

MIN-EC09A

边缘整机 USER' Manual V10

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。





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第一章 产品介绍

1.1 产品规格

Model		MIN-EC09A
产品类型	产品类型	边缘整机
Form Factor	Form Factor	
	CPU	Intel Coffee Lake-S 13/15/17
处理器 Dragograph System	芯片组	Intel PCH Q370
Processor System	Chipset	
	BIOS	AMI 128Mbit EFI
	规格 Technology	DDR4
内存 Memory	最大容量 Max. Capacity	64G 2133/2400/2666MHz
	插槽 Socket	2 x SO-DIMM
		1 x M.2 for NVME or SSD
扩展插槽	M.2	1 x M.2 for 4G/5G/WIFI/BT
Expansion Slot	SIM	1 x SIM
存储 Storage	SATA	1 x SATA3.0(7 Pins)
	最多显示 Multiple Display	3 Ports
显示	前面板 Front I/O	1 x HDMI (From CPU)
Graphics	后面板	1 x HDMI (From GPU DP A DP to HDMI)
	Rear I/O	1 x DP (From GPU DP_B)
	分辨率	HDMI2.0:4096*2160@60Hz
	Resolution	DP:7680*4096@60Hz
	前面板	4 x USB3.0
	Front I/O	4 x USB2.0
USB / Type-C	后面板 Rear I/O	2 x USB3.0
	功能 Function	Support wake up from S3/S4
串口 сом	后面板 Rear I/O	2 x RS232/RS485



音频	控制器 Controller	Integrated High Definition Audio Stereo (ALC897)
Audio	前面板	1 x Line Out
	Front I/O	1 x MIC In
GPIO	前面板 Front I/O	1 x GPIO 8bit(Phoenix Port)
	控制器 Controller	Intel® Ethernet Controller I211-AT
以太网 Ethernet	后面板 Rear I/O	2 x RJ45 10/100/1000M
	功能 Function	Support wake up and PXE
按钮	前面板	1 x Power Button
Button	Front I/O	1 x RV Button
		1 x Reset Button
	Remote Power	1 x 2Pin
	Switch	
电源 Power	Power Output	1 x 2Pin(12V/1A)
Requirements	电源电压	$1 \times 4 \operatorname{Pin}(19 \sim 24 \mathrm{V})$
	Power input	$1 \times 2Pin(12 \sim 24V)$
	Voltage	
	工作温度	
	Operating	0~50℃ at 0.7m/s air flow
	Temperature	
环墙	存储温度	
Environment	Storage	-20~70℃
	Temperature	
	工作湿度	
	Operating	10~95%(non-condensing)
	Humidity	
	尺寸	282*208*79.5mm
物理特性	Dimensions	
Physical	颜色 Color	Dark Green
操作系统	Microsoft	Windows 10 1809(RS5)/1607(RS1)
os	Linux	Yocto YP3.1xLTS



1.2 功能框图



1.3 产品料号

Model Part Number		Specification
		MIN-EC09A-01 整机 Q370B V10/I7-9700/2T M.2-
整机-EC09A-01	8.ZRT.80-6436-19-LFF	SSD/16G*2 DDR4/MXM RTX3060(120W)/一体式
		铝合金机箱/电源/包装
		MIN-EC09A-02 整机 Q370B V10/I7-9700/2T M.2-
整机-EC09A-02	8.ZRT.80-6436-20-LFF	SSD/16G*2 DDR4/MXM RTX3070(126W)/一体式
		铝合金机箱/电源/包装



1.4 产品照片













第二章 安装说明

2.1 接口/尺寸图

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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。



2.2 接口说明

2.2.1 DC 接口

DC_JACK1: 4pin 凤凰端子

	管脚	信号名称
	1	GND
	2	VCC
à à à à	3	VCC
	4	GND

2.2.2 SATA-PWR 接口

SATAPWR1: 电源插座

Pin	Signal	Pin	Signal
1	12VS	2	GND
3	GND	4	5V



SATA1:7PIN 数据座

	Pin	Signal	Pin	Signal
1	1	GND	2	SATA_TX_P
└╋┘╫╢╢╢╢╢╻╋┘	3	SATA_TX_N	4	GND
1	5	SATA_RX_N	6	SATA_RX_P
	7	GND		

2.2.3 风扇座子

MXMO_FAN1, MXM1_FAN1, ,CPU_FAN1 4PIN 风扇座子, PIN 定义如下:

	Pin	Signal	Pin	Signal
1	1	GND	2	12VS
	3	TAC	4	CTL

2.2.4 串行接口(DB9 接口)

COM1, COM2 接口定义如下

	管脚	信号名称		
		RS-232	RS-422	RS-485
	1	DCD#	TXD-	Data-
	2	RXD	TXD+	Data+
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	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

2.2.5 显示接口

主板含有集成显卡 HDMI 输出,独立显卡 HDMI/DP 输出接口列表

显示接口位号	显示类型	输出通道	备注
J11	HDMI	核显通道	标准显示接口
HDMI1-UP	DP	独显通道	标准显示接口
HDMI1-DN	HDMI	独显通道	标准显示接口



2.2.6 网络接口

主板提供 2 个 Intel i211 10/100/1000M 自适应以太网接口 LAN1, LAN2,标准 RJ45 网络接口

2.2.7 USB 接口

单板提供 4 个标准 USB3.0 接口	单板提供 4 个标准 USB2.0 接口
USB2: 双层 USB3.0	USB3:双层 USB2.0
USB3:双层 USB3.0	USB4:双层 USB2.0

2.2.8 音频接口

主板支持一路 3.5mm 三段式 MIC_IN1 输入和一路 3.5MM 三段式 front_spk1 输出

2.2.9 M.2 PCIE 卡槽

卡槽	接口类型	支持	数量
M.2_E_CONN	E_KEY	WiF, 蓝牙	一个
4G1	B_KEY	4G/5G 模块	一个
NGFF1	M_KEY	4XPCIE&SATA 协议	一个

2.3 开机、重启、一键还原按钮

2.3.1 主板按键说明

开机按钮 SW1:

Pin	Signal	Pin	Signal
1	PWR_SW	2	GND
3	LED+	4	LED-

复位按钮 SW2:

Pin	Signal	Pin	Signal
1	PWR_SW	2	NC
3	GND	4	NC

-键还原按钮 SW4:

Pin	Signal	Pin	Signal
1	ONEKEY_SW	2	NC
3	GND	4	NC



第三章 BIOS 程序设置

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。

BIOS 基础操作规范

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。



BIOS 详细参数设置:

3.1 Main Screen

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

BIOS Information BIOS Vendor Core Version Compliancy Project Version Build Date and Time Access Level	American Megatrends 5.13 UEFI 2.7; PI 1.6 ECO50A14 10/29/2021 11:16:32 Administrator	Choose the system default language
Processor Information Intel(R) Core(TM) 17–9700K	CPU @ 3.60GHz	
Memory RC Version	0.7.1.111	
Total Memory Memory Frequency	8192 MB 2667 MHz	++: Select Screen
System Language	[English]	Enter: Select +/-: Change Opt.
System Date System Time	[Wed 01/01/2020] [00:58:15]	F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2 20	1275 Conucidat (C) 2021 America	n Medatrends Thr

Setup Item	Options	Help Text	Comments
BIOS Information			
BIOS Vendor			Displays BIOS vendor.
Core Version			
Compliancy			
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	1	1	
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.

Aptio Setup Utility – Copyright (C) 2021 Ameri Main Advanced Chipset Security Boot Save & Exit	ican Megatrends, Inc.
 CPU Configuration ACPI Settings Super 10 Configuration Hardware Monitor SATA Configuration USB Configuration CSM Configuration NVMe Configuration NATCHONG Configuration PXE Boot 	CPU Configuration Parameters **: Select Screen 14: Select Item Enter: Select */-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1275. Copyright (C) 2021 America	an Megatrends, Inc.

Setup Item	Options	Help Text	Comments
CPU Configuration		CPU Configuration Parameters.	
ACPI Settings		System ACPI Parameters.	
Super IO Configuration		System Super IO chip Parameters.	
Hardware Monitor		Monitor hardware stats.	
SATA Configuration		SATA Devices Configuration.	
USB Configuration		USB Configuration Parameters.	
CSM Configuration		CSM configuration: Enable/Disable,	
		Option ROM execution settings, etc.	
NVMe Configuratioin		NVMe Device Options Settings.	
Watchdog configuration		Set System WatchDog Parameters.	
PXE Boot		Legacy PXE Control.	



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*.

CPU Configuration		To turn on/off the MLC
Type	Intel(R) Core(TM) 17-9700K CPU @ 3.60GHz 0x906ED	streamer prefetcher.
Speed	3600 MHz	
VMX	Supported	
SMX/TXT	Supported	
Hardware Prefetcher	[Enabled]	
Adjacent Cache Line Prefetch	[Enabled]	
Intel (VMX) Virtualization Technology	[Enabled]	
Active Processor Cores • CPU - Power Management Control	[A11]	++: Select Screen 11: Select Item Enter: Select
		+/-: Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		ESC: Exit





Setup Item	Options	Help Text	Comments
CPU Configuration	·		
Туре			
ID			
Speed			
VMX			
SMX/TXT			
Llaudurana Duafatakan	Enabled	To turn on/off the MLC streamer	
Hardware Prefetcher	Disabled	prefetcher.	
Adjacent Casha Line Drefetch	Enabled	To turn on/off prefetching of	
Adjacent Cache Line Prefetch	Disabled	adjacent cache lines.	
		When enabled, a VMM can utilize	
Intel(VMX) Virtualization	Enabled	the additional hardware capabilities	
Technology	Disabled	provided by Vanderpool	
		technology.	
	All		
Active Brocessor Cores	1	Number of cores to enable in each	
Active Flocesser Coles	2	processor package.	
	3		



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.		
Intel® Speed Shift Technology	Enabled Disabled	Enable/Disable Intel® speed shift technology support.		
Turbo Mode	Enabled			
Tcc Activation Offset				



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*.

Aptio Setup Advanced	Utility – Copyright (C) 2021 Americ	an Megatrends, Inc.
ACPI Settings		Select the highest ACPI sleep
ACPI Sleep State	[S3 (Suspend to RAM)]	state the system will enter when the SUSPEND button is pressed.
		++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.2	0.1275. Copyright (C) 2021 American	Megatrends, Inc.

Setup Item	Options	Help Text	Comments
ACPI Settings			
	Sucpord Disabled	Select the highest ACPI sleep state	Sleep
ACPI Sleep State	Suspend Disabled	the system will enter when the	supported
·	55 (Suspend to RAIVI)	SUSPEND button is pressed.	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*.

Aptio Setup Utility - Advanced	Copyright (C) 2021 Americar	Megatrends, Inc.
Super IO Configuration		Set Parameters of Serial Port
Super IO Chip • Serial Port 1 Configuration • Serial Port 2 Configuration • Serial Port 3 Configuration • Serial Port 4 Configuration • Serial Port 5 Configuration • Serial Port 6 Configuration	178786	++: Select Screen 1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1275. C	opyright (C) 2021 American M	legatrends, Inc.

Setup Item	Options	Help Text	Comments
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).
Serial Port 5 Configuration			Set Parameters of Serial Port 5 (COM5).
Serial Port 6 Configuration			Set Parameters of Serial Port 6 (COM6).



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*.

Serial Port 1 Configuration Serial Port Device Settings Change Settings Device Mode	[Enabled] IO=3F8h; IRQ=4;	Change the Serial Port mode.
Serial Port Device Settings Change Settings Device Mode	[Enabled] IO=3F8h; IRQ=4;	
Change Settings Device Mode		
	[Auto] [232 Mode]	
	Device Mode 422 Mode 232 Mode 485 Mode	<pre>++: Select Screen tl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>

Setup Item	Options	Help Text	Comments
Serial Port 1 Configurat	tion		
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.	



Setup Item	Options	Help Text	Comments
Device Mode	422 Mode 232 Mode 485 Mode		Com1-2 support 422/232/485. com3-6 support 232 only.



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*.

MART FAN Control		MXMO FAN1 Configration
PU FAN1 Mode Setting	[Automatic mode]	
CPU Temperature Limit of OFF	30	
CPU Temperature Limit of Start	35	
CPU Fan1 Start PWM	120	
CPU Slope PWM	[3]	
IXM1 FAN1 Mode Setting	[PWM Manually mode]	
MXM1 FAN1 PWM Control	180	
c Health Status		
PU temperature	: +45 °c	
YS temperature	: +24 °c	
PU_FAN1 Speed	: N/A	↔+: Select Screen
IXM0_FAN1 Speed	: N/A	14: Select Item
IXM1_FAN1 Speed	: 5443 RPM	Enter: Select
CORE	: +1.089 V	+/-: Change Opt.
/IN1	: +1.223 V	F1: General Help
/IN2	: +12.078 V	F2: Previous Values
/IN3	: +5.060 V	F3: Optimized Defaults
/IN4	: +3.332 V	F4: Save & Exit
DAT	: +3.036 V	ESC: Exit

Setup Item	Options	Help Text	Comments
Hardware Monitor		'	
SMART FAN Control			
			When Manual mode
CPUL Fan1 Mode Setting	Automatic mode	CPU Fan control mode	selected, Manual PWM
CPO Faill Mode Setting	Manual mode	select.	Setting shows to set
			FAN PWM Duty.
CPU temperature Limit of			
OFF			
CPU temperature Limit of			
Start			
CPU Fan1 Start PWM			
CPU Slope PWM			
			When Manual mode
MYM1 Fap1 Made Setting	Automatic mode	SYS Fan control mode	selected, Manual PWM
MAMIT Farit Mode Setting	Manual mode	select.	Setting shows to set
			FAN PWM Duty.
MXM1 Fan1 PWM Control			
PC Health Status			



Setup Item	Options	Help Text	Comments
CPU temperature		Shows Current CPU temperature.	NOTE1:Sometimes not the actual temperature value, just indicates temperature tolerance limitation.
SYS temperature			
CPU Fan1 Speed			
MXM0_FAN1 Speed			
MXM1_FAN1 Speed			
Vcore			
VINN1			HW Information.
VINN2			
VINN3			
VINN4			
VBAT			



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*.

SATA Configuration		Enable/Disable SATA Device.
SATA Controller(s) SATA Mode Selection SATA Test Mode	[Enabled] [AHCI] [Disabled]	
Serial ATA Port 1		
Empty		
Software Preserve	Unknown	
Secial ATA Port 2	(cnao teo)	
Emotu		
Software Preserve	Unknown	
Port 2	[Enabled]	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Setup Item	Options	Help Text		Comments
SATA Configuration				
SATA Controller(s) Ena Dis	Enabled	Enable / Disable SATA		
	Disabled	Device.		
SATA Mode Selection	AHCI Mode	Select AHCI.		
SATA Test Mode	Disabled			
Serial ATA Port 1			Shc	w HDD information
Serial ATA Port 2			con	nected.



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	Enabled	Enable/Disable USB Mass Storage Driver	
Support	Disabled	Support.	
USB hardware delays and tir	ne-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.	



3.2.7 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*.

Compatibility Support Module	Configuration	Enable/Disable CSM Support.
CSM Support	[Enabled]	
Boot option filter	[UEFI and Legacy]	
Option ROM execution		
Network Storage Video Other PCI devices	(Legacy) (Legacy) [Legacy] [Legacy]	
		<pre>++: Select Screen f1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>

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.	
Option ROM execution	· · ·		
Network	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.	



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

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*.

Aptio Setup Utility – Copyright (C) 2021 American Advanced	Megatrends, Inc.
NVMe Configuration	
No NVME Device Found	
	<pre>#*: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.20.1275. Copyright (C) 2021 American Me	gatrends, Inc.

Setup Item	Options	Help Text	Comments
NVMe Configuration			
Controllor 0			Show NVMe device
Controller U			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*.

Aptio Setur Advanced	o Utility – Copyright (C) 2021 Am	erican Megatrends, Inc.
Advanced WatchDog Parameters WatchDog Control	[Disabled]	WatchDog function ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.	.20.1275. Copyright (C) 2021 Amer	ican Megatrends, Inc.

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*.

Aptio Setup Advanced	Utility – Copyright (C) 2021 Ame	erican Megatrends, Inc.
PXE Boot Launch LAN1 PXE OpROM Launch LAN2 PXE OpROM	[Disabled] [Disabled]	Enable or Disable Boot Option for Legacy Network Devices.
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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.



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.

Aptio Setup Utility – Copyright (C) 2021 American Main Advanced <mark>Chipset</mark> Security Boot Save & Exit	n Megatrends, Inc.
 System Agent (SA) Configuration POH-IO Configuration 	System Agent (SA) Parameters ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1275. Copyright (C) 2021 American (Megatrends, Inc.

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*.

System Agent (SA) Configurat	ion	Memory Configuration Parameters
SA PCIE Code Version VT-d	7.0.108.64 Supported	
Memory Configuration Graphics Configuration PEG Port Configuration		
		<pre>**: Select Screen f1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
		and a second second
Version 2.20.	1275. Copyright (C) 2021 Am	erican Megatrends, Inc.
Version 2.20.	1275. Copyright (C) 2021 Am	enican Megatrends, Inc.
Version 2.20. Aptio Setup Ut	1275. Copyright (C) 2021 Am ility – Copyright (C) 2021	erican Megatrends, Inc. American Megatrends, Inc.
Version 2.20. Aptio Setup Ut Chipset Graphics Configuration	1275. Copyright (C) 2021 Am ility – Copyright (C) 2021	erican Megatrends, Inc. American Megatrends, Inc. Select which of IGFX/PEG/PCI
Version 2.20. Aptio Setup Ut Chipset Graphics Configuration Primary Display Internal Graphics GTT Size Aperture Size DVMT Pre-Allocated DVMT Total Gfx Mem	1275. Copyright (C) 2021 Am illty – Copyright (C) 2021 [Auto] [Auto] [8M8] [256MB] [32M] [MAX]	enican Megatrends, Inc. American Megatrends, Inc. Select which of IGFX/PEG/PCI Graphics device should be Primary Display Or select SG for Switchable Gfx.
Version 2.20. Aptio Setup Ut Chipset Graphics Configuration Primary Display Internal Graphics GTT Size Aperture Size DVMT Pre-Allocated DVMT Total Gfx Mem	1275. Copyright (C) 2021 Am ility - Copyright (C) 2021 ([Auto] [Auto] [BHB] [255MB] [32M] [MAX]	enican Megatrends, Inc. American Megatrends, Inc. Select which of IGFX/PEG/PCI Graphics device should be Primary Display Or select SG for Switchable Gfx.





Setup Item	Options	Help Text	Comments
System Agent (SA) Configu	ration		
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.
PEG Port Configuration			



Setup Item	Options	Help Text	Comments
Primary IGFX Boot Display	VBIOS Default	Select the Video Device which will be activated during POST. This has no effect if	
	EFP LFP	external graphics present.	

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*.

CH-IO Configuration		Control Detection of the
0 Audio C Power loss	(Enabled) [Power On]	Disabled = MDA will be unconditionally disabled Enabled = MDA will be unconditionally enabled.
		<pre>++: Select Screen f4: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>

Setup Item	Options	Help Text	Comments
PCH-IO Configuration			
HD Audio	Enabled		
AC Dower Loss	Power off	Select AC power state when power	
AC POWEI LUSS	Power on	is re-applied after a power failure	



3.4 Security

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

Aptio Setup Ut Main Advanced Chipset <mark>Se</mark>	ility — Copyright (C) 2021 Ame curity Boot Save & Exit	rican Megatrends, Inc.
Password Description If ONLY the Administrator's then this only limits access only asked for when entering If ONLY the User's password is a power on password and m boot or enter Setup. In Setu have Administrator rights. The password length must be in the following range: Minimum length Maximum length	password is set, to Setup and is Setup. is set, then this wast be entered to p the User will 3 20	Set Administrator Password
Administrator Password User Password		++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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*.

Aptio Setup Util Main Advanced Chipset Secu	ity – Copyright (C) 2021 Ameri rity <mark>Boot</mark> Save & Exit	.can Megatrends, Inc.
Boot Configuration Setup Promot Timeout Bootup NumLock State Quiet Boot	<mark>1</mark> [Off] [Disabled]	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
Boot Option Priorities Boot Option #1 Fast Boot	[UEFI: Built-in EFI Shell] [Disabled]	
		++: Select Screen f4: Select Item Enter: Select +/-: Change Opt.
		Fi: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.12	75. Copyright (C) 2021 America	n Megatrends, Inc.

Setup Item	Options	Help Text	Comments			
Boot Configuration	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.	Nota : Chawad Whan boat			
Boot Option #2		Sets the system boot order.	Note · Showed when boot			
Boot Option #3		Sets the system boot order.	devices existed.			
Fast Boot	Disabled					
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.

Aptio Setup Ut Main Advanced Chipset Se	.ity – Copyright (C) 2021 American Mega rity_Boot_Save & Exit	trends, Inc.
Save Options Save Changes and Exit Discard Changes and Exit Save Changes and Reset Discard Changes and Reset Save Changes Discard Changes Default Options Restore Defaults Save as User Defaults Restore User Defaults Boot Override UEFI: Built-in EFI Shell	++: S ++: S 14: S Enter +/-: F1: C F2: f F3: C F4: S ESC:	system setup after saving changes. Select Screen Select Item r: Select Change Opt. General Help Previous Values Optimized Defaults Save & Exit Exit
Version 2.20.	275. Convright (C) 2021 American Megatre	ends Inc

Setup Item	Options	Help Text	Comments	
Save & Exit Screen				
Save Changes and Exit		Exit system setup after saving the changes.		
Discard Changes and Exit		Exit system setup without saving any changes.	User is prompted for confirmation only if	
Save Changes and Reset		Reset the system after saving the changes.	any of the setup fields were modified.	
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.	



附录

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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