

ALD-75 ATX Motherboard



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ALD75 Motherboard

User Manual

(Version 1.0)

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NO.	Description	Issue Date:
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Chapter 1 Product Introduction

1.1 Brief Introduction

The ALD-75 is an ATX motherboard based on the Intel Alder Lake-S (FCLGA1700 socket) processor with Z690 chipset.

1.2 Parameters

CPU: PCH Z690 + Intel Alder Lake-S series processor

Memory: 4x UDIMM DDR4-3200MHz, maximum capacity for single slot:32GB, maximum memory capacity in total: 128GB.

GPU: Integrated Graphics varies on the processor SKU. It provides 1x HDMI2.0b, 1xDVI-I interfaces for display.

Storage: 1 x M.2_Key M type 2280 for NVMe/SATA SSD, 4 x SATA3.0 standard interfaces.

USB: 4x USB3.2Gen 1 ports, 2xUSB3.2 onboard headers, 2xUSB2.0 ports, 4x USB2.0 onboard headers.

PS/2: 1x PS/2 interface (supports mouse and keyboard 2-in-1, default support: PS/2 keyboard.)

Ethernet: Two Intel Gigabit Ethernet Controllers (1x Intel i219 Date Rate Per Port: 1.0Gbps + 1x Intel i225 Data

Rate Per Port: 2.5 Gbps)

Audio: Realtek High-Definition Audio Codec, support rear audio ports: Line_out, Line_in and Mic_in; front

Line out, Mic-in onboard headers.

Serial I/O: 6x RS232 COM by default. The COM5, COM 6 can be set as RS485/RS422 by jumper.

Expansion: 1x PCIe16X, 5x PCIe4X, 1x PCIe2X

Other I/O: 1*GPIO header, 1x LPT header

Dimension: 304.8mm x 218.44mm

Power: ATX_24PIN+2*8 PIN

Operating Temperature: -20°C~60°C

1.3 Connector Diagram





Chapter 2 Hardware

2.1 Installations

Please refer to the following steps for installations:

- 1. Read the user manual carefully to make sure all the adjustments on the ALD75 are correct.
- 2. Installing the Memory:
 - Press the ejector tab of the memory slot outwards with your fingertips.
 - Hold the memory module and align the key to the module with that on the memory slot.
 - Gently push the module into the slot until the ejector levers return completely to the closed position, holding the module in place when the module touches the bottom of the slot. To remove the module, press the ejector levers outwards to unseat the module.
- 3. Installing the expansion cards:
 - Locate the expansion slots and remove the screw, insert the cards into the slot at a 45-degree angle then attach the screw to the expansion cards, gently press down on it then install the screw back.
- 4. Connect all signal wires, cables, panel control wiring, and power supplies.
- 5. Start the computer and complete the setup of the BIOS program.

The board's components are integrated circuits and can easily be damaged by Electrostatic Discharge or ESD; therefore, please follow the instructions:

- Hold the board's edge when handing, and do not touch onboard pins, components, or plug sockets.
- When touching integrated circuit components (such as CPU, RAM, etc.), please wear an antistatic wrist strap/glove to avoid electrostatic discharge damage to the board or other sensitive components.
- Before installing the integrated circuits/sensitive components, place the sensitive components in anti-static bags to keep them safe from ESD.
- Please make sure the power switch is OFF before plugging the power plug.

2.2 Jumper Setting

Please configure the jumpers according to your requirements before installing the hardware.

How to identify the first header of jumpers and pins: Observe the mark beside the jumper or pins and find the header marked by "1" or bold line or triangular symbol. Or observe the rear panel and the header with a square solder pad is the first header.

2.3 Memory Slots

The board is equipped with four UDIMM DDR4 slots, with a memory frequency of 3200MHz. It supports a maximum capacity of 32GB for a single slot and a maximum memory capacity of 128GB in total.

Attention: Make sure to hold the memory module and align the key to the module with that on the memory slot. While choosing a memory module, please make sure the module matches the specification.

2.4 Display Interfaces

The board is equipped with one HDMI2.0b standard interface (supporting HDCP 2.3) and one DVI-I interface (compatible with analog and digital signals).

2.5 Storage (Screen Printing: SATA1, SATA2, SATA3, SATA4, M.2-N)

The board provides 1 x M.2_Key M type 2280 for NVMe/SATA SSD, 4 x SATA3.0 standard interfaces.

2.6 USB, PS/2 Interfaces (Screen Printing: F-USB20, F-USB21, USB/KB, F-USB30)

The board supports 4x USB3.2 Gen 1 standard ports, 2x USB3.2 Gen 1 onboard pins/headers, 2xUSB2.0 ports, 4x USB2.0 onboard pins/headers 2.54mm for spacing, and 1x PS/2 interface (supports mouse and keyboard 2-in-1, default support: PS/2 keyboard.)

Screen printing USB-PWR: The pin controls the rear port (Screen printing USB/KB) through a jumper cap, which supports two modes: startup with power(5V) and standby with power(5V).

Signal	Pin		Singal
VCC 5V	1	2	VCC 5V
USB DATA-	3	4	USB DATA-
USB DATA+	5	6	USB DATA+
GND	7	8	GND
(NULL)	9	10	NC

USB2.0 Pin (Screen Printing: F-USB20, F-USB21)

USB-PWR (Screen Printing: USB-PWR)

Interface	Setting	Function
1-2	Close	5V (startup with power)
2-3	Close	5V (standby with power)

USB3.2 Pin (Screen Printing: F-USB30)

Signal	Pin		Signal
VCC 5V	1	20	(Null)
RX1-	2	19	VCC 5V
RX1+	3	18	RXO-
GND	4	17	RXO+
TX1-	5	16	GND
TX1+	6	15	TX0-
GND	7	14	TX0+
D1-	8	13	GND
D1+	9	12	D0-

GND	10	11	D0+

2.7 Audio (Screen Printing: FP-AUDIO)

The board features Realtek High-Definition Audio Codec, interface colored blue is the audio input connector (Line-in), colored green is the audio output connector (Line-out), and colored pink is the microphone input connector (MIC-in). The FP-Audio is the front audio pin (2.54mm spacing).

Signal Pin Signal MIC2-L 1 2 AGND MIC2-R 3 4 AVCC FRO-R 5 6 MIC2-JD 7 F-IO-SEN(AGND) 8 (NULL) FRO-L 9 10 LIN2-JD

FP-AUDIO (Screen Printing: FP-AUDIO)

2.8 GPIO (Screen Printing: JGPIO)

The board provides a set of 2×5Pin GPIO (2.54mm spacing), originating from the Platform Controller Hub (PCH); eight programmable inputs/outputs in total.

GPIO (Screen Printing: JGPIO)

Signal	Pin		Signal
GPP_B7	1	2	3.3V
GPP_B8	3	4	GPP_B15
GPP_B9	5	6	GPP_B16
GPP_B10	7	8	GPP_C12
GND	9	10	GPP_C13

2.9 COM (Screen Printing: COM1, COM2, JCOM3, JCOM4, JCOM5, JCOM6)

The board provides six standard RS232 serial ports (four pin spacing 2.54mm, two DB-9 interfaces). All COM ports can be powered by configuring the voltage through jumpers: JCOM1-P, JCOM2-P, JCOM3-P, JCOM4-P, JCOM5-P, and JCOM6-P for either 5V or 12V voltage.

The COM5 and COM6 can be configured as RS485/RS422 ports through jumper settings.

COM1, COM2 (Screen Printing: COM1, COM2 Pins are the DB-9 plug pins)

Pin	RS232
1	DCD
2	RXD

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3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

COM Pin Definition (Screen Printing: JCOM3, JCOM4, JCOM5, JCOM6)

Signal	Pin		Signal
DCD	1	2	RXD
TXD	3	4	DTR
GND	5	6	DSR
RTS	7	8	CTS
RI	9		

COM5, COM6

Pin	RS232	RS485	RS422
1	DCD	DATA-	TX-
2	RXD	DATA+	TX+
3	TXD	(NC)	RX+
4	DTR	(NC)	RX-
5	GND	GND	GND
6	DSR	(NC)	(NC)
7	RTS	(NC)	(NC)
8	CTS	(NC)	(NC)
9	RI	(NC)	(NC)

COM5, COM6 Jumper Setting

Interface	RS232	RS485	RS422
COM5	J1(1-3,2-4)	J1(3-5,4-6)	J1(3-5,4-6)
	J2(1-3,2-4)	J2(3-5 <i>,</i> 4-6)	J2(3-5 <i>,</i> 4-6)
	J3(1-2,3-5)	J3(3-4,7-8)	J3(1-3 <i>,</i> 5-6)
COM6	J4(1-3,2-4)	J4(3-5,4-6)	J4(3-5,4-6)
	J5(1-3,2-4)	J5(3-5 <i>,</i> 4-6)	J5(3-5,4-6)
	J6(1-2,3-5)	J6(3-4,7-8)	J6(1-3,5-6)



JCOM1-P, JCOM2-P, JCOM3-P, JCOM4-P, JCOM5-P, JCOM6-P

Pin	Setting	Function
1-2	Close	5V
3-4	Close	RI
5-6	Close	12V

Only one of the three pin sets mentioned above can be short-circuited.

2.10 LPT (Screen Printing: LPT)

The board provides a 2x13-pin parallel port, it requires an adapter cable to convert it into a standard parallel interface for use. The port can be connected to parallel devices such as printers based on the user's requirements.

Signal	Pin		Signal	
LPT_STB#	1	2	LPT_AFD#	
LPT_ PPD0	3	4	LPT_ERR#	
LPT_PPD1	5	6	LPT_INIT#	
LPT_PPD2	7	8	LPT_SLIN#	
LPT_PPD3	9	10	GND	
LPT_PPD4	11	12	GND	
LPT_ PPD5	13	14	GND	
LPT_PPD6	15	16	GND	
LPT_PPD7	17	18	GND	
LPT_ACK#	19	20	GND	
LPT_BUSY	21	22	GND	
LPT_PE	23	24	GND	
LPT_SLCT	25	26	(NULL)	

LPT (Screen Printing: LPT)

2.11 Switch Panel Socket (screen printing: JFP)

The board provides a front control panel pin for connecting to the function buttons and indicators on the front panel of the chassis.

Signal	Pin		Signal
HDD_LED+	1	2	PWR_LED+
HDD_LED-	3	4	PWR_LED-
RSTBTN-	5	6	PWR_ON+
RSTBTN+	7	8	PWR_ON-

Switch Panel Pin (screen printing: JFP)

(NC)	9	10	(NULL)

2.12 System Fan/CPU Fan Socket (Screen Printing: CPU-FAN, SYS-FAN1, SYS-FAN2,)

The board provides one 4Pin CPU fan socket for smart cooling, two 4Pin system fan sockets.

CPU Fan Definition (screen printing: CPU-FAN)

Pin	Signal
1	GND
2	12V
3	ТАС
4	CTL

System Fan Definition (screen printing: SYS-FAN1, SYS-FAN2)

Pin	Signal
1	GND
2	12V
3	TAC
4	CTL

2.13 ATX Power Supply (Screen printing: ATX1, ATX2, ATX3)

The board power supply: ATX power supply mode (ATX_24PIN+2*8PIN). ATX_24PIN DEFINTION (screen printing: ATX1)

Signal	Pin		Signal
+3.3V	1	13	+3.3V
+3.3V	2	14	-12V
GND	3	15	GND
+5V	4	16	PS_ON
GND	5	17	GND
+5V	6	18	GND
GND	7	19	GND
PWR_OK	8	20	NC
5VSB	9	21	+5V

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+12V	10	22	+5V
+12V	11	23	+5V
+3.3V	12	24	GND

8PIN DEFINTION (screen printing: ATX2, ATX3)

Signal	Signal Pin		Signal
GND	1	5	+12V
GND	2	6	+12V
GND	3	7	+12V
GND	4	8	+12V

2.14 LAN (Screen printing: LAN1, LAN2, LAN_LED)

The board features two high-speed ethernet controllers, which include 1x Intel i219 Date Rate Per Port: 1.0 Gbps plus 1x Intel i225 Data Rate Per Port: 2.5 Gbps. *Please note the Intel i225 network controller only supports one-time programming for the MAC address, which cannot be changed later.

In additional, the LAN1 (Intel i219) supports network wake-up (Magic packet wake-up), while LAN2 (Intel i225) supports UEFI PXE network boot. To utilize UEFI PXE network boot, it is necessary to set (IPv4 PXE Support) to "Enabled" in the BIOS.

The board also provides a LAN_LED pin header, enabling the extension of the (orange) status indicator light to the chassis panel.

LED Interface Status Indicators:

LI_LED (Green) Status	Function	ACT_LED (Orange) Status	Function
Always on	Network Connect	Blinking	Data Transmission

2.15 Expansion Slot (screen printing: PCIE16X, PCIE4X-1, PCIE4X-2, PCIE4X-3, PCIE4X-4,

PCIE4X-5, PCIE2X)

- 1 PCIe 16X slot for expanding PCIe devices such as graphics cards. (Supporting Rate of Speed: PCIe5.0)
- 5 PCIe 4X slots for expanding Network Interface Cards (NICs) and other PCIe devices (screen printing: PCIE4X-1, PCIE4X-3, PCIE4X-4 support PCIE4.0 rate; screen printing: PCIE4X-2, PCIE4X-5 support PCIE3.0 rate).
- 1 PCIe 2X slot for expanding PCIe devices such as NICs (supports PCIE3.0 rate).

2.16 CMOS Clearance/Retention (screen printing: JCMOS)

CMOS is powered by onboard button batteries. Clearing CMOS will permanently remove the previous system settings and restore the board system to original settings (factory settings).

- 1. Turn off the computer and disconnect the power.
- 2. Use a jumper cap to short the 1st and 2nd pins of JCMOS for approximately 30 seconds, then



remove the jumper cap.

- 3. Reinsert the jumper cap onto the 2nd and 3rd pins of JCMOS (Note: Closing pins 1 and 2 clears the CMOS).
- 4. Start the computer and press the key to enter the BIOS. Load optimized default values, save the settings, and exit.

CMOS (Screen Printing: JCMOS)

Pin	Setting	Function
1-2	Close	Clear CMOS
2-3	Close	NC

Do not clear the CMOS while the computer is powered on to prevent potential damage to the board.

Chapter 3 BIOS Setup

3.1 Entering the BIOS

- 1. Turn on the computer and press <Delete> entering the BIOS
- 2. After the computer is turned on, keep pressing F11, select enter Setup
- 3. BIOS Hotkeys:

F9: Restore to Factory setting. F10: Save and Exit.

ESC: Exit

3.2 Main Setup (BIOS info, Date, Time)

When you enter the BIOS Setup utility the first things you will encounter is the Main Setup screen. Shown below is the Main BIOS Setup screen. You can always return to the Main setup by selecting the Main tab.

Main Advanced Chipset Security	Aptio Setup - AMI Boot Save & Exit	
BIOS Information BIOS Vendor BIOS Version Build Date and Time Access Level	American Megatrends ALD75T101 05/17/2022 16:32:57 Administrator	
Processor Information Name Type Speed ID Stepping	AlderLake DT 12th Gen Intel(R) Core(TM) 17-12700K 3600 MHz 0x90672 C0	
Package Number of Efficient-cores Number of Performance-cores Microcode Revision GT Info eDRAM Size	Not Implemented Yet 4Core(s) / 4Thread(s) 8Core(s) / 16Thread(s) 1A 0x4680 N/A	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values E9: Ortigized Defendets
Memory Information Total Memory Memory Frequency PCH Information	65536 MB 2667 MHz	F10: Save & Exit ESC: Exit

System Date: Set the date. MM/DD/YY format.

System Time: Set the time. HH:MM: SS format.



3.3 Advanced Settings

Main Advanced Chinset Security	Aptio Setup - AMI Boot Save & Exit	
Main Advanced Chipset Security Connectivity Configuration CPU Configuration Power & Performance PCH-FW Configuration Thermal Configuration OverClocking Performance Menu BCLK Configuration Trusted Computing ACPI Settings Super IO Configuration Hardware Monitor Watch Dog Configuration SS RTC Wake Settings AMI Graphic Output Protocol Policy USB Configuration Network Stack Configuration CSM Configuration NVMe Configuration TIS Auth Configuration	Aptio Setup - AMI Boot Save & Exit	Configure Connectivity related options ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
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Select any of the items in the left frame of the screen. The advanced sections allow you to configure, improve and set up system features according to the preference of the CPU Configuration. All Advanced BIOS Setup options are described as follows.

3.3.1 Power & Performance

Advanced	
Power & Performance > CPU - Power Management Control > GT - Power Management Control	CPU – Power Management Control Options
	++: Select Screen
	T4: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values
	F9: Optimized Defaults F10: Save & Exit ESC: Exit
Version 2 22 1284 Conuright (C	2) 2022 AMT

CPU-Power Management Control GT-Power Management Control



3.3.2 CPU-Power Management Control

	Aptio Setup – AMI	
Main		
CPU – Power Management Control		Select the performance state that the BIOS will set
PO Fused Max Core Ratio	49	starting from reset vector.
P1 Fused Max Core Ratio	49	
P2 Fused Max Core Ratio	49	
P3 Fused Max Core Ratio	49	
P4 Fused Max Core Ratio	50	
P5 Fused Max Core Ratio	50	
P6 Fused Max Core Ratio	49	
P7 Fused Max Core Ratio	49	
Boot performance mode		
Intel(R) SpeedStep(tm)	[Enabled]	
Race To Halt (RTH)	[Enabled]	
Intel(R) Speed Shift Technology	[Enabled]	++: Select Screen
Intel(R) Turbo Boost Max	[Enabled]	T4: Select Item
Technology 3.0		Enter: Select
Per Core P State OS control mode	[Enabled]	+/-: Change Opt.
HwP Autonomous Per Core P State	[Enabled]	F1: General Help
HwP Autonomous EPP Grouping	[Enabled]	F2: Previous Values
EPB override over PECI	[Disabled]	F9: Optimized Defaults
HwP Lock	[Enabled]	F10: Save & Exit
HDC Control	[Enabled]	ESC: Exit
Turbo Mode	[Enabled]	
View/Configure Turbo Options		
CPU VR Settings		
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1) Intel[®] Speedstep[®](TM):

Enhanced Intel SpeedStep[®] Technology enables the operating system to control multiple frequencies and voltage points for optimal performance and power efficiency.

2) Intel[®] Speed Shift Technology:

An energy-efficient frequency control method by the hardware rather than relying on OS control. Processor decision is based on the different system constraints for example Workload demand, and thermal limits while taking into consideration the minimum and maximum levels and activity window of performance requested by the operating system. Default enabled.

3) Intel [®] Turbo Boost Max Technology 3.0

When Intel Turbo Boost Technology is activated, the CPU dynamically modifies its clock frequency (core frequency) according to the present workload. This empowers the CPU to provide peak performance during demanding tasks and optimize energy efficiency during lighter workloads. This feature is activated by default (Enabled).

4) Turbo Mode

The Turbo mode refers to Nehalem's "Integrated Power Gate" power management technology, which allows running off some cores and adding power to the others so that they run at a higher frequency. The capacity of the entire CPU remains unchanged, and the efficiency of the CPU is optimized. Default enabled.

5) C states

Idle States (C-states) are used to save power when the processor is idle. C0 is the operational state, meaning that the CPU is doing useful work 100% load. C1 is the first idle state, C2 the second, and so on, where more power-saving actions are taken for numerically higher C-states. C1 to C3 cuts off the clock inside the CPU, and C4 to C6 reduces the CPU voltage. Default enabled.

6) Enhanced C states

C1 to C3 cuts the clock inside the CPU. C4 and C6 mode reduces CPU voltage. Features two way "Enhanced" mode, enable by default.



3.3.3 GT-Power Management Control

Main	Aptio Setup - AMI	
Main GT - Power Management Control RC6(Render Standby) Maximum GT frequency Disable Turbo GT frequency	[Enabled] [Default Max Frequency] [Disabled]	Check to enable render standby support. ++: Select Screen 14: Select Item Enter: Select
		+/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit

RC6(Render Standby):

Allow/Prohibit integrated graphics card standby, the setting item has been Enabled/Prohibited, and the default setting is (Enabled).

Maximum GT frequency:

Maximum GT Frequency, Default max frequency.

Disable Turbo GT frequency:

Disable Turbo GT Frequency mode, Default disabled.



3.3.4 Thermal Configuration

Aptio Setup - AMI		
Thermal Configuration Enable All Thermal Functions [Disabled] • CPU Thermal Configuration • Platform Thermal Configuration • Intel(R) Dynamic Tuning Technology Configuration	Enable All Thermal Functions" is Enabled it Enables 'Memory Thermal Management', 'Active Trip Points', 'Critical Trip Points'.Set to disabled for Manual Configuration	
	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit</pre>	
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Enable All Thermal Functions

CPU Thermal Configuration:

Unlocks the temperature setting, the "Tcc Activation Offset" is the temperature adjustment option, the highest temperature is 105°C. Change the temperature by minus the number of degrees you wish to change. For example, minus 0(105-0) to set the temperature at 105°C, minus 20(105-20) to set the temperature at 85°C. **Platform Thermal Configuration**

Intel[®] Dynamic Tuning Technology Configuration



3.3.5 OverClocking Performance Menu

Advanced	Aptio Setup - AMI	
Advanced OverClocking Performance Menu OverClocking Feature HDT Enable BCLK Frequency	[Disabled] [Disabled] 99.756 MHz	Performance Menu for Processor and Memory. ++: Select Screen 14: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit FSC: Evit
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Over Clocking Feature: Disabled WDT (Watchdog Timer) Enable: Disabled BCLK Frequency



3.3.6 ACPI Settings

Main	Aptio Setup - AMI	
ACPI Settings Enable ACPI Auto Configuration	[Disabled]	Enables or Disables BIOS ACPI Auto Configuration.
Enable Hibernation ACPI Sleep State S3 Video Repost	[Enabled] [S3 (Suspend to RAM)] [Disabled]	-
		<pre>++: Select Screen t4: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit</pre>
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Enabled ACPI Auto Configuration Enabled Hibernation ACPI Sleep State S3 Video Repost:

S3 Sleep Mode (Enable VGA BIOS POST function when waking up from S3 Sleep mode)

3.3.7 Super IO Configuration

Advanced Advanced	- AMI
Super IO Configuration 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	Set Parameters of Serial Port 1 (COMA)
	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
Version 2 22 1221 Deer	

Serial Port 1~6 Configuration

Serial Port: Enable or disable serial port (COM).

Device Setting (Read-only): Displays serial ports' interrupt and location.

Change Setting: Change serial port settings and suggest setting "Auto" as default.

Parallel Port Configuration



3.3.8 Hardware Monitor

Advanced	Aptio Setup - AMI	
Advanced Pc Health Status CPU temperature System temperature System Fan1 Speed CPU Fan Speed System Fan2 Speed Vcore V_SM 3.3V_SYS SV_SYS Smart Fan Function	Aptio Setup - AMI : +25 °C : +38 °C : N/A : 572 RPM : N/A : +1.056 V : +1.203 V : +3.362 V : +5.082 V	Smart Fan function setting ++: Select Screen 1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit

PC Health Status

The PC health status displays CPU temperature, system temperature, fan speed, and other relevant voltage values. The above parameters have a certain range, and the system cannot run beyond these ranges.

- 1. CPU Temperature
- 2. System Temperature
- 3. System Fan1 Speed
- 4. CPU Fan Speed
- 5. System Fan2 Speed
- 6. VCore: Core Voltage
- 7. V_SM
- 8. +3.3V_SYS: 3.3V
- 9. +5V_SYS: 5V
- 10. Smart Fan Function:
 - 1) System Fan1 Setting
 - 2) CPU Fan Setting
 - 3) System Fan2 Setting

The CPU Fan Speed and the System Fan Speed can be set separately according to specific needs:

- 1) Automatic Mode
- 2) Full on Mode
- 3) Manual Mode



3.3.9 Watch Dog Configuration



Watch Dog Configuration

WDT Timeout Mode select: Minute or Second



3.3.10 S5 RTC Wake Settings

Advanced	Aptio Setup - AMI	
Wake system from S5	[Disabled]	Enable or disable System wake on alarm event. Select FixedTime, system will wake on the hr::min::sec specified. Select DynamicTime , System will wake on the current time + Increase minute(s)
	Wake system from S5 Disabled Fixed Time Dynamic Time	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
	version 2.22.1284 Copyright (C	C) 2022 AMI

Wake system From S5: timing boot settings, disabled by default.

Fixed Time: Select Fixed Time and the system will wake on the Hr: Min: Sec specified. **Dynamic Time:** Select Dynamic Time and the system will wake on a dynamic time.



3.3.11 USB Configuration

Advanced	Aptio Setup - AMI	
USB Configuration		Enables Legacy USB support.
USB Module Version	28	support if no USB devices are
USB Controllers:		keep USB devices available
USB Devices: 1 Keyboard, 1 Mouse		
Legacy USB Support	[Enabled]	
USB Mass Storage Driver Support	[Enabled]	
USB hardware delays and time-outs:	[20, cac]	++: Select Screen
Device reset time-out	[20 sec]	Enter: Select
Device power-up delay	[Auto]	+/-: Change Opt.
and the second se		F2: Previous Values
		F9: Optimized Defaults F10: Save & Exit
		ESC: Exit
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Legacy USB Support

Enable Legacy USB support. Disables legacy support if no USB devices are connected. Select enable will keep USB devices available under UEFI's support.

XHCI Hand-off

Whether to enable the USB XCHI transfer protocol. A workaround for OS without XHCI hand-off support. The XHCI ownership change should be claimed by the USB XCHI driver.

USB Mass Storage Driver Support

Enable(default) or disable USB Mass Storage Driver Support.

USB transfer time-out

Time-out value for control, bulk, and interrupt transfers, default time:20 second.

Device reset time-out

USB mass storage device start unit command time-out, default time:20 second.

Device Power-up Delay

Maximum time the device will take before it properly reports itself to the host controller.



3.3.12 Network Stack Configuration

Advanced	Aptio Setup - AMI	
Advanced Network Stack IPv4 PXE Support IPv6 PXE Support IPv6 HTTP Support PXE boot wait time Media detect count	[Enabled] [Disabled] [Disabled] [Disabled] [Disabled] 0 1	Enable/Disable UEFI Network Stack ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
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Network Stack

PXE Network boot setting, disabled by default.



3.3.13 CSM Configuration

Advanced	Aptio Setup - AMI	
Compatibility Support Module	Configuration	Enable/Disable CSM Support.
CSM Support		
CSM16 Module Version	07.84	
GateA20 Active INT19 Trap Response	[Upon Request] [Immediate]	
Boot option filter	[UEFI only]	
Option ROM execution		
Network Storage Video Other PCI devices	[Do not launch] [UEFI] [UEFI] [UEFI]	<pre>++: Select Screen f1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit</pre>
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Boot Option Filter

Option ROM Execution

Network

Storage

Video

Other PCI Devices



3.3.14 NVMe Configuration



The capacity and model of the SSD will be displayed under the option after the NVMe protocol SSD has been installed.

3.4 Chipset

Select the chipset tab from the setup screen to enter the chipset BIOS Setup screen.



System Agent (SA) Configuration: Northbridge configuration options, including video memory, display devices, and other options.

PCH-IO Configuration: Southbridge configuration options, including hard disk, sound card equipment, and other options



3.4.1 PCH-IO Configuration

Chipset	Aptio Setup - AMI	
PCH-IO Configuration > PCI Express Configuration > SATA Configuration > USB Configuration > Security Configuration > HD Audio Configuration		PCI Express Configuration settings
PCH LAN Controller State After G3	[Enabled] [S5 State]	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
Version 2.22.1284 Copyright (C) 2022 AMI		

PCI Express Configuration SATA Configuration USB Configuration Security Configuration HD Audio Configuration PCH LAN Controller State After G3 setting: S0 State (auto-start after power-on), S5 State by default.

3.5 Security

Aptio Setup - AMI Main Advanced Chipset <mark>Security</mark> Boot Save & Exit		
Password Description	Set Administrator Password	
If ONLY the Administrator's passwor then this only limits access to Set only asked for when entering Setup. If ONLY the User's password is set, is a power on password and must be boot or enter Setup. In Setup the U have Administrator rights. The password length must be in the following range: Minimum length	d is set, up and is then this entered to ser will 3	
Maximum length	20 ++: Select Screen	
Administrator Password User Password	t↓: Select Item Enter: Select +/-: Change Opt. F1: General Help	
▶ Secure Boot	F2: Previous Values F9: Optimized Defaults	
TCG Storage Security Configuration: KINGSTON OM8SEP4256Q-A0	F10: Save & Exit ESC: Exit	
Version :	.22.1284 Copyright (C) 2022 AMI	

Administrator Password: Set the Administrator Password.

User Password: Set User Password.

Secure Boot: Secure boot

3.6 BOOT

Main Advanced Chipset Security	Aptio Setup - AMI Boot Save & Exit	
Boot Configuration Setup Prompt Timeout Bootup NumLock State Show Full Logo	1 [On] [Enabled]	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
Boot mode select	[UEFI]	
Boot Option #1	[NVME:Windows Boot Manager (KINGSTON DMBSEP42560-A0)1	
Boot Option #2	[Hard Disk]	
Boot Option #3	[CD/DVD]	
Boot Option #4	[SD]	
Boot Uption #5	[USB Device]	++: Select Screen
Boot Uption #5	[NETWORK]	T+: Select Item
Boot option wi	Built-in EFI Shell]	+/-: Change Opt. F1: General Help
UEFI NVME Drive BBS Priorities		F2: Previous Values
UEFI Application Boot Priorities		F9: Optimized Defaults
		F10: Save & Exit
and the second sec		ESC: Exit
and a second		
Version	2.22.1284 Copyright (C) 2	022 AMI

Setup Prompt Timeout:

Number of seconds that the firmware will wait before initiating the original default boot selection. A value of 0 indicates that the default boot selection is to be initiated immediately on boot. A value of 65535(0xFFFF) indicates that firmware will wait for user input before booting. This means the default boot selection is not automatically started by the firmware.

Bootup NumLock State:

Select the keyboard NumLock state. The Bootup NumLock State allows activation of the Keypad number lock function after the system is powered on to the DOS system. When the default is set to ON, the NumLock is on when the system starts. When it is set to OFF, the keypad is in the cursor control state when starting.

Show Full Logo:

Enabled/Disabled Displays customized boot logo.

Boot Option #1~#7:

Set the system boot order from Number 1 to Number 7.

UEFI NVME Drive BBS Priorities:

UEFI NVME drive boot priorities setting.

UEFI Application boot Priorities:

UEFI application boot priority.

3.7 Save & Exit

Aptio Setup – AMI Main Advanced Chipset Security Boot Save & Exit	
Save Options Save Changes and Exit Discard Changes and Exit Save Changes and Reset Discard Changes and Reset Save Changes Discard Changes Discard Changes Default Options Restore Defaults Save as User Defaults Restore User Defaults Boot Override Hindows Boot Manager (KINGSTON OM8SEP4256Q-A0) UEFI: Built-in EFI Shell Launch EFI Shell from filesystem device	Exit system setup after saving the changes.
Version 2.22.1284 Convright	(C) 2022 AMI

Save Changes and Exit:

Exit the system setup after saving the changes and continue to start the computer.

Discard Changes and Exit:

Exit the system setup without saving any changes and continue to start the computer.

Save Changes and Reset:

Reset the system after saving the changes.

Discard changes and Reset:

Reset the system without saving any changes.

Save Changes:

Save changes done so far to any of the options.

Discard Changes:

Discard changes done so far to any of the options.

Restore Defaults:

Restore/load default values for all the options.

Save as User Defaults:

Save the changes done so far as the user defaults.

Restore User Defaults:

Restore the user defaults to all the options.

Boot Override:

Boot device selection can override your boot priority. Select the specified boot device such as SATA, USB Flash Disk, EFI Shell, PXE, etc., and boot directly. Or press F11 boot by selecting the specified boot device.