# **MAB-T600**

**Barebone System with RX610H Chipset** 

# **Quick Reference Guide**

1<sup>st</sup> Ed –13 November 2023

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#### **FCC Statement**

THIS DEVICE COMPLIES WITH PART 15 FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.

(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS "A" DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES.

THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTATLLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS.

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To receive the latest version of the user's manual; please visit our Web site at: <a href="http://www.avalue.com">www.avalue.com</a>

# **Cleaning and Disinfecting**

During normal use of MAB-T600, the device may become dirty and should be regularly cleaned.

#### **Cleaning Instructions**

**1.** Turn off the computer before starting clean up. This way, you can see any dirt on the screen; the brightness of the monitor may make you miss some areas.

**2.** Wet a soft, lint-free or microfiber cloth with cleaning agent per manufacturer's instructions or hospital protocol. Wipe the medical PC in a gentle motion to remove dust, oil, or fingerprint smudges.

**3.** Wipe any moisture excess with a dry lint-free cloth to finish cleaning before turning the computer back on.

#### **Cleaning Tools**

Below is a list of some items that may be needed or used when cleaning the medical PC or medical PC peripherals.

Please keep in mind that some components in medical PC components may only be cleaned using a product designed for cleaning that component.

Cleaning agent list: chemical disinfectants which have been tested on the medical PC

#### No. Cleaning agent

- 1. Water
- 2. Alcohol
- 3. Alcohol 75%

#### Caution!



Do not immerse or rinse the MAB-T600 or its peripherals. If you accidentally spill liquid on the device, disconnect the unit from the power source. Contact your Biomed Department regarding the continued safety of the unit before

placing it back in operation.

- Do not spray cleaning agent on the chassis.
- Do not use disinfectants that contain phenol. Do not autoclave or clean the MAB-T600 or its peripherals with strong aromatic, chlorinated, ketone, ether, or Esther solvents, sharp tools or abrasives. Never immerse electrical connectors in water or other liquids.

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# **1. Getting Started**

### **1.1 Safety Precautions**

#### Warning!



Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

#### Caution!



Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

#### **1.2 Packing List**

- 1 x MAB-T600 Barebone system
- Power cord



If any of the above items is damaged or missing, contact your retailer.

## 1.3 System Specifications

System		
	LGA 1700 Socket supports Intel® Alder Lake Core™ i9, Core™ i7,Core™	
Processor	i5, Core™ i3, Pentium, Celeron Processor up to 16 Cores 24 Threads	
	Hybrid. Max TDP 65W	
Platform Controller		
Hub		
Suctom Momory	2 x DIMM slots support Dual Channel DDR5 memory speed up to 4800MHz	
System Memory	with UDIMM, up to 64GB	
<b>BIOS Information</b>	Socket Type 256Mb SPI BIOS	
Watahdag Timar	From Super I/O to drag RESETCON#	
watchuog rimer	256 segments (10sec ~ 255min)	
H/W Status Monitor	CPU temperature monitoring Voltages monitoring CPU fan speed control	
ТРМ	Support onboard TPM 2.0	
COOLER TYPE	ACC-FAN-170-02R	
SBC	RX610H	
Expansion		
M.2 (Key-X, Size,	1 x M 2 E-Key (2230) supports CNV/i with USB2 0 & PCIex1 Gen4 interface	
Signal)		
	1 x Gen 5 PCIe x16 (x16 Physical Black) (Slot 1)	
PCIe (Gen X, Lanes)	1 x Gen 3 PCIe x1 (x4 Physical Open Ended) (Slot 2)	
	2 x Gen 3 PCIe x1 (x16 Physical Yellow) (Slot 3 & 4)	
Storage		
M.2 (Kev-X, Size	1 x M.2 M-Key 2242/2280/22110 NVMe (PCIe x4 + SATA III)	
Signal)	1 x M.2 E-Key 2230 with CNVi Support (PCIe x 1 share with slot4	
	+ USB 2.0)	
2.5" Drive Bay (Height)	2 x 2.5" HDD/SSD Drive	
	(2 x 3.5" HDD/SSD Drive as option)	
Edge I/O (Rear)		
USB Port	2 x USB 2.0 Type A	
	4 x USB 3.2 Gen 1Type A	
HDMI	1 x HDMI 2.0b	
DP	2 x DP ++	
Audio	Line-out, Mic-in	
RJ-45	2 x RJ-45	
Edge I/O (Front)		
USB Port	2 x USB 2.0 (Front I/O)	

Power Button	1 x Power Button (with LED indicator)	
Display		
Graphic Chipset	Intel® Integrated UHD Graphic with Xe Architecture (CPU Dependent)	
Posolution	DP Audio 1.4a (Max Resolution: 3840X2160@60Hz)	
Resolution	HDMI 2.0b (Max Resolution: 3840X2160@60Hz)	
Audio Codec	Realtek HD Audio Codec	
Ethernet		
LAN Chinest	Intel® I219-V Gigabit Ethernet Controller	
LAN Chipset	Intel® I225-LM 2.5 Gigabit Ethernet Controller	
Power Requirement		
Input	100-240 Vac, 8-4 A, 60-50 Hz	
ACPI	Single power ATX	
Power Mode	AT/ATX Mode (Default: ATX mode)	
Power Supply Unit	FSP500M-80PA PSU 100-240V (power 500W)—Medical Grade	
Mechanical & Environment		
Power Type	AT/ATX Mode (Default: ATX mode)	
Power Connector Type	AC in	
Dimension	107(H) X 372(W) X 307(D) (mm)	
Weight	6.4kg packed	
Color	Black	
OS Support	Win10, Linux	
Reliability		
Operating Temp.	Operating Temperature 0°C ~ 40°C (32°F ~ 104°F) Air flow 0.5	
Storage Temp.	-30°C ~ 70°C (-22 ~ 158°F)	
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing	
Dimension (W*L*H) 330*344*160mm (TBD)		
Weight 7 Kg		
	Random Vibration Operation:	
	1. Test PSD : 0.00050513G²/Hz , 0.5 Grms	
	2. System condition : operation mode	
	3. Test frequency : 5~500 Hz	
Vibration Test	4. Test axis : X,Y and Z axis	
	5. Test time : 30 minutes per each axis	
	6. IEC60068-2-64 Test Fh	
	Sine Vibration test (Non-operation)	

	1 Test Acceleration : 2G	
	2 Test frequency : 5~500 Hz	
	3 Sweep : 1 Oct/ per one minute. (logarithmic)	
	4 Test Axis : X,Y and Z axis	
	5 Test time :30 min. each axis	
	6 System condition : Non-Operating mode	
	7. Reference IEC 60068-2-6 Testing procedures	
	1. Wave form : Half Sine wave	
	2. Acceleration Rate : 10g	
	3. Duration Time : 11ms	
Cheek Teet	4. No. of Shock : Z axis 300 times	
Shock lest	5. Test Axis: Z axis	
	6. Operation mode	
	7. Reference IEC 60068-2-27 Testing procedures	
	Test Eb : Bump Test	
	1. Test PSD : 0.026G²/Hz , 2.16 Grms	
Pookago Vibration	2. Test frequency : 5~500 Hz	
	3. Test axis : X,Y and Z axis	
Test	4. Test time : 30 minutes per each axis	
	5. IEC 60068-2-64 Test Fh	
	Package drop test	
	Reference ISTA 2A, Method : IEC-60068-2-32 Test:Ed	
	Test Ea : Drop Test	
Drop Test	1. Test phase : One corner, three edges, six faces	
	2. Test high : 96.5cm	
	3. Package weight : 5Kg	
	4. Test drawing	
IP Rating	IPX1 Grade Protection	
Software Support		
OS Information	Windows 10, Windows 11, Linux	



**Note:** Specifications are subject to change without notice.

### 1.4 System Overview

1.4.1 Front/Rear View



Connectors		
Label	Function	Note
Power	Power on button	
USB 2.0	4 x USB2.0 connector	
USB 3.2	4 x USB3.2 connector	
LAN	2 x RJ-45 Ethernet	suggest using shielded LAN cables to
		increase stability.
DP	2 x DP connector	
HDMI	HDMI connector	
LINE OUT	Line-out audio jack	
MIC IN	Mic-in audio jack	
Power	Power switch	



#### **1.6 Operating Principle**

- (a) Installation:
  - Take the device and accessories from package and put in the suitable place.
  - Check the packing list (accessories).
  - Connect the power cord to the device.
  - Put the plug of power cord into receptacle of power source.
  - Press power button "Power Icon" on the device to start the device.
- (b) Installation for monitor:
  - Plug in the monitor cable (HDMI or DP).
- (c) Installation keyboard and mouse.
  - Plug in mouse and keyboard.
- (d) Operation for Turn ON the system
  - Turn ON the system.
  - Press the power ON/OFF icon firmly to turn power ON/OFF.
  - The power ON/OFF LED will turn blue to indicate power is on.
  - Check with the Icon behavior for power status.

# 2. Hardware Configuration

### Jumper and Connector Setting

For advanced information, please refer to:

1- RX610H included in this manual.



Note: If you need more information, please visit our website: www.avalue.com

#### 2.1 RX610H Overviews



# 2.2 RX610H Jumpers & Connectors list

Jumpers		
Label	Function	Note
CLCMOS1	Clear CMOS	1 x 3 header, pitch 2.00mm
JPSON1	AT/ATX Mode Select	1 x 3 header, pitch 2.00mm
JCOMPWR1~6	COM1~6 POWER SETTING	2 x 3 header, pitch 2.00mm
JPCIESEL1	PCI SELECTION	1 x 3 header, pitch 2.00mm
Connectors		
Label	Function	Note
CPU1	LGA1700 socket	
DIMMA1~B1	DDR5 UDIMM Slot	
PCIEX16_1	PCI-e Gen 5 x16	Physical Black(Slot 1)
PCIEX4_1	PCI-e Gen 3 x1	X4 Physical only(Slot 2)
PCIEX16_3~4	PCI-e Gen 3 x1	X16 Physical only (Slot 3 & 4)
HDMI	HDMI port Connector x 1	
DP12	Display port connector x 2	
USB56	USB2.0 Type A Connector x 1	
LAN1_USB12	RJ-45 Ethernet Connector x 1 USB3.2 Type A Connector x 2	Gigabit Ethernet
LAN2_USB34	RJ-45 Ethernet Connector x 1 USB3.2 Type A Connector x 2	2.5 Gigabit Ethernet
AUDIO1	Audio phone jack	Line-out, Mic-in
CPU_FAN1	CPU Fan Connector	WAFER 1x4P, 2.54mm
CHA_FAN1	Chassis Fan Connector	WAFER 1x4P, 2.54mm
CHA_FAN2	Chassis FAN connector	WAFER 1x4P, 2.54mm
F_PANEL1	Intel Front Panel connector	BOX header 2x5P, 2.54mm
ATX1	ATX power connectors	PWR Conn 2x12P
ATX12V1	12V ATX power connectors	PWR Conn 2x4P

#### 2.3 RX610H Jumpers & Connectors settings

#### 2.3.1 Clear CMOS (CLCMOS1)



Normal\*



**Clear CMOS** 



\* Default

#### 2.3.2 AT/ATX Power Mode Select (JPSON1)



AT mode

ATX mode\*

**-** 1



#### 2.3.3 COM POWER SETTING (JCOMPWR1~6)



Ring\*



1

5



+5V

1	
5	

#### 2.3.4 PCIe Selection (PCISEL)



For E key M.2



For PCIE slot\*



# Note:

PCIe x 1 slot4 share same PCIe x1 signal with M.2 E Key slot

#### 2.3.5 CPU and System fan connectors (CPU\_FAN1, CHA\_FAN1, CHA\_FAN2)





#### 2.3.6 System Panel (F\_PANEL)



2		
1		
1.HDD LED+	2.PWR LED+	
3.HDD LED-	4.PWR LED-	
5.GND	6.Power Button	
7.RST	8.GND	
9.NA		

#### 2.3.7 ATX power connectors (EATXPWR1 & ATX12V1)





ATX



#### 2.3.8 Serial Port connectors (COM1~6)





5. GND	6. DSR#
7. RTS#	8. CTS#
9. RI3xPOWERxJMP	0.010#

1

0,00,00

1. GND 2. TX+ 3. TX-4. GND

5. RX-6. RX+ 7. GND

#### 02 L attt. Ette mus at 0 1.0 Đ ô 0 0 0 ė Ū 0 6 0.0.0 ()e. B++.++ 0

#### 2.3.9 Serial ATA Connector (SATA1~4)

#### 2.3.10 USB connectors (USB910, USB1112)



	1 00 00 00 00 00
1.USB+5V	2.USB+5V
3.USB-	4.USB-
5.USB+	6.USB+
7.GND	8.GND
	10.NC

#### 2.3.11 USB3.2 connector (USB78)



10 000 19		
1	11	
10.NC	19.+5V	
9.USB+	18.USB3_RX-	
8.USB-	17.USB3_RX+	
7.GND	16.GND	
6.USB3_TX+	15.USB3_TX-	
5.USB3_TX-	14.USB3_TX+	
4.GND	13.GND	
3.USB3_RX+	12.USB-	
2.USB3_RX-	11.USB+	
1.+5V		

#### 2.3.12 LPT Port Connector (LPT1)



000000000000000000000000000000000000000		
1	25	
1. LPT_STB#	2. LPT_AFD#	
<ol><li>LPT_PD0</li></ol>	4. LPT_ERR#	
5. LPT_PD1	6. LPT_INIT#	
7. LPT_PD2	8. LPT_SLIN#	
9. LPT_PD3	10. GND	
11. LPT_PD4	12. GND	
13. LPT_PD5	14. GND	
15. LPT_PD6	16. GND	
17. LPT_PD7	18. GND	
19. LPT_ACK#	20. GND	
21. LPT_BUSY	22. GND	
23. LPT_PE	24. GND	
25.LPT_SLCT	26. NC	

#### 2.3.13 8-bit GPIO header (JDIO1)



11	1
1. SIO_GPIO0 3. SIO_GPIO1 5. SIO_GPIO2 7. SIO_GPIO3 9. SMB_CLK_ 11. GND	2. SIO_GPIO4 4. SIO_GPIO5 6. SIO_GPIO6 8. SIO_GPIO7 10. SMB_DATA 12. +5Vsb

#### 2.3.14 Front Audio connector (FP\_AUDIO1)



2		
80	80	000
1		

1.MIC2L	2.GND
3.MIC2R	4.+3.3V
5.LINE2R	6.MIC2-JD
7.SENSEB	8.NC
9.LINE2L	10.LINE2-JD



#### 2.3.15 Amplifier Connector (JAMP1)



#### 2.3.16 SM bus connector (SMB1)







#### 2.3.17 LAN LED status connector (LANLED1)

#### 2.3.18 I2C header (I2C1)









#### 3.1 Introduction

The BIOS setup program allows users to modify the basic system configuration. In this following chapter will describe how to access the BIOS setup program and the configuration options that may be changed.

#### 3.2 Starting Setup

The AMI BIOS<sup>™</sup> is immediately activated when you first power on the computer. The BIOS reads the system information contained in the NVRAM and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

While the BIOS is in control, the Setup program can be activated in one of two ways: By pressing <Del> or <F2> immediately after switching the system on, or By pressing the <Del> or <F2> key when the following message appears briefly at the left-top of the screen during the POST (Power On Self Test).

#### Press <Del> or <F2> to enter SETUP

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to.

#### Press F1 to Continue, DEL to enter SETUP

#### 3.3 Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, use the PageUp and PageDown keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program using the keyboard.

Button	Description
↑	Move to previous item
$\downarrow$	Move to next item
<i>←</i>	Move to the item in the left hand
$\rightarrow$	Move to the item in the right hand
Esc key	Main Menu Quit and not save changes into NVRAM Status Page Setup Menu and Option Page Setup Menu Exit current page and return to Main Menu
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2 key	Previous Values.
F3 key	Optimized defaults
F4 key	Save & Exit Setup

#### • Navigating Through The Menu Bar

Use the left and right arrow keys to choose the menu you want to be in.



Note: Some of the navigation keys differ from one screen to another.

#### • To Display a Sub Menu

Use the arrow keys to move the cursor to the sub menu you want. Then press <Enter>. A " $\geq$ " pointer marks all sub menus.

#### 3.4 Getting Help

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc> or the F1 key again.

#### 3.5 In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the AMI BIOS supports an override to the NVRAM settings which resets your system to its defaults.

The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both BIOS Vendor and your systems manufacturer to provide the absolute maximum performance and reliability. Even a seemingly small change to the chipset setup has the potential for causing you to use the override.

#### 3.6 BIOS setup

When you enter the BIOS, the following screen appears. The BIOS menu screen displays the items that allow you to make changes to the system configuration. To access the menu items, press the up/down/right/left arrow key on the keyboard until the desired item is highlighted, then press [Enter] to open the specific menu.

Main Advanced Chipset Security	Aptio Setup – AMI Boot Save & Exit	
BIOS Information BIOS Vendor Core Version Compliancy Project Version Build Date and Time Access Level	American Megatrends 5.25 0.08 x64 UEFI 2.8; PI 1.7 RX610H #71841 BIOS V0.23 06/15/2022 10:06:30 Administrator	Set the Date. Use Tab to switch between Date elements. Default Ranges: Year: 1998-9999 Months: 1–12 Days: Dependent on month Range of Years may vary.
Memory Information Total Memory Memory Frequency	32768 MB 4800 MHz	
Power Type	[AT Mode]	
System Date System Time	[Wed 07/06/2022] [15:24:39]	11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.22.1284 Copyright (C) 2022 AMI		

General Help —		
† <b>↓</b> ++	: Move	
Enter	: Select	
+/-	: Value	
ESC	: Exit	
F1	: General Help	
F2	: Previous Values	
F3	: Optimized Defaults	
F4	: Save & Exit Setup	
	Ok	

#### 3.6.1 Main Menu

This section allows you to record some basic hardware configurations in your computer and set the system clock.

Main Advanced Chipset Security	Aptio Setup – AMI Boot Save & Exit	
BIOS Information BIOS Vendor Core Version Compliancy Project Version Build Date and Time Access Level	American Megatrends 5.25 0.08 x64 UEFI 2.8; PI 1.7 RX610H #71841 BIOS V0.23 06/15/2022 10:06:30 Administrator	Set the Time. Use Tab to switch between Time elements.
Memory Information Total Memory Memory Frequency Power Type	32768 MB 4800 MHz [AT Mode]	++: Select Screen
System Date System Time	[Wed 07/06/2022] [15:24:51]	<pre>T4: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version	2 22 1284 Conucidht (C) 2022	AMT
VEI S1011	2.22.1204 COPY 18HC (C) 2022	1111

#### 3.6.1.1 System Language

This option allows choosing the system default language.

#### 3.6.1.2 System Date

Use the system date option to set the system date. Manually enter the month, day and year.

#### 3.6.1.3 System Time

Use the system time option to set the system time. Manually enter the hours, minutes and seconds.

**Note:** The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen. Visit the Avalue website (<u>www.avalue.com</u>) to download the latest product and BIOS information.

#### 3.6.2 Advanced Menu

This section allows you to configure your CPU and other system devices for basic operation through the following sub-menus.

Aptio Setup – AMI Main <mark>Advanced</mark> Chipset Security Boot Save & Exit			
<ul> <li>CPU Configuration</li> <li>Power &amp; Performance</li> <li>PCH-FW Configuration</li> <li>Trusted Computing</li> <li>ACPI Settings</li> <li>NCT61260 Super IO Configuration</li> <li>Hardware Monitor</li> <li>SS RTC Wake Settings</li> <li>Serial Port Console Redirection</li> <li>Intel TXT Information</li> <li>VSB Configuration</li> <li>Network Stack Configuration</li> <li>IP Configuration</li> <li>NVMe Configuration</li> <li>Remote Server Configuration</li> </ul>	CPU Configuration Parameters ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit		
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#### 3.6.2.1 CPU Configuration

Aptio Setup - AMI		
CPU Configuration		Displays the P-core Information
▶ Performance–core Information		
ID Brand String VMX SMX/TXT	0x90672 12th Gen Intel(R) Core(TM) 19-12900E Supported Supported	
TXT Crash Code	0x00000000	
TXT SPAD	0x0000000000000000	
Boot Guard Status Boot Guard ACM Policy Status	0x00000000000000000000	
Boot Guard SACM Information	0x0000001000000000	++: Select Screen
Intel (VMX) Virtualization Technology	[Enabled]	T∔: Select Item Enter: Select +/-: Change Opt.
Active Performance-cores	[A11]	F1: General Help
Active Efficient-cores	[A11]	F2: Previous Values
Hyper-Inreading	[Euapieo]	F3: Optimized Defaults F4: Save & Exit ESC: Exit
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#### • Intel (VMX) Virtualization Technology[Enabled]

When enabled, a VMX can utilize the additional hardware compatibilities provided by Vanderpool Technology Configuration options: [Enable] [Disable]

• Active Performance – Cores

Number of P-core to enable in each processor package

#### • Active Efficient-cores

Number of E-core to enable in each processor package

#### Hyper-Threading

Enable or disable Hyper-Threading technology Configuration options: [Enable] [Disable]

#### 3.6.2.2 Power & Performance



#### ● Intel® Speedstep<sup>™</sup> [Enabled]

Allow more than two frequency range to be supported Configuration options: [Enable] [Disable]

Turbo Mode

Enable or Disable processor Turbo mode Configuration options: [Enable] [Disable]

#### • C states

Enable/Disable CPU power management. Allows CPU to go to C states when it's not 100% utilized

Configuration options: [Enable] [Disable]

• Enhance C states

When enabled, CPU will switch to minimum speed when all cores enter C state Configuration options: [Enable] [Disable]

• Package C state limit

Maximum package C state limit setting. CPU default: Leaves to factory default value

Configuration options: [C0/C1] [C2] [C3]

#### 3.6.2.3 PCH-FW configuration

Configure Management Engine Technology Parameters

Advanced	Aptio Setup – AMI	
ME Firmware Version ME Firmware Mode ME Firmware SKU ME Firmware Status 1 ME Firmware Status 2 ME Firmware Status 3 ME Firmware Status 4 ME Firmware Status 5 ME Firmware Status 6 ME State ME UnLock Control	16.0.15.1620 Normal Mode Consumer SKU 0x9000255 0x33850106 0x0000000 0x00004000 0x00004000 0x00000000	When Disabled ME will be put into ME Temporarily Disabled Mode.
		<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
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#### • ME State [Enabled]

When disabled ME will be put into ME temporarily disabled mode Configuration options: [Enable] [Disable]

#### ME unlock control [Lock] When it is Set to unlock, system will shut down for active function Configuration options: [Lock] [Unlock]

#### 3.6.2.4 Trusted Computing

Security device settings

Advanced	Aptio Setup – AMI	
Configuration TPM Device Selection Security Device Support NO Security Device Found	[dTPM] [Disable]	Selects TPM device: PTT or dTPM. PTT - Enables PTT in SkuMgr dTPM 1.2 - Disables PTT in SkuMgr Warning ! PTT/dTPM will be disabled and all data saved on it will be lost.
	TPM Device Selection	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
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- **TPM Device Selection [dTPM]** Select TPM device Configuration options: [dTPM] [PTT]
- Security Device support [Disabled] Enable or Disable BIOS support security device Configuration options: [Enable] [Disable]

#### 3.6.2.5 ACPI Settings

Main	Aptio Setup — AMI	
ACPI Settings		Enables or Disables System
Enable Hibernation	[Enabled] [S3 (Suspend to RAM)]	Sleep State). This option may
S3 Video Repost	[Disabled]	operating systems.
PCIE# Wake from S5 Wake on Ring	[Disabled] [Disabled]	
	[01000100]	
		++: Select Screen
		↑↓: Select Item Enter: Select
		+/−: Change Opt. F1: General Help
		F2: Previous Values F3: Optimized Defaults
		F4: Save & Exit ESC: Exit
	Version 2 22 1284 Convright (C) 20	122 AMT

#### • Enable Hibernation [Enable]

Enable or Disable system ability to Hibernation.

Configuration options: [Enable] [Disable]

#### ACPI Sleep State [S3 only (Suspend to RAM)]

Select the highest ACPI sleep state the system will enter the SUSPEND button is press.

Configuration options: [Suspend Disable] [S3 (suspend to RAM)]

#### • S3 Video Repost [Disabled]

Enable or disable S3 video repost

Configuration options: [Disabled] [Enabled]

#### PCIE# wake from S5 [Disabled]

Enable or disable PCIE wake the system from S5.

Configuration options: [Disabled] [Enabled]

#### Wake on Ring [Disabled]

Enable or disable wake on ring function under ACPI S3/S4/S5.

Configuration options: [Disabled] [Enabled]

#### 3.6.2.6 NCT6126D Super IO configuration

Provide NCT6126D super IO configuration settings

Advanced	Aptio Setup – AMI	
NCT6126D Super IO Configuration		Set Parameters of Serial Port 1
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 > Parallel Port Configuration	NCT6126D	
WatchDog Count Mode WatchDog TimeOut Value Chassis Opened Warning ErP/EuP S5 Support	[Second] O [Disabled] [Disabled]	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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- Enable Hibernation [Enable] Enable or Disable system ability to Hibernation.
- WatchDog count mode [Second]
   WatchDog count mode Selection
   Configuration options: [Second] [Minute]
- WatchDog Timeout value

Fill watchdog timeout value, 0 means disables

- Chassis opened warning [Disabled]
   Select chassis intrusion enabled to Disabled
   Configuration options: [Disabled] [Enabled]
- ErP/EuP S5 Support [Disabled]

Configuration options: [Disabled] [Enabled]

#### 3.6.2.6.1 Serial Port 1 Configuration

Advanced	Aptio Setup – AMI	
Serial Port 1 Configuration		Enable or Disable Serial Port
Serial Port Device Settings	[Enabled] IO=3F8h; IRQ=4;	(609)
Change Settings	[Auto]	
		→+: Select Screen ↑↓: Select Item
		Enter: Select +/−: Change Opt. F1: General Help
		F2: Previous Values F3: Optimized Defaults
		ESC: Exit
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• Serial Port [Enabled]

Enable or Disable serial Port (COM) Configuration options: [Disabled] [Enabled]

Change Setting [Auto]
 Select an optimal settings for super IO device
 Configuration options: as below

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#### 3.6.2.6.2 Serial Port 2 Configuration

• Serial Port [Enabled]

Enable or Disable serial Port (COM) Configuration options: [Disabled] [Enabled]

• Change Setting [Auto]

Advanced	Aptio Setup – AMI	
Serial Port 2 Configuration Serial Port Device Settings Change Settings	[Enabled] IO=2F8h; IRQ=3; [Auto]	Select an optimal settings for Super IO Device
	Change Settings Auto ID=2F8h: IRQ=3; ID=3F8h: IRQ=3,4,5,6,7,9,10,11,12 ID=2F8h: IRQ=3,4,5,6,7,9,10,11,12 ID=3E8h: IRQ=3,4,5,6,7,9,10,11,12 ID=2E8h: IRQ=3,4,5,6,7,9,10,11,12	Select Screen Select Item r: Select Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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#### 3.6.2.6.3 Serial Port 3 Configuration

#### • Serial Port [Enabled]

Enable or Disable serial Port (COM) Configuration options: [Disabled] [Enabled]

#### • Change Setting [Auto]

Advanced	Aptio Setup — AMI	
Advanced Serial Port 3 Configuration Serial Port Device Settings Change Settings COM Mode Select RS485 Auto Flow RS422/485 Terminal	[Enabled] IO=3E8h; IRQ=5; [Auto] [RS232] [Disabled] Change Settings Auto IO=3E8h; IRQ=5; IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12 IO=220h; IRQ=3,4,5,6,7,9,10,11,12 IO=228h; IRQ=3,4,5,6,7,9,10,11,12	Select an optimal settings for Super IO Device Select Screen Select Item r: Select Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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#### 3.6.2.6.4 Serial Port 4 Configuration

#### • Serial Port [Enabled]

Enable or Disable serial Port (COM) Configuration options: [Disabled] [Enabled]

#### • Change Setting [Auto]

Advanced	Aptio Setup — AMI	
Serial Port 4 Configuration		Select an optimal settings for
Serial Port Device Settings	[Enabled] IO=2E8h; IRQ=10;	Super To Device
Change Settings		
	Change Settings — Auto IO=2E8h; IRQ=10; IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12 IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12 IO=220h; IRQ=3,4,5,6,7,9,10,11,12 IO=228h; IRQ=3,4,5,6,7,9,10,11,12	Select Screen Select Item r: Select Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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#### 3.6.2.6.5 Serial Port 5 Configuration

#### • Serial Port [Enabled]

Enable or Disable serial Port (COM) Configuration options: [Disabled] [Enabled]

#### • Change Setting [Auto]

Advanced	Aptio Setup - AMI	
Serial Port 5 Configuration		Select an optimal settings for
Serial Port Device Settings	[Enabled] IO=220h; IRQ=6;	Super ID Device
Change Settings		
	Change Settings Auto ID=228h; IRQ=15; ID=328h; IRQ=3,4,5,6,7,9,10,11,12 ID=228h; IRQ=3,4,5,6,7,9,10,11,12 ID=228h; IRQ=3,4,5,6,7,9,10,11,12 ID=228h; IRQ=3,4,5,6,7,9,10,11,12	Select Screen Select Item r: Select Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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#### 3.6.2.6.6 Serial Port 6 Configuration

#### • Serial Port [Enabled]

Enable or Disable serial Port (COM) Configuration options: [Disabled] [Enabled]

#### • Change Setting [Auto]

	Aptio Setup — AMI	
Advanced		
Serial Port 6 Configuration		Select an optimal settings for
Serial Port Device Settings	[Enabled] IO=228h; IRQ=15; [Auto]	
	Change Settings	
	Auto IO=220h; IRQ=6; IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12 IO=226h; IRQ=3,4,5,6,7,9,10,11,12 IO=226h; IRQ=3,4,5,6,7,9,10,11,12	Select Screen Select Item r: Select Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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#### 3.6.2.6.7 Parallel Port Configuration

#### • Parallel Port [Enabled]

Enable or Disable parallel Port (LPT) Configuration options: [Disabled] [Enabled]

#### • Change Setting [Auto]

Select an optimal settings for super IO device Configuration options: as below

Advanced	Aptio Setup — AMI	
Parallel Port Configuration		Select an optimal settings for
Parallel Port Device Settings	[Enabled] IO=378h; IRQ=7;	Super IU Device
Change Settings Device Mode	[Auto] [STD Printer Mode]	
	Change Settings Auto ID=378h; IRQ=7; ID=378h; IRQ=5,6,7,9,10,11,12; ID=278h; IRQ=5,6,7,9,10,11,12; ID=3BCh; IRQ=5,6,7,9,10,11,12;	: Select Screen : Select Item ter: Select -: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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#### • Device mode [STD Printer Mode]

Change the printer port mode

Configuration options: as below

Advanced	Aptio Setup – AMI	
Parallel Port Configuration		Change the Printer Port mode.
Parallel Port Device Settings	[Enabled] IO=378h; IRQ=7;	
Change Settings Device Mode	[Auto] [STD Printer Mode]	
	Device Mode STD Printer Mode SPP Mode EPP-1.9 and SPP Mode ECP Mode ECP Mode ECP and EPP 1.9 Mode ECP and EPP 1.7 Mode	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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#### 3.6.2.7 Hardware monitor

Display Hardware monitor information

Advanced	Aptio Setup — AMI	
PC Health Status PC Health Status Smart Fan CPU Temperature (PECI) SYS Temperature CPU_FAN Speed CHA_FAN1 Speed CHA_FAN2 Speed VORE +5V8 +5V +12V 3VSB 3VSC VBAT AVSB	: +42 C : +33 C : 1000 RPM : N/A : N/A : +0.968 V : +5.068 V : +5.056 V : +12.192 V : +3.312 V : +3.312 V : +3.312 V : +3.328 V	Smart Fan function page ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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#### 3.6.2.7.1 Smart FAN

Advanced	Aptio Setup – AMI	
Smart Fan Smart Fan Function	[Enabled]	Smart Fan Function Enable/Disable
▶ Smart Fan Mode Configuration		
		++: Select Screen
		t↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values
		F3: Optimized Defaults F4: Save & Exit ESC: Exit
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# Smart FAN Function [Enabled] Smart fan function Enable/Disabled

Configuration options: [Enabled] [Disabled] [Manual]

#### 3.6.2.7.1.1 Smart FAN mode Configuration

Setting different FAN on this motherboard

Advanced	Aptio Setup — AMI	
Smart Fan Mode Configuration		CPU Smart Fan Target Temperature
CPU_FAN1 Smart Fan Target CPU_FAN1 MIN.FAN Speed(%)	[55 C] [12.5%]	
CHA_FAN1 Smart Fan Target CHA_FAN1 MIN.FAN Speed(%)	[55 C] [12.5%]	
CHA_FAN2 Smart Fan Target CHA_FAN2 MIN.FAN Speed(%)	[55 C] [12.5%]	
		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

• Smart FAN1/CPU\_FAN1/CHA\_FAN1 FAN Target Smart FAN target temperature

Configuration options: Please see below picture

Advanced	Aptio Setup - AMI	
Smart Fan Mode Configuration		CPU Smart Fan Target
CPU_FAN1 Smart Fan Target CPU_FAN1 MIN.FAN Speed(%)	[55 C] [12.5%]	Temperature
CHA_FAN1 Smart Fan Target CHA_FAN1 MIN.FAN Speed(%)	[55 C] [12.5%]	
CHA_FAN2 Smart Fan Target CHA_FAN2 MIN.FAN Speed(%)	CPU_FAN1 Smart Fan Target — Disabled 40 C 45 C 55 C 55 C 60 C 65 C 70 C	Select Screen Select Item er: Select : Change Opt. General Heip F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Ve	rsion 2.22.1284 Copyright (C) 202	2 AMI

CPU\_FAN1/CHA\_FAN1/CHA\_FAN2 MIN.FAN Speed (%)
 CPU or Chassis Smart FAN minimum settings
 Configuration options: Please see below picture

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Smart Fan Mode Configuration	CPU Smart Fan minimum settings
CPU_FAN1 Smart Fan Target [55 C] CPU_FAN1 MIN.FAN Speed(%) [12.5%]	
CHA_FAN1 Smart Fan Target [55 C] CHA_FAN1 MIN.FAN Speed(%) [12.5%]	
CHA_FAN2 Smart Fan Target CHA_FAN2 MIN.FAN Speed(%) 12.5% 25% 37.5% 50% 62.5% 75% 87.5%	Select Screen Select Item er: Select : Change Opt. General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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#### 3.6.2.8 S5 RTC wake settings

Wake system from S5       [Disabled]       Enable or disable System wake on alarm event. When enabled, System will wake on the hr::min::sec.         ++: Select Screen       11: Select Item Enter: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	Advanced	Aptio Setup – AMI	
++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	Wake system from S5	[Disabled]	Enable or disable System wake on alarm event. When enabled, System will wake on the hr::min::sec.
			<pre>+: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>

#### • Wake system from S5 [Disabled] Enabled or Disabled system wake on alarm event Configuration options: [Enabled] [Disabled]

#### 3.6.2.9 Serial Port Console Redirection

Advanced	Aptio Setup — AMI	
COM1 Console Redirection ▶ Console Redirection Settings	[Disabled]	Console Redirection Enable or Disable.
		<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
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#### • Console Redirection [Disabled]

Enabled or Disabled COM1 Console redirection Configuration options: [Disabled][Enabled]

#### 3.6.2.9.1 Console Redirection settings

Advanced	Aptio Setup — AMI	
COM1 Console Redirection Settings Terminal Type Bits per second Data Bits Parity Stop Bits Flow Control VT-UTF8 Combo Key Support Recorder Mode Resolution 100x31 Putty KeyPad	[ANSI] [115200] [8] [None] [1] [None] [Enabled] [Disabled] [Disabled] [VT100]	Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100Plus: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes. ++: Select screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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#### • Terminal Type[ANSI]

Select terminal type

Configuration options: [VT100][VT100Plus][VT-UTF8][ANSI]

#### • Bits per second[115200]

Select serial port transmission speed

Configuration options: [9600][19200][38400][57600][115200]

#### • Bits per second[115200] Select data bits

Configuration options: [7][8]

#### • Parity[None]

A parity bit can be sent with the data bits to detect some transmission errors Configuration options: [None][Even][Odd][Mark][Space]

#### • Stop Bits[1]

Stop bits indicate the end of a serial data package

Configuration options: [1][2]

#### • Flow Control[None]

Flow control can prevent data loss from buffer overflow.

Configuration options: [None][Hardware RTS/CTS

#### • VT-UTF8 Combo key Support [Enabled]

Enable VT-UTF8 combination key support for ANSI/VT100 terminals Configuration options: [Enabled] [Disabled]

#### • Recorder Mode [Disabled]

With this mode enabled only text will be sent.

Configuration options: [Enabled] [Disabled]

#### • Resolution 100x31 [Disabled]

Enables or disables extended terminal resolution

Configuration options: [Enabled] [Disabled]

#### • Putty Keypad [VT100]

Selects function key and keypad on putty

Configuration options: [VT1000] [LINUX][XTERMR6][SCO][ESCN][VT400

#### 3.6.2.10 intel TXT information

Display Intel TXT information. This depends on CPU sku.

Advanced	Aptio Setup – AMI	
Intel TXT Information Chipset BiosAcm Chipset Txt Cpu Txt	Production Fused Debug Fused Supported Supported	
Error Code Class Code Major Code Minor Code	None None None None	
		<pre>++: Select Screen f1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
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#### 3.6.2.11 USB Configuration

Advanced	Aptio Setup — AMI	
USB Configuration		Enable/Disable USB Mass
USB Module Version	28	
USB Controllers: 1 XHCI USB Devices: 1 Drive, 1 Keyboard, 2 H	ubs	
USB Mass Storage Driver Suppor Mass Storage Devices: KingstonDataTraveler 3.0PM	t [Enabled] USB Mass Storage Driver Suppor sabled abled	t lect Screen lect Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Ver	sion 2.22.1284 Copyright (C) 20	D22 AMI

• USB Mass Storage Driver Support [Enabled]

Enable or Disable USB Mass Storage Driver Support

Configuration options: [Enabled][Disabled]

 Mass Storage Devices [Auto]
 Mass Storage device emulation Type. "Auto" enumerates device according to its media format

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Advanced	Aptio Setup — AMI	
USB Configuration USB Module Version	28	Mass storage device emulation type. 'AUTO' enumerates devices according to their
USB Controllers: 1 XHCI USB Devices: 1 Drive, 1 Keyboard, 2 Hubs		media format. Optical drives are emulated as 'CDROM', drives with no media will be emulated according to a drive type.
USB Mass Storage Driver Sup Mass Storage Devices: KingstonDataTraveler 3.0PMA Hard D CD-ROM	ngstonDataTraveler 3.0PMAP – FDD visk	Select Screen Select Item r: Select Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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#### 3.6.2.12 Network Stack Configuration

Network Stack setting

Advanced	Aptio Setup – AMI	
Network Stack IPv4 PXE Support IPv6 PXE Support PXE boot wait time Media detect count	[Enabled] [Disabled] [Disabled] 0 1	Enable/Disable UEFI Network Stack ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
V	ersion 2.22.1284 Copyright (C	) 2022 AMI

#### • Network Stack [Disabled]

Enabled/Disabled UEFI Network Stack

Configuration options: [Enabled][Disabled]

#### • IPv4 PXE Support [Disabled]

Enabled or disabled IPv4 PXE boot Support

Configuration options: [Enabled][Disabled]



Enabled or disabled IPv6 PXE boot Support

Configuration options: [Enabled][Disabled]

• PXE boot wait time

Wait time in seconds to press ESC key to abort the PXE boot.

#### • Media detect count

Number of time the presence of media will be checked

#### 3.6.2.13 IP Configuration

Advanced	Aptio Setup — AMI	
IP Configuration Settings		Allows user to set IP.
Provides the Options to Configu	re the IP Address	Disabled → IP won't set Every Boot → Sets IP on every boot On Demand → liser has to set
		IP using IPConfig interface
Vers	Auto Configuration Disabled Every Boot On Demand	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit 2 AMI

#### • Auto Configuration[Disabled]

Allow user to set IP. Disabled IP won't set Every Boot Sets IP on every boot On demand User has to set IP using IPConfig interface.

#### 3.6.2.14 NVMe Configuration

Display NVMe controller or Drive information

Advanced	Aptio Setup – AMI	
NVMe Configuration		
No NVME Device Found		↔: Select Screen
		<pre>14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
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#### 3.6.2.15 Remote Server Configuration

Advanced	Aptio Setup – AMI	
Remote Server Configuration Sett	ings	Enable to communicate with
Remote Firmware Management		then communication will not happen with management server
Auto Server Searching Server Address Server Port Number Clear Enrollment Enrollment Status Connection status with server	[Enable] 0.0.0.0 8443 Not Enrolled Not Connected - Remote Firmware Management sable able	Select Screen Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Versi	on 2.22.1284 Copyright (C) 2	022 AMI

#### • Remote Firmware Management [Enabled]

Enable to communicate with management server.

Configuration options: [Disabled][Enabled]

#### • Auto Server searching [Enabled]

Enabled to obtain DHCP server IP automatically. Disabled to provide Server IP manually. Need to do clear Enrolment, if server is changed to DHCP.

#### 3.6.3 Chipset

Apt: Main Advanced Chipset Security Boot	o Setup - AMI Save & Exit
<ul> <li>System Agent (SA) Configuration</li> <li>PCH-IO Configuration</li> </ul>	System Agent (SA) Parameters ++: Select Screen 1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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#### 3.6.3.1 System Agent (SA) Configuration

Chipset	Aptio Setup – AMI	
System Agent (SA) Configuration		Memory Configuration Parameters
VT-d	Supported	
<ul> <li>Memory Configuration</li> <li>Graphics Configuration</li> <li>PCI Express Configuration</li> </ul>		
VT-d	[Enabled]	
		<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
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#### • VT-d [Enabled]

VT-d capability

#### 3.6.3.1.1 Memory Configuration

Maximum Value of TOLUD. Dynamic assignment would adjust TOLUD automatically based on largest MMIO length of installed graphic controller.

Chipset	Aptio Setup - AMI	
Memory Configuration Memory RC Version Memory Frequency tCL-tRCD-tRP-tRAS Total Memory DIMM_A1 Size Number of Ranks Manufacturer DIMM_B1 Max TOLUD	0.0.3.58 4800 MHz 40-39-39-77 Max TOLUD Dynamic 1 GB 1.25 GB 1.5 GB 1.5 GB 2 GB 2 CB 2.5 GB 2.5 GB 3.25 GB 3.25 GB 3.5 GB	Maximum Value of TOLUD. Dynamic assignment would adjust TOLUD automatically based on largest MMIO length of installed graphic controller ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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#### 3.6.3.1.2 Graphics Configuration

Graphic configuration settings

Chipset	Aptio Setup — AMI	
Graphics Configuration Primary Display Internal Graphics PSMI SUPPORT DVMT Pre-Allocated	[Auto] [Auto] [Disabled] [60M]	Select which of IGFX/PEG/PCIE Graphics device should be Primary Display Or select HG for Hybrid Gfx.
		<pre>11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
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#### • Primary Display [Auto]

Select which of IGFX/PEG/PCIE graphic device should be primary display or select HG for Hybrid Gfx.

Configuration options: [Auto] [IGFX][PEG slot][PCIE]

#### • Internal Graphics [Auto]

Keep IGFX enabled based on the setup options Configuration options: [Auto] [disabled][enabled]

#### • PSMI Support [Disabled]

**PSMI** eabled/Disabled

Configuration options: [Disabled][Enabled]

#### • DVMT Pre-allocated [60M]

Select DVMT 5.0 Pre-allocated (Fixed) Graphics memory size used by the internal graphics device.

Configuration options: As below picture



#### **MAB-T600**

3.6.3.1.3 PCI Express Configuration



#### • Detect Non-compliance Device [Disabled]

Detect Non-compliance Device in PEG Configuration options: [Disabled][Enabled]

#### 3.6.3.1.3.1 PCI Express Root Port 2 (x16 slot1)

Chipset	Aptio Setup – AMI	
PCI Express Root Port 2 ASPM PCIe Speed	[Enabled] [Disabled] [Auto]	Control the PCI Express Root Port. ++: Select Screen
		<pre>H: Select item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
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#### • PCI Express Root Port 2[Enabled]

Control the PCI express Root Port

Configuration options: [Disabled][Enabled]

#### • ASPM [Disabled]

Set the ASPM level

Configuration options: [Disaled] [L0S][L1][L0sL1]

#### • PCIe Speed [Auto]

**Configure PCIe Speed** 

Configuration options: [Auto][Gen1][Gen2][Gen3][Gen4][Gen5]

#### 3.6.3.2 PCH-IO Configuration



#### • Lan1 Controller [Enabled]

Enable or Disable onboard LAN1

Configuration options: [Disabled][Enabled]

• Lan1 PXE OpROM [Disabled]

Enabled or Disabled boot option for LAN1 controller

Configuration options: [Disabled][Enabled]

#### Wake on LAN Enabled [Disabled]

Enable or Disable integrated LAN to wake the system

Configuration options: [Disabled][Enabled]

- Lan2 Controller [Enabled]
   Enable or Disable onboard LAN2
   Configuration options: [Disabled][Enabled]
- Lan2 PXE OpROM [Disabled]
   Enabled or Disabled boot option for LAN2 controller
   Configuration options: [Disabled][Enabled]
- Flash Protection Range Registers(FPRR) [Disabled]
   Enabled Flash Protection Range Registers
   Configuration options: [Disabled][Enabled]
- GPIO Group Control [Disabled]

Configure the digital GPIO pins

Configuration options: [Disabled][Enabled]

#### • Amplifier GAIN(db) [15.3db]

Select Amplifier GAIN value

Configuration options: [15.3db][21.2db][27.2db][31.8db]

#### 3.6.3.2.1 PCI Express Configuration

Aptio Setup – AMI Chipset	
PCI Express Configuration	PCI Express Root Port Settings.
<ul> <li>PCI Express Root Port 1(x4 Slot 2)</li> <li>PCI Express Root Port 2(x16 Slot 3) PCI Express Root Port 3(LAN2)</li> <li>PCI Express Root Port 4(x16 Slot 4 &amp; M.2 E KEY)</li> <li>PCI Express Root Port 5(x4 Key M) PCI Express Root Port 15(LAN1)</li> </ul>	
	<pre>++: Select Screen f1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
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#### 3.6.3.2.1.1 PCI Express Root Port 1(x4 slot2)

#### • PCI Express Root Port 1 [Enabled]

Control the PCI Express Port

Configuration options: [Disabled][Enabled]

#### • ASPM Support [Disabled]

Set the ASPM level: Force L0s- Force all links to L0s State; Auto- BIOS auto configure; Disabled- Disables ASPM

Configuration options: [Disabled][L1][Auto]

#### • PCIe Speed [Auto]

Select PCI Express Port speed

Configuration options: [Auto][Gen1][Gen2][Gen3] [Gen4]

#### • Detect Non-compliance device [Disabled]

Detect non-compliance PCI express Device, If enabled, it will take more time at Post time.

#### Aptio Setup - AMI Chipset Control the PCI Express Root ASPM 2 Port. [Disabled] PCIe Speed [Auto] Detect Non-Compliance Device [Disabled] ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit 2.1284 Copyright (C)

#### 3.6.3.2.1.2 PCI Express Root Port 2(x16 slot3)

#### PCI Express Root Port 2 [Enabled]

Control the PCI Express Port

Configuration options: [Disabled][Enabled]

#### • ASPM 2 [Disabled]

Set the ASPM level: Force L0s- Force all links to L0s State; Auto- BIOS auto configure; Disabled- Disables ASPM

Configuration options: [Disabled][L1][Auto]

#### • PCIe Speed [Auto]

Select PCI Express Port speed

Configuration options: [Auto][Gen1][Gen2][Gen3] [Gen4]

#### Detect Non-compliance device [Disabled]

Detect non-compliance PCI express Device, If enabled, it will take more time at Post time.

#### Aptio Setup - AMI Chipset Control the PCI Express Root ASPM 4 [Disabled] Port. [Auto] PCIe Speed Detect Non-Compliance Device [Disabled] ↔: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

#### 3.6.3.2.1.3 PCI Express Root Port 4(x16 slot4 & M.2 E key)

#### PCI Express Root Port 4 [Enabled]

Control the PCI Express Port

Configuration options: [Disabled][Enabled]

#### • ASPM 4 [Disabled]

Set the ASPM level: Force L0s- Force all links to L0s State; Auto- BIOS auto configure; Disabled- Disables ASPM

Configuration options: [Disabled][L1][Auto]

#### • PCle Speed [Auto]

Select PCI Express Port speed

Configuration options: [Auto][Gen1][Gen2][Gen3] [Gen4]

#### • Detect Non-compliance device [Disabled]

Detect non-compliance PCI express Device, If enabled, it will take more time at Post time.

Chips	set	Aptio Setup – AMI	
PCI Express Root Port ASPM 5 PCIe Speed Detect Non-Compliance	5 Device	[Enabled] [Disabled] [Auto] [Disabled]	Control the PCI Express Root Port.
			<pre>++: Select Screen 1↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
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#### 3.6.3.2.1.4 PCI Express Root Port 5(x4 Key M)

#### • PCI Express Root Port 5 [Enabled]

Control the PCI Express Port

Configuration options: [Disabled][Enabled]

#### • ASPM 5 [Disabled]

Set the ASPM level: Force L0s- Force all links to L0s State; Auto- BIOS auto configure; Disabled- Disables ASPM

Configuration options: [Disabled][L1][Auto]

#### • PCle Speed [Auto]

Select PCI Express Port speed

Configuration options: [Auto][Gen1][Gen2][Gen3] [Gen4]

#### • Detect Non-compliance device [Disabled]

Detect non-compliance PCI express Device, If enabled, it will take more time at Post time.

#### 3.6.3.2.2 SATA Configuration

Chipset	Aptio Setup – AMI	
SATA Configuration		Enable/Disable SATA Device.
SATA Controller(s) SATA Mode Selection	[Enabled] [AHCI]	
Serial ATA Port 1(M.2 KeyM) Software Preserve Port 1(M2 Port)	Empty Unknown [Enabled]	
Serial ATA Port 2 Software Preserve Port 2	Empty Unknown [Enabled]	
Serial ATA Port 3 Software Preserve Port 3	Empty Unknown [Enabled]	++: Select Screen 14: Select Item Enter: Select +/-: Change Ont.
Serial ATA Port 4 Software Preserve Port 4	Empty Unknown [Enabled]	F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Versi	on 2 22 1284 Conwright (C	) 2022 AMT

#### • SATA Controller(s) [Enabled]

Enable or Disable SATA device

Configuration options: [Enabled][Disabled]

#### • SATA Mode Selection [AHCI]

Determines how SATA controller operate

Configuration options: [AHCI]

#### • Port 1(M2 Port) [Enabled]

Enable or Disable SATA port 1

Configuration options: [Enabled][Disabled]

#### Port 2 [Enabled]

Enable or Disable SATA port 2

Configuration options: [Enabled][Disabled]

#### • Port 3 [Enabled]

Enable or Disable SATA port 3

Configuration options: [Enabled][Disabled]

#### • Port 4 [Enabled]

Enable or Disable SATA port 4

Configuration options: [Enabled][Disabled]

#### 3.6.3.2.3 USB Configuration

Chipset	Aptio Setup — AMI	
USB Configuration		Enable/Disable USB Standby Power.
USB12 Standby Power USB34 Standby Power USB56 Standby Power USB78 Standby Power USB910 Standby Power USB1112 Standby Power	[Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled]	
		<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
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#### • USB12 Standby Power [Enabled]

Enable or Disable USB standby power Configuration options: [Disabled] [Enabled]

• USB34 Standby Power [Enabled]

Enable or Disable USB standby power Configuration options: [Disabled] [Enabled]

### USB56 Standby Power [Enabled]

Enable or Disable USB standby power Configuration options: [Disabled] [Enabled]

- USB78 Standby Power [Enabled]
   Enable or Disable USB standby power
   Configuration options: [Disabled] [Enabled]
- USB910 Standby Power [Enabled]
   Enable or Disable USB standby power
   Configuration options: [Disabled] [Enabled]
- USB1112 Standby Power [Enabled]
   Enable or Disable USB standby power
   Configuration options: [Disabled] [Enabled]

#### 3.6.3.2.4 HD audio Configuration



#### • HD audio [Enabled]

Control Detection of the HD-Audio device.

Configuration options: [Disabled] [Enabled]

#### 3.6.3.2.5 Serial IO Configuration

Chipset	Aptio Setup – AMI	
SerialIo Configuration I2CO Controller I2C2 Controller	[Enabled] [Enabled]	Enables/Disables SerialIo Controller If given device is Function 0 PSE disabling is skipped_PSE
▶ Serial IO I2CO Settings ▶ Serial IO I2C2 Settings		default will remain and device PCI CFG Space will still be visible. This is needed to allow PCI enumerator access functions above 0 in a multifunction device. The following devices depend
		++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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#### • I2C0 Controller [Enabled]

Enabled/Disabled Serial IO Controller

Configuration options: [Disabled] [Enabled]

#### • I2C2 Controller [Enabled]

Enabled/Disabled Serial IO Controller

Configuration options: [Disabled] [Enabled]

#### 3.6.4 Security

Aptio Setup – AMI Main Advanced Chipset <mark>Security</mark> Boot Save & Exit		
Password Description If ONLY the Administrator's pas then this only limits access to only asked for when entering Se If ONLY the User's password is is a power on password and must boot or enter Setup. In Setup t have Administrator rights. The password length must be in the following range: Minimum length Maximum length	sword is set, Setup and is tup. set, then this be entered to he User will 3 20	Set Administrator Password
Administrator Password User Password		14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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• Administrator Password

Set Administrator Password

• User Password

Set User Password

#### 3.6.5 Boot



#### • Setup Prompt Timeout [1]

Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

#### Bootup NumLock State [On]

Select the keyboard NumLock state

Configuration options: [On] [Off]

#### Quick Boot [Disable]

Enable or disable Quick Boot option

Configuration options: [Disabled] [Enabled]

#### Boot mode select [UEFI]

Select boot mode LEGACY/UEFI

Configuration options: [LEGACY] [UEFI]

#### UEFI USB Key Drive BBS Priorities

Specifies the boot device priority sequence from available UEFI USB key Drives.

#### UEFI Application Boot Priorities

Specifies the boot device priority sequence from available UEFI Application.

#### 3.6.6 Save & Exit



#### Save changes and Exit

Exit system setup after saving the changes.

#### Discard changes and Exit

Exit system setup without saving the changes.

#### • Save changes and Reset

Reset the system after saving the changes.

#### Restore Defaults

Restore/Load default values for all the setup option.

#### Launch EFI Shell from filesystem device

Attempts to launch EFI shell application from one of the available filesystem devices.

#### AMIFWUpdate

Launches AMIFWUpdate.

