

ALN-35 Disk Size Motherboard



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ALN35 Motherboard

User Manual

(Version 0.5)

Version:		
NO.	Description	Issue Date:
V0.5	Initial Version	2023/08/16

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Chapter 1 Product Introduction

1.1 Brief Introduction

The ALN-35 motherboard is a 3.5" SBC (single board computer) based on the Intel Alder Lake N series platform and features a small form factor with high computing power, great for energy saving.

1.2 Parameters

Intel Alder Lake-N Series:

- Intel[®] Processor N100, 4Cores 4Threads, Max Turbo Frequency: 3.40GHz, 6 MB Intel[®] Smart Cache, TDP: 6W.
- Intel[®] Processor N97, 4Cores, Max Turbo Frequency: 3.60GHz, 6 MB Intel[®] Smart Cache, TDP: 12W.
- Intel[®] Core[™] i3-N305 Processor, 8Cores 8Threads, Max Turbo Frequency: 3.80GHz, 6 MB Intel[®] Smart Cache, TDP: 15W

Memory: 1x SO-DIMM DDR4-3200 slot, supports single channel, up to 32GB for maximum memory capacity.

GPU: Integrated Graphics based on CPU, display via 1x HDMI2.0b, 1xDP1.4a, 1x LVDs (eDP optional)

Storage: 1x mSATA interface for SSD/4G modules. 1x SATA3.0 interface.

USB: 4x USB3.2 Gen 2 interfaces, 4x USB2.0 interfaces.

Ethernet: Two Intel i210 Gigabit Network Controllers, Data Rate Per Port: 1.0Gbps

Audio: High-Definition Realtek Audio Codec, 1xCTIA Audio Jack, supports Line-out plus Mic-in.

Serial I/O: 4x RS232 COM, 2xRS485 COM (COM5, COM6*RS232 optional)

Other I/O: 1x M.2_Key E Slot type 2230 for Wi-Fi and Bluetooth, JFP, SIM Card Slot, GPIO

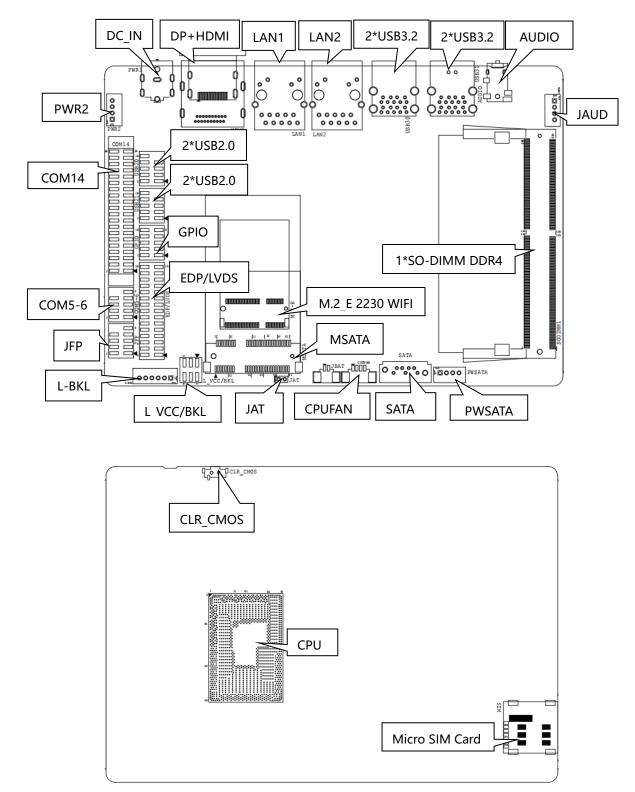
Dimension: 146mm x 102 mm

Power: 12V ~35V DC-in

Working 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 ALN35 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 provides a 1xSO-DIMM DDR4-3200 slot and supports single channels up to 32GB for memory. Notes: 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 board's specifications.

2.4 Display Interfaces

The board features 1xHDMI2.0b interface and 1xDP1.4 interface for 4K resolution at 60Hz; 1x 24bit LVDs interface (eDP optional) for resolution up to 1920x1080.

2.4.1 LVDS (Screen Printing: EDP/LVDS, L-BKL, L_VCC/BKL)

When it is configured as an LVDS function, the "EDP/LVDS" pin transmits LVDS signals, the "L-BKL" pin is the backlight adjustment jumper, and the "L_VCC/BKL" pin is the display working voltage adjustment jumper.

LVDS Data Pin (Screen printing: EDP/LVDS)

Signal	Pin		Signal
VCC	1	2	VCC
VCC	3	4	GND
GND	5	6	GND
A_DATA0_DN	7	8	A_DATA0_DP
A_DATA1_DN	9	10	A_DATA1_DP
A_DATA2_DN	11	12	A_DATA2_DP
GND	13	14	GND
A_CLK_DN	15	16	A_CLK_DP
A_DATA3_DN	17	18	A_DATA3_DP
B_DATA0_DN	19	20	B_DATA0_DP
B_DATA1_DN	21	22	B_DATA1_DP
B_DATA2_DN	23	24	B_DATA2_DP
GND	25	26	GND
B_CLK_DN	27	28	B_CLK_DP
B_DATA3_DN	29	30	B_DATA3_DP

LVDS Backlight Adjustment Pin (Screen printing: L-BKL)

Pin	Signal
1	GND
2	GND
3	LCD_BKL_ADJ
4	LCD_BKL_ON
5	12V
6	12V

LVDS Working Voltage Pin (Screen Printing: L_VCC/BKL)

Interface	Setting	Function
1-3	Close	VCC(+3.3V)
3-5	Close	VCC(+5V)
2-4	Close	REV (Backlight Control Reverse)
4-6	Close	STD (Backlight Control Standard/Forward)

NOTE! When setting the LVDS display power supply jumper, it can be adjustable between 5V/3.3V. The customer can use a jumper cap to short-circuit the voltage pin according to the LVDS screen's voltage parameters. (Please do not short-circuit two or more different voltage pins at the same time).

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2.4.2 eDP (Optional)

When it is set as eDP functions, the "EDP/LVDS" pin transmits the eDP signal, the "L-BKL" is for the backlight adjustment jumper and the "L_VCC/BKL" is for the display working voltage adjustment jumper.

eDP Data Pin (Screen Printing: EDP/LVDS)

Signal	Pin		Signal
VCC	1	2	VCC
VCC	3	4	EDP_HPD
GND	5	6	GND
EDP_AUXN	7	8	EDP_AUXP
N/A	9	10	N/A
EDP_DATA0_P	11	12	EDP_DATA0_N
GND	13	14	GND
N/A	15	16	N/A
EDP_DATA1_P	17	18	EDP_DATA1_N
N/A	19	20	N/A
N/A	21	22	N/A
N/A	23	24	N/A
GND	25	26	GND
N/A	27	28	N/A
N/A	29	30	N/A

eDP Backlight Adjustment Pin (Screen Printing: L-BKL)

Pin	Signal
1	GND
2	GND
3	LCD_BKL_ADJ
4	LCD_BKL_ON
5	12V
6	12V

eDP Working Voltage Pin (L_VCC/BKL)

Interface	Setting	Functions
1-3	Close	VCC(+3.3V)
3-5	Close	VCC(+5V)
2-4	Close	REV (Backlight Control Reverse)
4-6	Close	STD (Backlight Control Standard/Forward)

NOTE! When setting the eDP display power supply jumper, it can be adjustable between 5V/3.3V. Shortcircuit pins of different voltages at the same time are strictly forbidden.

2.5 Storage Interfaces

The board provides 1x mSATA interface SATA2.0 onboard supports 4G module with standard Micro-SIM slot. 1x Standard SATA interface. 1xPWSATA disk power supply socket (2.0mm spacing).

SATA Definition (Screen Printing: PWSATA)

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

2.6 Expansion Slots (Screen Printing: M.2_E)

Screen Printing M.2_E: 1x M.2_Key E slot, type 2230 for Wi-Fi Modules (supports PCIe/USB2/CNVi).

2.7 USB Interfaces

The board supports 4x USB3.2 Gen2 and 4x USB2.0 interfaces (2.0mm spacing). Internal USB2.0 Pin (Screen Printing: USB20, USB21)

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

2.8 LAN

The board features 2xRJ45 LAN interfaces with high-speed Intel i210 network controllers, data rate per ports: 1.0Gbps. Both of the Ethernet interfaces supports network wake-up (Magic packet wake-up), and the LAN1 supports UEFI PXE network boot.

LED Status Indicators:

LI_LED Status (Green)	Function	ACT_LED Status (Orange)	Function
Always on	Network Connected	Flashing	Data transmission

2.9 COM

The board is equipped with four RS232 onboard serial port headers (2.0mm spacing) plus two RS485 headers (COM5, COM6) by default. The COM5 and COM6 can be configured as RS232 as an optional choice; the COM1-4(screen printing: COM14) is powered with the same voltage as the board's input voltage.

RS232 COM (Screen Printing: COM14)

Signal Pir	Signal
------------	--------

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DCD#	1	2	RXD
TXD	3	4	DTR#
GND	5	6	DSR#
RTS#	7	8	CTS#
RI#	9	10	12V
DCD#	11	12	RXD
TXD	13	14	DTR#
GND	15	16	DSR#
RTS#	17	18	CTS#
RI#	19	20	12V
DCD#	21	22	RXD
TXD	23	24	DTR#
GND	25	26	DSR#
RTS#	27	28	CTS#
RI#	29	30	12V
DCD#	31	32	RXD
TXD	33	34	DTR#
GND	35	36	DSR#
RTS#	37	38	CTS#
RI#	39	40	12V

COM5_6 RS485 Default (Screen: COM5_6)

Signal	Pin		Signal
COM5_DATA-	1	2	COM6_DATA-
COM5_DATA+	3	4	COM6_DATA+
GND	5	6	GND
NC	7	8	NC
NC	9	10	(NC)

COM5_6 RS232 Optional (Screen Printing: COM5_6)

Signal	Pin		Signal
NC	1	2	NC
RX5	3	4	RX6
GND	5	6	GND
TX5	7	8	TX6
NC	9	10	(NC)

2.10 GPIO (Screen Printing: GPIO)

The board provides a set of 2x5Pin GPIO header (2.0mm spacing), offering 8 programmable I/O in total. **GPIO** (Screen Printing: GPIO)

Signal	Pin		Signal
SIO_GP70	1	2	3.3V
SIO_GP71	3	4	SIO_GP74
SIO_GP72	5	6	SIO_GP75
SIO_GP73	7	8	SIO_GP76
GND	9	10	SIO_GP77

2.11 Board Power Supply (Screen printing: PWR1, PWR2)

The board features one DC power interface(5.5mm*2.5mm), one 1x4Pin power supply interface; and supports 12V~35V DC-IN.

4PIN power supply pin definition	(Screen Printing: PWR2)
----------------------------------	-------------------------

Pin	Signal
1	VCC
2	VCC
3	GND
4	GND

2.12 Switch Button/Light Indicator (Screen Printing: JFP)

The board has a set of 2.0mm spacing pins that can be connected to a switch button, a system reset button, a hard disk read/write indicator, and a power-on indicator.

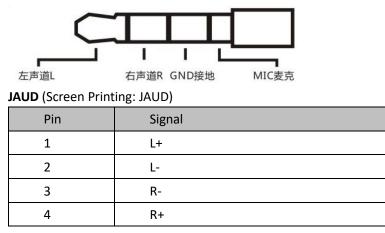
Signal	Pin		Signal
HDD_LED+	1	2	PWR_LED+
HDD_LED-	3	4	PWR_LED-
RSTBTN-	5	6	PWR_ON+
RSTBTN+	7	8	PWR_ON-
NC	9	10	(NC)

Switch Button/Indicator Pin Definition (Screen Printing: JFP)

2.13 Audio Interface

The board features a Realtek HD audio codec, supports a 3.5mm Line-out/MIC two-in-one combo jack (CTIA American standard), and a built-in dual-channel power amplifier output socket for connecting passive speakers.

Two-in-one headphone jack:



2.14 Hardware Auto Start (Screen Printing: JAT)

JAT (Screen Printing: JAT)

Setting	JAT
Close	Hardware Auto Start

Please note that this jumper's function is similar to the BIOS's "State After G3" function. When the latter is set to "SO State", the device will start automatically after being connected to power.

2.15 CPU Fan (Screen printing: CPUFAN)

The board features one 1x4Pin CPU fan header, powered at 5V by default. C

Pin	Signal
1	VCC
2	GND
3	TAC
4	CTL

2.16 CMOS Clearance/Retention (Screen printing: CLR_CMOS)

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).

Step 1: Turn off the PC and disconnect the power.

Step 2: Press CLR_CMOS for 10 seconds then disconnect.

Step 3: Restart the device, press the button to enter the BIOS, load the optimal default value, save, and exit the settings.

CMOS (Screen Printing: CLR_CMOS)

Setting	CLR_CMOS
Close	Clear CMOS

A Please do not clear COMS when the PC is connected to power in case board damages.



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:

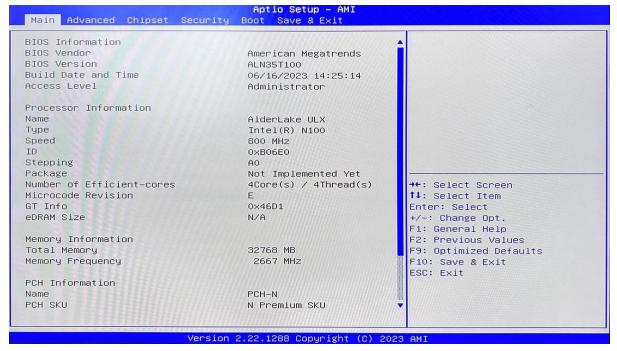
F9: Restore to Factory setting.

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.



System Date: Sets the date. MM/DD/YY format. **System Time:** Set the time. HH:MM: SS format.



3.3 Advanced Settings

Aptio Se Main Advanced Chipset Security Boot Save	tup - AMI & Exit
 Connectivity Configuration CPU Configuration Power & Performance 	Configure Connectivity related options
PCH-FW Configuration Thermal Configuration	
Trusted Computing	
 ACPI Settings Super IO Configuration 	
 Hardware Monitor Watch Dog Configuration 	
▶ S5 RTC Wake Settings	
 AMI Graphic Output Protocol Policy USB Configuration 	
 Network Stack Configuration CSM Configuration 	++: Select Screen 11: Select Item
 NVMe Configuration 	Enter: Select
▶ Tls Auth Configuration	+/-: 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

Power & Performance	CPU – Power Management Control
CPU – Power Management Control GT – Power Management Control	Options
	++: Select Screen ↑↓: Select Item Enter: Select
	+/−: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults
	F10: Save & Exit ESC: Exit

CPU-Power Management Control GT-Power Management Control

3.3.2 CPU-Power Management Control

CPU – Power Management Control		▲ Select the performance state
Boot performance mode		starting from reset vector.
Intel(R) SpeedStep(tm)	[Enabled]	
Race To Halt (RTH)	[Enabled]	
Intel(R) Speed Shift Technology		
Per Core P State OS control mode	[Enabled]	
HwP Autonomous Per Core P State	[Enabled]	
HwP Autonomous EPP Grouping	[Enabled]	
EPB override over PECI	[Disabled]	
HwP Lock	[Enabled]	
HDC Control	[Enabled]	
Turbo Mode	[Enabled]	
View/Configure Turbo Options		++: Select Screen
CPU VR Settings		↑↓: Select Item
Platform PL1 Enable	[Disabled]	Enter: Select
Platform PL2 Enable	[Disabled]	+/-: Change Opt.
Power Limit 4 Override	[Disabled]	F1: General Help
C states	[Enabled]	F2: Previous Values
Enhanced C-states	[Enabled]	F9: Optimized Defaults
C-State Auto Demotion	[C1]	F10: Save & Exit
C-State Un-demotion	[C1]	ESC: Exit
Package C-State Demotion	[Enabled]	
Package C-State Un-demotion	[Enabled]	
CState Pre-Wake	[Enabled]	

Intel[®] Speedstep[®](TM):

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

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.

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.

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.

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

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

(Standby)Enable/disable integrated graphics standby, default 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 Advanced	
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 fl: 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. (Please note the maximum supported temperature for the processor can be found on ark.intel.com.)

Platform Thermal Configuration

Intel(R) Dynamic Tuning Technology Configuration

3.3.5 ACPI Setting

Advanced	Aptio Setup – AMI	
ACPI Settings		Enables or Disables BIOS ACPI Auto Configuration.
Enable Hibernation ACPI Sleep State	[Enabled] [S3 (Suspend to RAM)]	
		→+: Select Screen
		14: Select Item Enter: Select
		+/-: Change Opt. F1: General Help
		F2: Previous Values F9: Optimized Defaults
		F10: Save & Exit ESC: Exit
		A CHARMENT
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- 1. Enabled ACPI Auto Configuration
- 2. Enabled Hibernation
- 3. ACPI Sleep State



3.3.6 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 	Set Parameters of Serial Port L (COMA)
	 *: Select Screen *: Select Item Enter: Select */-: Change Opt. F1: General Help *2: Previous Values *9: Optimized Defaults *10: Save & Exit ESC: Exit

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.

3.3.7 Hardware Monitor

Advanced	Aptio Setup – AMI	
Pc Health Status		Smart Fan function setting
CPU temperature System temperature CPU Fan Speed Vcore V_SM 3.3V_SYS SV_SYS Smart Fan Function	: +41 °C : +55 °C : N/A : +0.850 V : +1.203 V : +3.348 V : +5.091 V	
		<pre>++: Select Screen 11: 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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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. CPU Fan Speed
- 4. VCore: Core Voltage
- 5. V_SM: RAM Voltage
- 6. 3.3V_SYS: 3.3V
- 7. 5V_SYS: 5V
- 8. Smart Fan Function:
 - i. Automatic Mode
 - ii. Full on Mode
 - iii. Manual Mode

3.3.6 Watch Dog Configuration

Advanced		
Natch Dog Configuration		WDT Timeout Mode Select: Minute or Second
		MINUTE OF SECOND
	WDT Timeout Mode – Disabled Minute Second	++: 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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Watch Dog Configuration

WDT Timeout Mode select: Minute or Second

3.3.9 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)
	Hake system from S5 Disabled Fixed Time Dynamic Time	++: Select Screen †↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
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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.

3.3.10 USB Configuration



1. Legacy USB Support

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

2. XHCI Hand-off

a) A workaround for OS without XHCI hand-off support. The XHCI ownership change should be claimed by the USB XCHI driver.

3. USB Mass Storage Driver Support

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

4. USB transfer time-out

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

5. Device reset time-out

- a) USB mass storage device start unit command time-out, default time:20 second.
- 6. Device Power-up Delay
 - a) Maximum time the device will take before it properly reports itself to the host controller.



3.3.11 Network Stack Configuration

Advanced	Aptio Setup – AMI	
Network Stack	[Disabled]	Enable/Disable UEFI Network Stack
	Network Stack Disabled Enabled	<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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Network Stack

PXE Network boot setting, disabled by default.

3.3.12 NVME Configuration

Advanced	Aptio Setup – AMI	
NVMe Configuration	CONTRACTOR OF THE OWNER	
No NVME Device Found		
I Carles Contraction		++: Select Screen
		↑↓: Select Item Enter: Select
		+/−: Change Opt. F1: General Help F2: Previous Values
IT I AN AN AN AN		F2: Previous values F9: Optimized Defaults F10: Save & Exit
		ESC: Exit
and the second second		
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The capacity and model of the SSD will be displayed under the option after the NVMe protocol SSD has been installed.

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3.4 Chipset

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

Main	Advanced	Chipset	Ap Security Boot	t io Setup – AMI Save & Exit	
	Agent (SA Configura		ration		System Agent (SA) Parameters
					<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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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		
State After G3	[SS State]	<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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- 1. PCI Express Configuration
- 2. SATA Configuration
- 3. USB Configuration
- 4. Security Configuration
- 5. HD Audio Configuration
- 6. State After G3:
 - i. SO State
 - ii. S5 State

3.5 Security

Main Advanced Chipset Secu	Aptio Setup – AMI rity Boot Save & Exit	
Password Description	STATE OF THE OWNER	Set Administrator Password
If ONLY the Administrator's pa then this only limits access t only asked for when entering S If ONLY the User's password is is a power on password and mus boot or enter Setup. In Setup have Administrator rights. The password length must be in the following range:	o Setup and is etup. set, then this t be entered to the User will	
Minimum length Maximum length	3 20	
Administrator Password User Password		<pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. F1: General Help</pre>
▶ Secure Boot		F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
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Administrator Password: Set the Administrator Password.

User Password: Set User Password.

Secure Boot: Secure boot

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3.6 Boot

Main Advanced Chipset Security	Aptio Setup – AMI Boot Save & Exit	
Boot Configuration Setup Prompt Timeout Bootup NumLock State Show Full Logo Fast Boot	1 [On] [Enabled] [Disabled]	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
Boot mode select FIXED BOOT ORDER Priorities Boot Option #1	[UEFI]	
Boot Option #2	[NVME] [Hard Disk:Windows Boot Manager (PO: KINGSTON DMBP0S3128Q-A0]	
Boot Option #3	[CD/DVD]	++: Select Screen
Boot Option #4	[SD]	1↓: Select Item
Boot Option #5	[USB Device] [Network]	Enter: Select +/-: Change Opt.
Boot Option #6	[UEFI AP:UEFI:	F1: General Help
Boot Option #7	Built-in EFI Shell]	F2: Previous Values
	built in hit oneilij	F9: Optimized Defaults
▶ UEFI Hard Disk Drive BBS Priorities		F10: Save & Exit
UEFI Application Boot Priorities		ESC: Exit

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

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 Hard Disk Drive BBS Priorities:

UEFI hard drive boot priorities setting.

UEFI Application boot Priorities:

UEFI application boot priority.

3.7 Save & Exit

Aptio Setup – AMI Main Advanced Chipset Security Boot <mark>Save & Exit</mark>	and the state of the second second
Save Options Save Changes and Exit Discard Changes and Exit	Exit system setup after saving the changes.
Save Changes and Reset Discard Changes and Reset	
Save Changes Discard Changes	
Default Options Restore Defaults Save as User Defaults	
Restore User Defaults	++: Select Screen 14: Select Item
Boot Override Windows Boot Manager (PO: KINGSTON OM8POS3128Q-AO) UEFI: Built-in EFI Shell Launch EFI Shell from filesystem device	Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values
Launch EPI Shell Trum Tilesgstem device	F9: Optimized Defaults F10: Save & Exit ESC: Exit
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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.