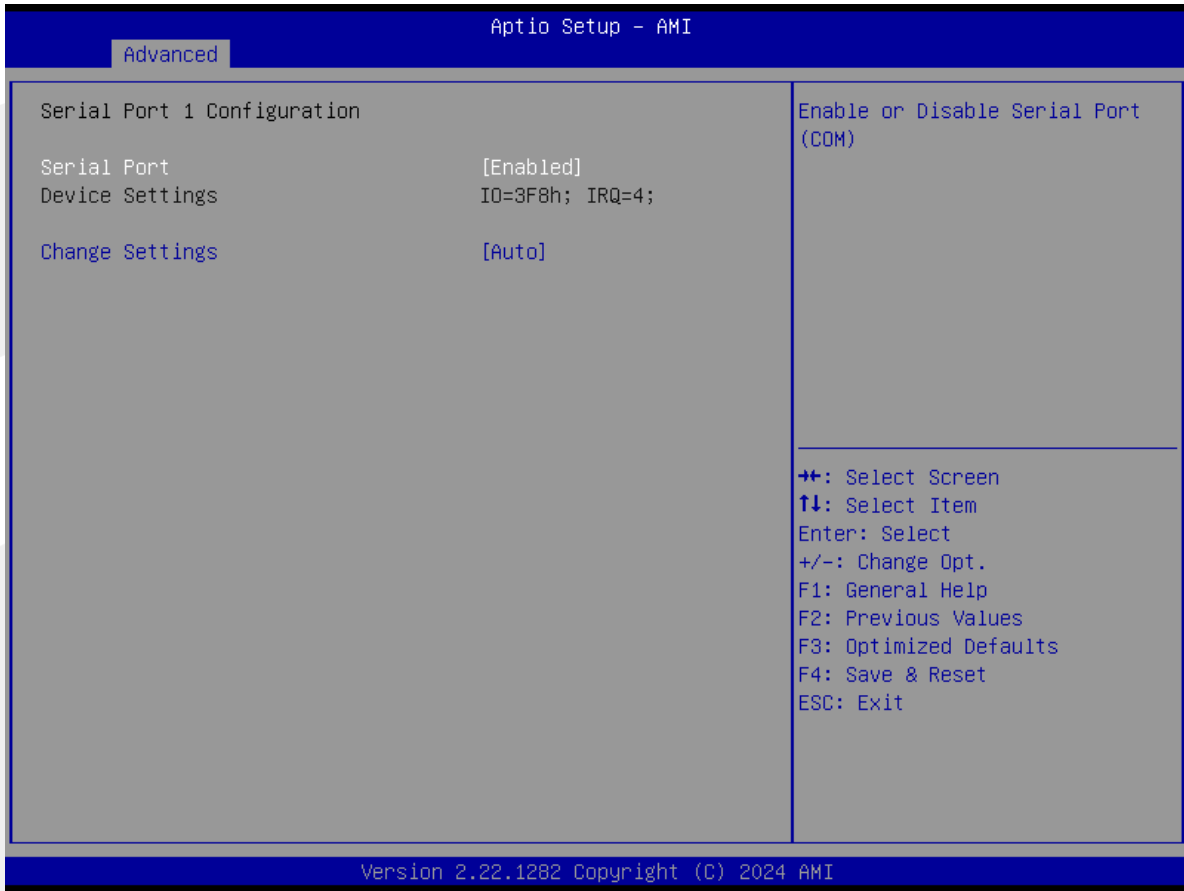
The Super IO Configuration screen allows the user to view the super IO information, and to enable or disable super IO options. To access this screen from the Advanced screen, choose **Advanced > Super IO Configuration**.



Setup Item	Options	Help Text	Comments
Super IO Configuration			
Super IO Chip	IT8659		
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 Port X Configuration

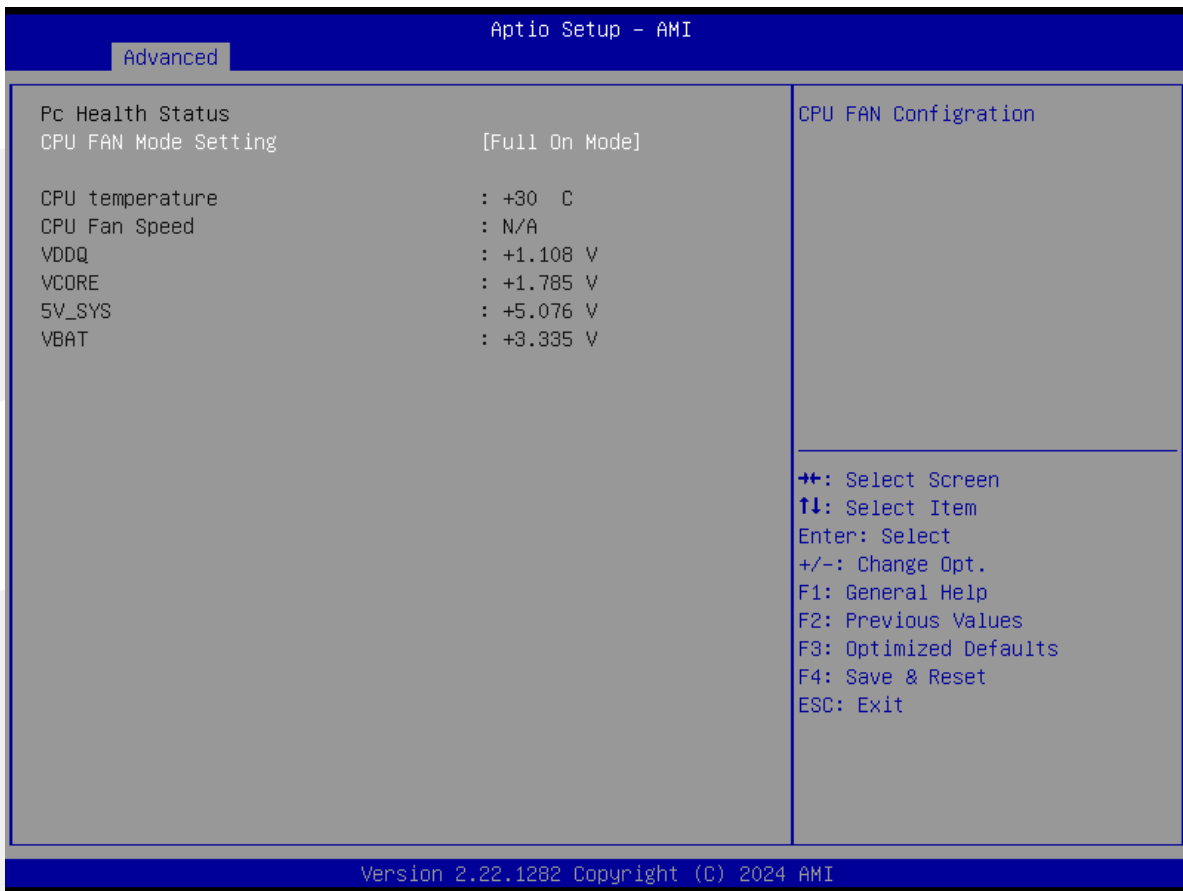
The Super IO Configuration screen allows the user to view the super IO information, and to enable or disable serial port options. To access this screen from the Advanced screen, choose **Advanced-> Super IO Configuration->Serial Port X Configuration**



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

3.2.5 Hardware Monitor

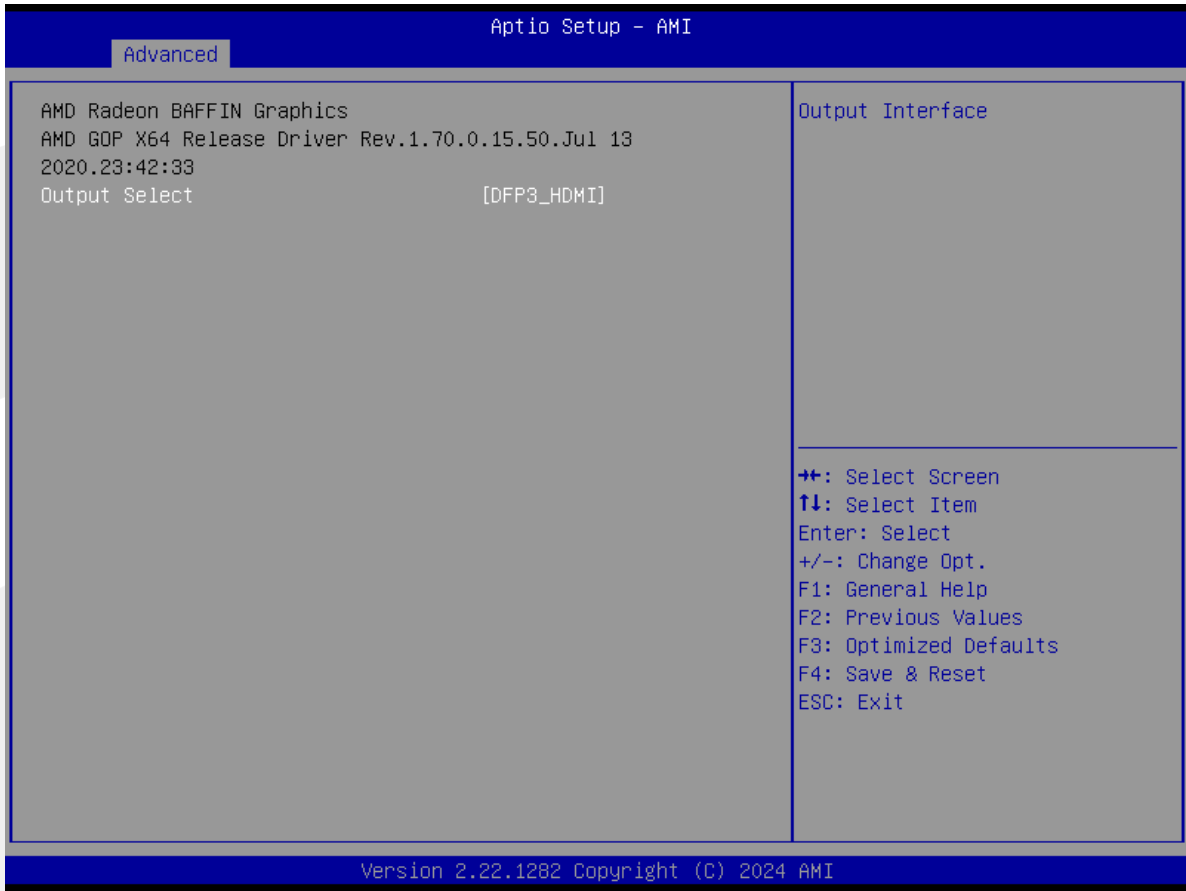
The Hardware monitor screen allows the user to view the hardware information. To access this screen from the Advanced screen, choose **Advanced-> Hardware Monitor**.



Setup Item	Options	Help Text	Comments
PC Health Status			
CPU FAN Mode Setting	Full On Mode Automatic mode PWM Manually mode	CPU FAN Configuration.	
CPU temperature		Shows Current CPU temperature.	<i>NOTE1: Sometimes not the actual temperature value, just indicates temperature tolerance limitation.</i>
CPU Fan Speed		Shows Current CPU Fan Speed.	
VDDQ			HW Information.
VCORE			HW Information.
5V_SYS			HW Information.
VBAT			HW Information.

3.2.6 AMI Graphic Output Protocol Policy

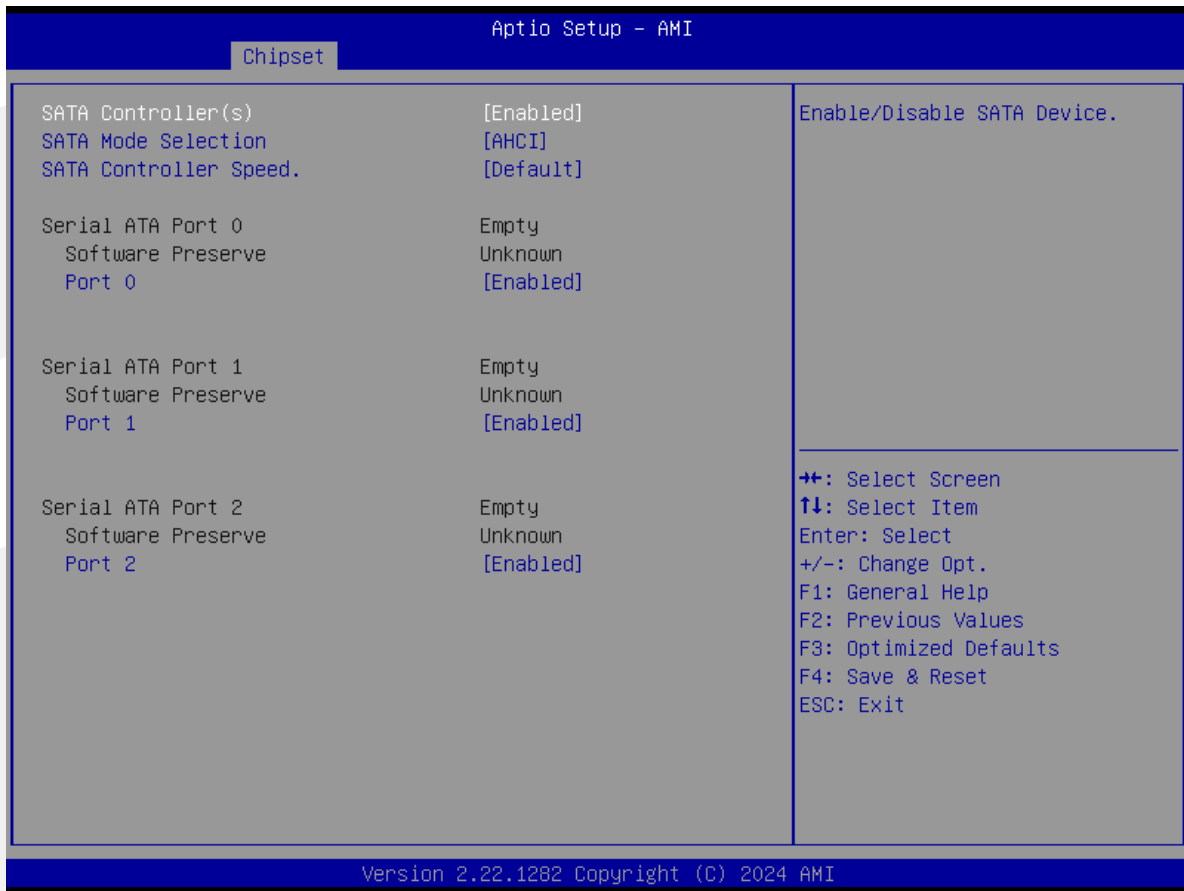
The AMI Graphic Output Protocol Policy screen allows the user to select the output interface. To access this screen from the Advanced screen, choose **Advanced-> AMI Graphic Output Protocol Policy**.



Setup Item	Options	Help Text	Comments
AMI Graphic Output Protocol Policy			
Output Select		Output Interface.	

3.2.7 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**.

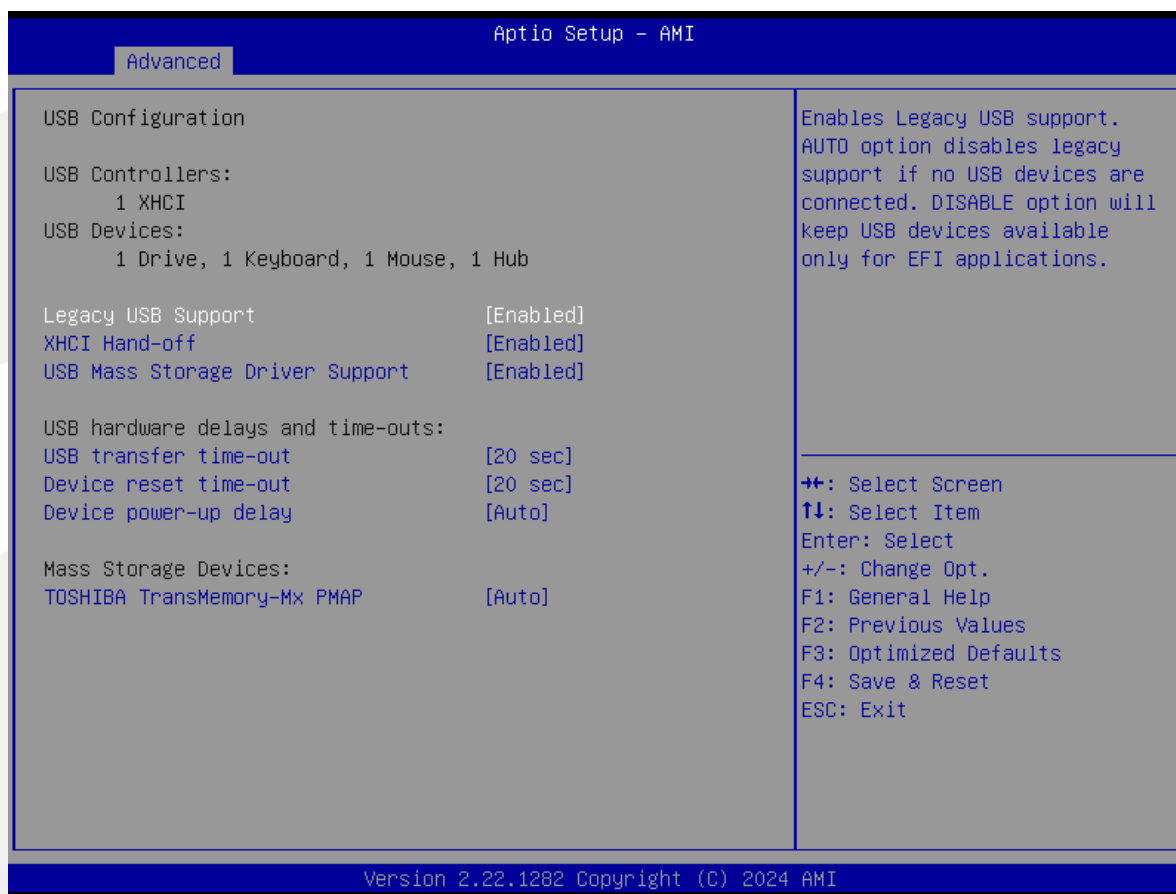


Setup Item	Options	Help Text	Comments
SATA Configuration			
SATA Controller(s)	Enabled Disabled	Enable / Disable SATA Device.	
SATA Mode Selection	AHCI	Determines how SATA controller(s) operate.	
SATA Controller Speed	Default Gen1 Gen2 Gen3	SATA Controller Speed.	
Serial-ATA Port 0	Enabled Disabled	Enable / Disable Serial ATA Port 0.	
Serial ATA Port 0			Show HDD information connected.
Serial-ATA Port 1	Enabled Disabled	Enable / Disable Serial ATA Port 1.	
Serial ATA Port 1			Show HDD information connected.

Setup Item	Options	Help Text	Comments
SATA Configuration			
Serial-ATA Port 2	Enabled Disabled	Enable / Disable Serial ATA Port 2.	
Serial ATA Port 2			Show HDD information connected.

3.2.8 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**.

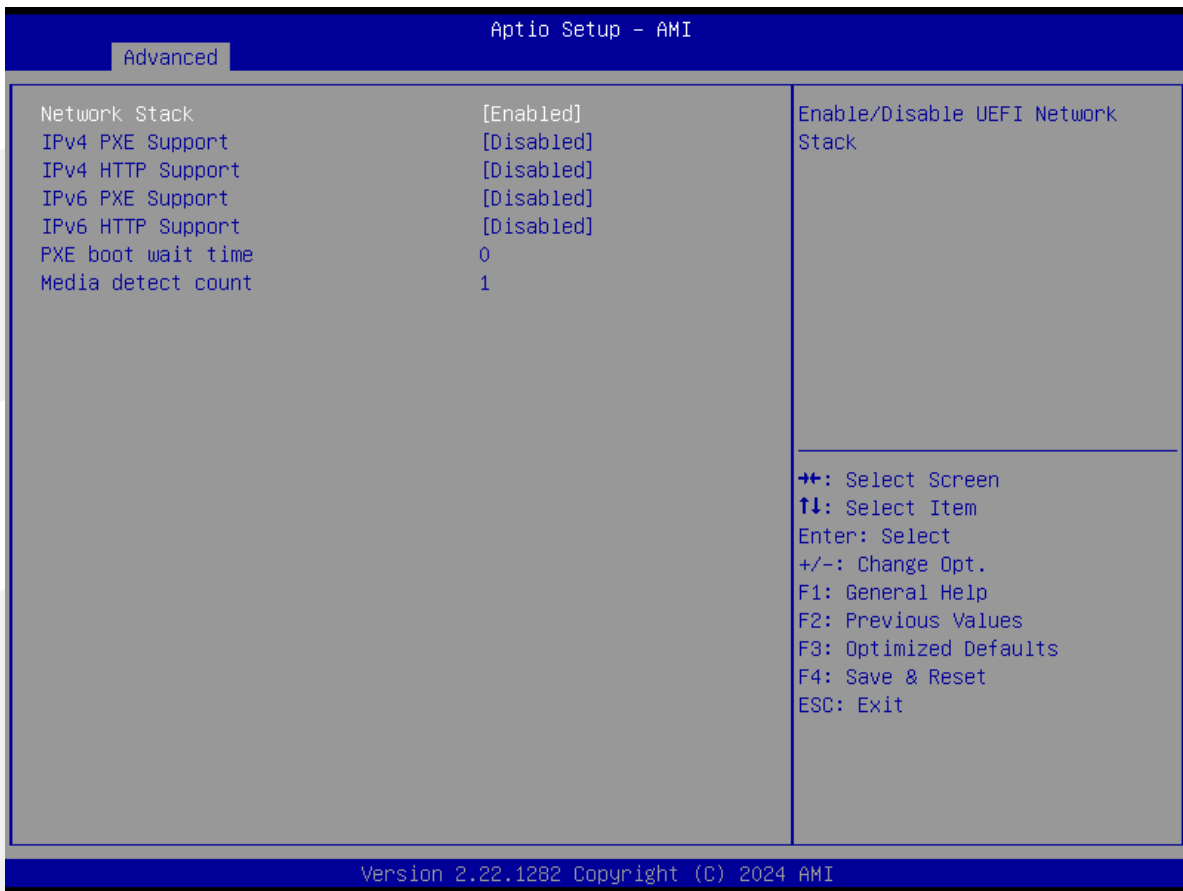


Setup Item	Options	Help Text	Comments
USB Configuration			
Legacy USB Support	Enabled Auto Disabled	Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.	
XHCI Hand-off	Enabled Disabled	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	10 sec 20 sec 30 sec 40 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 100 ms, for a Hub port the delay is taken from Hub descriptor.	

3.2.9 Network Stack Configuration

The Network Stack Configuration screen allows the user to Set Network Stack Parameters. 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. If disabled, IPv4 PXE boot support will not be available.	
IPv4 HTTP Support	Disabled Enabled	Enable/Disable IPv4 HTTP boot support. If disabled, IPv4 HTTP boot support will not be available.	
IPv6 PXE Support	Disabled Enabled	Enable/Disable IPv6 PXE boot support. If disabled, IPv6 PXE boot support will not be available.	
IPv6 HTTP Support	Disabled Enabled	Enable/Disable IPv6 HTTP boot support. If disabled, IPv6 HTTP boot support will not be available.	
PXE boot wait time	0-5	Wait time in seconds to press ESC key to abort the PXE boot. Use either +/- or numeric keys to set the value.	

Setup Item	Options	Help Text	Comments
Media detect count	1-50	Number of times the presence of media will be checked. Use either +/- or numeric keys to set the value.	

3.2.10 NVME Configuration

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

3.2.11 WatctDog 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
WatctDog Configuration			
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.

3.2.12 LVDS & PXE Boot

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



Setup Item	Options	Help Text	Comments
LVDS			
LVDS Control	Disabled Enabled	Enable or Disable for LVDS control.	

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) Configuration	
PCH-IO Configuration		PCH-IO Configuration	

3.3.1 System Agent (SA) Configuration

The System Agent (SA) Configuration Screen allows user to set System Agent (SA) Parameters. To access this screen, from the Main screen, choose **Chipset > System Agent (SA) Configuration**.



Setup Item	Options	Help Text	Comments
System Agent (SA) Configuration			
Memory Configuration		Memory Configuration Parameters.	
Graphics Configuration		Graphics Configuration Parameters.	

3.3.1.1 Memory Configuration

Chipset
Aptio Setup - AMI

Memory Configuration		
Memory Data Rate	3200 MTPS	
Channel 0 Slot 0	Populated & Enabled	
Size	8192 MB (LPDDR4/x)	
Number of Ranks	2	
Manufacturer	SK Hynix	
Channel 0 Slot 1	Not Populated / Disabled	
Channel 1 Slot 0	Populated & Enabled	
Size	8192 MB (LPDDR4/x)	
Number of Ranks	2	
Manufacturer	SK Hynix	
Channel 1 Slot 1	Not Populated / Disabled	

++: Select Screen
 ↑↓: Select Item
 Enter: Select
 +/-: Change Opt.
 F1: General Help
 F2: Previous Values
 F3: Optimized Defaults
 F4: Save & Reset
 ESC: Exit

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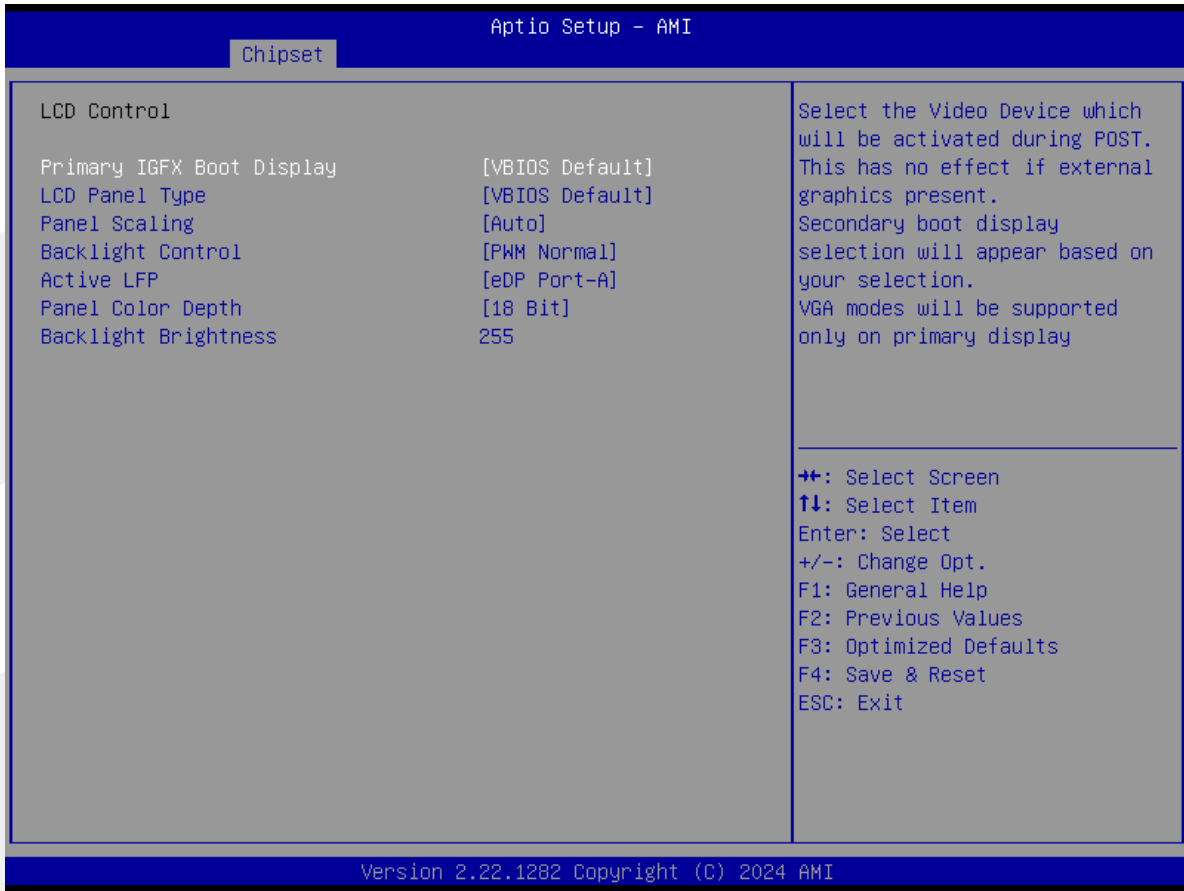
3.3.1.2 Graphics Configuration



Setup Item	Options	Help Text	Comments
Graphics Configuration			
Primary Display	Auto IGFX PCI SG	Select which of IGFX/PEG/PCI Graphics device should be Primary Display Or select SG for Switchable Gfx.	
External Gfx Card Primary Display Configuration		External Gfx Card Primary Display Configuration.	
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.	
PSMI SUPPORT	Disabled Enabled	PSMI Enable/Disable.	

Setup Item	Options	Help Text	Comments
DVMT Pre-Allocated	64M 96M 128M 160 60M	Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.	
DVMT Total Gfx Mem	128M 256M MAX	Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device.	
LCD Control		LCD Control.	

3.3.1.2.1 LCD Control

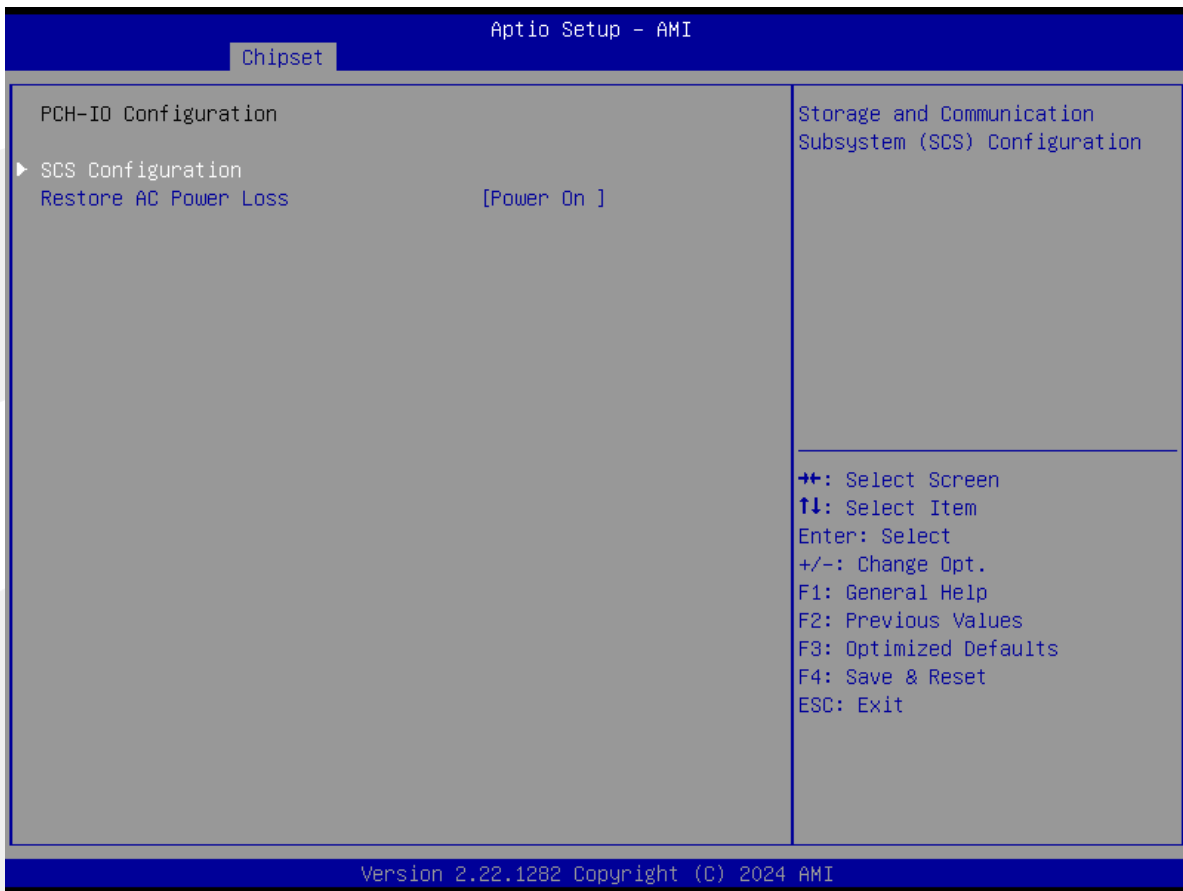


Setup Item	Options	Help Text	Comments
LCD Control			
Primary IGFX Boot Display	VBIOS Default EFP LFP EFP3 EFP2 EFP4	Select the Video Device which will be activated during POST. This has no effect if external graphics present. Secondary boot display selection will appear based on your selection. VGA modes will be supported only on primary display.	

Setup Item	Options	Help Text	Comments
LCD Panel Type	VBIOS Default	Select LCD panel used by Internal Graphics Device by selecting the appropriate setup item.	
	640x480 18bit		
	800x600 18bit		
	1024x600 18bit		
	1024x768 18bit		
	1280x720 18bit		
	800x480 18bit		
	1366x768 18bit		
	1440x900 18bit		
	1366x768 24bit		
	1440x900 24bit		
	1600x900 24bit		
	1680x900 24bit		
1680x1050 24bit			
1600x1200 24bit			
1920x1080 24bit			
1366z768 LVDS			
Panel Scaling	Auto Off Force Scaling	Select the LCD panel scaling option used by the Internal Graphic as Device.	
Backlight Control	PWM Inverted PWM Normal	Back Light Control Setting.	
Active LFP	No eDP eDP Port-A	Select the Active LFP configuration. NO eDP: VBIOS does not enable eDP. eDP Port-A:LFP Driven by Int-DisplayPort encoder from Port-A	
Panel Color Depth	18 Bit 24 Bit	Select the LFP Panel Color Depth.	
Backlight Brightness	255	Set VBIOS Brightness. Range: 0-255.	

3.3.2 PCH-IO Configuration

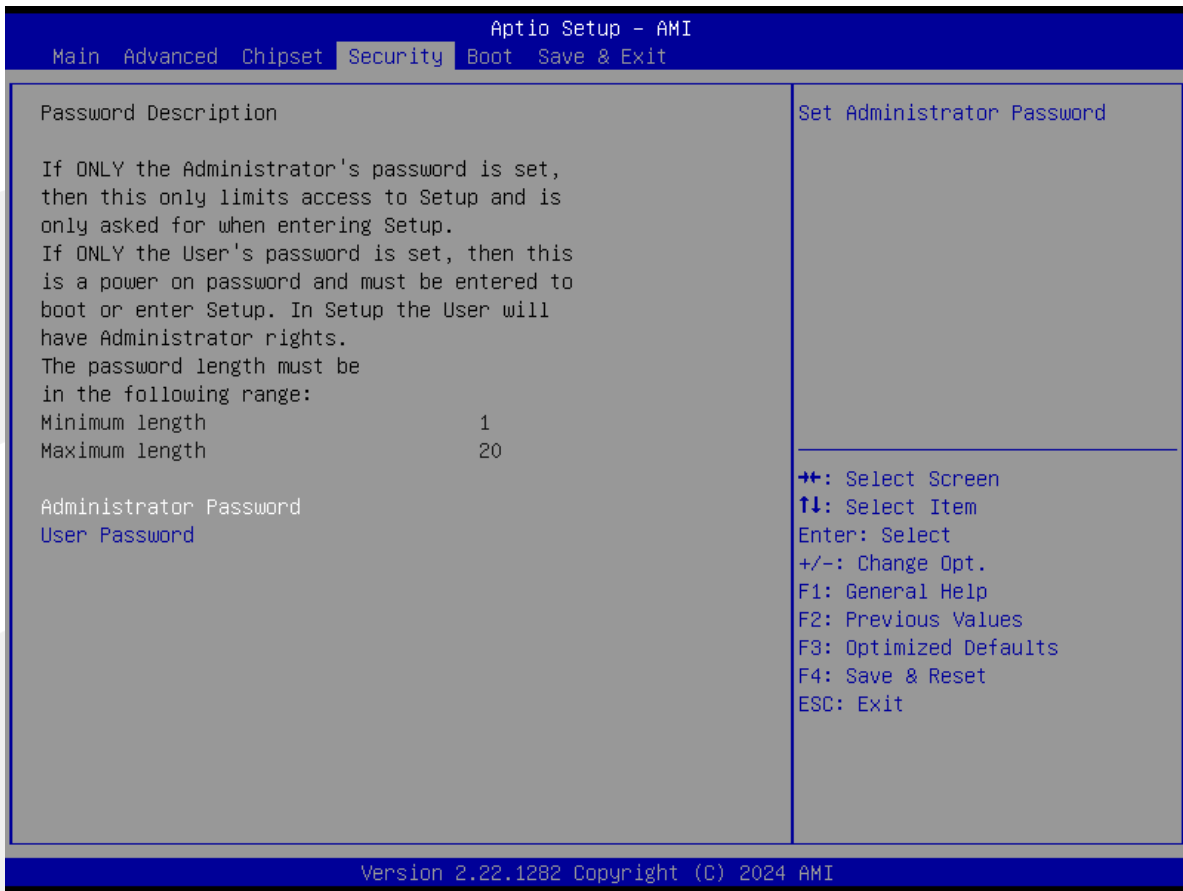
The PCH-IO Configuration Screen allows user to set PCH-IO Parameters. To access this screen, form the Main screen, choose **Chipset > PCH-IO Configuration**.



Setup Item	Options	Help Text	Comments
PCH-IO Configuration			
SCS Configuration			
eMMC 5.1 Controller	Enabled Disabled	Enable or Disable SCS eMMC 5.1 Controller.	
eMMC 5.1 HS400 Mode	Enabled Disabled	Enable or Disable SCS eMMC 5.1 HS400 Mode.	
Enable HS400 software tuning	Enabled Disabled	Software tuning should improve eMMC HS400 stability at the expense of boot time.	
Driver Strength	33 Ohm 40Ohm 50Ohm	Sets I/O driver strength.	
Restore AC Power Loss	Power On Power Off	Specify what state to go to when power is re-applied after a power failure(G3 state).	

3.4 Security

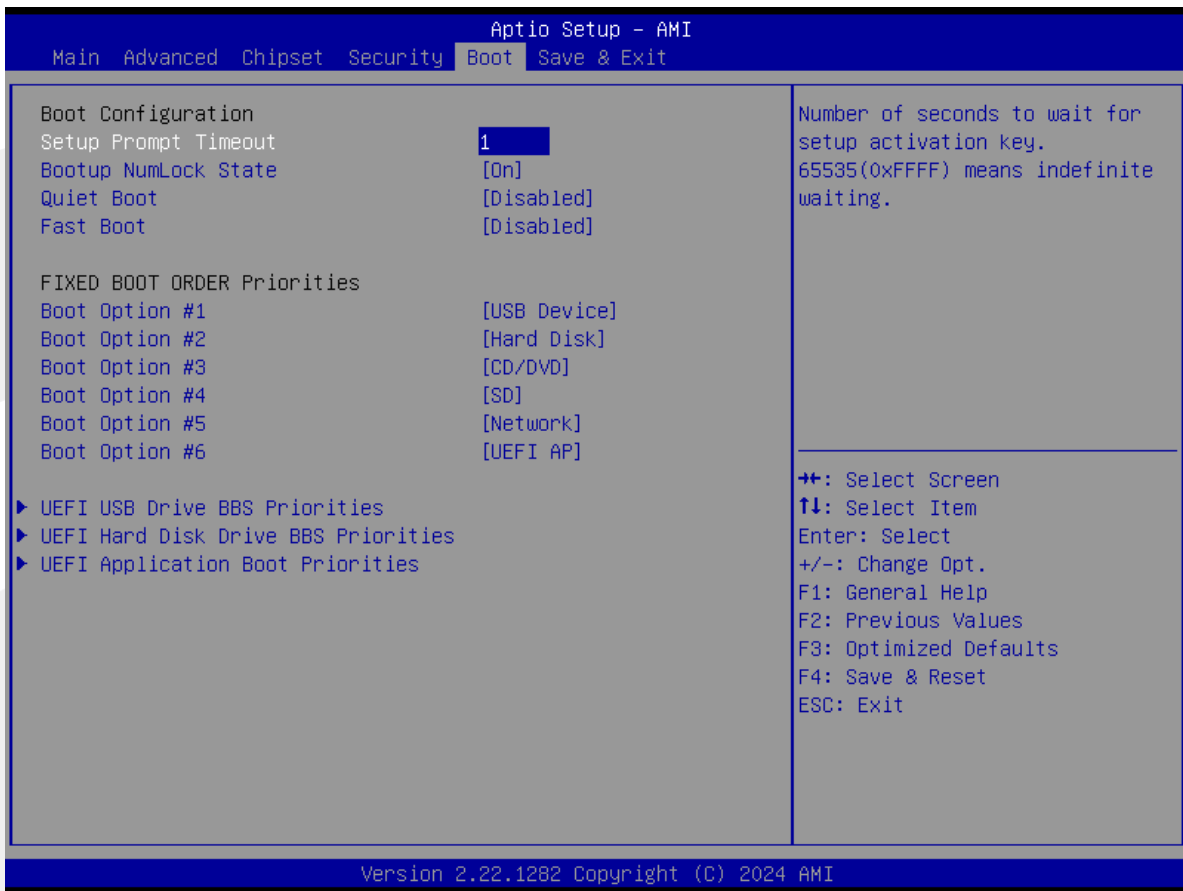
To access this screen form the Main screen, choose **Security**.



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**.

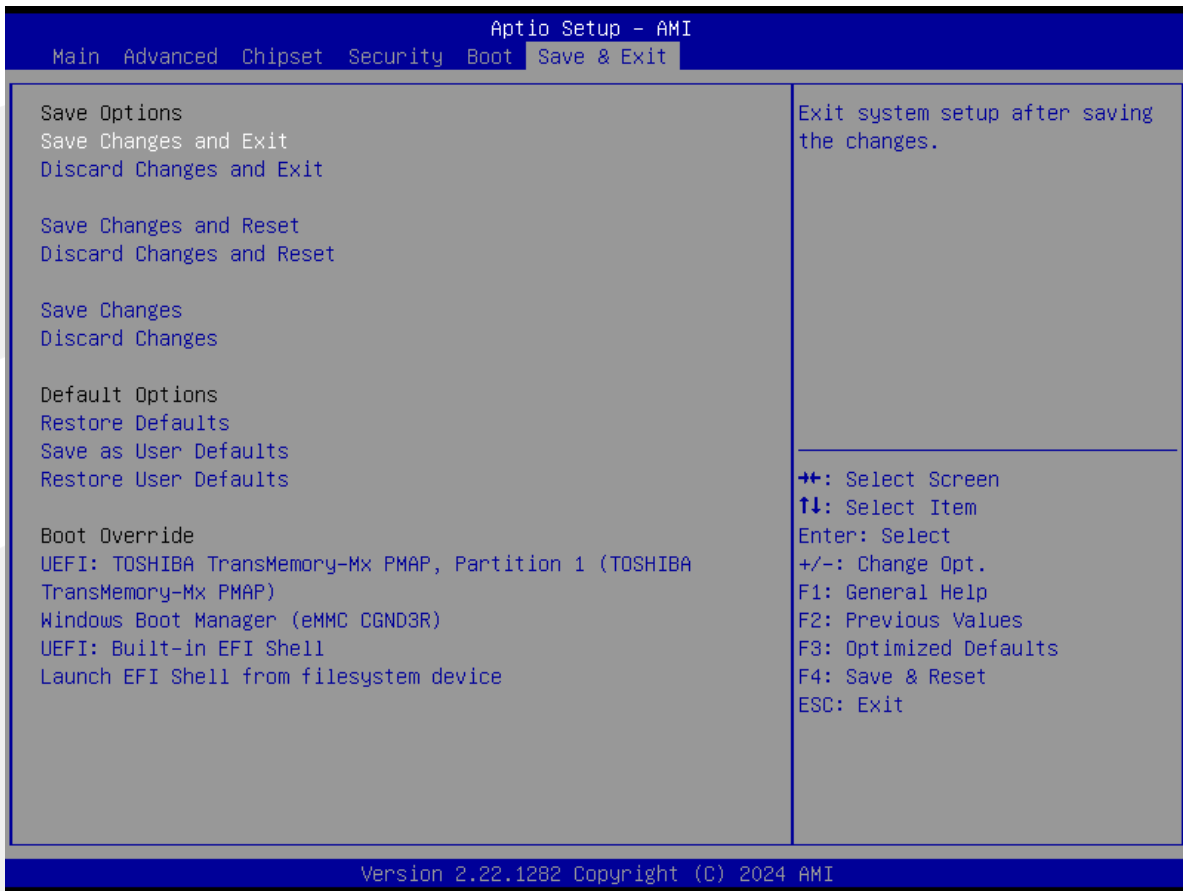


Setup Item	Options	Help Text	Comments
Boot Configuration			
Setup Prompt Timeout	1~65535	Number of seconds to wait for setup activation key.65535(0xFFFF) means indefinite waiting.	
Bootup NumLock State	On off	Select the keyboard Number state.	
Quiet Boot	Disabled Enabled	Enables or disables Quiet Boot option.	
Fast Boot	Disabled Enabled	Enables/Disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.	
FIXED Boot Option Priorities			
Boot Option #1		Sets the system boot order.	<i>Note: Shown When boot devices existed.</i>
Boot Option #2		Sets the system boot order.	
Boot Option #3		Sets the system boot order.	
Boot Option #x		Sets the system boot order.	

Setup Item	Options	Help Text	Comments
UEFI USB Drive BBS Priorities		Specifies the Boot Device Priority sequence from available UEFI USB Drives.	
UEFI Hard Disk Drive BBS Priorities		Specifies the Boot Device Priority sequence from available UEFI Hard Disk Drives.	
UEFI Application Boot Priorities		Specifies the Boot Device Priority sequence from available UEFI Application.	

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			
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.			<i>Note: Showed When boot devices existed.</i>

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

&



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